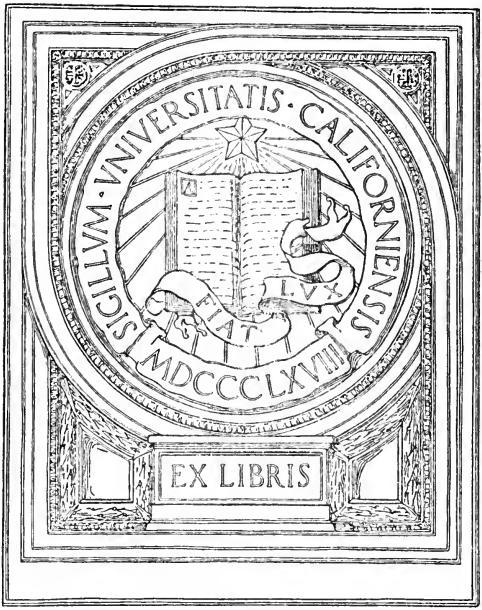
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SONORA:

ITS EXTENT, POPULATION, NATURAL PRODUCTIONS, INDIAN TRIBES, MINES, MINERAL LANDS, ETC., ETC.

TRANSLATED FROM THE SPANISH OF FRANCISCO VELASCO

BY WM. F. NYE.

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PREFACE.

Of the original Spanish work from which this translation is made, there are but few copies in existence; one of which was obtained by Mr. Robinson, through the courtesy of the Prefect of Alamos.

The author, Don Francisco Velasco, was a native of Sonora, and held various official positions of responsibility — among others, that of Secretary of State, and member of the Federal Congress. Although he modestly remarks in his preface, that his principal motive in giving his book to the public was that it might induce some person better informed than himself to furnish more full and accurate statistics, his work is universally recognized in Sonora as the best, and in fact, the *only* reliable one that has yet been published upon this subject. The translator has selected such portions of the original as in his judgment will be the most interesting to the general reader, and the most important to those having a direct interest in Sonora.

San Francisco, May, 1861.

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SONORA.

CHAPTER I.

SITUATION, EXTENT, AND BOUNDARIES OF THE STATE OF SONORA.

When Sonora and Sinaloa formed one State (called the Western State) it extended from the river "de las Cañas," which divided it from the State of Jalisco, to the river Gila on the north, and was four hundred and sixty-five leagues in length. But when, in 1830, this State was divided into two, the south-eastern boundary of Sonora was fixed on the border of the Mezquite rancho, eighteen leagues south of the city of Alamos, on the road to "villa del Fuerte." The distance from the said Mezquite (the dividing line between Sonora and Sinaloa) to Ures, is one hundred and eighteen leagues,

and thence to the Gila one hundred and forty-five leagues; the entire length of the State thus being two hundred and sixty-three leagues.

Its breadth is very irregular, as from the Mezquite towards the interior, the Sierra Madre gradually recedes until it is out of sight from the main road, whilst numerous plains exist, of ten or more leagues in extent, some broken by small ranges of hills, which appear from the road to be isolated mountains. Its mean breadth from the western side of the Sierra Madre, which divides it from the State of Chihuahua, to the gulf of California, has not been exactly ascertained; but all the inhabitants who are acquainted with the geography of the country agree that its breadth, in its narrowest part, viz: between Mezquite and Alamos, is not less than forty leagues; in the parallel of Arispe it exceeds one hundred and thirty leagues, and at the Gila, reckoning from the pass of Carretas—which is the lowest of the

Sierra Madre—to the river Colorado, one of its western boundaries, the breadth is far greater and has not yet been defined.

The general direction of the State is from north-west to south-east, along the Gulf of California, its western boundary. It is bounded on the north by New California, and by a number of barbarous tribes beyond the Gila, whose limits are unknown.

The name of Sonora, according to the most authentic accounts, is derived from the Opata word *Sonot*, which means Señora, an appellation bestowed by the Spanish conquerors upon an Indian woman, who treated them with great hospitality when they visited the settlements of that tribe; the Indians, in attempting to imitate the Spaniards, pronounced the word Sonot, instead of Señora, and it was gradually corrupted into Sonora. This State comprises the province that was formerly called Upper Sonora, and contains the departments of Arispe, Cieneguilla, Horcasitas and Hostimurí, in which

are included the department of Alamos and the settlements on the rivers Mayo and Yaqui. The territory of the State also includes the presidial establishments, viz: Buenavista, Pitic—now the city of Hermosillo—Altar, Santa Cruz, Fronteras, Tubac, Bacuachi, Babispe and Tucson, where the captains or commanders of garrisons formerly exercised all political, judicial and military authority; at present there are no presidios in existence.

The face of the country is of unequal elevation; being in the neighborhood of the Sierra lofty and broken, whilst in the interior, and also on the coast, there are plains and valleys of immense extent. Its area, between the Mezquite and the Gila, may be estimated at 42,869 square leagues.

The rivers are few in number in comparison with Sinaloa, which contains eleven. In the State of Sonora there are really no rivers, except the Buenavista or Yaqui, the only one of importance, and the Conicari or Mayo,

both of which emanate from the copious springs of the Sierra Madre. After these, we may mention the Arispe or Sonora, which passes through Ures and Hermosillo, and loses its waters in the sandy plains of Siête Cerritos, seven leagues to the west of Hermosillo, and the Horcasitas, also called Rayon, Opodepe and Cucurpe, which joins the Arispe one league and a half east of Hermosillo. The Oposura, Aribechi, Santa Cruz, San José de Pimas, Tecoripa, Altar and Caborca are mere creeks, fordable when their waters are high, and partially dry in times of drought, some of them disappearing in the sands.

On the northern frontier are two rivers which truly deserve the name, viz: the Colorado, the largest of all the streams in Sonora or Sinaloa, and the Gila, which joins the Colorado near the point at which it empties into the Gulf of California. The only rivers that empty into the sea are the Colorado, Buenavista and Conicari; all the oth-

ers either join these first, or are lost in the sandy plains of the coast.

The State contains no port suitable for commerce, except that of Guaymas, which, according to mariners, is the best in the Gulf of California. In Santa Cruz de Mayo, in the department of Alamos, there is a small bay or roadstead, commonly called the port of Santa Cruz, which is occasionally visited by a schooner or launch from Lower California, laden with dried fruit and olives.

