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TRAVELS

FROM

BUENOS AYRES,

BY POTOSI,

TO

L I M A.

WITH NOTES BY THE TRANSLATOR,

CONTAINING

TOPOGRAPHICAL DESCRIPTIONS OF THE SPANISH
POSSESSIONS IN SOUTH AMERICA,

Drawn from the Last and Best Authorities.

Anthony Zacharias

ANTHONY ZACHARIAH HELMS,

FORMERLY DIRECTOR OF THE MINES NEAR CRACOW IN
POLAND, AND LATE DIRECTOR OF THE MINES AND
OF THE PROCESS OF AMALGAMATION IN PERU.

London;

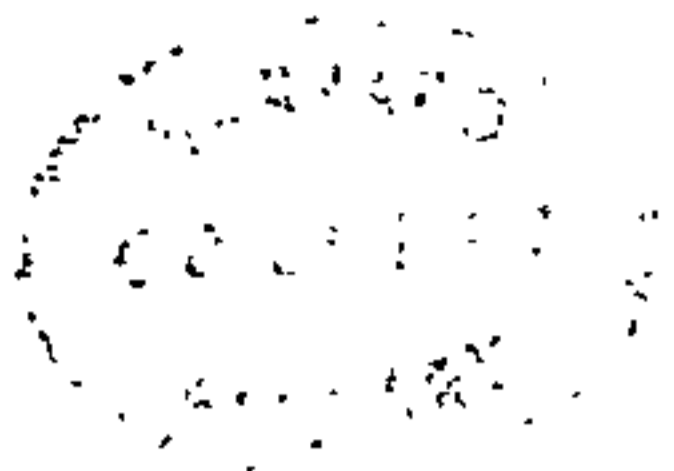
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INTRODUCTION.

THE improvement which M. de Born of Vienna had introduced into Metallurgy, by his new method of amalgamation, attracted in the year 1787 the attention of the Court of Spain, in whose American Provinces they had, from the scarcity of wood, been obliged to have recourse to a rude kind of amalgamation for separating and purifying the nobler metals.

M. d'Elhujar, director general of the Mexican mines, whose works prove him to be an intelligent mineralogist, was accordingly sent to Hungary to make himself master of Born's method of amalgamation, and to engage expert German miners in the Spanish service, for the purpose of restoring with their assistance the American gold and silver mines to their former flourish.

rishing state. M. Helms, then chief assayer of the mines and mint at Cracow, and the Baron von Nordenflycht, a Swedish mineralogist, director of the mines at Miczanagora in the district of Cracow, entered on the most advantageous terms into the Spanish service; the former as director of the smelting-houses and of the process of amalgamation, and the latter as director general of the mines in Peru.

Accompanied by their families, a few negro servants, and a great number of German miners, they sailed from Cadiz for Buenos-Ayres; and on the 29th of October, in 1789, the spring season in that part of the globe, began their journey at first in carriages, and afterwards on horseback, by the common route of the post, in an oblique direction across South America, through Tucuman and over the Cordilleras, to Potosi and Lima; an extent of way amounting from Buenos-Ayres to Potosi to 1700 miles, and from thence through Cusco and Guancavelica to 1300 miles.

In Potosi the German commissioners remained until the 30th of January 1791, and during their residence endeavoured to dispel the incredible barbarism and ignorance that prevailed in the mint and mining departments there. Helms, for his part, erected a laboratory, in which he daily read lectures, accompanied with suitable experiments, to an audience composed of officers of the mint and proprietors of the mines; and fully instructed six young men in the science of metallurgy. Supported by the Governor, he succeeded in exposing the ignorance of the American overseers and officers of the mines and mint; although the latter counteracted with all their might the royal commissioners, and particularly Helms, by secret cabals and the basest calumnies. In writing and in conversation they decried the Germans as arch-heretics, German Jews, and cheats; as men, in short, who, it was to be feared, would corrupt the morals of the honest miners and their overseers; and tried every means to

render them suspicious to the proprietors of the mines, fearing lest, enlightened by Helms and his associates, they should examine too narrowly into the conduct of their ignorant and roguish servants.

