

## SECTION V.

JOURNAL OF A TOUR, TO THE MINING DISTRICTS  
OF ZIMAPAN—SAN JOSÉ DEL ORO—LA EN-  
CARNACION—EL CHICO—CAPULA, AND REAL  
DEL MONTE.

ON the morning of the 12th of July, I left Mexico, and proceeded by the great Northern road to Hühütöcā, about eleven leagues from the Capital.

On the 13th, after following the same road three leagues in the direction of Tula, we struck off towards the East, over about five leagues of wretchedly barren and stony country, which extends to the plains of San Pedro, in the centre of which, on a very fertile spot, are situated the Hacienda and village of that name, where we arrived after five hours' travelling.

The plains of San Pedro led us to another Pedregal, or stony district, of still greater extent than the first, in the midst of which, five leagues from the Hacienda, stands a solitary venta, where we had

been informed that we could pass the night, but where we found that no sort of accommodation was to be obtained. We were therefore compelled to proceed, at a very late hour, towards Itzmiquilpān, a town seven leagues farther on, there not being a single Pueblo, or Hacienda, between it and the Venta del Pēdrēgāl. The road continued to be stony and bad, with the exception of a few miles of sand covered with a thin brushwood. About two leagues from Itzmiquilpan there is an abrupt descent, of nearly two English miles, covered with masses of rock, amongst which it is hardly possible for horses to keep their footing. We did not reach the town till half-past eight o'clock, having left the Venta at half-past three in the afternoon.

Itzmiquilpan is remarkable for the beauty of its situation, and the richness of the vegetation for about a league in every direction around it. The town stands upon the banks of the river Tula, and is so completely sheltered by the neighbouring mountains, that it is almost a *Tierra Caliente*; in which every thing seems to partake of the luxuriance peculiar to that climate. The inclosures are composed of Peruvian pepper-trees intermixed with roses, and covered with vines, which produce fruit in great abundance, as clusters of grapes are seen amidst the highest branches of the trees. By the side of the river, there are some magnificent cypresses, almost equal in size to those of Chapultepec: parasitic plants too are found in every direction, and even the

plumage of the birds appears more variegated. Itzmiquilpan was once a place of considerable importance, as a manufacture of Pita\* was carried on there, from which most of the great mining districts were supplied with ropes: since the Revolution the demand for this article has diminished, and the inhabitants have turned their attention almost entirely to agriculture, for which they possess great local advantages from the facility of irrigation and the mildness of the climate. The town contains at present about three thousand Vecinos,† or a population of between nine and ten thousand souls: should the mines in the neighbouring districts recover their former importance, Itzmiquilpan will participate in the advantages of the change, as it is the great line of communication between Zimāpān, El Cārdōnāl, Lă Pēchūgă, and the Capital.

We passed the whole of the 14th at Itzmiquilpan, in order to rest our horses, which were much fatigued with the exertions of the preceding day. On the 15th we proceeded to Zimāpān.

From the moment that we quitted the immediate vicinity of Itzmiquilpān, we began to ascend, and continued to do so almost uninterruptedly for nearly five leagues. The chain of mountains which it is necessary to cross, is rugged and barren. There is hardly a tree of moderate size to be seen. A sort

\* Pita is the thread made from the fibre of the Maguey.

† Vecino means householder.

of low prickly bush, interspersed with an immense variety of the Cactus, of all shapes and sizes, filled with Censontlis, and other singing birds, growing alternately on a sandy or strong soil,—such are the characteristics of the vegetation, where any vegetation is to be found. Nor is the descent on the Zimapan side less monotonous or fatiguing. It is very steep, and the path, which is covered with loose stones, is so narrow that it will seldom admit of two persons abreast. On the whole road we only crossed two small streams, at one of which we halted to breakfast.

The town of Zimāpān is situated about twelve leagues from Itzmiquilpān, and forty-two from the Capital: it is the head of a district, the mines of which were formerly very productive. During the Revolution they were suffered to go completely to ruin, having not only been abandoned by the real proprietors, but worked by Buscones, or common miners, who, unwilling to quit a place where they had long resided, have gained a subsistence, during the last sixteen years, by extracting ores from the upper levels and pillars of the principal mines, many of which they have entirely destroyed in the course of their operations.