That portion of Sonora lying between Merzquite and the ancient capital city, Arispe, is sterile in comparison with the region further north. The most thickly settled places are upon the banks of the rivers and creeks, whilst in the interior settlements between Alamos and Hermosillo there is so great a scarcity of water on the roads, that the traveler is compelled to carry a supply with him. It is not uncommon to travel eight, or even sixteen leagues, without finding a stream, or a place where water may

be procured by digging. On that part of the coast called Tiburon, to the west of Hermosillo, the distance between watering places is still greater, and the supply more scanty; and on the old road of Cieneguilla, which is from fifty to sixty leagues in length, there are but three watering places, including one well.

On the road from Hermosillo to the port of Guaymas, in the dry season, no water is to be had for thirty-six leagues, except at La Posa and La Cieneguilla; and it is occasionally so scarce at these places that foot passengers perish from thirst. The coast is so dry that the rancheros have sunk wells in different parts of it thirty and forty yards in depth, without finding moisture. The region between Arispe and the Gila, however, is well watered by numerous creeks, and abounds in pools and swamps; and the mountains are well supplied with water and timber of various kinds, such as cedar, pine, evergreen-oak, ebony, etc., well stocked with

deer and birds, and contain medicinal herbs of marvelous efficacy, one of which, called "Colorada," is used by the Apaches for the treatment of wounds. The valleys are expansive and beautiful, abundantly watered, and clothed in verdure during the entire year; and nature has lavished her vegetable and mineral wealth upon these frontier regions with so prodigal a hand, that they may well be called the Paradise of Sonora. The inscrutable decree of the Almighty has bestowed them upon savages, incapable of appreciating or enjoying his munificent gift.

CHAPTER II.

CLIMATE.

THE climate of Sonora is subject to the extremes of heat and cold. In the winter season, especially in the frontier settlements, the cold weather commences in the latter part of October, and is extremely severe from November until March. Ice has frequently been formed in October; but this is not usually the case until November or December. In the settlements nearest the frontier, the frosts set in earlier than in the interior towns; indeed, in these last, three or four years occasionally pass without frost, and this is especially the case in the settlements nearest to the coast, such as Hermosillo, Buena Vista, Alamos, Yaqui, Mayo, etc.

Warm weather commences in May, and the heat becomes extreme during the months of June, July and August—in September it is moderated by refreshing rains—the mercury frequently reaching more than one hundred degrees Fahrenheit at Hermosillo, Guaymas, Ures, Buena Vista, and San Antonio de la Huerta, these places suffering more from heat than any others in Sonora.

Hermosillo is occasionally visited by a hot wind, which blows from eleven of the morning till four of the afternoon, during which period no one ventures into the street, unless urged by business or imperative necessity. On one occasion, a few years since, such was the fury of the withering blast, that it seemed to scorch the skin like a furnace; hares, deer, cayotes and other wild animals flocked to the settlements for refuge, and plants and trees perished at the root. In Guaymas, this wind makes its appearance every year, when least expected, and sometimes blows for four and twenty hours. It

is a remarkable circumstance that it does not extend more than a league from the coast, seaward, and that while it prevails, fresh water deposited in jars continues deliciously cool, even in summer.

It is the general custom throughout the States to throw aside, in the beginning of June, the woolen mattresses that have been used during the winter, and the poorer classes abandon the interior of their houses, and pass the night in the corridors or court yards; others, so unfortunate as to have but one room or no enclosed corridor, sleep in the streets in front of their huts, when the heat within becomes insufferable. In some towns, however, as in Hermosillo, the nights are cooler, on account of the southerly breeze, which sets in at eight o'clock; when this fails, as sometimes happens, the inhabitants court sleep in vain.

In some of the frontier settlements, such as Arispe, Bacoachi and Fronteras, the winter is longer than the summer; and at the

presidio of Santa Cruz, cold weather prevails during the entire year, this phenomenon being confined to that particular locality.

We see, then, that the climate of Sonora is neither moderate nor temperate, notwithstanding which serious epidemic diseases are unknown, except in a few places; as, for example, in Hermosillo, where diarrhœa and phthisic prevail to a limited extent. On the rivers Oposura and Laguaripa, as well as in Cosola, Rosario and other towns in Sinaloa, the inhabitants are subject to an excrescence or fleshy tumor upon the neck, called "buche." This is more common among women than men. In the frontier settlements, and especially in those of "Pimeria Alta," intermittent fevers are not uncommon, but are to be attributed rather to the immoderate use of fruit than to the climate. These fevers sometimes make their appearance in the interior of the State, but they do not spread, nor are they of long continuance.

It may safely be affirmed that the climate of Sonora is not only salubrious, but far more so than that of the adjoining States or those in the center of the Republic. This may be attributed to the purity of its atmosphere, the dryness of its soil, which contains no lagoons or pools of stagnant water, exhaling noxious vapors, and to the various and constant winds from the Sierra Madre, the north and the sea, which, sweeping over deserts and sparsely settled regions, have necessarily a purifying effect upon the atmosphere. Those terrible epidemics that have decimated the human race in other climes, are as yet unknown in Sonora. In Guaymas, Matapé, Horcasitas and Arispe, days and even months frequently elapse without the occurrence of a single death. It is not uncommon to encounter in these, places as well as in the presidio of Altar or Cavorca, persons over one hundred years of age (two attained the respective ages of a hundred and fourteen and a hundred and thirty) and the av-

erage duration of human life, when prudence and temperance are observed, may be set down at from seventy to eighty years. It is true that such longevity is not common in the interior; but this is owing more to excesses than to the climate. The strongest proof of the purity of the atmosphere is the fact that even the Indian tribes, exposed as they are to the inclemency of the weather, half naked, poorly fed, subjected to severe and exhausting labors and deprived of medical assistance, generally attain the same age as the whites.

In the last century, according to tradition and the statements of the oldest inhabitants, the small pox and the measles made their apppearance about every twenty years; in the present century, the intervals have been less, viz: from sixteen to eighteen years. The ravages of the small pox, however, are trifling, in comparison to what they were before the introduction of vaccination, which is now practised in all parts of the State.

