

CHAPTER XII.

STATE OF CHIHUAHUA — POSITION — BOUNDARIES — EXTENT — CHARACTERISTICS — RIVERS — LAKES — INDIANS — DIVISIONS — CLIMATE — PRODUCTIONS — CATTLE ESTATES — MINT — MINES — PRINCIPAL TOWNS — CHIHUAHUA — EL PASO DEL NORTE — MILITARY IMPORTANCE — EL PASO WINE, ETC. — ANTIQUITIES — INDIAN RAVAGES — THE BOLSON DE MAPIMI — MEXICAN MODES OF TRAVELLING AND TRANSPORTATION — LITERA — MULES — ARRIEROS — CONDUCTA — COACHES — FREIGHT WAGONS — MEXICAN HABIT OF HOME-STAYING — WANT OF EXPLORATION — MODERN ADVANCEMENT.

THE STATE OF CHIHUAHUA.

The State of Chihuahua, containing an area of 17,151½ square leagues, or 119,169 English square miles, and reaching from 26° 53' 36" to 32° 57' 43" north latitude, is bounded on the north by New Mexico, east by Coahuila and Texas, south by Durango, south-west by Sinaloa, and north-west by Sonora. The great mountain chain of Mexico, which is the connecting link between the Rocky Mountains of the north and the Andes of the south, is here known as the Sierra Madre, and occupies chiefly the western part of the State, where its elevations attain a vast height, and at length, descend abruptly, cut by deep *barrancas* or ravines, until they are lost in the plains of Sonora and Sinaloa. Mexican authorities state the highest point of the Sierra Madre, at the Peaks of Jesus Maria, to be 8,441 feet above the level of the sea. The greater portion of Chihuahua consequently lies, like Durango, upon the *plateau* of Mexico, and only a small part upon the western slope of the Sierra Madre. The loftier elevations of the Cordillera, as it passes upward from Durango, lean towards the west until they pass the centre of Chihuahua, and then bending once more, nearly north, pursue their way through New Mexico into the remote wilderness of our Union. Towards the east these steeply become gradually depressed until they are lost in the vast and uncultivated regions of the Bolson de Mapimi, whose elevation above the sea is still 3,800 feet, according to the measurement of Dr. Wislizenius.

Seventeen rivers and streams flow through the territory of this State. The Rio Bravo, or Rio Grande del Norte; the Rio Conchas; Florida; Chihuahua; Tonachi; Llanos; Casas Grandes; San Buenaventura; Carmen; Santa Isabel; Pasesiochi; Mulatos; Chiñapas; Parral; San Pedro; Batopilas; and Rio Grande de Bavispe. The lakes or lagunes are those of San Martin; Guzman; Patos, or Candelaria; Encinillas; and Castilla. The river Nasas, which rises in Durango debouches in the Lake of Cayman, in the Bolson de Mapimi. The climate resembles that of the adjoining State of Durango. In the year 1834, the population, according to official statistics was 145,182; at present, it is estimated at from 150,000 to 160,000, which number would give about 1.3 for each English square mile. This is probably the actual number of inhabitants within the State, exclusive of Indians and some wild dwellers among the mountains who were not comprised in the census of 1833. Large numbers of aborigines occupy the lonelier portions of Chihuahua. Tribes of Tepehuanés, Llanos, Acotlames, Cocoyames and a few remnants of the Aztecs are found within its borders. In the Bolson de Mapimi, and on the borders of the mountain ranges of the Chanáte, El Diabolo Puerco, and Pilares, swarm numbers of the Apaches Mescaleros and Farones, who are often engaged in war with the savage and robber tribes of Cumanches, whose constant inroads into the Mexican territory are a source of incessant annoyance and insecurity to the people of the frontier. In the ravines and valleys of the Sierra de los Mimbres, in the north-west of the State, the Apache Mimbrenos are found, while further south, in the wild and deep dells of Tararécua and Santa Sinforosa various bands of the Tarahumares still pursue their hunter-life in perfect freedom.

