

POPOCATEPETL.

cles were not so expensive in Mexico, this alabaster might be profitably exported to Europe, where its extreme purity and clearness would probably ensure its preference to all indigenous qualities. Extensive salt works are carried on at Chila, Xicotlan, Ocotlan and Zapotlan.

Some of the most remarkable geological characteristics of the Mexican Republic are found in the three celebrated mountains of Popocatepetl, Iztaccihuatl, and Malinche or Matlacueye, which lie in the State of Puebla. The latter of these, sometimes called La doña Maria, lies between the volcanoes of Puebla and those of Orizaba and Perote, but does not require special mention except as forming a striking and picturesque feature in the landscape. But the other two deserve our special notice.

#### ASCENT OF THE VOLCANO OF POPOCATEPETL.

The mountains of Popocatepetl and Iztaccihuatl border the State of Puebla on the west. The following account of the ascent of the former of these gigantic volcanoes is founded on the journal published in Spanish in May, 1827, by Messieurs Frederick and William Glennie, who were in the service of the British United Mining Company, and Mr. John Tylour, a merchant of the city of Mexico.

On the 16th of April, 1827, the party left the capital early in the day, accompanied by their servant José Quintana, and, provided with barometer, sextant, chronometer, telescope, and other instruments, reached the village of Ameca, on the western slope of the mountain, where they halted for the night.

On the 17th they continued their route, following the road to Puebla which leads through the gap of the two mountains, intending to go to Atlixco. In the highest part of the gap they took the road to the right which is called "*de los neveros*," (those who procure ice for the capital,) and having reached the limit of vegetation, which according to their barometrical measurements is 12,693 English feet above the level of the sea, they met with some men who informed them, that in this direction they could not reach the summit, nor prosecute their way to Atlixco on account of the great quantity of sand. With this information they returned to the road they had left, and reached the village of St. Nicolas de los Ranchos.

On the following day they continued towards Atlixco. The road here edges along the eastern side of the mountain, skirting an extensive district covered with large rocks and loose stones. Having understood that the village of Tochimilco is nearest to the volcano, they determined to go thither to obtain information relative to

the adventure. The Alcalde Don F. Olivares, who, though the owner of Popocatepetl, had never reached the summit, gave them all the information he possessed, offered to accompany them, and procured guides and carriers for their instruments. They appointed the next day to go to his Hacienda de St. Catalina, which is at the very foot of the principal mountain and belongs to that estate.

On the 19th they proceeded to the hacienda, where they were soon joined by Señor Olivares, who was prevented by some business from accompanying them any farther. He furnished them a guide who conducted them through a thick forest, to the highest limit of the pines, which they found to be 12,544 feet above the ocean. Here they passed the night. At midnight it rained, which was soon afterwards followed by a severe hoar frost.

On the 20th of April, contemplating to reach the summit this day, they distributed the instruments among the carriers, and mounted on the mules, began the ascent at half after three in the morning by the light of the moon. After travelling a short distance they left all vegetation, and entered a district of loose stones and sand, which although hardened considerably by the rain, greatly fatigued the mules. In this manner they ascended on the southwest side of the mountain, until half past six when they could proceed no further with the mules, as much because they were too fatigued, as on account of the steepness of the volcano's side. They therefore dismounted, and abandoning the mules, gave the barometer in charge to Quintana. They resumed their ascent through a soil composed of loose sand and stones, with many fragments of pumice stone, being desirous of reaching some rocks which appeared to be connected with the summit. Here, however, the difficulties commenced; the acclivity was very steep, the footing so loose that every step they made forward they slipped back nearly the same distance; and the thinness of the air fatigued them so much that they could not advance more than fifteen or twenty steps without resting. In this manner they proceeded about half a mile, until they reached the rocks, where they waited for the Indians who followed more slowly. During this time the thermometer stood at 28° of Fahrenheit. The sky was perfectly clear, but a dense stratum of vapor rested on the horizon, which prevented them from perceiving any object, and made it appear as if they were in the midst of an ocean. At 8 o'clock A. M. they first saw the sun. As soon as the Indians arrived, they took a light breakfast, and continued ascending among large loose stones, which have rolled from the summit, and, arrested by each other in their course, have formed a