There is not a hospital in the State, nor a drug store worthy of the name; the only one being in Hermosillo, poorly supplied with drugs of inferior quality, and without any practical chemist or apothecary. Neither are there any established physicians of accredited skill and experience, the few who are found in the State being foreigners, who are only applied to in cases of urgent necessity; the inhabitants, in case of sickness, being generally left to the tender mercies of quacks and old women.

Venereal diseases are not common, except in the settlements near the coast, especially those of the river Yaqui; in the interior they are rarely seen.

At the changes of the seasons, catarrhs frequently prevail, but are generally mild and seldom induce fever.

Although the night air, on the coast and in the central States of the Republic, is deadly in its effects, in Sonora, no harm results from sleeping in the open air. The

most dangerous diseases among children are those which accompany teething, such as diarrhœa, intermittent fevers, vomiting, opthalmia, and eruptions of the face. These are so prevalent as to annually cause the death of quite one-fourth part of the children born in the State. Those that pass the period of teething in safety, generally enjoy good health until they arrive at the age of puberty.

CHAPTER III.

POPULATION.

In the absence of positive and reliable statistics, based upon a census properly taken, it is impossible to ascertain the exact population of the State of Sonora, or to classify the inhabitants by sexes, ages, occupations, etc., but we will endeavor to make an estimate, which, although imaginary, may be approximate to the truth, and therefore call attention to the following facts.

The city of Hermosillo, in 1830, contained according to the census 5,000 souls; and in 1840, 13,665, including, as estimated, about 2,000 Yaqui Indians, of whom no census could be taken. The same rate of increase

for the last ten years, would give 20,482 as the present population; this we consider to be above the mark; but there is no doubt that the population, including Indians, does not fall short of 15,000.

Ures, the present capital of the State, contained according to the census of 1822 less than 2,000 souls; at present its population is not less than 7,000.

The population of the town of Oposura, in the same year, was 2,534; at present it does not contain more than 3,000, the emigration thence having been very great, on account of its exposure to the incursions of the Apaches.

The port of San Fernando de Guaymas, with the town of San José—generally called the rancho of San José de Guaymas, did not contain one thousand inhabitants in 1828; the present population is not less than 3,000.

The city of Alamos, in 1828, was supposed to contain from 5,000 to 7,000 inhabitants, but owing to the emigration resulting from

the decadence of its mines, the present population does not exceed 6,000.

The town of Guadalupe del Altar, one of the frontier presidios, contained but 2,645 inhabitants in 1822, but since the important mineral discoveries in 1837, its population has increased to 6,000.

The population of the town of Horcasitas was, in 1822, 2,460, and in the twenty-three years since, it has probably not increased more than one-third, owing to the depopulation of many ranchos, on account of the ravages of the Apaches. We may estimate its present number of inhabitants at 3,280. The mineral region of Varoyeca probably contains about the same number of inhabitants as in 1822, viz: 2,460; frequent emigration having retarded its increase.

The population of the old capital city, Arispe, which in 1822 amounted to 2,079, does not at present exceed 1,000 of all ages and sexes.

The entire population of all the settle-

ments on the river Yaqui, in 1822, was estimated at 5,501 persons; add to which 6,000 others beyond the river and scattered over the State, and we have a total of 11,501. This we may consider to be the present number of these Indians, as many perished in the outbreaks of 1825, 1826 and 1832, and in the civil wars of Gandara and Urrea.

The town of Ceris, according to the last census in 1844, contained 3,000 inhabitants of all ages and sexes.

From the preceding statistics of the population of the larger or principal towns and settlements of the State in 1822, and their probable rate of increase up to 1845, they should now contain 72,995 souls, as shown by the following statement:

Population of the above mentioned pueblos in 1822	58,396
Add one-fourth as the probable increase in twenty-three years, from 1822 to 1845	14,599
Total	72,995
Add to this the population of the small settlements, which have not increased on account of the depredations of the Apaches	12,669
Total population	85,664

NOTES.

1. The mining region of Cieneguilla, which in 1822 contained 1,589 souls, is entirely depopulated.

2. The mineral region of Aigame had a population in 1822 of 2,543, but is now nothing more than a private rancho.

3. The presidio of Basuchi had a population of nine hundred and fifty-nine, but is now nearly depopulated.

4. Fronteras, a presidio, formerly had six hundred and thirty-five inhabitants, but is now entirely depopulated on account of the Apaches.

5. Bananchi formerly had a population of 1,746, but is now nearly depopulated for the same reason. Many other pueblos and ranchos have shared the same fate.

Although the Papago Indians do not associate with the whites, they nevertheless form a part of the population of the State, and recognize its government. As they number 20,000 souls, and the Mayo Indians

—who may also be included—7,000 more, we may safely estimate the population of Sonora at over 100,000 persons.

CHAPTER IV.

CAPITAL OF THE STATE.

The capital city, Ures, is situated in a most beautiful valley, stretching from east to west, the soil of which is exceedingly fertile, and suitable for the production of all kinds of fruits, excellent wheat and other cereals. Several hundred "cargas" of sugar are annually produced, also cotton of superior quality; but the progress of the place is slow, owing to the epidemic which visits it every two or three years.

The environs of Ures are picturesque, and contain several important haciendas of arable land, such as Santa Rita, Molino, Guadalupe, Topagui and others. There are no public buildings, except certain small houses

purchased during the administration of General Urrea to form a palace. The present Governor is erecting a penitentiary, or house of correction, there being but one prison on the skirts of the city, and that extremely insecure.

The private buildings are irregular, frail, and with no pretensions to beauty. All are built of adobe, although there is excellent stone for building in the neighborhood of the city.

Ures has the great misfortune of being subject to frequent inundations, since it is immediately surrounded by various creeks, which, when swollen by heavy rains, constantly threaten the city with ruin. Its principal branch of industry is the manufacture of mantillas, but much progress might be made in other branches, under a quiet and peaceable order of things.

It is particularly exposed to the depredations of the Apaches, notwithstanding which its population has materially increased since

1825; this, however, is partly owing to the emigration from the frontiers of many, who, having witnessed the slaughter of their families by the savages, sought refuge and protection in the city.