There is some doubt, in consequence of the conflict of authorities, as to the divisions of the State of Chihuahua. According to the *Noticias Estadísticas* of Señor Escudero, published in 1834, it was composed of four districts: Chihuahua, Hidalgo, Paso del Norte, and Guadalupe y Calvo,—in the first of which are the *partidos* of Aldama, Cosihuirachi, Papigochi, and Jesus Maria de Rosales;—in the second, the *partidos* of Allende and Jimenez;—in the third, the *partidos* of Galeanas and Janos;—and in the fourth, those of Batopilas and Balleza or Tepehuanes. According to an article published by the same writer in the fourth volume of the *Museo Mexicano*, in 1844, he apparently entertains the opinion that the same divisions still continue; but, if the authority of another and very positive correspondent of the same work is to be relied on in refer-

ence to the last mentioned period, Chihuahua was divided into the *partidos* of Aldama, Allende, Balleza, Batopilas, Concepcion, Cosihuiriachi, Galeana, Hidalgo, Jimenez, Paso, and Rosales, formerly Tapacolmes.

Nature has endowed Chihuahua with a pleasant and temperate climate and a fertile soil, which is said by those who are best acquainted with the State to be capable of producing abundantly, if the county is ever freed from savage inroads and filled with an industrious population of agriculturists. The forests, the streams, the valleys and the plains, all yield their tributes of valuable articles of trade. Vast herds of cattle are fed upon the large *haciendas de ganado*; and the mountains are veined with the precious deposits which form the wealth of so many other Mexican States. The prompt settlement of the frontier, and the security of its inhabitants against the Indians, under the protection of armed forces by the contiguous Republics, seem to be all that is requisite for the development of the fine natural resources of this hitherto neglected State.

Field and garden cultivation is not much attended to by the present inhabitants; but wherever farming operations are carried on in suitable spots, corn, wheat, barley, frijoles, and all the finest fruits, plants and vegetables, are found to repay bountifully the husbandman's labor. Even indigo and cotton are found growing wild in some of the districts, notwithstanding the proximity of the mountain region, and the bleaker exposure of the soil.

At El Paso del Norte, the right bank of the Rio Grande, is covered for a distance of seven leagues with excellent vineyards, whose capital fruit produces an abundance of wine, which is greedily purchased in the markets of the adjacent States. In the neighborhood of Aldama, Allende, and of many other towns, the grape is also successfully cultivated, and the liquor produced is highly esteemed by competent judges. But the chief sources of the present prosperity of Chihuahua are its mines and cattle. The best data in our possession assign to this State 56 large estates, upon all of which about 70,000 horses, 190,000 horned cattle, and 550,000 head of sheep, swine and goats are constantly fed. The silver, gold and copper mines have been in former years exceedingly productive, and even in 1844, the mint of Chihuahua, struck \$61,632 in gold, and 290,000 in silver. In 1814, the coinage of the same institution reached the sum of \$1,818,604 in silver, after which period it ceased operating until 1832; but since then its annual emission has never exceeded \$544,244 in coins of both the precious metals. Gold was first struck at this mint in 1841, and in 1842 it sent into circulation

\$164,744, since which its issue has sensibly decreased. The best copper mines at present known, are those of Santa Rita, near the union of the Rio Florida with the Rio Conchas. Veins of iron, cinnabar, lead, sulphur, coal, and nitre have been found and explored; but owing to the disturbed and insecure condition of the State, are altogether abandoned.

The chief mining districts and mineral deposits are at Allende or San Bartolomé; Santa Barbara; Chihuahua; Cosihuiriachi; Santa Eulalia; Jesus Maria; Loreto; Moris; Mulatos; Minas Nuevas; Parral; San Pedro; El Refugio; Santa Rita; Sierra Rica; Batopilas; Urique y Ximenes, or as it is at present called, Guajuquilla. A considerable portion of the product of these mines may have been extracted from the Mexican Republic, before they were coined, by the inland trade with the United States, which has been carried on extensively for many years. The gold dust, especially, both of Chihuahua and New Mexico, has formed the principal return for American merchandize; and thus the diminution of the Chihuahuan coinage may be partially accounted for. Nevertheless we are informed by the best authorities, as well as by the statistics of the mint, that the mines of this State have been negligently wrought for some years past by the unsettled inhabitants of the frontier.

