

## SECTION IV.

## PREPARATIONS FOR TRAVELLING IN MEXICO.—

## JOURNEY TO THE MINING DISTRICTS OF TLALPUJAHUA.

So little was known in the city of Mexico of the manner in which the affairs of the great English Mining Companies were conducted, and such contradictory reports prevailed with regard to the system pursued by them, that I determined to seek, by personal observation, that information which I found it impossible to draw from any other source. In this I was influenced not merely by the interest that I naturally felt in the issue of enterprises, in which British capital to so large an amount was invested; but by a wish not to render myself responsible, in the reports which I might be called upon to transmit to His Majesty's Government, upon the subject, for any errors but my own.

In the Capital, the opinions of most people seemed to be influenced by feelings of merely a personal

nature. There were so many prepossessions in favour of particular districts, so many prejudices against others, and such rivalities amongst the agents or friends of the different Companies, that I found it hopeless to attempt to arrive at any reasonable conclusion with regard to their prospects while at a distance from the scene of action; and, under this impression, I resolved, in any of those inaccuracies into which the want of data might betray me, to ensure to myself the satisfaction of knowing that I had, at least, done all that in me lay to avoid them.

In preparing for the execution of a plan, which rendered it necessary for me to undertake a series of journeys amounting in their aggregate to nearly three thousand English miles, I endeavoured to lessen, as much as possible, the inconveniences with which travelling in Mexico is attended, by taking beforehand all those little precautions, the neglect of which in the first instance is sure to occasion so much subsequent vexation and delay. I accordingly procured the very best horses that were to be obtained, both for myself and my servants, and took equal care in the selection of my baggage, or *carga* mules, upon which, in fact, the whole comfort of a journey depends.

A Mexican inn, or even a second-rate Hacienda, contains little or nothing besides the bare walls. If the traveller be very much fatigued, he may stretch himself at full length upon the floor, or perhaps he may obtain the luxury of a table, which, as present-

ing a less uneven surface, forms a better substitute for a couch. To any thing beyond this he must not aspire, nor must he expect to find, except in the towns, any other provisions than tortillas and Chile. He therefore depends, both for rest and food, upon his own supplies, and of these he ought never to lose sight. In order to accomplish this, the carga mules should be of the best Durango breed, light and active, and able to continue at a trot before the horses thirty or forty miles, with a load of 150 or 160lbs. The Mexicans attach this load to the animal in a most slovenly manner, by merely balancing the packages upon a pad, composed of skins, and sackcloth stuffed with straw, and then girding them with such violence as frequently to injure the mule, by creating swellings either under the girths, or upon the withers, on which the whole load rests in going down hill. The packages too, require constant attention, and alteration, as the balance is destroyed by the roughness of the motion when travelling at a quick pace, although at a very slow walk, fewer changes are necessary. I found that so much inconvenience arose from the frequency of these stoppages on my way to Cuautla, that I determined on my return home to introduce an innovation, against which all my Mexican servants protested, until they were taught by experience how much it tended to diminish their own trouble.

I employed a French saddler recently established in the capital to make me four English packsaddles,

upon the model of one which had gone through the Peninsular war, each furnished with a tree, so as to prevent the load from resting immediately upon the mule's back, and these again provided with iron hooks on each side, to which a portmanteau or bed is attached by corresponding rings and straps. In the rainy season, an oilskin cover, or tarpaulin, is thrown over the whole, and secured by a broad leather girth; this serves to keep the load steady, while breechings and a breast-piece prevent the packsaddle itself from slipping, even in the most precipitous roads. One of the trees was fitted up in a different manner from the rest, being provided with iron brackets, made to fit a canteen, which was slipped in between them, and secured by a single strap. From the moment that I adopted this system, I discarded all the clumsy Mexican "aparejos," and I had the satisfaction both of never having a mule afterwards with a sore back, and of seeing them perform their journeys with ease and convenience. My luggage generally consisted of a canteen, which contained cooking utensils, as well as a small breakfast and dinner set for four people, and formed a light load for one mule: one of Thompson's small brass camp beds, with a portmanteau to balance it, was allotted to a second mule: the third carried two boxes for wine, provisions, and other necessaries, of which we laid in a stock in the larger towns; and the fourth the beds of Dr. Wilson and Mr. Carrington, a young friend by whom I was

