

Guaymas to take the command of the expedition upon its arrival. Unfortunately, it was but too soon ascertained that the heat and the rocky bottom together, prevented the diving-bell from acting at any thing like the depth to which the native miners were accustomed to descend. One damaged pearl was the result of the first cruize, which lasted six weeks; and after a second attempt, equally long and equally unsuccessful, the scheme was abandoned as utterly hopeless. No blame attaches to the gentleman entrusted with the management in Mexico: the fault lay in the principle, which was not properly inquired into here; and its failure may serve as an additional proof of the risk incurred by the application of new theories to the opposite hemisphere, where any miscalculation in the first instance must lead to disappointment, and may be attended with ruinous expence.

When I left Mexico, Lieutenant Hardy had not returned from the North. He was said to be wandering amongst the savage tribes of the Pimeria Alta, with whom he had contrived to establish a friendly intercourse; and he will probably in this way acquire a knowledge of a country hitherto unexplored by any white. A taste for such investigations has always been a remarkable feature in this gentleman's character. A few years ago, being out of employment, he took a passage on board a merchant-vessel to the vicinity of the Tierra del Fuego, (near Cape Horn,) where he was landed amongst the

Patagonians, with whom he remained a year and a half, before the arrival of another vessel enabled him to bring himself into communication again with the civilized world. It is supposed, however, that he is not influenced in his present excursion by mere curiosity, but by a wish to investigate the mineral treasures of the Indian country, which are thought to be very great.

From Guaymas, the road to the interior of Sonora lies through Pétic, a town of 8,000 inhabitants, situated in a plain near the confluence of the rivers Dolores and Sonora, thirty-six leagues from the Coast. The intervening country is level, and apparently destitute of water; the rivers from the Cordillera losing themselves in the sands between Petic and the Gulf; yet it is covered with herds of cattle and deer, and inhabited at intervals by Indians of the Seres tribe, of whose treacherous character Colonel Bourne's Journal gives some curious details. Pétic is the depôt for the trade of Upper Sonora with the Gulf. Its inhabitants, amongst whom there are a few foreigners, (three Englishmen, two Americans, and eight Biscayans,) are wealthy, and abundantly supplied with all the necessaries of life; the country around being remarkable for its fertility.

Fourteen leagues to the Westward of Pétic is the town of San Miguel de Horcasitas, upon the river Dolores. To the North of this town, the first ramifications of the Sierra Madre appear, abounding in



mines of silver, gold, and copper. A vein of the last is worked by Mr. Loisa, a merchant of Petic, who raises the ore at an expence of four dollars the quintal, and sells it, when conveyed to Guaymas by his own mules, for fourteen dollars; at which price it is bought up for the China market, where the copper of Sonora bears a high price, in consequence of the large proportion of gold contained in it.

From San Miguel to Ūrēs, on the Southern bank of the river Sonora, the distance is twelve leagues. The plain to the South of this town is one of the most fertile districts in the State; but to the North, the road runs along the banks of the river Sonora, confined in its course by two of the precipitous ridges which branch out from the great Cordillera and intersect the level country at regular intervals. These ridges preserve generally the same direction, (from North to South,) and run parallel with each other towards the Pacific, separated by the rivers Dolores, Sonora, Ōpōsūrā, and Bārispě, which fertilize the intervening spaces. In all these streams gold has been found, but in none so constantly as in the river Sonora, the mountains on either side being nearly perpendicular, and full of mineral veins.

After passing through the cañada above Ūrēs, the town of Bābīācōrā is found upon a Table-land, a little elevated above the bed of the river; it extends twelve leagues in a Northerly direction, and contains the towns of Conche and Sonora, with a number of

Ranchos and Haciendas. Eighteen leagues to the Eastward, again, is the town of Ōpōsūrā, situated upon the banks of a river of the same name, not laid down in any map, but which, after running over a great extent of country to the South-west, enters the river Yaqui a little above Onābās, in latitude 28.