The chief towns in the State are the capital, Chihuahua, situated 4,640 feet above the level of the sea, in 28° 38' north latitude and 106° 30' west longitude from Greenwich, containing a population of from 12,000 to 15,000. It lies in a beautiful valley opening towards the north, and hemmed in, on the other sides, by the arms of the Sierra Madre. The city is regularly built, on wide, clean streets, with many handsome and convenient houses, plentifully supplied with water, which is brought to the town by an aqueduct extending 6,533 *varas*. The plaza, or public square, is quite imposing. Its spacious area is adorned with a fountain and walks, with benches and pillars of white porphyry. Three sides of this square are occupied with public edifices and stores, while on the fourth is the cathedral.

The other towns are San Pedro de Batopilas, a mining post on the western slope of the Cordillera, in a deep dell; — San José del Parral, at the eastern foot of the Sierra Madre on the southern limit of Chihuahua, about eighty leagues east of Batopilas, containing about 5,000 inhabitants; Valle de San Bartolomé, on the road from Chihuahua to Durango; Allende, with 11,000 inhabitants; Santa Rosa de Cosihuiriachi, with 3,000; and various other villages and Presidios of lesser note.

One of the most important towns in the State of Chihuahua, since the annexation of a part of Mexico to the United States by the treaty of 1848, is El Paso del Norte. According to the observations of Dr. Wislizenius, it lies in $31^{\circ} 45' 50''$ north latitude, 3,814 feet above the level of the sea, on the Rio Grande, distant about 340 miles from Santa Fé, and about 240 from the town of Chihuahua. The Rio Grande or Rio del Norte, having escaped the mountain pass, runs here in an open fertile field, at the beginning of which El Paso is situated. The town is principally built on the right bank of the river while a few houses are on the left. Stretched out along the stream for many miles, all its dwellings are surrounded and embosomed in groves, gardens, orchards, vineyards and cultivated fields as far as the eye can reach. The position of this town is an important one, inasmuch as the road by it is the only practicable one for wagons leading from Santa Fé to Chihuahua. A circuitous road might, in case of necessity, be made from the right bank of the river, on the northern end of the Jornada del Muerto, to the copper mines near the sources of the Gila, and thence by Carmen to Chihuahua; but it is by far more mountainous, winding and difficult than the direct road through El Paso which has long been the only highway between New Mexico and Chihuahua. Besides these advantages of commercial intercourse, the point is deemed of the greatest value as a military post, in which a well provided garrison could hold out against a ten-fold stronger force.¹ The population of the town proper, and of the line of settlements extending about twenty miles down the river is estimated at from ten to twelve thousand.

Besides these important considerations, the valley of El Paso is probably the most fertile country along the river. In addition to maize and wheat the inhabitants raise a large quantity of fruits, such as apples, pears, figs, quinces, peaches, &c., but especially an excellent grape from which the celebrated El Paso wine is prepared, and a liquor is made called by the Americans "Pass Whiskey." The grape which is so extensively cultivated is of Spanish origin; it is blue, very rich and juicy, and produces a strong, sweet, southern, straw-colored wine. For want of barrels, the natives preserve the liquor in earthen jars or in ox skins. The wine has a strong body, and when mellowed by age, has the flavor of Malaga. Besides the blue grape, a white species is also raised, having the flavor of the Muscadine, but it is believed that it is not used for wine.

¹ Dr. Wislizenius's Memoir, &c., &c., 1848, p. 41.

The mode of cultivating the vineyards in this region is simple. The vines are covered in winter with earth, are kept clear from weeds, hoed and pruned at the proper season, but they are not attached to stakes or espaliers. The soil and climate are so genial that less labor is required than in other countries; but a great deal of the fertility of the beautiful valley must be ascribed to the ingenious system of irrigation, which is produced by a dam constructed in the river above El Paso, which turns a large body of water into a canal. This canal, spreading into numerous branches and re-uniting again, provides all the cultivated land with a sufficiency of moisture.

Some remains of antiquity are found in the north-western part of the State, lying near the village and creek of the Casas Grandes, between Janos and Galeana. Ruins of large houses, known as "Casas Grandes" in the language of the country, exist in this neighborhood, built of sun-dried bricks, or *adobes*, and squared timber. They are three stories high with a gallery of wood and stairway from the exterior, with very small rooms and narrow doors in the upper stories but without means of entrance in the lower. Water was brought to the spot from a neighboring spring by a canal; and a watch-tower, commanding an extensive prospect, stands on an elevation two leagues south-west of it. A series of mounds, containing earthen vessels, weapons, instruments of stone, and fragments of white, blue and violet colored pottery, extends along the banks of the Casas Grandes and Janos creeks.