They even excited the Indian labourers against them, by insinuating that the foreigners had come solely for the purpose of working the mines by machinery, and would thus deprive them of the means of subsistence. In this opposition they were encouraged and joined by a numerous band of merchants in the principal cities; as Helms, in particular, spoke loudly against the enormous usury by which they oppressed the workers of the mines, and made every effort to put a stop to their rapacity.

Scarcely had Helms arrived in Lima, when, at the desire of the Intendant of Guancavelica, he was ordered to proceed to that celebrated quicksilver-mine, to introduce there the Idrian furnaces. But in procuring Helms this commission, the In-

tendant, an old Creole, who by pretended patriotic projects had amassed a fortune of a million of piastres, had no other end in view but to derive a profit from furnishing the necessary building-materials, for which he received more than four times their value : and when Helms set his face against his nefarious proceedings, he had the address surreptitiously to procure an order from the Viceroy to suspend the work. Vexation at the unjust treatment he here met with threw Helms into a fever, which caused him to leave Guancavelica.

Two other commissions which he received from Lima to introduce a better method of working the mines at Pasco and Bellavista, fifty miles from Lima, proved equally fruitless ; as the viceroy absolutely refused any pecuniary assistance from the funds appropriated to the promotion of the mines, and would not permit him to raise the necessary supplies by means of a loan. All he could obtain was a commendatory epistle in praise of his zeal.

He therefore resolved to leave Peru, a land morally and physically pernicious to him — where, in the execution of the most dangerous and laborious commissions, he was obliged to act not only as a director of the smelting-houses, but likewise as a carpenter, smith, and mason. Accordingly, in the beginning of the year 1793 he sailed from Callao, the port of Lima, on board of a register-ship; and after a passage of two months and a half, round Cape Horn, safely arrived in Cadiz. Having been obliged to spend seven months in Madrid in tedious solicitations to have the terms of his agreement fulfilled, he at last obtained a small pension for life, on which he lived lately at Vienna.

In 1798 M. Helms published an account of his travels, which is in the proper sense of the word a *Journal*: every page containing, unaltered, the remarks made and written down on the spot.

Station after station, the number of miles daily travelled are indicated; and inter-

scattered we find remarks on what he every day had seen, and likewise extracts from the official details on the state of the mines which he had examined.

M. Helms is, however, only a miner and mineralogist. To the other parts of natural history he is a stranger, and few things worthy of notice relative to that science are to be found in his Journal. Even geographical and statistical observations occur only occasionally: but among them are many which contain valuable information, and which throw considerable light on the present state of these remote regions, with which we are yet but imperfectly acquainted.

Mineralogical and metallurgic remarks on Potosi and Peru, and on the Cordilleras, the largest and richest chain of mountains in the world, which Helms had travelled over in every direction in length and breadth, from the borders of Chili to Lima, form the bulk of his work. As few, however, would have the patience to peruse the

whole of his dry mineralogical day-book, the unimportant details and repetitions relative to the contents of the mountains over which he travelled, have been abridged by the translator, at the same time that nothing useful has been omitted, and every fact relative to the general state of the country, or of the people, has been scrupulously retained.

It is to be regretted that these facts are not more numerous; but, as far as they go, their authenticity cannot be questioned; and as the last, and almost the only account of these countries, the work cannot fail to be acceptable to the public at a moment when the attention of all England has been excited towards them by the recent important conquest made by Sir Home Popham, and by the pending expedition of General Miranda. The travels of Ulloa in certain parts of this immense continent, it will be recollected, were performed nearly seventy years ago, and perhaps no country in the world has under-

gone greater changes in the same interval of time, than South America.