generally accompanied. A single muleteer, duly provided with his sabre and lasso, took charge of this detachment, which preceded the rest of the party; and in addition to him we were usually accompanied by three men servants, two Mexicans and an English groom, who, being all armed as well as ourselves, with pistols and sabres, besides two or three double-barrelled fowling-pieces, formed a party sufficiently strong to secure us against any danger of an attack from robbers. When once trained to European wants, I know no better travelling servants in the world than the Mexicans. They are a fine manly race, excellent horsemen, adepts in the use of that indispensable instrument the lasso, and capable of enduring every sort of fatigue. They eat any thing, always look respectably, if provided, as mine were, with the leather (Payo) dress of the country, and sleep upon the ground, wrapped in the manga, which each man carries behind his saddle, round your bed if you bivouac, or stretched across your room door at the Ventas, where, as every thing is open, you have seldom any other security than what the presence of your own attendants may give. In mine I used to feel the most perfect confidence, for, when treated well, I have found them capable of great attachment, and although I had not occasion to put them to any severe trial, I am convinced that in an emergency they would not have deserted me.

I know few sensations more pleasing in life than those which I have experienced when starting, thus

accompanied, upon one of my long expeditions, with all my party well mounted, a few spare mules and horses driven before us, and the certainty of finding, after traversing a new country, in the principal object of the journey, enough to gratify curiosity, and often to remove unpleasant doubts. There is something so wild and independent in the whole thing, that there are few people, who have stamina enough to support the fatigue, that do not learn to enjoy it. You forget Europe and all the mingled advantages and restraints of civilization, and trusting to your horse for carrying you to the place of your destination, and often to your gun for a meal upon the way, you care neither for mountains nor rivers, but take at once the shortest and the most picturesque road, or branch off to the east or the west, at pleasure, should there be any thing, on either side, to attract attention. The Mexican horses are admirably adapted to this sort of travelling. They are small, but active, and full of spirit; extremely light in hand, and ready to spring off at full speed upon the slightest motion of the rider. Many of them possess in addition to these good qualities that most invaluable requisite for the road, a passo, of the advantages of which no one, who has not tried it, can form an idea. The passo consists in a peculiar motion of the horse, by which the hind legs are drawn along the ground, sustaining nearly the whole weight of the body, while the fore are raised in high and graceful action; the rider, from the gentle movement

of the hind quarter, is hardly moved in his seat, while the horse before appears to be going at a trot, and does in fact move at nearly the same rate. A good passo horse will perform, with ease to himself, six miles in the hour, and will hold this pace over good ground for several successive leagues. I had one, known in Mexico by the name of the Mascarillo, (from a peculiar white mark on one side of the head) whose passo was so rapid as to keep any other horse nearly at a gallop: when at his full speed he was thought to move at the rate of ten or eleven miles in the hour, but this was an exertion which he could not sustain for any length of time. A more ordinary passo varies from four to six miles in the hour, seldom exceeding the one, or falling much short of the other. I never had above two of the first kind, one of which was a little brown horse which Mrs. Ward used to ride, the other a favourite of my own, a Rosillo, (or Roan) very fast, and with legs like a deer, but with such courage that he performed all my journeys with less injury to himself than others apparently of three times his strength. Dr. Wilson had a third of clumsier make, but an equally good passo, and it was curious to see with what ease these three creatures went over the ground, while all the rest of the horses were wearied out with their efforts to keep up with them. Passo horses of this description are valuable, and will sell, in any part of the country, for one hundred and fifty or two hundred dollars, (30% or 40%) while a trötön, or trotting horse

of the very best kind, may be bought for fifty dollars, (10%) and might have been purchased for half the money in 1823, before the influx of English raised the prices, as it always does. Many people prefer mules to horses for a long journey, and, in a very mountainous country, they certainly answer best: they are useful, too, for servants; but for my own riding I should never employ them, for it was my delight to stop, wherever there was game in the vicinity of the road, and, after shooting for half an hour, to rejoin my party at a canter, which would spoil a passo mule, although it does no sort of harm to a horse. When kept at their regular pace, however, mules are most extraordinary animals, and seem capable of continuing at the rate of thirty miles a day, from January to December, without fatigue or inconvenience. I had one little chesnut macho, that had been with Mr. Hervey to the Interior, and afterwards both with him and Mr. Morier to the coast. It was then transferred to Mr. Baring, with whom it went to Tépïc, from whence it returned just in time for me to repurchase it at the commencement of my own travels. In all these it carried my muleteer, a very heavy man; and when, in April 1827, I transferred the two together to Mr. Stokes, to go over no inconsiderable portion of the same ground again, there was as little in the mule, as in the rider, to indicate the fatigues which it had undergone. I may say the same of a little black terrier, one of the two only dogs that survived the