The State of Chihuahua has suffered and still suffers greatly and constantly from the incursions of the barbarians who ravage her frontiers and descend boldly into the very heart of the settlements. The uncertainty of life and insecurity of property have, of course, prevented the development of a region so valuable for its mineral and agricultural resources; nor is it likely that any sensible progress will be made until the four warring tribes of Gileños, Mesclaros, Mimbrenos and Lipanes, are destroyed by the advance of the civilized nations from the north as well as from the south.

A recent Mexican author, in describing the condition of Chihuahua, declares that at "present every hacienda must be converted into a castle of the middle ages, every shepherd into a soldier:—proprietors of estates enjoy no security of their possessions, and the common people gather themselves into villages to escape from the exposed country in which they must become the victims of the blood-thirsty savages and robbers from the wilderness."

There is a singular geological formation in the northern part of Mexico, lying on the road between the cities of Chihuahua and Monterey, and extending northwardly from the towns and haciendas of Mapimi, San Juan, San Lorenzo and San Sebastian towards the Rio Grande, called the Bolson de Mapimi, or Pouch of Mapimi. Leaving Mapimi, the road continues about three miles to the eastern mountain chain, and then winding nearly two miles through a cañon, or gorge, it leads to a very open level valley, which is the commencement of the Bolson. Towards the right of the road, eastwardly, at the distance of from three to five miles, a steep, high mountain chain of limestone, rises precipitously, while another chain towers up to the left, at the distance of about twelve miles. Both chains gradually diverge, but especially the eastern arm, which stretches north-eastwardly and then bends to the south-west, at an angle, leaving a deep *cul de sac* or depression in the middle from which the country has probably derived its name. All around is an immense chapparal plain, while in the distance the Rio Nasas runs towards the north into the immense basin, and forms the large Laguna de Tlagonalila, usually set down on maps and mentioned in geographical works as Lake Cayman. The Nasas is said by Dr. Wislizenius to be the Nile of the Bolson. Coming about 150 leagues from the western part of Durango, from the Sianori mountains, it runs north-westwardly and northerly towards this Pouch, and the wide and level country along the river is yearly inundated by the floods, and owes its fertility to this circumstance. The limits of the Bolson de Mapimi have never been clearly defined either geographically or politically for its immense wilderness has been neither fully explored or occupied in consequence of the danger of encountering the robber hordes by whom its recesses are infested. The northern portion is supposed to belong to the State of Chihuahua, and the southern to Durango. Nor are its general physical properties clearly known, though the common and perhaps erroneous impression in the country is that it is a low, flat, swampy country and a mere desert. The two terminating points of Dr. Wislizenius's transit through the Bolson are Mapimi, where he entered it, and El Paso, or a point between Paso and Parras, where he left it. At Mapimi, the elevation above the sea was 4,487 feet; in the valley of the Nasas, at San Sebastian, 3,785; at San Lorenzo, 3,815; at San Juan, 3,775; and towards the eastern edge of the Bolson, at El Paso, 3,990, and at Parras, 4,987. We perceive, therefore, that the valley of the Nasas, which may be called the vein and centre of the Bolson has a mean elevation of 3,800 feet; and though from 500 to

1,000 feet lower than the surrounding county, it nevertheless occupies a considerable elevation above the sea.