Ures has an ayuntamiento, prefecture, judge of first instance and a primary school. The attorney general also resides there, but the Supreme Tribunal of Justice holds its sessions at Hermosillo.

CHAPTER V.

CITY OF HERMOSILLO AND ITS DEPARTMENT.

THE capital of this department is the city of Hermosillo, distant from the Gulf of California thirty leagues on the west, and thirty-six leagues on the south. It was originally called Pitic, having been one of the old presidios. It is now the first town in the department, its elements of progress being certain and increasing. Its climate is dry and very warm; from the middle of spring till the beginning of autumn, the thermometer frequently reaching ninety-six or ninety-eight degrees Fahrenheit, and sometimes over one hundred; but immediately after sunset, a refreshing westerly breeze springs up, which compensates for the intense heat

during the day. The winters are not severe, and their temperature is very variable, sometimes rising nearly to summer heat. The atmosphere during the greater part of the year is clear.

No epidemics visit this city, excepting catarrhs and light fevers; neither are there any noxious insects, the only ones found being ants, the bite of which is neither painful nor dangerous.

It is situated in a valley about three and a half leagues in length and one and a half in breadth, sheltered on the north by various hills, on the west by the range of hills called Chanate, and on the east by the "Cerro de la Campana"—hill of the bell—so called because its rocks, when struck together, produce a sound similar to that of a bell. The base of this hill is bathed by a small stream running from east to west, which is sufficient to irrigate the lands between San Juanico and Chanate cultivated by the inhabitants of the city, and of the

pueblo of Ceris, which is in sight to the south; the said lands being in length, from east to west, four to five leagues. A large aqueduct passes through the middle of the settlement, which also serves for irrigating the neighboring lands; another passes near the river and the "Cerro de la Campana," and a third divides the city north and south, furnishing water to the houses, orchards and gardens in the immediate neighborhood.

Hermosillo, according to the last census of 1840, contained 11,655 inhabitants, to which should be added 2,000 Yaqui Indians, making the total population 13,655. Its present population—in 1843—according to the regular rate of increase, should not be less than 14,000.

The average annual quantity of its agricultural products, as near as we can estimate, is 25,000 fanegas of wheat—about 64,000 bushels; 100,000 fanegas of maize, and 5,000 of other cereals, beans and lentiles.

There are also raised in abundance, Chile

pepper, garlic, onions, gourds of all classes and sizes, and sweet potatoes.

Other vegetables are scarce, as they are seldom cultivated.

The fruits are abundant, and of excellent quality, especially the grapes, musk and water melons; and figs grow in such profusion that large quantities are wasted; poor people are permitted by the owners of land to gather all that fall from the trees. Sweet and sour oranges, lemons, citrons, limes, pomegranates and peaches, are also abundant, though not equal in quality to those of Arispe and San Ignacio. The guava is cultivated, and the plantain tree attains a large size, and is loaded with fruit, which gradually falls as it ripens.

The cultivation of the vine has tended much to the aggrandizement of the city. The average annual product of the grape is 1,500 barrels of aguadiente of one hundred and twenty-five quarts each, as many of vinegar, and but a few barrels of wine;

since it has been found impossible, even with the greatest care, to make good wine, it invariably turning sour on the approach of hot weather. But few raisins are made, and those are of inferior quality. We have heard from various proprietors of vineyards that their profits were two, three and four thousand dollars per annum; but, if they exercised greater economy, and possessed sufficient experience to manufacture wines and brandies equal to those of Europe, their gains would be infinitely greater.

The cultivation of cotton was commenced in the year 1811 by several persons; among them, Don Rafael Diaz, who succeeded in raising good crops, and manufactured narrow cloths, half a yard in width. For two or three years this enterprise steadily advanced, but then an incurable disease attacked the plant, and after many fruitless attempts to remedy this, its cultivation was abandoned. This continued until 1842, when a few persons, stimulated by the establishment of the

cloth manufactory of Los Angeles, took steps to revive the cultivation of cotton, and there are now several considerable plantations on the estates, four to eight leagues to the west of the city, called Tennaje and Palomos, and at "Chino Gordo," four leagues to the east.

The cultivation of the sugar cane has also been unsuccessful, the general opinion being that neither the soil nor climate is suitable for this plant; some "cargas" of sugar, however, are produced, mostly in San Juanica and Ceris. Within two years, the cultivation of the large cane of the coast has been commenced, and this, if successful, will be an important branch of agriculture.

The soil of Sonora is not generally fertile, though more so in some parts than in others. Upon a hacienda of Messrs. Astiaseranes, and that of Topajui, on the road to Ures, the average yield of wheat is two hundred and fifty or three hundred to one; and many others are equally productive. In the haci-

endas of Hermosillo, the yield, though not so large, is still respectable, being from one hundred and fifty to one hundred and seventy to one from the better lands, but not more than fifty to one from the least productive.

Hermosillo contains several carpenter and blacksmith shops, and great improvement has been made in these branches, thanks to foreigners who have settled in the country. We have seen wardrobes and other pieces of furniture quite equal to those made in the United States.

The public buildings are: First — The mint, which has been idle for some years, for want of direction and supplies, and now serves as barracks for the troops. Second—The assayer's office, which is much dilapidated. Third—The municipal buildings, including the prison—almost in ruins—and the primary school. This school is now held in a building purchased by the city, and is in charge of Don Antonio Villalpando.

It consists of two departments, male and female, and the number of pupils exceeds one hundred; public examinations are held every six months. The principal plaza, in front of the church, is four hundred varas square, two of its sides being enclosed by private dwellings, and the other two by the church and municipal buildings. The church was built when Hermosillo was the presidio of Pitic, and is sadly in want of repairs. It is poorly supplied with sacred utensils, but three of which are of silver, viz: a cibary and two censers. The former is valued at $2,000.

To the west of the city is a chapel, dedicated to San Antonio, which is fast falling to decay on account of the encroachments of the river, and has consequently been abandoned. On the east is the chapel of Nuestra Señora del Carmen—small, but in good condition—and a ruined chapel on the north.

The trade of Hermosillo was formerly car-

ried on with the city of Mexico, but at present it is confined to the port of Guaymas.