journey from the coast. Four greyhounds and another terrier died mad upon the sands, within a league of Veracruz; but this little creature being younger, suffered less from the sun; and, from the moment that we reached the Table-land, formed, at once, an attachment to the mules, which continued unchanged during the whole of my stay. In defiance of heat and dust, the dog always accompanied the leading mule; at night he slept amongst the packsaddles, where his vigilance was of great use; and except to be fed, nothing ever induced him to enter a house. He still, I believe, continues the same career, as I thought it a pity, on my departure, to separate him from his friends, with whom he has since been to Catorce and Tēpāntīlān.

I shall finish this general outline of travelling in Mexico, by saying that in the hot months of May, July, and August, in the course of which, from the extreme dryness of the season in 1826, I was enabled to visit Tlālpūjāhūa, Tēmāscāltēpēc, Real del Monte and Zīmāpān, we used to set off long before day-break in the morning; so that we usually got our day's journey over by twelve or one o'clock. In Mexico, you never stop upon the road to bait, but perform the whole distance, whatever it may be, without a halt. It is better for the horses and mules, as they have a longer time together for rest and food, which, in so hot a climate, they do not enjoy without water, and this cannot be given them, in any quantity, until the day's work is done. Nor

is there any thing in the arrangement inconvenient for the traveller, as it gives him time to dress and bathe before dinner, and afterwards to stroll about in the cool of the evening, where there is any thing to be seen, until the approach of darkness summons him to bed. It is then that the luxuries of musquito curtains and portable bedsteads are really felt, particularly if the length of the legs is calculated, (as it always should be) so as just to raise you beyond the maximum of a flea's leap. Sheltered from all annoyances of this kind, and extended in peace and comfort upon your elastic stretcher, you soon forget the fatigues of the past day, and are awakened at three the next morning, by your muleteers, ready to face those of the day to come. It always required an hour's work to saddle, and load the mules, make up the beds, and prepare a little stock of cold provisions, which we stopped to eat, at eight or nine o'clock, wherever water or Pulque was to be procured. If we got in extremely early, we had usually some books with us to pass the time, and for those who were not thus disposed, the kitchen, or the care of the animals, afforded occupation, as, in both, constant superintendence was necessary. On the whole, I found my journeys a most agreeable relaxation, after the confinement of the Capital. I ended them with regret; I look back to them with pleasure, and I should recommence them again to-morrow, with great satisfaction, were my profession to lead me again to a country as little known as Mexico, and

offering as much to excite attention, and recompense curiosity.

The first Mining district that I visited, after my return from Cuautla, was that of Tlālpūjāhuā, which is situated upon the confines of the State of Valladolid, about 38 leagues, or 95 English miles, from the Capital. The road traverses the mountains that bound the Valley of Mexico to the West, and passes through Tācūbāyā and Sāntā Fē to Lās Crūcēs, where the battle between the Insurgents, under Hidalgo, and the Viceregal troops, commanded by Truxillo, was fought in 1810. From this high ridge, (it is 10,882 feet above the level of the sea,) where a number of crosses and piles of stones still mark out the burying-places of the Indians who fell in the action, the descent towards the valley of Toluca commences, which is 785 feet more elevated than that of Mexico. The town of Lerma lies about a league from the foot of the mountains, upon the borders of the lake, from which the Rio Grande de Santiago takes its rise. This river assumes a different name, at first, in almost every village near which it passes, but is the same which, after fertilizing the Bāxīō, and traversing the extremity of the Lake of Chāpālā, runs through a large portion of the State of Guādālājārā, and finally discharges itself at San Blas into the Pacific. It contains a very considerable body of water, and is not fordable, even during the dry season, within a very few miles from its source.