With regard to the maximum of the Silver previously raised in the district, I was unable to obtain any information that could be depended upon, most of the registers having been lost during the Revolution, when the town was continually changing

masters. I am, however, in possession of a sketch of the principal mines, by which it appears that several of them have produced considerable Bonanzas in earlier times. For instance, Pámplonã yielded 140,000 dollars in three years; La Iglesia took its name from the church that was built out of its proceeds; and from Cerro Colorado the family of Bustamante derived its fortune. There are many others which it is unnecessary to enumerate.

The only mine regularly worked at the time of my visit was that of Santa Rita, belonging to the German Company. They were driving a level upon the vein, which they had just cut, and were only waiting for the completion of the Hacienda de los Tölmänēs, situated in a ravine below the mine, in order to reduce seventy cargass of rich ore, which had already been extracted.

This Hacienda was formerly an old convent: it is built upon the banks of a river, in a deep Barranca, about two leagues from Zimãpãn. The situation is beautiful, the command of water great; and there is attached to it a garden and patio, containing some of the finest orange, Äguãcãtē, and fig-trees, that I almost ever saw. The climate, from the peculiarity of the situation, is warm.

The repairs necessary at this Hacienda constitute almost the only expence incurred by the Germans at Zimãpãn.

The mine of Santa Rita cost them nothing, and

they were induced to select it from finding that it would begin almost immediately to pay its own expences.

Their director, Mr. Spangenberg, who superintends likewise the neighbouring districts of San José del Oro, and el Cãrdõnãl, is a clever active man, and seemed to entertain great hopes of success in the works placed under his inspection.

The Real del Monte Company has no silver mines at Zimãpãn; they are forced, however, to keep up an establishment there, in order to superintend the works at the lead mine of Lomo del Toro, (the Bull's Side,) so called, probably from the shape of the mountain upon which it is situated. It is about four leagues from Zimapan, and very difficult of access. From the top of a high mountain, a zig-zag path, very narrow, and bordering on one side upon a precipice of from two to three thousand feet, conducts you to the mouth of the Mine. The descent is so steep, that a great part of it is cut into steps; it is, however, possible to go down on horseback, as far as the entrance to the Mine, but from thence to the river below, (about 1,700 feet,) no animal was ever known to descend.

The ore of Lomo del Toro is used as a flux in smelting, and twenty thousand cargass of it were annually consumed in the smelting establishment at Regla. The produce of the mine is divided into four distinct classes, Pepena, Quajado, Arenillos,

and Metales Comunes. *Pepena* is lead ore, which glitters, containing from eight to ten ounces of silver per carga. *Quajado* is dull lead ore, but as rich as the *Pepena*. *Arenillos*, earth sifted, and containing some particles of lead and silver, about one ounce to the carga. *Metales Comunes*, earth, or refuse from the mine, without any metallic particles, but used in smelting. Even this sells at Zimapan for one dollar the mule load. The *Pepena* is worth fifteen and a half dollars per carga, or five reals per arroba. The costs of extraction, however, leave the Company at present but little profit. The mine has been worked from time immemorial, by *Buscones*, who search for ore wherever they please, and deliver it at the mouth of the shaft at a certain price. Owing to this total want of system, the mountain has been excavated to an enormous extent, and the lower workings are now so distant, and so difficult of access, that the price paid for each arroba brought up by the *Buscones*, is two reals and a half, or one half the market price of the ore; in addition to which the Company defray all the expences of mining tools, candles, and powder, and keep an English miner to superintend the works. It is now very difficult to apply a remedy to this evil, as the side of the mountain is so very precipitous, that to effect a communication with the lower workings, by driving a level some hundred feet below the present entrance to the mine, would be useless, unless the ores could be raised to the summit by a small steam-engine,

of about twenty-horse power; and to this the dearth of fuel in the immediate vicinity of Zimapan would present a serious obstacle. It is a pity that a mine of such importance should have been destroyed by being worked in so desultory a manner; but as there was neither method nor restraint amongst the *Buscones*, you find, at a very little distance from the surface, proofs of their having consulted nothing but the interest of the moment; as the workings consist of huge excavations, unsupported, and in many places already in ruins; while the galleries by which they are connected, are so narrow that it is often nearly impossible to force a passage through them.