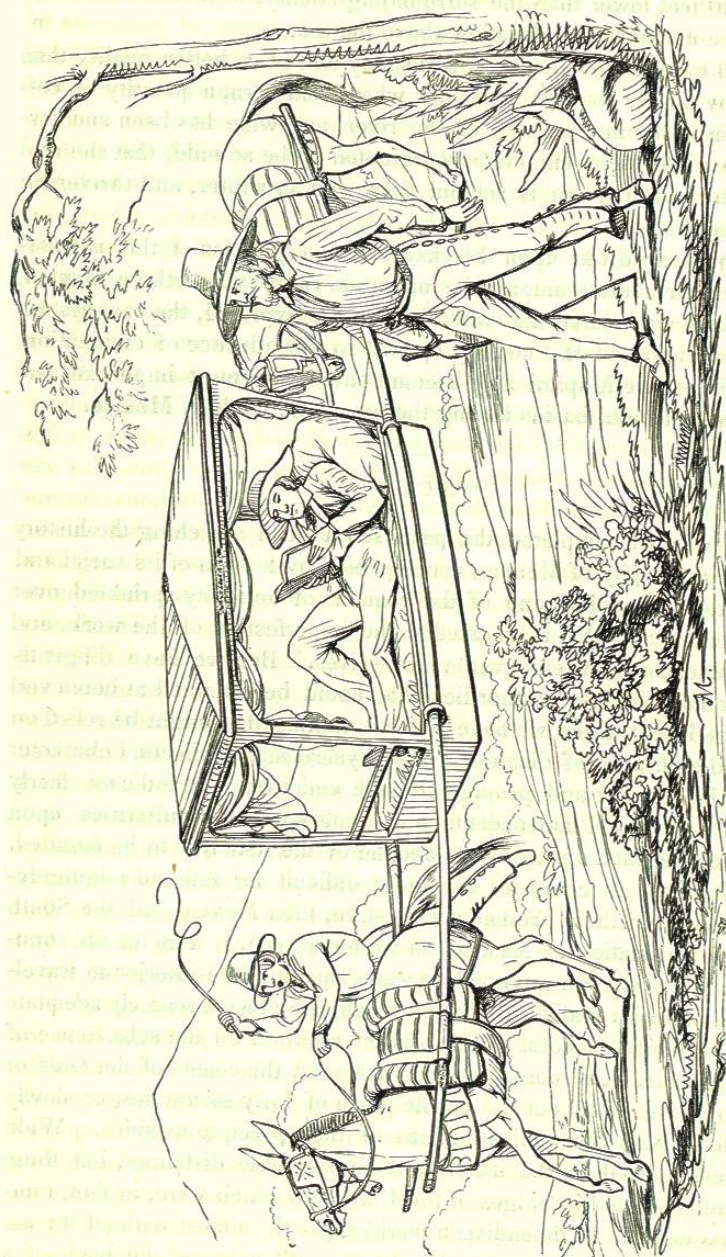
The soil in the Bolson is less sandy and of a better quality than in the higher country. Besides wheat and corn, a quantity of cotton is raised in the valley of the river, and wine has been successfully tried. The climate is represented to be so mild, that the root of the cotton plant is seldom destroyed in winter, and thrives for many years.

We have dwelt upon the character and qualities of this extraordinary depression among the mountain ridges of northern Mexico, because we believe that when it is finally explored, the savages exterminated, and the country opened to the advance of civilization, El Bolson de Mapimi may become one of the most important and perhaps fruitful basins among the temperate lands of Mexico.

CONCLUSION.

We have completed the proposed task of sketching the history and geography of Mexico, accompanied by notices of its social and political condition, and of the remains of antiquity sprinkled over its territory. We acknowledge the imperfection of the work, and its unsatisfactoriness even to ourselves. But we have diligently searched the best authorities that could be obtained at home and abroad, and, while we have omitted nothing that might be relied on for the purpose of displaying the physical and intellectual character of the country and people, we have endeavored to indicate clearly those historical antecedents and geographical peculiarities upon which the future progress or decline of the nation is to be founded.

Perhaps no countries are more difficult for full and minute description, in their present social state, than Mexico and the South American nations. Mexico, as we have seen, is a mountain country, with very few navigable streams opening the interior to travellers, and with badly constructed roads, which were scarcely adequate for the most needful transportation required for the subsistence of the people. As soon as the way-farer left the coasts of the Gulf or of the Pacific he penetrated the glens of lofty mountains, or slowly toiled along the inclined plains of their precipitous sides. Wide levels opened in the interior, at considerable distances, but these were separated by ridges of the Cordillera which were, in fact, ramparts capable of defending a warlike people almost without the aid of military improvement. Until within a few years, the back of a horse or of a mule; an old fashioned LITERA swung between two beasts