Lerma possesses nothing remarkable as a town, except an inn, where, from the frequent visits of foreigners, both beds and provisions may be obtained, and where some attention to cleanliness is shown.

The place contains about 4000 inhabitants, and is surrounded by Maguey plantations, which produce most excellent Pulque. The distance from the Capital is twelve leagues.

From Lerma there are two roads to Tlālpūjāhuā; one of which passes through the city of Tōlūcā, while the other, which is four leagues shorter, branches off to the North-west, and runs in a direct line to the town of Īstlāhūacā, (about twelve leagues from Lerma, and fourteen from Tlalpujahuā,) where we slept. For nearly eight leagues we followed a bridle road called El camino de las Cajones, through a country covered with Haciendas of corn, or maize, and large grazing estates, over which immense herds of cattle are scattered. The plain is intersected with canals for irrigation, while the view, which is diversified by a number of villages rising in the distance, and bounded by the Nevada, or Snowy mountains, of Toluca to the extreme South, conveys an impression of fertility and abundance that is very pleasing. For about four leagues before we reached Īstlāhūacā, we travelled over an elevated and barren ridge; but cultivation re-appears in the vicinity of the town, (which stands on a little elevation upon the banks of the river Lerma,) and

continues across the plains of Tēpētītlān, to the Hacienda of that name, (five leagues from Istlahuaca,) where the mountains of El Oro and Tlālpūjāhūa commence. Of the remaining nine leagues, the first four are barren and desolate; the five last extend through a succession of Pine forests, in the midst of which the Real of Tlālpūjāhūa stands.

The ancient village of San Pedro and San Pablo, now called Tlalpujahuā, where the officers of the Company formed in England under that name reside, is situated in North latitude  $19^{\circ} 17' 30''$ , West longitude  $100^{\circ} 1' 15''$ , upon the borders of a little stream, which winds down the valley of Tlālpūjāhūa into that of Tēpētōngō, where it joins the river of Tepetongo, which subsequently unites with that of Lerma. The town is environed by mountains covered with pines, the most considerable of which are Lă Sōmēră, to the North-east, Săn Lōrēnzō to the South, and the Cerro del Gallo to the East of the town: the first of these is 1,430 feet, the second 1,160 feet, and the third 851 feet, above the level of the bridge of Tlālpūjāhūa, which, again, is 822 feet higher than the town of Mexico, and 8,581 feet above the level of the sea.

It is upon the slope of the mountains by which the valley of Tlalpujahuā is formed that the principal mines of the Company are situated, in the hollows, (Cañadas,) of Las Animas, Los Zăpătērōs, and Lăbōrdă. Their position is extremely favourable for drainage by adits; and the shafts are neither

difficult of access, nor at an inconvenient distance from the town, most of them being contained in a circle of two English miles.

The metalliferous veins of this district are found principally in the Phyllade, (Thonschiefer, or Clay Slate,) which contains in subordinate strata, 1. Le traumate, (Grauwacke;) 2. Le traumate schisteux, (Schieffrige Grauwacke, or Greywacke Slate;) 3. Le Calcaire, (Transition Limestone;) 4. Le Talcschisteux, (Talkschiefer;) 5. Le Feldspath Compacte, (Prismatic Feldspar of Jameson;) 6. Le Diabase, (principally composed of Prismatic Feldspar, and straight-edged Augit of Jameson; and 7. Quartz.

The veins of Laborda and Coronas vary in dimensions from  $16\frac{1}{2}$  to  $5\frac{1}{2}$ , and  $8\frac{1}{4}$  English feet: that of Las Virgenes attains in some parts, a width of  $27\frac{1}{2}$ , and even 33 English feet; nor has any diminution, or falling off, been observed at the greatest depth, to which these veins have yet been explored.