The APPENDIX has been compiled from the best and latest authorities, and from scarce and expensive books, by the translator; and he may, without vanity, assert that it contains the fullest and the most correct account of Spanish America, which exists in any European language. He is indebted for many of his most curious facts to the valuable work on the present state of Peru, lately published by Mr. Skinner; and in defining the boundaries of the various governments he is indebted to Mr. Arrowsmith, the Geographer, for the use of the great Spanish map of South America. The work of Don Ulloa has been duly compared with later authorities; and the *Dictionario Geographico*, published by Don Alcedo at Madrid in 1788, a work till now wholly unknown to the English reader, has been carefully consulted. The detailed travels of Humboldt, it is well known, are not yet given to the world; but the various re-

ports which have been published of them in his letters to his friends, have here served to correct many errors, and to verify many facts in the existing accounts of those parts of South America over which he travelled.

LONDON,
Sept. 30, 1806.

Helm's Travels.



TRAVELS
FROM
BUENOS AYRES
TO
LIMA.

ON the 29th of October 1789, we began our journey from BUENOS AYRES westward to Cannada de Maron; distant fifteen geographical miles, reckoning sixty to a degree. Buenos Ayres is situated on the south-west bank of the great river la Plata; and, according to the account which we received from the Viceroy, contains from twenty-four to thirty thousand inhabitants. In 1748, regular posts were instituted from hence to Peru; post-houses were

erected, and relays of horses and carriages provided*.

Seventy-three miles from the capital the traveller enters on an immense plain, by the Spaniards called Pampas, which stretches three hundred miles westward to the foot of the mountains, and about fifteen hundred miles southward towards Patagonia †. This plain is fertile, and wholly covered with very high grass; but for the most part

* For full local descriptions and other particulars, see the notes in the Appendix.

† In crossing South America from Buenos Ayres to Peru, great danger arises from the savage nation who inhabit these Pampas. Troops of them attack travellers; but they do not possess valour sufficient to maintain a combat, and their attacks are successful only when made by surprise, or when greatly superior in numbers.

uninhabited and destitute of trees. It is the abode of innumerable herds of wild horses, oxen, ostriches, &c. which, under the shade of the grass, find protection from the intolerable heat of the sun. The largest tamed ox is sold for one piastre*, and a good horse may be purchased for two.

The abundance of the necessaries of life encourages, among the lower orders, a propensity to idleness, which has given rise to another order of strollers, called *Gauderois*. Their mode of life resembles that of the *Gypsies*. They are badly clothed; their whole dress consisting only of a coarse shirt, and a worse upper garment. These articles of dress, together with horse furniture, serve them for bedding, and a saddle for a pillow. They stroll about with a kind of small guitars, to the sound of which they sing ballads.

* The piastre is 3s. 7d. English, being rather more than six to a guinea. See *Appendix*.

From Cannada de Moron to Cannada de Escobar, twenty-one geographical miles.

On the 29th of October we were obliged to encamp at night during a heavy storm; and early on the 30th of October we arrived at Escobar.

From Cannada de Escobar to Cannada de la Cruz, twenty-four miles.

At the former of these places I saw in the evening so great a number of luminous insects that at first I mistook them for exhalations proceeding from the marshy ground; but found that they were a kind of glow-worms, twice as large as those of Europe. They are of an oblong shape, and of a brown colour.

From Cannada de la Cruz to Arcos, eighteen miles.

Adjoining to the posthouse at Arcos, I found a beautiful orchard planted with peach-trees.

From Arcos to Chacras de Ayola, twelve miles.

The magnetical needle here points exactly north.

From Chacras de Ayola to Arecive, thirty miles.

On the road between these two stations, two of our *carretillas*, or baggage-waggons, broke down. The posthouse here is tolerably commodious. Near it are orchards of peach-trees, which are the only trees that grow in the pampas.

From Arecive to Pontezuelos, twelve miles.

From Pontezuelos to Arroyo de Ramallo, eighteen miles.

From Arroyo de Ramallo to Arroyo de Elmedio, fifteen miles.

From Arroyo de Elmedio to Arroyo de Pabon, fifteen miles.