The vale of Ōpōsūrā is divided from that of Bābiacora, or Sonora, by one of those parallel ridges which have been already described. It is about twenty-six leagues in length, and varies from one to four leagues in breadth. The population consists partly of whites, who have preserved the blood of their Biscayan ancestors in all its purity, and partly of Indians of the Opātā tribe, who, in Upper Sonora, compose nearly two-thirds of the inhabitants. They live in towns, and are completely civilized, being clothed after the manner of the whites, with whom they always unite against their barbarous countrymen, the Apāchēs; and such is the confidence reposed in them, that they are provided with fire-arms by the Government, and formed into militia companies, under the command of their own chiefs. The smiths, carpenters, and other artisans of the State, as well as the working miners, are found amongst these Indians, who are thus most valuable members of the community. They likewise furnish the Haciendas with a hardy race of labourers, many thousands of whom are distributed over the valleys of Bābīācōrā, Sōnōrā, and Ōpōsūrā, extending in a northerly direction towards Arispě,



(a town of 3,000 inhabitants, now the residence of the Commandant of the State,) and the mining district of Năcösărî.

The whole of this country is rich in every variety of agricultural produce, for besides wheat, maize, and barley, the sugar-cane grows in the valleys, with figs, pomegranates, peaches, grapes, and numberless other fruits; horned cattle, mules, and horses abound throughout the province, and may be purchased in any number, at about one-fifth of the price usually paid for them in other parts of the Republic; and to these advantages are added a most delightful climate, and the facility of a communication by water with the port of Guaymas, from which the towns of Babiacora and Oposura are only distant between seventy and eighty leagues.

Such a combination of favourable circumstances induced General Victoria, (himself a native of the North,) Don Pedro Escalante, (the Representative of the State of Sonora in the Senate,) and several other Mexicans connected with the Northern Provinces, to entertain the idea of bringing into activity, by the formation of a Company, some of the mining districts near Opösüră and Arîspe, formerly celebrated for their wealth, but abandoned during the great Apache war, in the latter half of the last century; when the Indian tribes upon the frontier, irritated by the hostilities of the Spanish presidial troops, made so general an attack upon the Northern Provinces, that all the isolated establishments were

broken up, and even the towns themselves preserved with difficulty.

For this purpose an association was formed, of which Colonel Bourne is a member, and in its name a number of important mines were "denounced" in the vicinity of Oposura, which was selected, as a central spot, for the principal establishment. Of these districts a very detailed account is given in Colonel Bourne's Journal. The most noted are Cerro Gordo, (South-east of Babiacora,) and the mines of Cobriza, San Antonio, and Dolores, (within a little distance of the same place; the mines of San Juan Bautista de Sonora, (situated upon a mountain eight leagues to the North-west of Oposura, which is crossed in different directions by fourteen veins, all distinctly pronounced,) and those of San Pedro Nacosari, and Churinibabi, (to the North and North-north-west of Oposura).

In all these districts the depth of the mines is inconsiderable, their former riches acknowledged, and the causes by which their working was interrupted, known. The advances necessary in order to bring them into activity are small, for in fact it is more remittances of quicksilver and mining stores, (which must be sent round Cape Horn to Guaymas,) than money, that is requisite. No unreasonable expectations are entertained by the Mexican proprietors, and no onerous conditions proposed: while their respectability and influence in the country are the best possible guarantee to the adven-



turers that their operations will be conducted with good faith, and can meet with no interruption.

The success of the enterprise appears to me unquestionable; and regarding as I do the prosperity of the mines of Mexico, as intimately connected with that of our own trade and manufactures, I should think it a subject of just regret, if, after embarking so eagerly in speculations, of which nothing certain was known, capitalists should not be found to engage in one, the result of which can hardly be regarded as doubtful.

I am aware that many of the statements contained in this, and the preceding books, respecting the mineral riches of the North of New Spain, will be thought exaggerated. They are not so: they will be confirmed by every future report; and, in a few years, the public, familiarised with facts, which are only questioned because they are new, will wonder at its present incredulity, and regret the loss of advantages which may not always be within its reach.

I am willing to hope, however, that my present undertaking may have the effect of directing the attention of many of my countrymen to a field, the importance of which has been hitherto but little suspected. Many of the facts detailed in the preceding pages are known in Mexico only by persons immediately connected with the part of the country to which they relate, but by them they are unanimously confirmed.