The Ores contain Native Gold, (Hexahedral Gold of Jameson,) and Native Silver, (Hexahedral Silver;) which are found in small quantities. The Rhomboidal Silverglance (*l'argent antimonie sulfuré noir*) is most abundant; and next to it the Hexahedral Silverglance, or Argent Sulfuré. The Red Silver, or Argent Antimonie, *Sulfuré rouge*, is less common, but may frequently be found.\*

\* Having professed my ignorance of Mineralogy, I must state that I am indebted for these details to a manuscript report drawn up by Mr. Burkart, Principal Miner of the Tlalpujahuā Com-

Of the former produce of the district of Tlälpujähua nothing certain is known. The great Cörönäs vein was discovered at a very early period, and has been worked, with occasional intermissions, for upwards of two hundred years. The Cañada which bears La Borde's name, and to which he was indebted for his first fortune, was only discovered in 1743: there are no returns of the Silver raised from it during the great Bonanza, which gave it celebrity; but in stating it at twelve millions of dollars, in the eight years, during which the mines were worked, I take only half the estimate which is usually formed in Mexico of its amount. Tlälpujähua lost much of its importance upon La Borde's removal to Tāscö, but the mines of the district were worked without interruption until the commencement of the Civil War, at which time, according to a Statistical account of the State of Valladolid published in 1822, by Don Juan, José, Martinez de Lizarra, from eighteen to twenty thousand dollars were expended weekly in the purchase of ores, and in the payment of the mining labourers.

In 1824, it has likewise been ascertained, that Ores to the amount of 100,000 dollars, were raised by the Buscones (Searchers); and in 1825, before

pany, from which I should venture to make farther extracts for the information of Mineralogists, did I not conceive that the results of Mr. Burkart's investigations will, in the course of time, be laid before the world by himself.

the arrival of the Company, 60,000 dollars more were laid out in a similar way by the only miner who had a command of capital in the district. But it was not by the insulated efforts of an individual that the injuries done by the Revolution could be repaired.

The State of Valladolid was constantly the scene of action between the contending parties; and as one of the Insurgent chiefs (Räyön) occupied two fortified camps in the immediate vicinity of Tlälpujähua, (the Cerro del Gallo, and Coporo,) this district was exposed, for several years, to all the horrors of the war. To escape from these, its inhabitants abandoned their homes; and, in June 1825, Mr. de Rivafinoli found, upon his arrival, most of the houses in ruins, and the mines without a building of any kind to denote their existence.\* The population was so reduced, that one hundred and fifty workmen were procured with great difficulty, and although the surrounding country is remarkably fertile, supplies of every kind were scarce from the total ruin of the neighbouring Haciendas.

It was gratifying to behold the change which ten

\* The shaft of a mine is always surrounded by a *Galera*, in which the tools, candles, powder, &c. are kept, and an account taken of the labourers, who enter or quit the mine, as well as of the ores raised by them. In the *Galera* the *Mälacätés* (horse-whims) are likewise placed; so that where two or more of these are at work, the space covered in is very considerable.



months had produced in all these respects. In May 1826, Tlalpujāhua presented one of the busiest scenes that it is possible to imagine: the population had increased from one to five thousand; above eighty houses had been repaired, or rebuilt; shops for the sale of English manufactures were opened in the Plaza; there was a market most abundantly supplied with all the necessaries of life four days in the week; and twelve hundred labourers found constant employment in the mines. Twenty-seven of the principal shafts had been already put into a thorough state of repair, and surrounded with the necessary buildings. In the Mines of San Ēstevān, Cōlōrādillā, Los Olivos, Cāpūlīn, Concepciōn, Santos Mār-tirēs, and Ōcōtes, the works had already reached the Vein, and ore was raised in considerable quantities. In the others, Malacates had been fitted up upon the most improved plan, and the drainage was conducted with the utmost activity.

Of the extent to which the works of the Company are carried, some account has been given in the Second Section of the preceding Book: it is, however, necessary to add, that their contracts are mostly for the terms of thirty and thirty-five years; that in all their mines they have a full half share, or twelve Barras; that the Alimentos (or allowance made by the Company to the proprietors) are small, and are in every instance to be discontinued if a mine does not become productive within three years; and that although amongst the many contracts held

by the Company, there are undoubtedly some, from which no advantage can ever be derived, the command of all the mines in the district was indispensable in order to exclude competition, the ruinous effects of which, in other parts of Mexico, have been very severely felt.