kind of zone, so lightly supported however, that the slightest touch sets them in motion. This naturally alarmed the Indians, who declined going any farther; but by persuasions and promises they succeeded in getting them to advance. Seeing, however, that the road was becoming rather worse, all further means of persuasion to induce them to proceed began to fail. They endeavored to ascend through a gulley which they had perceived on their left; but the way thither was very difficult, and was rendered more perilous by clouds which prevented their distinguishing any thing. Here the Indians entirely refused to stir any further, and having given them part of the provisions, they were sent with the baggage to wait at the place where they had encamped the night before. This circumstance very much discouraged the travellers. Being left without instruments they had to relinquish the physical and astronomical observations which they had proposed to make, and thereby missed the principal object of their journey. They nevertheless determined to persevere, for the purpose of examining well the situation, and noting such points as might facilitate any subsequent attempt undertaken with better preparations.

Soon after this the clouds dispersed, and they reached a passage which was very steep and covered with loose stones, and through which they ascended with much labor, extending their line so as to prevent the stones rolling on those below. The fatigue and the pain in their knees, obliged them to rest every eight or ten paces. After an hour's travelling in this manner they reached a body of basaltic rock, which being very steep they could not surmount but with great difficulty, and only by leaping from one rock to the other, at great risk. After this they got into a bed of loose sand, (apparently pumice stone reduced to dust,) and ascended to a very high rock, which from Mexico appears like a speck. The rock is a great mass of compact black basalt forming some imperfect pillars, the fissures being filled with solid ice.

They observed from time to time small stones falling upon them, as if thrown from above, and began to experience headache and nausea, which affected Quintana more than the others. The barometrical observation here showed an elevation of 16,895 English feet above the ocean. After taking some slight refreshments, and resting about an hour, they continued their ascent.

It is impossible to detail the particulars of the frequent difficulties and risks encountered until the explorers reached the sandy acclivity which forms the dome of the mountain, and the firmness with which they overcame them. At this point they took another

short rest—fancying themselves very near the end of their labors, and deceived by the great rarefaction of the air, which made objects appear much nearer than they really were, they forgot what they had already undergone, and Mr. Glennie was entirely taken up with the prospect of soon putting his barometer in operation on the very summit. At this time Quintana who had smoked a good deal and was otherwise much fatigued, complained of excessive headache and fell down exhausted. They concluded that at these great elevations smoking is as impracticable as the use of ardent spirits. The servant was vainly encouraged to proceed, and finding it impossible, they directed him to await their return where he was.

They had before them a smooth expanse of sand, which on their left was covered, from the summit down, with ice or crystallized snow, forming a great variety of cubic and prismatic figures. Continuing their ascent along the edge of this snow, they heard a noise like distant thunder, and concluding that it was raining somewhere, they proceeded about a league, making frequent halts, being greatly distressed with violent pains in the head and knees, nausea, and difficulty of respiration. They had passed the whole day in absolute solitude; encountering neither plant, bird nor even the least insect. All they saw around them, were fractured rocks, that had undergone fusion, blistered fragments, and heaps of rubbish, sand and ashes. While contemplating these images of destruction, they unexpectedly, about five o'clock P. M., arrived at the border of an immense abyss, throwing up a shower of stones, with a noise similar to that produced by the waves of the sea beating against a wall. Natural emotion and surprise obliged them to recede some paces. Their hair stood on end—their shoulders fell—and they felt a sudden nauseating emptiness of the stomach. Without being able to speak, they could but look at each other, until this sensation of sickness and horror had subsided. They then returned to observe the crater, and examined the barometer, whose mercurial column measured only 15.63 English inches, while the thermometer attached to it was at 39° and the detached one 33° Fahrenheit. They then sat down to contemplate the scene around them, to take notes, and make drawings.