of burthen, or an antiquated clumsy Mexican coach, were the only means of travelling. Of these, the litera, a species of palanquin in which the traveller reclined at ease upon his mattress and cushions, was by far the most comfortable, and the use of this convenient vehicle is still continued especially in the warmer parts of the country where exposure to the sun is dangerous, and into which the modern diligence or stage coach has not been introduced from the factories of the United States. In many portions of Mexico, where the transportation has been for centuries carried on by ARRIEROS with their mules and jackasses, scarcely any thing of the original road remains, while the path that has been so long trodden by the single file *Atajos* of these useful beasts has been worn so deeply by their feet in the yielding soil or rock, that the animals themselves are often concealed by the steep sides of the gully. Thousands of sturdy Mexicans have for years been employed as ARRIEROS in this business of mule-carriage. The "CONDUCTA" is recognized as one of the traditionary, time honored, and almost constitutional institutions of the Republic, and it may easily be conceived that with so powerful a body of honest, industrious men opposed to any new scheme of transportation, it will require a long time for the enlightened requirements of extended commerce to displace it. The fidelity of this class has been already, elsewhere, alluded to; and whilst it is personally reliable and responsible, its members are scarcely ever attacked by the bands of robbers infesting the recesses of the mountains, and laying in wait for less numerous, resolute or organized way-farers. Millions were, and still are, often entrusted to them with perfect confidence by the government and the people.

Nevertheless, within the last fifteen years the growing manufactures of Mexico required a stouter means of transportation of heavy machinery than the limbs of a mule, and the consequence was that intelligent foreigners availing themselves of this want in the first instance, gradually introduced heavy wagons like those of the European *roulage* system, into which, by degrees, they forced a large portion of the bulky commercial freight which was to be borne from the coast into the interior. Simultaneously with this encroachment on the mule, the arriero, and the litera, appeared the American stage coach, built in New York; and together with the coach and its spirited horses, came the "Yankee driver," whose accommodating and daring character soon made him a favorite with those whose trade he in some measure injured, though it did not serve to protect him or his passengers from the attacks of robbers. The line of diligences or coaches established from Vera Cruz to the capital, passing through

Jalapa, Peroté and Puebla, was gradually extended northwards from the capital through the principal mining and commercial cities of the north, and thus the means of swift and comfortable travel was at length, though only recently, supplied to a small part of Mexico.

The danger of robbers, the wretchedness of the roads, the discomfort of inns and the old fashioned Mexican habit of staying at home, have, therefore, hitherto prevented the masses of the people from going abroad. A journey of two or three hundred miles, for any purpose but business or emigration, is still regarded as an important undertaking. When families depart on such an expedition the preparations embrace almost every comfort and luxury required at home, except a cow and a piano. Until very lately nothing but shelter or the commonest food was to be had at the miserable *mesones* or taverns along the roads. In most of the less frequented regions this is still the case. It was necessary therefore that travellers should be accompanied by a full complement of servants, that they should carry with them an ample supply of bedding and table furniture, that their long and numerous train should be fully armed and equipped to fight its way if necessary, and that they should be content to halt frequently, journey slowly, and linger on the road. Inconveniences like these necessarily localized and confined all classes of Mexicans except the very rich or those whose business imperatively required them to encounter a life of expensive adventure. Nor was Mexico a country of watering places and sea-side fashion, in which it was customary, at certain seasons, for all whose means permitted, to fly from the city to the fields or the shore for recreation and health. Invalids, occasionally, under the stringent orders of physicians, crawled to the warm baths or mineral waters which are abundant in a volcanic country, but they were not followed by the idle crowds who frequent similar places in Europe and the United States. Tens of thousands are now living in the city of Mexico who have not even crossed the lake to Tezcoco; while the fashionable or the wealthy are perfectly satisfied if they make an annual peregrination in the month of May of twelve miles to San Agustin de las Cuevas, where they spend three days of frivolity, gambling, cockfighting, and dancing. The journeys of the rest of the year are confined, as they are elsewhere in the Republic, to an evening drive or ride on the *Passeos* and *Alameda*, or a more extended excursion of a few miles to *Tacubaya* or *San Angel*. It was not the usage, in the early days of Mexico or during the viceregal government, to travel for pleasure in a country conquered from the Indians, and still ravaged by them or made insecure. The custom of the Span-

iard has become a habit of the Mexican. It may, in truth, be said that the spirit of travel does not rule in Mexico, and that her people are stationary. Railways do not traverse her valleys and plains, nor do electric telegraphs convey the thoughts of her people thousands of miles in a minute. Even the mail system is expensive, incomplete and inadequate. Neither a steamboat nor a locomotive belongs to the nation.