There are about twenty-five or thirty shops and mercantile establishments in the city, and only three or four merchants can be called capitalists; all others transact business on credit, and are frequently compelled to borrow money upon interest to meet their engagements.

The exact value of the goods annually used and consumed in Hermosillo we cannot positively state; but to the best of our knowledge, it is not far from $800,000.

There is a small market for the sale of meat, fruits and vegetables; but, in the absence of proper regulations, it is neither cleanly nor commodious. There are no regular bakeries; and consequently, in a country that produces an abundance of excellent wheat, it is almost impossible to procure good bread.

Inns, hotels, or public houses, are unknown. Travelers supplied with letters of

introduction take up their quarters in private houses; those not so fortunate must either hire apartments, or, failing in this, encamp under the trees outside of the city.

The towns belonging to the department of Hermosillo are six in number; of these, Guaymas is the most important.

It is situated on the Gulf of California, on the western coast of Mexico, in latitude 27° 22' north, and longitude 104° 30' west of Cadiz. It is completely sheltered from the sea and winds, and is one of the best harbors upon the Pacific. The entrance runs north and south, and is formed by the island of Pajaros on the east, and the islands of San Vicente, Pitayas and Tierra Firma on the west. There is also another entrance, called Boca Chica, formed by the island of Pajaros, on the south, and the beach of Cochin on the north. The length of the bay is four to five miles. The bottom is muddy, and when vessels remain for some time, it is necessary to sight the an-

chors every fortnight. The depth of water at the island of Pajaros is seven fathoms, which gradually decreases to two, alongside of the mole. This latter, according to the opinion of mariners, is one of the best on the Pacific, excepting that at Callao. The depth of water at the anchorage is three fathoms, and vessels drawing fifteen feet are loaded, discharged and hove down with facility. There are three landing places; but no fortifications, although there are several points well suited to the purpose.

The tides are irregular and uncertain, being influenced by the winds from the gulf. In time of full and new moon, they rise and fall eighteen to twenty inches, and in the autumnal equinox, about four feet.

The harbor abounds in various kinds of delicate fish; and shell-fish are also numerous, comprising the shrimp, crab, lobster, oyster, and muscles of different kinds. The town is situated on the north of the bay, and is surrounded by a range of hills of moder-

ate height, which leave but one single entrance from the land side. There is but one principal street from the entrance to the plaza, the other being short and narrow; the soil is dry and rocky. The cold is not severe, but the north and north-west winds blow with great violence from November until March, and cause much inconvenience. The summer heat is excessive, the thermometer occasionally rising to 104° in the shade, and never falling below 96° from June to September; and when the north wind blows during this season, it is so dry and parching in its effects, that it ruins the finer articles of furniture.

The health of the place is good, the principal disorder being a catarrh, of little importance and of short duration.

Water, for drinking, is drawn from wells sunk on the skirts of the town, on the land side; it is brackish, but very wholesome, especially to those suffering from intestinal disorders.

Guaymas derives its provisions, especially flour and meats, from the interior of the State; San Antonio and Santa Rosa furnish maize, beans, etc., whilst from the Yaqui are produced fowls, sheep, and grain.

The political and judicial administration of Guaymas are entrusted to two Justices of the Peace, a Judge of First Instance, and a Prefect.

The custom house lacks proper offices and storehouses, which deficiency is supplied by hiring private buildings, the cost of which, during the many years that this has been the custom, would have more than sufficed to erect suitable and substantial buildings.

The commerce of Guaymas is very inactive, the importations not exceeding five to seven cargoes in the busiest years. The only article of export in Sonora is flour, and the average annual quantity shipped does not exceed seven or eight thousand "cargas" of twelve arrobas each—equivalent to 11,000 or 12,000 barrels.

CHAPTER VI.

RIVER YAQUI AND ITS SETTLEMENTS.

This river, also called Buenavista, rises in the Sierra Madre Maicova, and runs from east to west, through Babispe, Todos Santos, the pueblos of Soyopa, Honavas, Tenichi, San Antonio, and Comuripa, to the city of Buenavista, where it enters the Yaqui settlements, and finally empties into the Gulf of California, in front of the pueblo of Rahum.

In the time of high water, it is navigable for small vessels; but this has not yet been put in practice. After the rains have ceased it is fordable, though still deep until the droughts in April, May, and June. In Soyopa, Buenavista, and Honavas, there is

plenty of land susceptible of cultivation; but except in the pueblo of Nuris, no steps have been taken to irrigate the soil, and the harvests are uncertain.

During the heavy rains of January, 1853, the river changed its bed, dividing at Sanic, between Rahum and Potun, and leaving its old channel dry; the lower settlements, as far as Belen, were in imminent danger of being overwhelmed; several persons lost their lives, and many cattle were swallowed up.

The Governor, who was at Huirivis, with three hundred men, was forced, with his command, to seek protection from the ruins of the old mission house, the only point that remained above water. Here they were compelled to remain two months, losing all their horses, and suffering acutely from hunger; at the expiration of which time they were relieved by the Indians, who, in one day, constructed a causeway of poles and branches, from Huirivis to Rahum, a distance of three leagues. The river, in

this change of its channel, abandoned the towns of Rahum, Huirivi, and Belen.

The agriculture of all the settlements on the river is confined to the cultivation of beans, maize, lentiles, and a small quantity of wheat. The people dispose of their crops at Guaymas, Baroyéca, and Alamos, and subsist principally upon shell-fish, "zayas," a sweet and succulent root, the "quelite," mescal, wild strawberries, and other fruits. They also eat the iguana, snakes, and squirrels, and many of them are fond of horse-flesh.

These settlements possess excellent salt-pits, which supply all the interior towns, and are considered as the property of the Yaquis. In 1843, General Urea monopolized the salt-pits at the mouth of the river, paying to the Indians four reals per "carga," and delivering it in launches at Guaymas, at four dollars per "carga;" but as it was impossible to prevent the importation of salt from the island of Carmen, this monopoly was withdrawn.

The distance from Cocori to Cochori (places which are about seven leagues east of the coast) is thirty leagues. All of the intermediate land is susceptible of a high degree of cultivation, as the soil is moist. The irrigation produced by one overflow of the river during the year suffices for the production of wheat, maize, beans, lentiles, and various kinds of fruit. The sugar cane flourishes; also cotton, flax, and coffee; but these articles have only been raised by a few persons, by way of experiment. The sheep of these settlements attain the size of a yearling calf, and are so fat that eight dollars' worth of candles has been made from the tallow of one animal; their flesh is most savory and tender.

