

next morning passed the carriages. We had completed three leagues the next day, when our progress was again obstructed by an *Arroyo* of considerable depth,—at least, fifteen yards. Here a bridge, on account of the width, was out of question, and we consequently set all hands to work in opening passes on each side; and, by twelve o'clock the next day, began to pass the carriages over, and drove on afterwards about a league, on a good road. On the 27th we arrived at Pilon, fourteen leagues from Linares. A superior sort of cultivation was observable in this neighbourhood; the country generally was extremely fertile, and fruit and vegetables of all kinds were plentiful and cheap. We here contracted with a man to take ten tons of castings to Saltillo, which lightened very considerably our carriages. We stopped two days at Pilon, waiting for bullocks, and loading the carts for Saltillo.

On the 30th we started, and went two leagues; and on the 1st of October we reached Callejon, a small Rancho, five leagues from Pilon, where we stopped seven days to rest the bullocks. On the 8th we arrived at Guadalupe, a small village, situated by the side of a river, where we stopped to repair the road and bridge on the other side. On the 10th we crossed the river, drove through the village, and stopped for the night. Early the following morning we drove on to Cadereita, over a tolerably good road. Cadereita is a small town, twelve leagues from Pilon, containing about a thousand inhabitants: it is a pleasant situation, and the inhabitants resort there from Monterey. On the 13th we proceeded, and on the 14th arrived at Pueblo, a large village, nine leagues from Cadereita. The following afternoon we entered the city of Monterey, situated in a large bahia, or plain, surrounded by mountains, (part of the Sierra Madre:) it lies in about twenty-six degrees north latitude. The climate is most delightful; fruit abounds all the year round, and provisions of all kinds are cheap and plentiful. It contains fifteen thousand inhabitants, among whom are a great many old Spaniards, extremely wealthy. We stopped there a day to load four carts with four tons of castings for Saltillo; and left on the 17th, proceeding for three leagues over a most excellent road.

Our route from Altamira to Monterey ran north by west half

north, or nearly so, with trifling variations: on leaving Monterey, we proceeded due west. We started early on the 18th, and although our road was a continual ascent throughout the journey, we performed three leagues. On the 19th, we descended over a rough broken road about three leagues; and on the 20th, yoked our cattle early in the morning and drove to Rinconada. Our road in the morning lay through a barranca, which conducted us to a hill: the road is good, but the steepest, I believe, in the world for a carriage. We soon reached, however, El Puerto de los Muertos, the summit of the mountain, which derives its name, the Indians say, from a bloody battle fought there by the first conquerors and the natives. This is the only place by which a carriage can pass from the *Tierra Caliente* to the Table-land to the north of Jalapa. We stopped a little on the top of the hill to rest the bullocks, and in the evening yoked them again, and reached a Rancho, about a league and a half distant from El Puerto.

The next day we drove on smartly, and by twelve o'clock were three leagues on the road, when we halted opposite a large farm-house, the people of which were astonished at the sight of the boilers, and came running to know the use of such tremendous things. The proprietor of the Hacienda also came out to us, to whom Colonel Martinez thought proper to mention our distressed situation, which he was no sooner acquainted with than he rode off to his house, and in about an hour afterwards we received a sufficient quantity of provisions for two days, consisting of beef and mutton, (boiled and roasted,) vegetables, bread, &c. &c. At four o'clock we left this abode of hospitality, and drove two leagues farther, and during the night felt the cold more sensibly than we had hitherto done since leaving the coast. On the 23rd we arrived at Saltillo, twenty-five leagues from Monterey. Saltillo is situated on the side of a hill: the country around presents very different features from those of the *Tierra Caliente*, where the land is so fertile, and the herbage so luxuriant. On this side of the Sierra Madre there is nothing but barren mountains and plains destitute of vegetation. Saltillo contains about twelve thousand inhabitants, and has several good streets, communicating at right angles with the Plaza, in the centre of which is a large

reservoir, which supplies the town with water. We had generally from the coast to this place met with great civility and attention, but the inhabitants here showed us every possible mark of kindness and politeness. On the second day after our arrival, we dined, by invitation, with a cousin of Iturbide's, and met all the principal people and authorities of the town: the dinner was most splendidly served up in the Spanish style, and to us who had fared badly during five months before, was no ordinary sort of treat. We contracted for several carts to take all our castings, except the cylinder, to Catorce, which latter, together with the boilers, were all that remained for our own carriages. We left Saltillo on the 26th of October, and proceeded four leagues over an excellent road, then stopped for the night at a small Rancho. Our bullocks by this time began to fail us; we consequently here contracted with a man to drive us to Catorce with his own cattle.