It may be asked, how a territory, possessing such vast natural resources, can have been reduced to the state of comparative poverty in which it now lies? The cause is simple. The precious metals do not in themselves constitute wealth, and as long as all communication between Sonora and the rest of the world was prohibited, except through the medium of the Capital, (Mexico,) and the port of Veracruz, they could not even be employed as a means of obtaining the produce of European industry, which they now command. The inhabitants, forbidden to avail themselves of the harbours upon their own shores, without quicksilver, (so essential in mining processes,) and without a mint, (the nearest was that of the Capital, 600 leagues from Arispe,) thought little of the mineral treasures by which they were surrounded, and devoted their whole attention to the cultivation of those, upon which their subsistence and comforts depended.

Their Haciendas, their flocks and herds, horses and mules, constituted their only care; and no portion of Mexico is richer than Sonora in these: but even at the present day, in many of the larger towns, money is unknown: and sales are effected by barter, the produce of the Interior, (as silver bars, gold dust, hides, or flour,) being exchanged for the imports of Guaymas, and Mázatlán at Pétic, or Rosārío, Ālāmōs, and Cosālā. There is no mint, as yet, nearer than Durango or Guadalajara, and until an establishment of this nature be formed, the



circulating medium will of course continue very small: but the exports of the precious metals in bars and grains to Calcutta and Canton are very considerable; the intercourse with India and China being already more frequent than that with any of the Southern Provinces of the Republic.

The inhabitants, who are frank and cheerful in their manners, industrious, brave, and hospitable in the highest degree, will soon learn to turn the advantages of their present position to account. From their former enemies the Apaches, and other savage tribes, North of Arispe, and the Presidio of Fonteras, (latitude 31,) they have no longer any thing to apprehend, for their enmity was always directed against the European Spaniards, who were obliged to avail themselves of the intervention and influence of the Creoles in order to obtain a cessation of hostilities.

The Apaches are said to be an independent and high-minded race, averse to all the arts of civilized life, excellent horsemen, skilful in the use of the lance, and formidable marksmen with the bow and arrow. They do not possess fire-arms, and are fortunately too distant from the frontiers of the United States to obtain a supply, (as the Comanches have done on the borders of Cohahuila and Texas,) from the lawless traders, who precede the advance of civilization across the wilderness. They require little beyond the undisturbed possession of their hunting-grounds, in which they were continually molested by the Spaniards; and as the Creoles already possess

ten times as much ground as they can possibly require, there is little reason to fear an interruption of the good understanding, which at present prevails.

I shall close my observations upon Upper Sonora with one more remark. Although there is no part of the country in which there are so many Creole families of pure Spanish descent, or where old Spanish names so continually recur, (as Moreno, Rodriguez, Fernandez, Espinosa, &c. &c.) Sonora has proved itself to be quite as decided as the Southern and Central Provinces, in the cause of Independence. A great number of the young men who joined the Insurgent armies in 1810, were natives of the North, sons and nephews of the most respectable landed proprietors of the Internal Provinces; and General Victoria himself, whose real name is Fernandez, although he has been induced by the general wish of his countrymen to retain that which he adopted during the war, was, as I have already stated, a native of Tã-mãsulã, where his family possessed considerable property. If there are particular spots, (as Alamos, or Rosario,) where other feelings with regard to Spain are thought to prevail, it is because they are in the hands of old Spaniards, who form, wherever they congregate together in any numbers, a little isolated knot, whose dislike to the present order of things is as evident, as it is innocuous.

The road from Arispe to the Villa del Fuerte, the capital of Cinaloa, runs nearly due South about one hundred and twenty leagues. The principal towns



on the way are Onābās (on the Southern bank of the river Yaqui,) and Los Ālāmōs, a celebrated mining district, situated between the rivers Mayo and El Fuerte, in a barren plain, where supplies, even of the necessaries of life, are drawn from the valleys of Oposura and Sonora in the upper part of the State.

The mines of Alamos lie nearly five leagues to the North of the town. They resemble those of Catorce in the character of the veins, which are mostly from six to eight varas in breadth, and produce ores varying from fourteen to thirty marcs of silver to the monton. The principal mining proprietors are four brothers of the family of Almādōs, who are said to possess a capital of half a million of dollars each: but the merchants are numerous and wealthy, and the town itself, which took its origin from the mines, is built with considerable magnificence. It contains six thousand inhabitants, and from three to four thousand more are employed daily in the mines.