Beef cattle are also raised in perfection, and their flesh is excellent; but both flocks and herds, formerly so numerous in these parts, have been reduced to an insignificant number. At the end of the last century, when the Yaquis held an established posi-

tion, the mission of Huirivis owned more than 40,000 head of cattle, and many Indians were reputed to be rich, on account of the number of their stock; many of them were said to possess concealed treasures, some of which amounted to three or four large jars of coin.

Their trade with the lower settlements was carried on through Guaymas, and with the upper, through Buenavista, Baroyéca, and Alamos; here they brought their grain and other articles of merchandise.

This race of Indians possesses remarkable natural abilities, and with very little application they soon become proficient in all the mechanical arts. We find among them masons, blacksmiths, carpenters, coppersmiths, makers of fireworks, and skillful players on the harp and violin—all of which they seem to acquire intuitively.

Their character is resolute, and they are daunted by no obstacles in the execution of their plans; and they keep a secret intrusted

to them most religiously, preferring death to the betrayal of their trust.

The Yaqui, with few exceptions, desires nothing more than a sufficiency of food, and a cotton shirt and drawers for himself, and a shawl and petticoat for his wife; while his children are allowed to go naked, with the exception of a cloth about the loins. His nature is gay and joyous, and he is fond of his native dances, in which he excels. His manners and customs being entirely different from those of the whites, he is naturally suspicious; and so positive, that when he supposes he has been deceived, it is almost impossible to persuade him to the contrary.

Some of these Indians, who have been living from childhood among the whites, readily conform to their habits and mode of life. They are generally copper-colored, and well made; the women are of medium height, and corpulent. In some of the settlements the women are exceedingly fair and handsome; these are children of the "Coyotas,"

who are the result of the intercourse between the Yaqui priests and the Indian women.

Their language is distinct, easy of comprehension, and capable of being reduced to grammatical rules. We have seen two works on the Yaqui idiom—one a vocabulary and the other a grammar—which were compiled by the missionaries, under the Spanish rule.

In the year 1740, there was a general revolt of the Yaquis; induced, it is said, by an escaped convict, who persuaded them that the Government intended to deprive them of their lands. Eight or ten thousand Indians took arms, but were met by the Governor, Don Agustin Vindasola, who gave them battle, with five hundred men, and utterly routed them, killing more than 2,000 of their number.

A few days afterwards, they reassembled at the hill of Otancahui, and the battle was renewed; but although they were more numerous and better prepared than on the previous occasion, they were again defeated,

with the loss of 3,000 men. This terrible reverse induced them to sue for peace, which was granted; and Vindasola, after shooting the leaders of the insurrection and restoring tranquility, retired with his troops.

The result of this chastisement was profound peace for eighty-five years, until 1825, when the Yaquis again rose, committing frightful murders in the towns and ranchos, burning houses and completely desolating the country. Since that period, the Yaquis may be said to have lived in a constant state of rebellion, and independent of any government.

In 1826 another outbreak took place, headed by a cunning Indian, called Juan Vanderas, who persuaded his fellows that he was inspired by Our Lady of Guadalupe. In 1832 another occurred, headed by the same Vanderas, who, according to common report, had an understanding with some of the whites. The Yaquis, to the number of one thousand, set out for the settlements of

the Pimas and Opatas, in order to prevail upon them to take part in the revolt. At this time, a company of mounted men—one hundred in number—under the command of Don Leonardo Escalante, a retired officer, left Hermosillo, and their ranks being swelled to three or four hundred by volunteers from other places, they pursued and came up with the rebels at Soyopa, Vanderas being on the other side of the river at San Antonio de la Huerta. A battle ensued, which lasted three hours, when the Indians were routed, leaving the field covered with their dead; among others, Don N. Cacillas, one of their leaders, a man of good family, from Tepic. Vanderas and an Opata, his second in command, were taken prisoners, conducted to the capital, Arispe, and there shot, after having confessed that their object was to exterminate the inhabitants of the entire Department.

It is impossible to give the exact population of the Yaqui towns, as many are par-

tially deserted, the Indians being scattered among the thickets of reeds that line both banks of the river. All efforts of the government to take a correct census of these tribes have been unavailing. In Hermosillo there are over one thousand Yaquis engaged in tilling the soil and in other occupations; about the same number in Horcasitas, Ures, etc., and many others are engaged in gold mining, for which they have a strong predilection. Persons who have resided in their settlements, and officers who have been engaged in the different campaigns against them, state positively that there are not, at present, three thousand warriors in the river settlements.

The customs of the Yaquis are diametrically opposed to our own; from childhood they are addicted to theft, licentiousness, gambling and drunkenness. They shun the society of the whites, although they live near them for the sake of employment, and they have never been observed to manifest

the slightest feeling of generosity or gratitude.

They allow no white persons to live among them, except such as pander to their vices and passions, and even these are regarded with distrust and slain upon the slightest suspicion.

Although some of them understand Spanish, they always use their native tongue in addressing the whites, knowing perfectly well that they are not understood, which seems to afford them much amusement. In their conjugal relations, they are not at all jealous; they frequently exchange wives, and an elopement, on the part of the latter, is regarded with the most philosophical indifference.

Notwithstanding these degrading traits, it is but just to say, that by them is performed nearly all the labor in Sonora—in working the mines, tilling the soil, building houses, etc., and in whatever they undertake, they display rare skill and intelligence.

They are skillful players upon the flute, violin, harp and guitar; they are also firm and persevering in their enterprises, and daring in war.

When the Spanish government first took notice of this tribe, it granted them the privilege of raising tobacco for their own consumption, and it is still cultivated by them, although it is not equal in quality to that used by the whites. The plant is yellowish, and has nearly the strength of our tobacco, without any disagreeable taste; the difference being, that while our tobacco plant has broad leaves, the "macuchi"—as it is called by the Yaquis—has a narrow leaf, and when gathered, is formed into large balls and covered with the husks of maize. Notwithstanding this privilege, their salt pits and their spacious lands, which seem to invite the hand of man to develope their resources, it may be safely said that the Yaquis are the most wretched beings in Sonora. They also possess about thirty leagues of sea

coast, abounding in all kinds of shell-fish, in which they might drive a profitable trade; but addicted as they are to vice, indolence and revolt, for the purpose of robbery and murder, they are of no benefit to themselves or to the State.