They observed that most of the stones which were thrown up in the eruptions, fell within the crater, the rest fell over the south side. The dull sound which was constantly heard within increased from time to time, and terminated with an explosion, at which time stones, sand, and ashes were thrown up. Those eruptions were frequent—some stronger than others. From various places in the

interior and near the edge of the crater, arose small columns of smoke, the principal of which were three on the east side, and at a considerable depth within the crater. The crater itself has the appearance of a large funnel, whose sides are but little inclined, and the bottom of which is not visible. The sides are furrowed by numerous gulleys which descend from around the mouth of the crater, having the appearance of the radii of a circle towards the centre. There are three distinct rings, or excavations, which divide the crater into four zones of different dimensions, the largest being that nearest the mouth, and which is of solid rock, the others appear to be composed of sand. The snow occupies only the exterior part of the summit, and that part of the interior of the crater which faces to the north, where its limits cannot be discovered. The mouth of the volcano is nearly circular, about a mile in diameter, and appears much lower on the eastern than on the western side. The lip of the southern side is very thin, and so broken that it seems impossible to walk on it, while the northern part, on the contrary, is broad and more even.

On account of a thick stratum of mist by which they were surrounded, the intrepid travellers could only see the summit of the peak of Orizaba, and the neighboring snow-capped mountains to the north.

Having completed the observations, and night approaching, they descended by the same way towards the place where they had left the servant, with the intention of passing the night there and returning to the summit next morning; but finding the man in a high fever with a violent pulse and headache, they resolved on descending. To relieve him, he was carried over the most difficult places, and finding it impossible to descend by the same path by which they had ascended in the day, they took at once that bend of the mountain which is called "de los Neveros;" and which, although very steep, is composed of loose sand through which they descended very rapidly. It was after night when they arrived at the limit of vegetation, but having taken a different direction, they did not strike the place where they expected to meet the Indians. They made a large fire as a signal, but the Indians did not make their appearance; and on the following morning, the 21st of April, separating to the right and left, and after shouting, they soon rallied the Indians. The reunited party descended to the rancho de la Vaqueria, and from this they passed through the village of Atlauca; at eight in the evening reached Ameco, and on the 23d of April returned to Mexico.

Names of places.	N. Latitude	Longitude east from Mexico.	Elevation above the level of the ocean.
Ameco a village	19° 7' 40"	0° 23' 30"	8,216 Eng. feet.
St. Nicolas de los Ranchos	19° 4' 21"	0° 32' 30"	8,087 do.
Tochimilco . . . . .			6,930 do.
Superior limit of pines . . . . .			12,544 do.
Limit of all vegetation . . . . .			12,693 do.
Picacho de S. Guillermo <sup>1</sup> . . . . .			16,895 do.
The most elevated border of the crater of the volcano of Popocatepetl . . . . .			17,884 do.
Rancho de la Vaqueria . . . . .			10,784 do.

## REMAINS OF ANTIQUITY IN THE STATE OF PUEBLA.

## THE PYRAMID OF CHOLULA.

The vast plain of Puebla, separated from the Valley of Mexico by its gigantic chain of bordering mountains, is full of interesting associations and studies for the antiquarian; but, among all of the sites signalized in the history of the Aztecs or of the Spanish Conquest, no one is more generally sought by the traveller than the Pyramid of Cholula. Its lofty remains lie about three leagues westward from the city of Puebla, and are easily reached by a pleasant ride over the plain. The pyramid was originally built of sun dried bricks, or, *adobes*, rising in four stories connected by terraces. Many years ago, in cutting a new road from Mexico towards Puebla, it became necessary to cross a portion of the base of this pyramid, and, in the course of the excavation, a square chamber was opened, which was found to be constructed of stone with a roof supported by cypress beams. Some idols, carved in basalt, a number of painted earthen vases, and two bodies were found in this cavity, but as no care was taken of these relics by the discoverers, and as their explorations were not prosecuted deeper into the bowels of the gigantic mound, the world is now quite as ignorant of its ancient uses as it was during the possession of the country by the Spaniards. The most recent publication upon the subject of Cholula by Señor Gondra, the Curator of the National Museum, in the University of Mexico, merely repeats the thrice told tales of the last century.