To the North-east of Alamos, and nearly due West of Jesus Maria, upon the slope of the Sierra Madre, towards the Gulf, lies the "Mineral" of San José de Mūlātōs, discovered in the year 1806, and registered as a "Placer de Oro," on account of the quantity of gold found in the small stream which descends from Mūlātōs to the river below. On investigating the ravine, from which this stream issued, three elevated crests were discovered, (one of them more than one hundred varas in height,)

intersected in all directions by small threads, or veins, of white earth, containing gold in so large a proportion that the ore of inferior quality was disposed of at twelve and fifteen dollars the arroba, while the richest sold for two hundred dollars.

Two of the crests have been extensively worked, but the third is nearly virgin. All three may be explored to advantage by commencing at the summit, and sinking through the crest to the level of the ground, as the veins of gold traverse every part of the rock. The gold of Mulatos is nearly pure, the lowest quality being twenty-three "quilates," while it sometimes rises to twenty-three quilates, three and a half grains.\* Some idea may be formed of the abandoned state of the district from the facts related by Mr. Glennie, to whom I am indebted for the above account, and who says, that when he visited Mulatos, he found a number of Indians suspended by ropes upon the side of the rocks, or crests described above, picking out the earth in which the gold is contained with wooden stakes, but without attempting an excavation of any kind.

I much regret that Mr. Glennie's continual absences from Mexico should have prevented him from continuing the account of his visit to the Northern Mining Districts, of which I have made such frequent use in the preceding parts of this Section. He visited both Ālāmōs and Cōsālā, of which I shall have

\* 4 grains=1 quilate; 24 quilates, pure gold.



occasion to speak subsequently; and it would have been a satisfaction both to the public and to myself to corroborate statements, many of which may be thought to require confirmation, by the evidence of so intelligent and indefatigable an observer. I must, however, remark generally, that Mr. Glennie's views, with regard to the riches of Sierra Madre, (which he terms *one mine* from Guarisamey to Jesus Maria,) coincide entirely with those entertained by Colonel Bourne; and that the opinions of both are confirmed by all the Mexicans who have visited the Internal Provinces; by the official documents, frequently alluded to in the foregoing Books; and by the unanimous evidence of a number of most respectable individuals, whom I had an opportunity of consulting, myself, upon the subject at Durango and elsewhere.

To the North and North-west of Alamos, between the rivers Yaqui and Mayo, there are vast plains inhabited by numerous tribes of Indians; who, like the Opatas of Babiadora, have become reconciled to the restraints of civilized life. The Yaqui tribe possesses a number of towns on the Southern bank of the river of that name, each surrounded by fields and gardens in the highest state of cultivation; and South of the river Mayo, the Mayos alone form a population of 60,000 souls. Their capital, Santa Cruz, contains 10,000 inhabitants. Both the Yaquis and Mayos are docile and industrious, and supply the mining districts and farms with labourers,

and the towns with artisans, many of whom are by no means unskilful in their respective trades.

To the South of Alamos, in the direction of El Fuerte, there is little or no population; but the country is level, and the road practicable for carriages: the distance is twenty-four leagues.

El Fuerte was originally a military station, established by the Spaniards in their progress towards the North. Since the union of Sonora with Cinaloa, it has been selected as the residence of the Governor of the State, the Congress, and the Supreme Tribunal of Justice; and it now contains four thousand inhabitants. The situation is not particularly favourable; as, notwithstanding the vicinity of the river, the country about the town is unproductive, and the heat in summer insupportable. The *Tierra Caliente* of Cinaloa extends from El Fuerte, or rather from Alamos, to the confines of Guadalajara; it is one vast sandy plain, destitute of vegetation, except in the rainy season, or in spots where the vicinity of the mountains, or the confluence of two large streams, ensure a constant supply of water. This is the case at Cūlīcān, the most ancient and populous town in Cinaloa, situated upon a river of the same name, eighty leagues South of El Fuerte. It contains eleven thousand inhabitants; and the country about it is well watered and highly productive.