In addition to all these habitual, accidental and geographical difficulties of travelling over and exploring this mountain country, its constant revolutionary state since the rebellion against Spain has tended to retain people as much as possible either in the neighborhood of their families or of their business and interests. Nor has scientific education been extended sufficiently to form a large or enthusiastic class of engineers who would have traversed the land and combined the results of their observations. A few scattered students have, indeed, published detached essays upon portions of the Republic, and the *Comision de Estadistica Militar* is now engaged in gathering statistical and geographical reports of the several States. But the elements from which these bulletins are constructed do not seem to be collected upon any uniform system of very responsible scientific inquiry. The local authorities from whom much of the numerical information is necessarily obtained, if they are connected with any of the branches of taxation, or revenue collection, are generally unreliable or corrupt, for, in consequence of the system of speculation which has been carried on during the late disorganized epoch of Mexican history, it was their interest to conceal rather than to disclose facts, especially when those facts manifested the great value or production of the region over which they presided.

Nevertheless, amid all these sad excuses for insufficiency or inaccuracy, we may congratulate Mexico upon the effort which she is now making to redeem herself from the past opprobrium. The war with the United States has taught her many things, social as well as political. Education is beginning to be more valued and extended. Periodicals and newspapers are more freely published and diffused. Their leading articles and scientific communications show that new classes of writers as well as politicians are coming readily into the field in a period of assured peace and order. These two elements of national progress will enable Mexico to become acquainted with herself, and when her students disclose the result of their discoveries, we shall be glad to see our imperfect but honest efforts superseded by a work that will confer honor upon Spanish science and literature.

APPENDIX NO. 1.

PROFILE OF THE PLATEAU—MEXICO TO SANTA FÉ—SANTA FÉ TO THE GULF.

In order to afford the geographical student an idea of the central configuration of Mexico, we annex the following tables of the lines of levelling made by Baron Humboldt, Dr. Wislizenius, Oteiza, and Burkart, northwardly from the city of Mexico to Santa Fé; and eastwardly from Santa Fé to Reynosa near the Gulf of Mexico. From the first of these we learn that the plateau which forms the broad crest of the Mexican Cordillera by no means sinks down to an inconsiderable height as was long supposed to be the case but that it maintains, throughout, its majestic elevation.

1st. Elevation above the sea from the city of Mexico to Santa Fé.	2d. From Santa Fé in New Mexico to Reynosa on the Rio Grande.
Mexico 7,469 ft. above sea.	Santa Fé 7,047 ft. above sea
Tula 6,733 " " "	3 miles N. of Alburquerque near the Rio Grande } 4,813 " " "
San Juan del Rio 6,490 " " "	Jornado del Muerto 4,452 " " "
Querétaro 6,362 " " "	Brazito 3,918 " " "
Celaya 6,017 " " "	Upon crossing of the Rio Grande } 3,797 " " "
Salamanca 5,761 " " "	Paso del Norte 3,810 " " "
Guanajuato 6,836 " " "	S. of Rio Carmen 4,219 " " "
Silao 5,911 " " "	S. of Gallego 5,317 " " "
Villa de Leon 6,133 " " "	Rio Sacramento 4,940 " " "
Lagos 6,376 " " "	Chihuahua 4,638 " " "
Aguas Calientes 6,261 " " "	Aguachi 5,952 " " "
San Luis Potosi 6,090 " " "	Cosihuiriachi 6,273 " " "
Zacatecas 8,038 " " "	Bachimba 3,956 " " "
Fresnillo 7,244 " " "	El Saucillo 3,955 " " "
Durango 6,848 " " "	Cadena 5,056 " " "
Parras 4,985 " " "	Mapimi 4,487 " " "
Saltillo, 5,240 " " "	El Bolson de Mapimi 3,785 " " "
El Bolson de Mapimi 3,785 " " "	Parras 4,985 " " "
Chihuahua 4,638 " " "	La Encantada 6,104 " " "
Cosihuiriachi 6,273 " " "	Saltillo 5,240 " " "
Paso del Norte on the Rio Grande } 3,810 " " "	Rinconada 3,381 " " "
Santa Fé in New Mexico } 7,047 " " "	Monterey 1,626 " " "
	Marin 1,354 " " "
	Ceralvo 1,006 " " "
	Mier 417 " " "
	Camargo 422 " " "
	Reynosa 104 " " "