From Arroyo de Pabon to Manan- ciales, ten miles.

As we pursued our journey late in the evening, we saw large flocks of ostriches (*Struthio Rhea* Linn.), which had come forth from the long grass to refresh themselves with water. On the following day some of our attendants rode a considerable way into the grass, and brought back about fifty eggs of these birds. The heat of the sun being very great, and each of us having put some of them into his hat, the young birds, to our no small astonishment, broke the shell and ran away into the grass, which they began

to devour with as much appetite as if they had been long accustomed to such a diet. The eggs are as large as an infant's head of a moderate size, and the young ostriches, when hatched, are of the size of a chicken two months old.

The ostriches lay their eggs, either singly or twenty together, in nests* ; and it is probable that in the daytime they leave them exposed to the rays of the sun, and sit on them only during night to protect them from the effects of the dew.

The ostriches that inhabit the pampas are of the height of a calf. Though from the shortness of their wings they are unable to fly, they run faster than the fleetest horse.

* According to Molina, even from forty to sixty in one nest. See *Saggio sulla Storia Naturale del Chili*. Bologna, 1782, p. 262.

From Mananciales to Demochados, thirty miles.

From Demochados to Esquina de la Guardia, twenty-four miles.

Here there is a square fortification, mounted with two pieces of cannon, for the purpose of checking the incursions of the wild Indians, who are said sometimes to attack the weak Spanish villages in bodies of from two to three thousand men. From the testimony of the inhabitants, however, it would appear that the danger is not so great as the Spanish soldiers (*milizianos*) stationed there endeavour to persuade strangers from Europe, for the purpose of giving them a high opinion of their courage and valour, of which they are suspected to possess but a small share. In this fortification there should be a guard of a captain and thirty men ;

but in the daytime we did not find a single sentinel. These soldiers are badly armed; some with firelocks, others with pistols, and others only with sabres or spears. As the wild Indians still retain a dread of all European weapons, and especially of fire-arms, we see no reason to reckon it a deed of uncommon heroism, if these thirty horsemen sometimes put to flight two or three thousand savages, whose weapons consist only of a sling or a rope six ells in length, with an angular stone or a piece of lead fastened to the end of it, with which they endeavour to give their enemy a blow from behind; and they are in general so expert in its use, and have such command of their horses, that they seldom miss the object aimed at.

The wild Indians have no intercourse

with the civilized Indians or the Spaniards, whom they mortally hate, and are in the highest degree dirty, savage, mistrustful, and treacherous; they are strong, and enterprising, but easily dismayed on the near approach of danger.

Their vices show the state of society among them to be the natural consequence of the manner in which they are treated by the Spaniards: for if the latter were more attentive to the general good of the state, and less attached to the promotion of their private interests, it would be easy, by mildness and by opening a free trade with them, gradually to render them, in the same manner as the civilized Indians, useful subjects of the crown. But this can be effected only by statesmen of enlarged minds, and gifted with

sound political knowledge :—such may possibly exist in Spain, but are seldom met with in South America.

From Esquina de la Guardia to Cabeza del Tiguerre, twenty-one miles.

Cabeza del Tiguerre lies on the Rio Tercera : the bed of this river consists of decomposed granite.

From Cabeza del Tiguerre to Saladillo, twenty-four miles.

Most of the undulatory heights in this neighbourhood were wholly covered with native saltpetre, as if with a hoar-frost.

From Saladillo to Barrancas, nine miles.

From Barrancas to Zarjon, twelve miles.

The bed of the river here consisted of indurated marle, intermixed with calcareous shells.

From Zarjon to Frailem Muerto, twelve miles.

Here begins a wood which continues on a gentle ascent as far as Cordova. In this wood were only found two kinds of trees; they resemble the olive of Spain, but bear no fruit; their leaves are of a most beautiful green colour.

From Frailem Muerto to Esquino de Medrano, eighteen miles.