They alone, of all the Indians, are skillful pearl-divers; but so great is their love of robbery, that they abandon any occupation, however profitable, for the purpose of stealing cattle and horses from the ranchos in the neighborhood of the river; this they practise even in time of peace.

In the last century, good missionaries established themselves among these Indians, and so long as they were protected by the garrison of Buenavista, and were regularly visited by the commander of that post, they enjoyed perfect safety and tranquility; but this protection having been gradually withdrawn, the Indians rose in 1825, under Juan Vanderas, and committed the most frightful atrocities. After having dispersed a small

body of troops, with the loss of seven men, they murdered Padre Argüelles, curate of Torin, Juan Encinas and several others; they butchered women and children without mercy, and put many of their captives to death under circumstances of the most revolting cruelty.

In the month of June, 1842, upon the eve of the revolution of "Las Gandaras," they murdered the Alcalde of Cocori, who was of their own tribe, and whose only fault was that he performed his duties with fidelity, and refused to connive at their robberies. The same fate overtook their general, Juan Maria Jusacamea, who, from being a rebellious and dangerous Indian, was converted into an enthusiastic and faithful supporter of the government. He also undertook to repress the thieving propensities of his fellow Yaquis, and was assassinated by them in the year 1840.

CHAPTER VII.

RIVER MAYO AND ITS SETTLEMENTS.

This river, like the Yaqui, rises in the Sierra Madre, and waters all the settlements of the Mayos. This tribe is of the same stock as the Yaquis, and is only distinguished from them by its name, which it takes from the river. Their language, with the exception of a few words, their customs, propensities and vices are all the same. In all the outbreaks of the Yaquis, the Mayos have taken an active and prominent part in murders, robberies and burning of ranchos in the department of Alamos; and owing to their depredations, the haciendas of this department do not now possess one-third as many cattle as in former times.

Among the Mayos are found more Indians of fair complexion than among the Yaquis, owing to the more frequent intercourse of the former with the whites at the mines of Alamos, and to their allowing white persons to dwell in their towns. Especially in the settlements of Nabajoa and Santa Cruz there are many whites, and some in Conicari, who occupy themselves in cultivating the lands that are watered by the river. These lands furnish the same fruits as those of the Yaqui, and their products are consumed in the city of Alamos, Varoyeca, and the other white settlements.

The only articles manufactured among the Mayos are "zarapes," of so firm and fine a texture that they are not excelled by the best from Saltillo. In agriculture they are as backward as the Yaquis. There are, however, among them many persons who are well inclined, who have never taken part in any revolt, and who profess friendship for the whites.

Their towns are more numerous than those of the Yaquis, but their population is less.

The most celebrated of all the revolutionary leaders of the Mayos, was Miguel Estevan, noted for his cunning and audacity. He was at one time the chief of a political party among the whites, during a civil war, and under this pretext committed numerous depredations in the white settlements. After peace was restored, he pursued the same career for a long time, causing serious damage to the honest citizens of Alamos, Varoyeca, etc. He was at last defeated by the miners of Varoyeca, under Palamores, and having thus lost his prestige, he sank into obscurity. Finally, he was apprehended and taken to Ures, where instead of suffering the penalty of his crimes, he was allowed to escape by the officer who had him in charge. Of his subsequent career, nothing is known; it is not unlikely that he joined the Apaches.

The Mayo pueblos, reckoning from the Sierra on the east to Conicari on the west,

and thence south to the mouth of the river, are as follows:

Macollagui, in the Sierra, Conicari, Camoa, Tecia, Nabajoa, Cuirimpo, Guitajoa, Echojoa, Santa Cruz and Masiaca.

The following is a list of the settlements on the Yaqui river:

From Buenavista—

To Cocori	8	leagues.
To Bocum	3	"
To Torin	4	"
To Bicam	3	"
To Potam	4	"
To Rahum	1½	"
To Huirivis	2½	"
To Belen	2	"
	28	

CHAPTER VIII.

PRESIDIO OF ALTAR, NOW THE TOWN OF GUADALUPE.

This presidio is the most populous of all; in 1822 it contained 2,645 inhabitants, and since then its population has doubled, owing to the discovery of its mineral wealth. Grain is raised in small quantities, and a variety of fruits, such as pomegranates, figs, grapes, etc.

It is watered by a river that springs from Agua Caliente, but its waters, in the dry season, are insufficient for the purposes of irrigation. It is the capital of its department, which comprises the following pueblos, viz: Altar, the capital, formerly called Santa Gertrudis del Altar; the Pina settlement Oquitoa, which in 1828 contained six

hundred souls; Tabutama, another Pima settlement, which contained about five hundred inhabitants; Cavorca, a settlement of the same tribe, which place, on account of the scarcity of water, is uninhabited except temporarily by a few families—population in 1828, six hundred; the old mining region of Cieneguilla, sixteen leagues to the south, containing a few families, a curate and some Yaqui Indians, in all about five hundred persons; the mining region of Zoñi, twenty to twenty-five leagues to the north; that of Cuitavac, forty leagues to the north-west, on the road to Upper California; its population is so much scattered that it cannot be calculated with certainty—probably about one thousand.

The discovery of mines of gold and silver in the neighborhood of Altar gave a great impetus to its progress, and its population may now be estimated at four or five thousand. It contains several retail shops for the sale of foreign and domestic goods, the pro-

prietors of which depend on the market of Hermosillo, where they purchase partly for cash and partly on credit.

The principal business of the place is raising cattle and horses. There are but few of the inhabitants who are not owners of stock, although they are exposed to the incursions of the Apaches, who persecute them with the greatest tenacity; the neighboring ranchos are exceedingly fertile and abundantly watered, but have frequently been abandoned to the merciless barbarians. The town is situated in a plain; its streets are irregular, the houses of adobe and without architectural beauty. It contains a small church poorly supplied with the sacred utensils, and without chaplain or curate.