There is one other mine, similar to that of Lomo del Toro, at *Zimāpān*, but of an inferior quality. The Germans have a third, at *El Cārdōnāl*, from which they are supplied with a flux for their smelting establishment at *Chico*.

The Mines belonging to the Anglo-Mexican Company at *Zimāpān*, having been subsequently given up, it is only necessary to state that, under the injudicious superintendence of a Cornish miner, the buildings erected by the Company were situated upon the edge of a mountain torrent, and were swept away by the impetuosity of its waters at the commencement of the first rainy season; an event, the probability of which the natives had in vain pointed out.

None of the mines were drained while they re-

mained in the hands of the Company; and, when the effects of the panic of 1826 began to be felt in Mexico, Mr. Williamson determined to abandon them, and to confine himself to more important undertakings in the vicinity of Guanajuato.

On the morning of the 17th of July, we left Zimapan to visit the Iron Mines of the Encarnación, situated about twelve leagues to the North-east of the town, upon the summit of one of the highest peaks of the Eastern branch of the Sierra Madre, or Great Cordillera of the Andes.

Public attention has only recently been directed towards these Mines, which were unknown before the Revolution. General Wavell was, I believe, one of the first to feel their importance, and the Mines now in the possession of the New Mexican Company were all denounced by him. Since that time, both the German and English Companies have acquired possessions there, for which (as I have already stated) no other formality is required than to open a shaft, which is "denounced," and to keep four men employed upon it for eight days. This gives a legal title to a Pertinencia of two hundred varas in the vicinity of the shaft.

The Real Del Monte Company has now the shafts of Las Animas, San Cosme, San Antonio, and El Carmen, which, together, give them a right to eight hundred varas of ground.

The Germans are in possession of Santa Matilda, and nine other shafts, which will give them a com-

mand of more iron, than the largest establishment that it is possible for them to form can require.

The Anglo-Mexican Company had likewise denounced several shafts, but will probably give them up with the rest of the establishment at Zimapan.

The mountain upon which these Mines are situated, appears to be one mass of Iron ore, so rich as to contain 75, and even 85 per cent. of pure Iron, apparently of a very fine quality, and possessing great magnetic powers.

The rock is principally marble and kalkspath, being (as I am informed), similar, in almost every respect, to the famous Swedish Iron mines at Danemora. The Mexican ore is, however, so rich, that a flux will be required in order to smelt it, and some difficulty is apprehended upon that account. The German Company has sent to Silesia for fifty men acquainted with Iron works, and they intend to establish a foundery near the Encarnacion, upon a very large scale. It is impossible to select a spot more favourable, in most respects, for such an undertaking. There is an abundant supply of water, and the vegetation, with which the whole Cordillera is covered, is superior to any thing that I have yet seen in the New World. There is an amazing variety of forest trees. We observed ten different species of Oak, with Ocotes, and Oyamels, (Pines, excellent for fuel,) and magnificent Limes, covering an extent of country as far as the eye could reach. Provisions were scarce, but a Mining establishment,

if successful, always creates a population around it; and, from the facility of irrigation, there is no doubt that the valleys between the mountains might be cultivated with success. The roads are very bad, and so steep, and liable to be affected by the rains, that it would hardly be possible to render the mines very accessible; but still there is no doubt that, in a country where the demand for iron is so great, and where the Mining Districts of Guanajuato and Real del Monte are so near, the speculation might answer.

The English Companies will not commence their works at the Encarnacion, until their other Mines begin to pay. The depth to which the Iron-ore, so rich at the surface, extends, has not yet been ascertained; and although I am not aware of there being any reason to question the abundance of the supply at Zimāpān, I have heard of another district near San Luis Pōtōsī, that presented similar appearances, although, on sinking a shaft, every vestige of iron was lost at a few yards below the surface.