Here the post-house and some huts of Creoles are situated in an open field, without any ditches or ramparts, because the savage Indians never extend their predatory incursions thus far.

From Esquina de la Guardia to Paso Ferreira, eighteen miles.

From Paso Ferreira to lo Tio Pafio, twelve miles.

Thence to Cannada del Gobierno.

Thence to Impira.

We still continued to proceed in a north-west direction, along the river Tercero.

From Impira to Rio Segundo, situated on a river of the same name, fifteen miles.

The river Segundo is a continuation of the river Tercero, receiving its waters from the Peruvian promontory which begins near this place.

From Rio Segundo to Punto del Monte, thirteen miles and a half.

From Buenos Ayres, the capital, to Cordova is four hundred and sixty-eight miles.

Cordova, a neat clean town, is very pleasantly situated near a wood at the foot of a branch of the Andes. It is the seat of a bishop, and is inhabited by 1500 Spaniards and Creoles, and 4000 Negro slaves.

A transit trade is carried on here from Buenos Ayres to Potosi. The cathedral is a very fine edifice, and the spacious market-place is adorned with buildings of considerable magnitude; the streets are likewise much cleaner than in Buenos Ayres, being paved, an improvement still wanting in the capital. We were very pleasantly lodged in the late college of the Jesuits. It is a very large and massy edifice, and the usual residence of the bishop. But the see was now vacant. The heat is more intense here than at Buenos Ayres, which, from its situation on the larger river la Plata, and its vicinity to the sea, enjoys a milder temperature.

Not far from the town, in the granite mountains, are found veins of lead and copper ore which contain silver. As this ridge of mountains (composed of

red and green granite) gradually becomes higher, the population increases: but at Remanso, 60 miles from Cordova, they again branch out so far from one another, that from that place to Tucuman the traveller passes through a saline plain 210 miles in length, and for the most part barren and desert, from which the mountains are seen at a distance. The whole ground is covered with a white incrustation of salt, and bears no other plants except the *salsola kali*, which here grows to the height of four yards. The decayed little town of St. Jago de Estero, is situated in this plain.

The Creole, a descendant of American Spaniards, is of a brown complexion, and differs in every respect from his ancestors. Though born with a genius capable of attaining whatever ennobles humanity; yet, from an edu-

cation in the highest degree neglected, he becomes lazy, licentious, and indelicate in his conversation; a hypocrite, and infected with a blind and malignant fanaticism. He tyrannizes over his slaves; but, in general, through his inordinate love of pleasure, is himself enslaved by his Mulatto and black females, who rule him with despotic sway. He is in the highest degree reserved and insidious; the sport of every unruly passion, immoderately puffed up with pride, and prepossessed against whatever is European; and, in an especial manner, of a hostile and mistrustful disposition towards the Spaniards. Under the oppressive yoke of such men the Indians have lived for centuries, and they consequently pant for the blessings of liberty.

The king of Spain has enacted several salutary laws, with a view of

ameliorating the condition of the Indians ; but they have either never been promulgated, or, by intrigues or artifice, are soon rendered of no avail.

The Indians are, in fact, the only industrious class of the community. To the labour of these patient drudges we are indebted for all the gold and silver brought from every part of Spanish America. No European, nor even the Negroes, are robust enough, for one year only, to resist the effects of the climate, and support the fatigues of working the mines, in the mountainous regions. Yet to these good and patient subjects their haughty masters leave, as the reward of their toil, scarcely a sufficient pittance to enable them to procure a scanty meal of potatoes and maize boiled in water.

The following list of the mines or pits, in the vice-royalty of la Plata, or Buenos Ayres, was extracted from the records of the chancery.