On the 27th, we travelled six leagues, and reached Aguanueva, where we stopped a day.

Our journey on the 29th was a continued and steep ascent, until at length we reached a plain, which lasted all the way to Vanegas. On the 30th, we drove nearly seven leagues, to La Encarnacion. The next day we reached Vaca, four leagues distant from La Encarnacion, a place deserted by human beings, and infested by wolves and jackals: we rested there one day, and on the 2nd of November proceeded to Buena Ventura, four leagues from where we started in the morning. On the 3rd we reached San Salvador, after driving three leagues, and on the following morning started early and arrived at El Salado; deriving its name, no doubt, from the water, which all over the plain we found to be very strongly impregnated with salt: we fared better here, however, in other respects, than we had done since leaving Saltillo. On the 5th, we arrived at Llana Blanca, four leagues distant, and observed on the road hundreds of *Perros de Campo*, so small that they do not frequent the woods, but form burrows, and live underground like rabbits. On the 6th, we travelled five leagues, and stopped at Lomo Prieto, and the next day went four leagues and reached La Punta, a large Rancho, where we were invited

to the principal habitation to take chocolate, and were also in other respects extremely well treated in their way, by its aged occupiers. On the 8th we arrived at La Perdida, whence we obtained a full view of the Catorce mountains, saw all our road distinctly before us, and even descried "El Potrero," our destination with the carriages. We collected in the evening several heaps of palm-wood and made bonfires, which were seen by the people at El Potrero. On the following day we reached Vanegas, three leagues from La Perdida, where we offered up our thanks for having met with fresh water. Vanegas is noted for its mineral-waters, or hot-baths: the road from Saltillo here is south, or very nearly so: there is an Hacienda de Plata here belonging to Don Matias and Don Francisco Aguirre. On the 10th, we went three leagues and stopped at Pachon, the road ascending all the way: we started early on the next morning, (the 11th,) and had not proceeded far on our journey when we were met by a great number of men, women, and children, who had come out to meet us, and to escort us to El Potrero, where we arrived about twelve o'clock, and found thousands of people waiting to see us. The Obregons had made interest with the administrators of the different mines to dispatch all their men to the Potrero, so that immediately on our arrival the castings might be conveyed to Concepcion, the mine where the engine was to be erected, at least two miles up a very steep mountain. All our baggage and small boxes of machinery were taken up that day, and we arrived at our future residence about five o'clock in the afternoon, having been exactly twelve months between London and Catorce. We left London on the 11th of November, 1821, and arrived at Catorce on the same day, 1822.

On the 12th we visited the mine, and found the shaft of a most tremendous size, the timber having become rotten and fallen away into the shaft, which, to within an hundred yards of the surface, was full of rubbish, &c. Every thing was in ruins; nothing but the walls standing of several old houses, which gave one the idea of an ancient castle that had been besieged a hundred years before: there was not the smallest stick of timber in all the mine.

Having brought my journal thus far, a few observations may, perhaps, not be uninteresting relative to our future proceedings after reaching Catorce.

We remained idle for want of funds until the 1st of April, 1823, when we began to clear away for the foundation of the engine-house, and on the 9th I started for Matehuala in search of wood for the pumps, but did not find forty yards of timber ten inches in diameter in the place. I made inquiries, however, at Matehuala, and was informed by the people there, that there was a Rancho, called Laca, about twelve leagues off, in the neighbourhood of which there was a fine wood, containing trees of all dimensions. I accordingly proceeded to Laca, but found, on my arrival there, timber no larger than two feet and a half long, and seven inches in diameter, just the size of billet-wood. There was no remedy, however, but to continue my researches, as I was resolved not to return to Catorce before I had obtained the object of my journey: I consequently proceeded to Solida, sixteen leagues from Laca, and in the skirts of the Sierra Madre. It is a species of Rancho, or Hacienda, to the people of which I applied on my arrival, and was informed that the pine and walnut-tree, (nopal,) grew in abundance in a cañada four leagues off. The good people, however, began to dissuade us from visiting so fearful a spot, assuring us that five individuals had been murdered there in the preceding month by the wild Indians, who infested the woods; and, as a proof of their veracity, they showed us some arrows stained with blood. They added, moreover, that twelve months before seven men had been killed by the Indians in the very place where we should have to cut the timber. These frightful accounts so alarmed my guide and attendant, that he positively refused to accompany me unless an escort was obtained from Catorce: I consequently went along with the Indian who had come with us, and fearlessly entered the wood, which was about two hours' ride from the house. The valley was nearly two hundred yards wide, overtopped by tremendous mountains, and clothed with wood of all kinds. We immediately found pine trees of all dimensions, some sixty yards high; but on proceeding farther into the wood, the size of the timber decreased: it consisted chiefly of oak and walnut-

trees. In this part of the wood we saw seven crosses fixed on the spot where the seven men had been killed by the Indians.