The top of this pyramid is reached by paths that climb its sides amid masses of *debris* and groves of bushes which have driven their

<sup>1</sup> This peak which is visible from Mexico, has been thus denominated in honor of Mr. William Glennie, who was the chief promoter of the expedition.

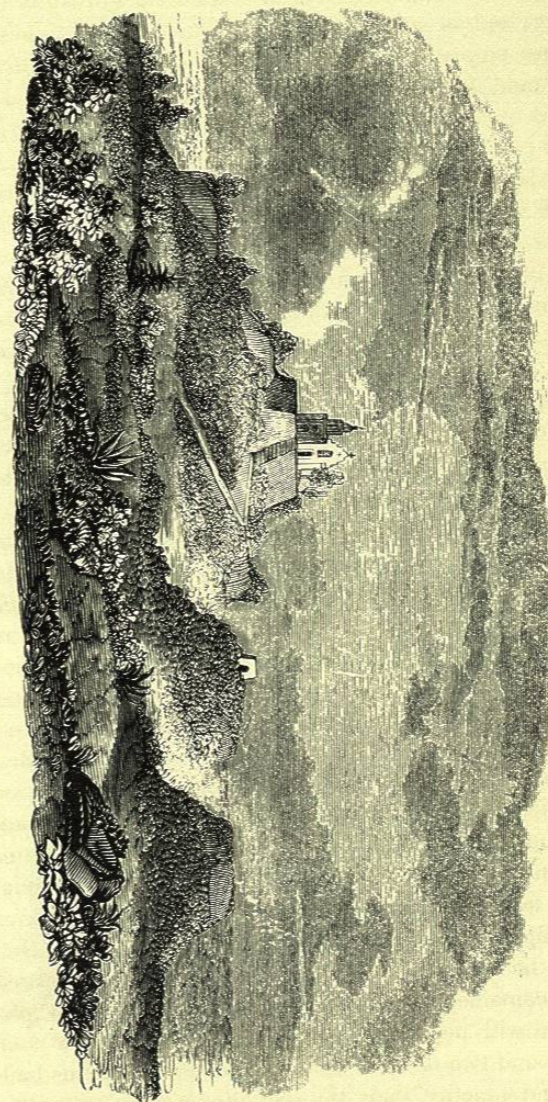
roots deeply between the fissures of the bricks. The level summit protected by a parapet wall, — and once the shrine of Quetzalcoatl — the “Feathered Serpent,” or “God of the Air,” — is now adorned with a small dome-crowned chapel, surrounded with cypresses and dedicated to the Virgin of Remedios; while, from all parts of the eminence, a magnificent panorama of the fruitful plain spreads out at the feet of the spectator.

The following extract from a communication by an officer of our army, in 1847, during the invasion of Mexico, contains some interesting facts, and corrects scientifically the measurements of the pyramid which were made by Baron Humboldt:

All the mornings of this elevated region, even in the rainy season, are bright and charming; the sun rises in unclouded splendor, gilding one of the most magnificent landscapes the imagination can conceive, whilst the atmosphere is so pure and elastic that it is a positive pleasure to breathe it. On such a morning, in company with the 4th regiment of artillery, acting as infantry, and a squadron of horse, we sallied from the city through the *garita* of Cholula, and soon found ourselves in the extensive plain skirting the base of the volcanoes of Puebla — Popocatepetl and Iztaccihuatl. Before us glittered in the morning's sun their snow-capped summits; on our right rose the Malinche, with its craggy crest partially enveloped in a wreath of mist; whilst behind us, in the far distance, towered the indistinct form of the Orizaba — that well-known landmark of the seaman, that serves to guide him in calm and in storm, hundreds of miles along the Mexican coast. The nearer landscape was as soft and picturesque as its more distant features were grand and sublime. A green meadow or prairie extended around us for some miles in every direction, dotted with villas and haciendas, and relieved by occasional patches of cultivation, and avenues and clusters of the beautiful shade willow. Herds of cattle and horses grazed as quietly on the surrounding estates as though “grim-visaged war” had long since “smoothed his wrinkled front,” and our military escort, as it wound its way over the fair landscape, with glittering arms and glancing banners, seemed more like a holyday procession than a band of stern veterans so recently from the conflict, and so soon to enter it again. A ride of an hour and a quarter, which our horses, as they snuffed the morning breeze and scented the fresh grass of the meadows, seemed to enjoy as much as their riders, brought us to the base of the far-famed pyramid, which, independently of its historical recollection, and the great interest attached