Names of the Provinces.	Gold	Silver	Copper	Tin	Lead
	Mines.				
Tucuman - - -	2	1	2	—	2
Mendoza a Chili - -	—	1	—	—	—
Atacama - - -	2	2	1	—	1
Lipez } province of Potosi {	2	1	1	—	1
Porco }	1	2	1	—	—
Caranges - - -	—	2	1	—	—
Pacages or Berenguela - -	—	1	—	—	—
Chucuyto - - -	—	2	—	—	—
Paucarcolla, city of Puno - -	—	1	—	—	—
Lampa - - -	—	2	—	—	—
Montevideo - - -	1	—	—	—	—
Chicas or Tarifa - - -	4	5	—	—	1
Cochabamba - - -	1	—	—	—	—
Zicazica - - -	2	—	—	—	—
Lavicaja - - -	4	—	—	—	—
Omasuijos - - -	4	—	—	—	—
Avangaro - - -	3	—	—	—	—
Carabaya - - -	2	1	—	—	—
Potosi - - -	—	1	—	—	—
Chayanza - - -	2	3	1	1	1
Mizque - - -	—	1	—	—	—
Paria - - -	—	1	—	1	1

In the neighbourhood of Cordova there is a great scarcity of water for the mines and the purifying of the ores.

From Cordova, we pursued our journey northward, along the foot of the anterior ridge of the Andes, to Noria, twenty-one miles.

From Noria to Sinsacate, fifteen miles.

From Sinsacate to Totoral, eighteen miles.

From Totoral to San Antonio, fifteen miles.

From San Antonio to Coral de Barranca, fifteen miles.

The direction of that ridge of mountains is from south to north, and it here begins to rise gradually to a considerable height. In the valleys I first saw the American palm, which forms one of their chief ornaments.

From Coral de Baranca to San Pedro, twelve miles.

From San Pedro to Durazno, twelve miles.

The mountains continue to be composed of red and green granite, and contain veins of corneous silver ore.

From Durazno, we passed through a broad and pleasing valley to Channar ó Cachi, fifteen miles.

From Channar to Pontezuelo, twenty-seven miles.

From Pontezuelo to Remanso, twenty-four miles.

From Remanso to Yuncha, ninety miles.

From Yuncha to Silipica, thirty-three miles.

From Silipica to San Jago de Estero, thirty-three miles.

San Jago situated on the river of the same name, is a small town, which has fallen into decay, in consequence of the trade which it once enjoyed having been diverted into other channels.

From the great declivity and depth of the valleys of San Jago the heat is almost intolerable, especially when the wind blows from the north.

From San Jago de Estero to San Antonio, eighteen miles.

From San Antonio to Chachilla, twenty-four miles.

From Chachilla to Vinara, twenty-four miles; and during fifteen miles of our route we passed and repassed the river St. Jago in all directions. In January, however, when the snow begins to melt on the mountains of Potosi, this river swells so as to become dangerous to travellers.

From Vinnara to Palmas, eighteen miles.

From Palmas to Talacacha, eighteen miles.

From Talacacha to Tucuman, twenty-four miles.

Tucuman, a pleasant little town, which is surrounded by groves of citron, orange, fig, and pomegranate trees, lies four hundred and fifty miles from Cordova, and seven hundred from Potosi. It is the seat of a bishop, and contains three monasteries: the inhabitants are wealthy, and might derive great profits from working gold and silver mines; as, immediately after passing this place, the whole ridge of mountains contain the precious metals in abundance. But the Negro slaves, who are here employed in mining, and their overseers are so ignorant, that they have not even

an idea of the advantages arising from the use of a windlass, and carry out the ore in sacks upon their shoulders: and this we found in the sequel to be the practice at Potosi, and in the whole kingdom of Peru.

During the journey to Tucuman, we found the mountains composed of primitive granite, but as we proceeded, the granite became intermixed with argillaceous slate of various colours; that, however, which chiefly predominates in the Cordilleras, is of a blueish cast, as far at least as we had an opportunity of examining them. Strata of limestone, and large masses of ferruginous sandstone, are in many places, superincumbent on the argillaceous slate. We likewise found on the road, coal, gypsum, and rock-salt; the last even

on the summits of the most elevated ridges.

From Tucuman to Tapia, twenty-one miles.