From the Encarnacion, we proceeded, on the 18th of July, to the Gold mine of San José del Oro, which was formerly immensely productive, but which has been, for many years, abandoned, and in ruins.

It has been taken, with the neighbouring Mine of "Chalma," by the Germans, as a speculation, which, from its vicinity both to Zimapan and to the Iron mines, will require no additional superintendence; while, should they be fortunate enough to strike

upon the vein, it is certain to repay them for the very trifling advances which they intend to make upon this experiment.

The ore of San José is composed of feldspath and copper, intermixed with gold, which is found pure, in very minute particles, and is separated from the copper in a few hours by the use of quicksilver in the arrastres. The copper ore is then prepared by fire, when it becomes valuable as *magistral*; an ingredient, of which, in the amalgamation of silver, a great consumption is made. It is worth from eight to twelve dollars the carga.

From San José we returned the same evening to Zimapan, which we left on the following morning for Itzmiquilpan, where a road branches off to Chico and Real del Monte.

It was my intention not to have quitted Zimapan without visiting the Mines of El Dōctōr, Măcōnī, and San Crīstōvāl, which have been taken up by the Catorce and Anglo-Mexican Companies; but I was prevented by the uncertainty of being able to recross the river Tula, which is seldom fordable during the rainy season. Had a fall of rain taken place in the mountains during my absence, I should have been prevented from reaching Zimapan again, and must have given up my visit to Real del Monte and Chico, in order to return to the Capital by San Juan del Rio and Tula, at which place alone there is a bridge. At any other time I should certainly have undertaken the journey, for the district of El Dōctōr is

one of great importance; and the road from Zimāpān although dangerous and full of precipices, is described as the boldest and most picturesque portion of the Sierra Madre, south of Durango.

From Mexico to the Doctor, there are two routes, the one by San Juan del Rio and Cādērēitā, and the other a bridle-road, which is laid down in my map of routes, as given to me by one of the agents of the Catorce Company.

The mountainous district commences on crossing the river Tūlā, a little to the South of Tēpētīlān, (fourteen leagues from Hūehūetōcā,) from whence a succession of steep and barren ridges extends to the Indian village of Tēcōsōūtlā, situated in a valley, well watered, and abounding in fruitful gardens. From Tēcōsōūtlā the road crosses the river Pātē, in the vicinity of which there are mineral springs, emitting a dense sulphureous vapour; and from thence it runs to the foot of a bleak and lofty mountain called Sōmbrērētē, upon which the Rancho of Olveira stands. The Rancho is nine leagues from Tēcōsōūtlā, and four from El Dōctōr, which it is however impossible to reach in a single day.

The first of the four last leagues traverses a barren and rocky plain; the second winds up a mountain of porphyry and marble, so steep as to be almost inaccessible; and the third lies through a valley, covered with Oak, Ash, the White Birch, and the Pine, with plots of rich soil at intervals. Of the fourth, the first half is the ascent of the mountain

called El Pīnāl, the summit of which is elevated above the highest peaks of the surrounding Cordillera; immediately beneath it, on a natural platform, stands the village of El Dōctōr, apparently not two hundred yards from the summit of the Pīnāl, but in fact nearly half a league distant, as the descent is effected by a zig-zag path, a great part of which is supported by terraces of masonry; whilst beyond the village, and many hundred yards beneath it, there are a number of lesser mountains, mostly conical, and covered with timber, the valleys between them being inhabited by Indians, and sown with maize.

The Mina Grande of El Dōctōr extends almost beneath the village, and has two "Pertinencias" on the line of the vein, which runs nearly East and West, with an inclination of about sixty degrees: it varies from one to three varas in breadth, and yielded, when worked regularly, three hundred cargass of ore weekly. The buildings connected with the mine have been destroyed during the Revolution, and the village itself has gone to decay. It still contains, however, a large church, with ten or twelve good-sized houses, and a few Indian huts.

The mouth of the mine is 4,875 feet above the level of the river Tula, which, at the foot of the mountain of the Doctor is itself 4,519 feet above that of the Gulf of Mexico: the village stands therefore at an elevation of 9,394 feet; and the Ēspōlōn, or summit of the mountain above it, attains