"If we consider,"—says Humboldt in his Views of Nature,—“that in the north and south direction the difference of latitude between Santa Fé and the city of Mexico is more than sixteen degrees, and that consequently the distance in a meridian direction, independently of curvatures on the road is more than 960 miles, we are led to ask whether in the whole world, there exists any similar formation of equal extent and height, between 5,000 and 7,500 feet, above the level of the sea. Four-wheeled wagons can travel from Mexico to Santa Fé. The plateau whose levelling is here described is formed solely by the broad undulating flattened crest of the chain of the Mexican Andes; it is not the swelling of a valley between two mountain chains, such as the Great Basin between the Rocky Mountains and the Sierra Nevada of California in the Northern Hemisphere; or the elevated plateau of the Lake of Titicaca, between the eastern and northern chains of Bolivia; or the plateau of Thibet between the Himilaya and Quenlun, in the Southern Hemisphere.”—Page 209, Humb. Views of Nature.

¹ See Humboldt's Views of Nature, London edition, 1850, p. 208, and Dr. Wislizenius's Profiles of the country in his Memoir on New Mexico, &c., &c.

APPENDIX NO. 2.

MEXICAN COINS.

- 1 onza—gold, = 16 dollars.
- 1 peso—silver, = 1 dollar.
- 1 real—silver, = 12½ cents.
- 1 medio real—silver, = 6¼ cents.
- 1 quartillo—copper, = 3⅓ cents.
- 1 tlaco—copper, = 1⅞ cents.

MEASURES.

- 1 foot = 0.928 feet English.
- 1 vara (three feet Mexican) = 2.784 feet English = 2 feet 9 3/4 inches English.
- 1 legua (26.63 to 1 meridian) = 5000 varas = 2.636 miles English.

WEIGHTS.

- 1 onza—(8 ochavos) = 1 ounce.
- 1 marco—(8 onzas) = ½ pound.
- 1 libra—(2 marcos) = 1 pound.
- 1 arroba—(25 libras) = 25 pounds.
- 1 quintal—(4 arrobas) = 100 pounds.
- 1 carga—(3 quintals) = 300 pounds.
- 1 fanega—(140 pounds) = 2 bushels nearly.
- 1 almuer—(almuerza) = ⅓ of a fanega.
- 1 frasco = 5 pints nearly.¹

TABLE OF LAND MEASURES ADOPTED IN THE MEXICAN REPUBLIC.

Names of Measures.	Figures of measures.	Length of the fig. in varas.	Breadth in varas.	Areas in sq. varas.	Areas in Caballerias.
Sitio de ganado mayor,	Square	5,000	5,000	25,000,000	41.023
Criadero de ganado mayor,	Square	2,500	2,500	6,250,000	10.255
Sitio de ganado menor,	Square	3,333⅓	3,333⅓	11,111,111⅓	18.232
Criadero de ganado menor,	Square	1,666⅔	1,666⅔	2,777,777⅔	4.558
Caballeria de tierra	Right angled parallelogram	1,104	552	609,408	1
Media caballeria,	Square	552	552	304,704	½
Cuarto caballeria or suerte de tierra,	Right angled parallelogram	552	276	152,352	¼
Fanega de sembradura de maiz,	Right angled parallelogram	376	184	56,784	⅓
Solar para casa,	Square	50	50	2,500	0.004
Fundo legal para pueblos,	Square	1,200	1,200	1,440,000	2.036

The Mexican *Vara* is the unit of all measure of length, the pattern and size of which are taken from the *Castilian Vara of the Mark of Burgos*, which is the legal vara used in the Republic. Fifty Mexican varas make a measure called *Cordel*, used in measuring lands.

The legal *league* contains 900 *cordels*, or 5000 *varas*. The league is divided into halves and quarters—this being the only division made of it. Anciently the Mexican league was divided into three miles, the mile into a thousand paces of Solomon, and one of these paces into five-thirds of a Mexican vara—consequently the league had 3000 paces of Solomon. This division is recognized in legal affairs, though it has been long in disuse. The *mark* was equivalent to two varas and seven-eighths, that is, 8 marks contained 22 varas, and was used in land measure.

See Appendix No. 9 to Captain Halleck's Report on Californian affairs,—pages 119 and 145 of Executive Document No. 17, 31st Congress, 1st Session.

¹ See Dr. Wislizenius's Memoir, &c., &c. p. 141.