From Tapia to Duralde, twenty-four miles.

Duralde is situated on a mountain torrent of the same name. On account of the badness of the road, we did not arrive here till late at night on the 14th of December.

From Duralde to Paso del Pescado, eighteen miles.

Twelve miles from Pescado lies Trinca, a small pleasant little town with a church, on a mountain torrent of the same name. The road continued to pass through thick woods, which, however, contain very few large trees.

From Paso del Pescado to Arenal, twenty-seven miles.

From Arenal to Rosario, fifteen miles.

From Rosario to Concha, twenty miles.

The main ridge of mountain begins to rise here considerably. In the bed of the river Rosario we found blue argillaceous slate, of which the mountains are chiefly composed. The woods are thicker, and the trees of a more vigorous growth.

From Concha to Rodeo de Tala, twenty-four miles.

From Rodeo de Tala to Pasage, on the river of the same name, twenty-four miles.

About seven miles from Tala we passed the dry bed of a river, the southern bank of which was incrustated with a white substance, in taste and

shape resembling common culinary salt; and from various other indications, we were led to conclude that there are large beds of fossil salt in this part of the country.

From Pasage to Sienage, thirty miles.

From Sienage to Cobos, twenty-one miles.

From Cobos to Salta, twenty-seven miles.

The town of Salta is situated on the river Arias, in $64^{\circ} 45'$ of west longitude. It is divided into four principal streets, very irregular, but wider than those of Cordova. The market-place (*Plaza Major*) is a regular and large square, on the west side of which stands the beautiful town-house, and on the opposite side the cathedral. It is the residence of the Governor-Inten-

dant, and of the Administration of the province of Tucuman. Besides the cathedral, there are seven churches and monastic establishments. There are about 600 Spanish families here ; and the whole population, including Creoles and slaves, is estimated to amount to 9000 souls. The inhabitants, who carry on a considerable transit trade with Potosi, Peru, and Chili, are richer and more polished than those of Cordova and Tucuman.

Here terminated the less elevated ridges and promontories : and we now prosecuted our journey over the Cordilleras, properly so called, which are rich in various plants, and whose snow-capt summits are lost in the clouds.

At Salta we changed our carriages for saddle mules, and thence pursued our way over the highest chain of

mountains on the globe, and on roads the most wretched and fatiguing, eighteen hundred miles, to Lima. It was fortunate for us that we had entered upon this dangerous journey at the most proper and favourable season of the year; as in our progress across the Cordilleras we were obliged to ford a number of rapid rivers and torrents (some of them even thirty different times). In these torrents, which often suddenly swell during summer, a great number of travellers perish. In a few hours we exchanged the very intense summer-heat in the valleys for the piercing cold of the snowy summit of the mountain—a transition that soon undermines the health of the most robust European. A hectic fever attacks him; or he is seized with the cramp, rheumatism, and nervous melancholy.

Immediately behind Salta, the woods, which till then had covered the less elevated ridges, cease to embellish the landscape :——but the traveller is no longer incommoded by an almost incredible multitude of locusts, crickets, singing-toads, frogs, serpents, crocodiles, and musquitoes.

The ants are likewise very numerous and troublesome ; their bite, and the corrosive fluid which they discharge when irritated, causing as painful symptoms as the sting of the musquito.

The ill regulated, dirty post-houses swarm with bugs, fleas, and other vermin ; and we were frequently obliged to quench our thirst with nauseous fetid water, or to breathe air impregnated with the noxious effluvia of putrid carcasses. But the inquisitive traveller, in the pursuit of knowledge,

braves danger, fatigue, and privations of every kind, while his mind is gratified by the acquisition of new ideas, or the contemplation of the wonders of Nature.

The tiger is the fiercest and most dangerous of all the beasts of prey found in this country. The South American lion, I was informed, far surpasses the tiger in strength and courage, though not larger than a middle-sized dog : in other respects, however, it perfectly resembles the African lion.