I must confess that I did not feel quite secure: the melancholy stillness which reigned around, broken occasionally by the rustling of a falling leaf or a distant echo, added to the corroborating monuments before me, awakened a lively recollection of the tales which had so alarmed my servant, and caused me, perhaps, rather more speedily than I might otherwise have done, to retrace my steps to the pine-trees, seventy of which I marked, and returned late in the evening to Solida. On the two subsequent days I continued to visit the cañada, and marked two hundred and twenty trees, making altogether four hundred yards of pumpwood.

Thus, after a great deal of fatigue and disappointment, I at length succeeded in my object, and on the 21st of April arrived again at Catorce.

The week after my return, I set about getting the boilers and cylinder up to the mine. To the eyes of the natives it appeared impossible ever to convey them entire up the mountains; but in less than four days, by means of pullies and a six inch rope, I succeeded in drawing these heavy pieces of machinery to the top: the zig-zag shape of the road rendered the task more difficult than it otherwise might have been.

The next thing I had to do was to fix a boring-mill, for boring the pumps, to which I applied a winch, that we had brought with us for lifting our heavy pieces of machinery: four of the natives could turn it quite easily, and bore about twelve feet of seven and eight inch caliber per day; whereas two Englishmen in the same time would have done double the work. The indolent sluggish sort of patience to be observed among the labouring classes of this country appears truly surprising to the eye of an Englishman. A man, while turning the winch one day, no doubt half asleep, allowed the pinion to catch his thumb, which was immediately jammed between the wheels, and separated from the hand.

This little accident, although a serious inconvenience to the individual, proved advantageous to the concern, for none of them were afterwards seen sleeping, and they paid more attention to their work.

On the 25th of September, we screwed down the cylinder; on the 11th of October, hove the beam into the house; and by the middle of November the engine was completely fixed, and ready to work. The shaft, however, was not ready to receive the pumps before the 15th of January, 1824, when I began to put the work in: from the collar, or mouth of the shaft, to the water measured two hundred and forty-eight yards English; yet by the 20th of April we were quite prepared to start the engine. It is a great awkward shaft, and I had, moreover, a great deal of it to repair, and no one to assist me but the natives. The only Englishman that came with me was an engineer, by the name of Newhale, he was addicted to daily fits of intoxication, which rendered him totally incapable of attending to his business; the consequence was, that his duty devolved on me six days out of seven, and were it not that I was fully acquainted with the different parts of the machinery, our proceedings must have suffered a great deal more delay than they actually did. People who embark in undertakings of such a nature as the one we are engaged in, cannot be too particular in the selection of individuals, either for the managing or operative arrangements, on whose experience, activity, and skill, success in a great measure depends. We found on starting the engine that the water rose with difficulty; the pumps were defective, and notwithstanding my binding them as strong as possible with iron, the greatest part of them burst, on the water attaining a moderate height. We consumed full three months in this ineffective trial: I had repeatedly, during this period, assured Colonel Martinez that we never should succeed in draining the mine with wood-pumps: in the first place, the timber was bad, and before it reached the mine all the bark was rubbed off, and the tree left bare: besides, the great distance (one hundred and forty miles) which it had to be brought, subjected it to the heat of the sun for weeks together, and after boring in this altitude, where the quicksilver in the barometer stands at twenty degrees and a quarter, the air was so extremely rare and dry, that it extracted all the substance, and occasioned the pumps to crack and split in all directions. I tried to remedy the evil by dividing the column of water, by this means reducing a considerable degree of the pressure; but this plan, however, did not remove the

natural defects which he had to contend with; and after some time the timber would not resist a column of water ten yards high.