to it as a work of art, forms one of the most picturesque features of the landscape. At a short distance it presents the appearance of a natural mound, covered with a luxuriant growth of trees and shrubbery, and is surmounted by a simple chapel, whose belfry towers some eighty feet above the pyramid. A road winds round the pyramid from base to summit, up which we passed on horseback. This road is cut into the pyramid, in some places, six or eight feet, and here one sees the first evidence of the artificial construction of the latter. It is built of *adobes*, or sun-dried brick, interspersed with small fragments of stone—porphyry and limestone. Its dimensions, as stated by Humboldt, are: base 1,060, elevation 162 feet; but its altitude is much greater. On the day of our visit, Lieutenant Semmes, of the navy, who had provided himself with a pocket sextant and tape-line for the purpose, determined its altitude to be 205 feet. As this measurement differed so widely from that of Humboldt, Lieut. S. requested Lieut. Beauregard, of the engineers, who visited the pyramid a few days afterwards, to test his observations; which Lieut. B., using a longer base, did, making the altitude 203 feet. These two observations, from different points, with different bases, and both with the sextant, show conclusively that Humboldt, who used a barometer, is in error. The mean of the two is 204 feet, which we may henceforth regard as the true height of this extraordinary monument—being nearly half as great as that of the pyramid of Cheops in Egypt. The pyramid of Cholula is quadrangular in form, and truncated—the area of the apex being 165 feet square. On this area formerly stood a heathen temple, now supplanted by the Gothic church of our Lady of Remedios. The temple on this pyramid was, in the days of Cortéz, a sort of Mecca, to which all the surrounding tribes, far and near, made an annual pilgrimage, held a fair, and attended the horrible human sacrifices peculiar to their superstition. Besides this great temple, there were, as we learn from the letters of Cortéz to Charles V., and also from the simple diary of his doughty old Captain, Bernal Diaz, some 400 others in the city, built around the base of the larger. The city itself contained 40,000 householders, and the whole plain was studded with populous villages. The plain is now comparatively a desert, and two or three thousand miserable leperos build their mud huts and practice their thievish propensities upon the site of the holy city.

RUINS OF THE PYRAMID OF CHOLULA.



## THE TERRITORY OF TLASCALA.

The history of Mexico has ever held in sacred regard the region of this ancient republic, whence Cortéz and the Spaniards derived such eminent assistance in the conquest of the Aztec Empire. Immediately after that event it was erected into a province, under which character it was always regarded until the political emancipation of Mexico from Spain, and even after that event up to the period of the adoption of the Acta Constitutiva, when Tlascala was raised to the dignity of a State, as an integral part of the Mexican Republic. The constitution, sanctioned on the 4th of October, 1824, deferred defining absolutely the political character of this region; but on the 24th of November of the same year, it was constitutionally declared to be a Territory of the Confederation. When the Central Government was subsequently adopted, it was added, under the denomination of a district, to the Department of Mexico; but when the federal system was restored by the movement of the 6th of August, 1846, which was afterwards nationalized by the decree of the provisional government on the 22d of August of the same year, and confirmed by the sovereign congress on the 18th of May, 1847, Tlascala re-entered the federal association in its original character of a territory.