There are no domestic bees reared in hives in South America ; and those which are wild do not construct their nests in the hollow trunks of trees, as in Europe, but fix them in a very curious manner on the branches. These nests form an oval ball of wax, about the size of an ox's bladder ; at its apex

is the opening through which the insect enters, and within are cells full of the purest honey. Owing to the heat of the climate, the inflammable parts of the external shell of wax gradually drip away, and only the earthy particles remain.

From Salta to Caldera, eighteen miles.

From Caldera to Buena Voluntad, seventeen miles.

From Buena Voluntad to Jujui, six miles and a half.

Jujui is a small town containing about three thousand inhabitants, who carry on some trade with Potosi; they might derive great advantage from the rich ores in the neighbourhood: but here, as well as at Tucuman and Salta, they have neither enterprise nor skill to make a proper use of the gifts which Nature has bestowed with

a liberal hand on these interesting regions.

From Jujui to Bolcan, twenty-seven miles.

The river Bolcan is the largest of the mountain torrents we passed since we left Jujui. The ascent became circuitous, and more gradual.

From Bolcan to Los Ormillos, twenty-seven miles.

From Los Ormillos to Guacatera, eighteen miles.

As hitherto we had passed over few mountains, and proceeded along the valleys, we crossed the Jujui no less than thirty times in one day; which a month later would have been attended with danger, as this rapid river is at that season much swollen with rain and the melting of the snow on the mountains.

From Guacatera to Humaguaca, eighteen miles.

A mile from the village of Humaguaca, when we had almost reached the highest part of the mountains, I again met with indications of beds of salt.

Guacatera is a small Indian town, governed by an Indian judge or alcade. It has a church and a neat chapel on an adjoining hill.

The converted Indians, who are styled *Fideles*, in contradistinction to the savages, whom they call *Barbaros*, *Infideles*, or *Bravos*, are of a very obedient and patient disposition; but, from the abject state to which they are reduced and the oppression of the subdelegates, they are very timid and suspicious. If we may judge of their character from that of the wild Indians, it seems

not improbable, that if they enjoyed a better education, and milder treatment, they would become one of the best nations on earth ; for in their intercourse among themselves they give strong proofs of humanity and a love of justice, and betray less selfishness and less pride than the Creoles ; they also evince a quick sense of right and wrong. Their colour resembles dark bronze ; they have an agreeable physiognomy, and muscular limbs ; they are of a middle stature, and endowed with an excellent understanding, but are rather of a pensive and melancholy than lively disposition. The Indians being esteemed the most laborious and diligent of the various classes of men found here, such as Spaniards, Creoles, Mulattoes, Samboes, Negroes, are employed through the greatest part of South America in mining, tend-

ing flocks, in cultivating the fields; and more especially as domestic servants; as in the mountains or mine country the Negroes, like the Europeans, cannot endure the daily alternations of heat and cold; but become sickly, and soon die an untimely death.

From Humaguaca to Cueba, twenty-four miles.

From Cueba to Los Colorados, eighteen miles.

Mountains so irregular and broken as this part of the Cordilleras, and with such various alternations of their component parts, we had seen neither in Hungary, Saxony, nor in the Pyrenees. In no place does a revolution of nature appear to have been so general as in South America; of which the traces are every where discoverable.

One hundred and forty miles be-

yond Jujui the traveller reaches the highest ridge of the Cordilleras ; which is the favourite haunt of the celebrated sheep (named *Lama* or *Guanaco*, and by the Indians *Huanacos*,) which feeds on moss, is easily tamed, and used as a beast of burthen. This animal, as likewise the *Vicunna*, is found only on the summits of hills covered with snow, and in the coldest mountainous regions, where they rove about in numerous herds.

I likewise saw here the American wild cat, which is not much larger than our domestic cats : its fur is excellent, and its flesh is esteemed a delicacy by the Creoles and Indians.

From Cangrejos to Guayaca, twenty-seven miles.

From Guayaca to Mojos, twenty-one miles.