Tlalpujāhua enjoys many advantages as a mining district. It is situated at a moderate distance both from the Capital and the Coast, in the midst of a country so fertile, that maize, which in Guanajuato and Mexico, sells for four and a half or five dollars the carga, (of 300lbs.) seldom rises there above two and a half or three dollars. Wood is equally abundant and cheap. Mining labour of all kinds is lower than in any of the neighbouring States. Few of the mines exceed one hundred and fifty varas in depth, and almost all are so situated as to facilitate their drainage by a single Adit, for a very considerable space below the deepest of their present workings. The ores of some contain a Ley de Oro, so considerable as to raise the value of the Marc to twelve and sixteen dollars; and in reducing these ores, the assistance of water power is almost always to be obtained.

At the period of my first visit, two Haciendas de beneficio (Santa Rosa and el Chimal) were completed, in each of which twelve stamps were at work, capable of pulverizing twenty-five cargas of ore, (of twelve Arrobas, or 300 lbs.) in the twenty-four hours. Another large Hacienda (San Rafael) was

in progress, with forty-eight stamps, and twenty-four Arastres, (crushing mills,) which it was thought would reduce from 600 to 800 cargass of ore in the week. I was very much struck with the appearance of all these works, which were planned by Mr. Moro, the engineer to the Company, and executed entirely by Mexican workmen, under the superintendence of another officer, (Mr. Enrico,) whose patience and assiduity triumphed over all the obstacles which the inexperience of the natives at first created. The water-wheel of San Rafael is twenty-seven feet in diameter, yet not a single European has been employed upon it, or upon the machinery connected with it, which now sets in motion forty-eight stamps, with a power that was thought insufficient in former times, to work more than six.

But both in this and in every other respect the Tlalpujahu Company has been admirably served. The director, Monsieur de Rivafinoli, possesses not only an active and indefatigable spirit himself, but the art of communicating a portion of this spirit to those by whom he is surrounded. I never saw more order and regularity than is shown in every part of his system; and although the gentlemen employed in superintending the works are natives of many different countries, there is an *esprit de corps* amongst them, which it is really pleasing to witness.\* The

\* The only place where I have ever seen any confusion at Tlalpujahu is at Mr. Rivafinoli's most hospitable table, where

Mexican proprietors, many of whom are entrusted with the superintendence of the works in their own mines, have become most useful assistants; and as the authority of the Church is employed wherever a change of machinery is contemplated, a solemn blessing being pronounced by the Cura, (a man of great talent and influence) upon the new machine, before it begins to work, each innovation is looked forward to by the natives as a *fête*, at which those who have been employed in the construction of the new works, receive a public reward.

Some of these details may be thought trifling; but as long as human nature remains constituted as it now is, more may be effected by attention to such trifles, than by the most beneficial projects when introduced without it. The conciliatory system adopted by Monsieur de Rivafinoli has given him an almost absolute authority in his district, and this, as long as the prospects of a Company are liable to be affected, (as they always must be) by the power which its agents possess of carrying into execution their projects, may always be regarded as an essential step towards success.

Doubts have been expressed with regard to the goodness of the mines of Tlalpujahu, and these, as there are no records of former produce, it is impossible for me to remove. It is difficult however to

Spanish, English, French, German, and Italian are spoken in such rapid succession as to convey a lively idea of the tower of Babel.

suppose, that in a district abounding in metalliferous veins, none of which have been worked to any considerable depth, whilst all are known to have been productive in earlier times, a Company which is in possession of every mine of any importance in the Real, and which is about to push its workings through a great extent of virgin ground, should not be amply repaid for its present advances. Its chances of success increase in proportion to the extent of its operations, as the veins are explored upon all the most essential points at once; while the mining works, which are under the direction of an active, cautious, and scientific man, Mr. Burkart, are sure to be conducted with economy, and executed with the greatest possible precision. With regard to time, a few months more or less are of little importance in an enterprise of such magnitude; and I should think even more highly than I now do of the prospects of the Tlalpujahua Company, were the Directors in England to forego for a year the hope of immediate returns, and to devote the whole of that time to the completion of the great Adit, by which the drainage of two-thirds of the district would be effected at once, and an immense saving made in the ultimate expences of the Association.

I remained at Tlalpujahua nearly a week, during which I visited all the mines which had been brought into activity up to that time, as well as the Haciendas, the most distant of which, San Rafael, is

situated about three leagues from the town. It was at that time unfinished, but in one of my subsequent visits I had the pleasure of seeing it completed, for I returned to Tlalpujahua both in September 1826, and January 1827, on my way from other districts to the Capital.