Tlascala comprehends within its limits a superficial extent of four hundred square leagues, and contains one city, one hundred and nine villages, eighteen settlements, one hundred and sixty-eight haciendas or large estates, ninety-four *ranchos* or small farms, eight grist mills, two iron works, and one woollen factory. It is divided into the three *partidos* of Tlaxco, Huamantla and Tlascala, the latter of which contains the capital town of the same name about seven leagues north of Puebla. The territory is of an oval form, lying between forty minutes and one degree thirty-three minutes east longitude from Mexico, and nineteen degrees, and nineteen degrees forty-two minutes of north latitude. Its climate is mild and healthful, and its population, which in 1837, was rated at about eighty thousand, has been found to increase, on comparison of a number of years, about one thousand eight hundred and seventy-eight annually, of which nine hundred and thirty-seven are males, and nine hundred and forty-one females.

The productions of Tlascala are chiefly of a cereal character, but its genial climate and soil are capable of yielding the fruits of the *tierras calientes*, *frias*, and *templadas*.

The capital town of TLASCALA is situated between two mountains, in  $19^{\circ} 16'$  of north latitude, and  $58'$  east longitude from Mexico, near the only stream of importance in the territory, known as the Rio Atoyac or Papagallo, under which name it passes through the State of Puebla on its way to the Pacific. The ancient numerous population of Tlascalala is no longer found within its limits, and perhaps not more than four or five thousand individuals now inhabit it. But the town is nevertheless handsome;—its streets are regular; its private houses, town hall, bishop's palace and principal church are built in a style of tasteful architecture, while on the remains of the chief Teocalli of the ancient Tlascalans, a Franciscan convent has been built, which is perhaps one of the earliest ecclesiastical edifices in the republic. In the town itself and in its vicinity many relics and ruins of the past glory of Tlascalala are still found by antiquarians, but they have hitherto been undisturbed by foreign visitors and remain unnoticed by the natives. Huamantla and Tlaxco are the chief towns or villages in the *partidos* which bear their names.

## CHAPTER V.

STATE OF MEXICO—AREA—DIVISIONS—POPULATION—FEDERAL DISTRICT—VALLEY—HIGHWAYS—LAKES—ZUMPANGO, CRISTOVAL, CHALCO, XOCHIMILCO, TEZCOCO—SALT-WORKS—CITIES—SAN AUGUSTIN—FESTIVAL—TEZCOCO—TACUBA—TOLUCA—CASCADE OF REGLA—TOWNS—VALLEY OF CUERNAVACA—ACAPANTZINGO—ITS INDIAN ISOLATION—MINES IN THE STATE.

### THE STATE OF MEXICO.

This State, which includes the national capital and the federal district, lies between  $16^{\circ} 34'$  and  $21^{\circ} 7'$  of north latitude and  $100^{\circ} 17, 30'$  and  $105^{\circ} 7, 30'$  W. longitude from Paris. It is bounded, west by the States of Guanajuato and Michoacan; south-west by the shores of the Pacific for 87 leagues; north by Queretaro; east by Puebla; and north-east by Vera Cruz. Its greatest breadth from east to west, from Chilapa on the boundaries of Puebla, to the haven of Zacatula, is, 104 leagues, and its extreme length from north to south, from Berdosas on the confines of Vera Cruz, to the west coast in the neighborhood of Acapulco and the boundary of Puebla in that direction, is, 124 leagues. The area of the State is 5,842 square leagues, more than two-thirds of which are covered with mountains and spurs of mountains, interspersed with vallies lying between 6,500 and 7,500 feet above the level of the sea. The *Nevada de Toluca* is the only mountain of extraordinary elevation in the State of Mexico, which breaks the uniformity of its lofty table lands. Popocatepetl and Iztaccihuatl, on the eastern limit of the Valley of Mexico, belong, it will be recollected, to the State of Puebla.

The political divisions consist of eight districts, with 38 *partidos*, or cantons, and 183 *ayuntamientos* or municipalities, subdivided into about 450 cities, towns and villages, as well as into a great number of *haciendas*, and minor dependencies.

1st. The district of Acapulco, with the cantons of Acapulco, Tépam, Chilapa, Tixtla, and 13 municipalities.