Cōsālā, thirty-five leagues South of Culiacan, is the next town of any note on the road towards Jä-



liscó. It derives its importance entirely from its mines, one of which, called Nuestra Señora de Guadalupe, is very celebrated. It belongs to Don Francisco Iriarte, a relation of the President's, who refused an offer of one million of dollars, made in 1825, by an association of Foreigners, on condition that he should allow them to work his mine for a term of three years. Guädälüpě is free from water, and situated at a considerable elevation above the plain; it contains a vein of gold of considerable breadth, and its produce might be increased to ten times its present amount; but the proprietor, a man of very peculiar habits, often refuses to work the mine for months together, and when compelled to employ labourers upon it, in order to prevent the loss of his title by exposing the mine to a denunciation from some other quarter, never allows more than four arrobas of gold (100lbs weight) to be raised in the week.

The idea of a man possessed of boundless wealth, but refusing to make any use of the treasures within his reach, will seem incredible in Europe; but Iriarte really does not know the value of money. With at least a million of dollars in gold and silver in his house, he lives in a habitation, the furniture of which is composed of buffaloe skins, with wooden tables, and chairs of so massive a construction that it requires two or three men to lift them from one part of the room to the other. His sons, whom he never permits to leave the town, are forced to attend to a little retail shop in Cösälä; and his daughter, who

is pretty, is suffered to grow up in uneducated idleness. His own habits are abstemious; and his religious notions extremely strict. He dislikes allusions to his wealth, and considers any enquiry respecting his mine almost as a personal offence. To all proposals for a cession of the right of working it, even for a limited time, he has constantly given the same answer, namely, that he does not want money, and that if he did, those who offer him the most liberal terms know best that he could take out of his mine double the amount of any thing that they could give, in less time than they would themselves require to raise the money.

Under these circumstances but little is to be expected from the mine of Guadalupe until the death of its eccentric proprietor; but if any faith can be reposed in the uniform opinions of those best acquainted with Cösälä, its wealth is almost unparalleled; and the three sons of Iriarte must, at some future period, astonish the world by the immensity of their resources.

Cösälä and Öposürä are almost the two only spots in Mexico, in which the inhabitants are afflicted with wens, a disease so common in the mountainous districts of Columbia that the possibility of discovering a remedy for it has frequently occupied the attention of the Legislature. In both places it is attributed to some peculiarity in the water, which descends from the Sierra Madre strongly impregnated with mineral substances. It is singular how-



ever that similar effects should not be produced by it in situations which differ apparently but little from those designated as the seats of the disorder, for instance in the valley of Sönörä, nearly parallel with that of Öpösürä, and in Cūliācān, which is almost on the same line with Cösälä. Perhaps the effect diminishes as the distance from the Sierra increases; for Cösälä is only five leagues from the foot of the Cordillera, and may consequently be more immediately under the influence of the causes calculated to engender the disease. This supposition is confirmed by the increased violence of the affection at Santa Ana, a rancho, where the ascent towards the Table-land commences, and where all the inhabitants without exception are victims to this disgusting complaint.

From Cösälä to the Capital, or the Central States of the Republic, there are two routes; the one by Rosario, the river Cañas, and Guädäläjärä, which is impassable during the rainy season, the other due East from Cösälä, across the Sierra Madre to Durango. By the first of these Colonel Bourne entered Cinaloa, and he quitted it by the second, the rains having commenced at Cūliācān on the 24th of June, and cut off all communication by the coast in the course of a very few days. He describes the ascent to the Table-land as full of difficulties, and extremely precipitous, but he nevertheless contrived to reach Durango in eight days by a road which crosses the mountains between Pāpäsquiāro and Guārīsāmēy,

without passing through a single town, or Pueblo of any importance.

I have endeavoured to compress into this Section all the data now in my possession with respect to a part of Mexico, which, though least known, I am inclined to regard as the most interesting portion of the territories of the Republic. Its progress has been hitherto impeded by obstacles which no longer exist. Of its resources we possess only a very imperfect idea; but, should the details given in the preceding pages have the effect of attracting the attention of capitalists, and scientific men, I am convinced that a field will be opened to European enterprise superior in richness to any that the New World has yet presented.

In stating this I am far from wishing to encourage delusive hopes. Inquiry must precede speculation, or the errors will be repeated which have already proved so detrimental to the interests of the adventurers engaged in the mines of the Central States of New Spain. But the subject is of sufficient importance to merit attention; and attention, should it lead to ulterior projects, would, I am inclined to believe, be sufficient to ensure success.