We continued to go on in this unprofitable manner until the 7th of November, 1824, when it was determined that I should be commissioned to the United States for iron-pumps. I accordingly left Catorce on the 22nd, with instructions, that if a foundry could not be met with in that country for casting the pipes, I should proceed immediately to England. I went by the way of San Luis Potosi, through Tula to Gallos, across the Sierra Madre by Santa Barbara, which stands in a delightful valley, picturesque and fertile, formed by the Sierra Madre and another chain of mountains: from thence to Rio Limon, Horcasitas, and Altamira. I was detained at Tampico till the 16th of December, when I embarked in an American schooner and sailed for New Orleans, and after a tempestuous passage reached Balize on the 2nd of January, 1825. The distance from Balize (at the mouth of the Mississippi) to New Orleans, is one hundred miles. I went in a steam-boat to the latter place, which it is unnecessary to describe. The number and size of the steam-boats plying on the Mississippi is extraordinary. At New Orleans I obtained information of a foundry established at Louisville, fifteen hundred miles up the river, which appeared to be on a scale in every way competent to the size of the castings required. On the 10th I left New Orleans and reached Louisville on the 25th, where I made immediate application to Mr. Prentice, the proprietor of the foundry, who told me that he should require twelve months to execute my order, and recommended me to proceed to Cincinnati, three hundred miles farther up. I accordingly left on the 26th, and reached Cincinnati the following morning. I found, on my arrival there, that there were four foundries in the neighbourhood, for the proprietors of which I sent immediately, and contracted with them on the very day of my arrival. In four months the order was completed.

The weight of the pipes was sixty-three tons five hundred, at six dollars per cwt.; the last pipe was cast on the 20th of May, and on the 23rd I left Cincinnati.

In consequence of a twenty-two feet fall in the river at

Louisville, I transported the castings below it in flat-bottomed boats, and from Louisville to New Orleans I took freight in a steam-boat. Having reached the latter place on the 4th of June, I chartered a small schooner and loaded her with the castings, and on the 22nd of June arrived at Tampico: we were, however, detained until the 17th of July outside the bar, there not being a sufficient depth of water for us to cross. On the 28th, all the pumps were discharged. I was to leave the following day, but the person that I depended on to dispatch the castings on the arrival of the carts from the Interior, was taken ill: the fever raged with violence, and the weather was so bad as to render travelling impossible. The carts, however, came down on the 26th of August, on the arrival of which I completed my business with all possible dispatch, and left for Altamira. The following scene is, perhaps, worthy of being described:—in a single room at Altamira, I observed on one side a dead body laid out, opposite which were two unhappy creatures on the point of expiring: in the centre of the room was a large heap of plantains, round which were seated several persons eating of them most voraciously, and one or two resting against the bier of the deceased, at the foot of which were two men, one playing the violin and the other the guitar; while, to complete the picture, three or four damsels were dancing near the door.

I stopped here until the 10th of September, and left for fear of fatal consequences. Before arriving at Catorce, I was seized with the most dangerous feverish symptoms, and on the 26th, the day after my arrival, I took to my bed, where I remained until the end of December; fatigue and exposure to the night air, and a sudden change of climate, having brought on an illness which very nearly proved fatal to me, and from the effects of which I have scarcely yet recovered. In 1826 the castings arrived, (in February and March.) On the 18th of the latter month I began to fix them in the shaft, and on the 1st of June, I again started the engine: we worked for a fortnight, and made a considerable progress in lowering the water, although we were stopped a short time by the want of fuel; but the engine continued in activity until the 24th of November, with few

intermissions, during which time we cleared away the greatest part of the water and rubbish in the shaft.

Since the 25th of November, we have been idle for want of funds.

ROBERT PHILLIPS.

*Real de Catorce, 4th January, 1827.*

From Tampico to Altamira, we brought all the machinery through the lake in canoes; the distance is six leagues.

B.

THE Province of Texas lies between the 27th and 36th degrees of North lat., and the 94th and 103rd parallels of West longitude. It contains about one hundred and sixty millions of English acres. In the Northern part the climate differs but little from that of the South of Europe, of Buenos Ayres, and the Cape of Good Hope. To the South the White settlers from the United States experience no ill effects from exposure to the sun. Few countries possess so large a proportion of rich land, or are so capable of supporting a dense population.

The coast is low, and swampy during the rainy season, when it becomes unhealthy. It is skirted by a number of islands separated from the main land by narrow straits. The most considerable of these is San Luis, or Galveston, the easternmost point of which shelters the harbour of that name. The Bay of Espiritu Santo is the next harbour of importance, and this, from the frequency of shoals, cannot be frequented by vessels drawing more than eight or ten feet water.

The anchorage is generally good, and as the water shoals gradually, vessels approaching the coast may be guided entirely by the lead.

Few countries are better supplied with navigable rivers, streams, and rivulets, than Texas. Nevertheless, excepting along a part of the coast, and on the banks of the Red River, near the Great Raft, no such inundations take place as to render the adjacent district periodically unhealthy. The depth of the water on the bars at the mouth of the principal rivers is not