A few Papago Indians, at times, reside on the skirts of the town, and are employed by the inhabitants in the manufacture of earthenware and baskets.

The town is garrisoned by about a dozen soldiers, has two justices of the peace, a pre-

fect, and judge of first instance. The extremes of heat and cold prevail, notwithstanding which the climate is healthy, as proved by the longevity of the inhabitants. A certain Contreras reached the age of one hundred and fourteen years; many might be mentioned who lived more than one hundred years, and the ordinary duration of life is from sixty to eighty years.

PRESIDIO OF SANTA CRUZ.

This is one of the most northern presidios of Sonora in the Pimeria Alta; it is situated in a beautiful valley, clothed in verdure during the entire year, in latitude 32° 15′ N. It is watered by a river which takes its rise from a spring to the north of the valley. Its lands are suitable for stock raising and for all kinds of grain, especially wheat, which is produced of excellent quality; it also produces the best red pepper in the State, and its hides are large and much esteemed. To this presidio belong the town of Cocospera,

the rancho of San Lazaro and four others, entirely ruined and depopulated by the Apaches; it has always been particularly exposed to the attacks of these Indians, on account of its proximity to their territory, and its being on their direct road to the interior.

Its distance from Villa de Guadalupe is forty leagues, passing the following places, viz: Ocuca, Santa Ana, Santa Marta, San Lorenzo, Santa Magdalena, San Ignacio, Tenenate, Imuris and San Lazaro. Its climate is not salubrious, and the winters are extremely severe; and when the other pueblos of the Department are suffering from intense heat, heavy clothing is necessary at Santa Cruz. Its population does not exceed five hundred, including soldiers, and its houses and walls are nearly demolished; the only chronic diseases are fevers, owing to the numerous swamps that environ the town.

CHAPTER IX.

PRESIDIO DE BACUACHI.

This presidio is distant from Santa Cruz twenty-seven leagues, by the road through Arispe, and from the city of Mexico, by way of Chihua, six hundred and twelve leagues.

Its garrison is composed of Opatas, whose number has greatly diminished, owing to poverty and the scarcity of the necessaries of life; it is an infantry corps, and formerly distinguished itself in the wars with the Apaches and the revolts of the Yaquis.

The population of the presidio ten years ago was about 2,000, besides the garrison; but it is now reduced to less than one-fourth of this number by emigration to the interior of persons fleeing from the ravages of the Indians.

It was at one time exceedingly rich in cattle, sheep and horses, but all were swept away by the Apaches; this, and the daily assassinations committed in sight of the presidio, induced a general emigration of the terrified inhabitants. Its climate is cool and healthy, epidemics are unknown, and many of the inhabitants reach the age of seventy, eighty and ninety years.

It produces good wheat, but very little of the other cereals is sown, as the early frosts generally destroy the crops before harvest; there are also various wild fruits used for food, and among them the acorn of the evergreen oak, which has a most agreeable flavor.

There are gold mines in the neighborhood, from which, before the invasions of the Apaches, great quantities of the precious metal were extracted of more than twenty-two carats fine; and we have known a small trader, who visited the mines with his wares, to accumulate more than forty marks in a few days.

The church, houses and barracks are in a most ruinous condition; the local government is vested in two justices of the peace, subject to the Sub-Prefect of Arispe.

PRESIDIO OF FRONTERAS.

This presidio is situated in latitude 31° N; before the rising of the Apaches it contained 2,000 inhabitants, but its present population does not exceed five hundred.

The lands in the neighborhood of the presidio produce excellent wheat, maize, peppers and beans; also the most delicious peaches in Sonora, apples and the bergamot pear.

The town of Fronteras contains but one street, at the foot of which runs a creek, whose waters irrigate the neighboring lands. Its distance from Bacuachi is forty leagues; the greater part of the road lies between dense thickets, and travelers are constantly liable to be surprised and murdered by the Apaches, for which reason they always go

armed and travel by night, concealing themselves during the day in thickets or ravines. Since the year 1832, two hundred persons have been killed by the Apaches in the presidio of Fronteras alone.

The climate is cold but healthy; good timber is abundant; also wild animals and birds suitable for the table. The plains are fertile and well watered; the local Government is administered by two justices of the peace.

PRESIDIO OF TUBAC.

This presidio, distant eighteen leagues from Santa Cruz, is garrisoned by thirty men; it contains the pueblo of San José de Tumacacori, the old mission of that name, formerly rich in cattle and horses.

It is situated in a spacious valley, at the foot of a range of low hills, the soil of which is fertile and susceptible of a high degree of cultivation, producing all kinds of fruits; the pastures are excellent, and water for

stock abundant and of the best quality. The climate is salubrious; present population about four hundred.

There is a rancho in this district called "las Calabazas," which, as well as a rich gold mine in its neighborhood, has been abandoned for fear of the Apaches; the presidio is watered by the same river that flows through Santa Cruz.

PRESIDIO OF TUCSON.

This is one of the most northern presidios of the frontier, and contains no white inhabitants; it is garrisoned by a company of cavalry numbering sixty men, and its population, including the garrison, is less than 1,000. Tucson has several times been beseiged by the Indians in bodies from 1,000 to 2,000 warriors; but, although these have succeeded in reaching the walls of the town, they have always been repulsed by the bravery of the troops. The climate is warm,

notwithstanding its situation so far north, and the only prevailing diseases are fevers at the changes of the seasons.

It is watered by the river that passes Santa Cruz, on each side of which is a spacious valley, thirty leagues in length, susceptible of cultivation; it could be irrigated with the greatest facility by canals from the river, and from an abundant spring which lies between the village and the presidio.

The small quantity of land that is tilled produces wheat, corn, beans, lentiles and pulse in great abundance and of excellent quality, and the orchards yield a large supply of quinces, peaches, pears, apples and grapes.

The distance from Tucson to the river Gila is forty leagues, over a smooth road, no hills being encountered until near the banks of the river.

The Indians of the Gila are known as "Pimas Gileños." There is another tribe on the other side of the river, on the road

to Monterey, called the "Cocomaricopas del Tesotal;" these two tribes are very numerous, and their respective languages are different. They live in straw huts, and are united in a number of settlements on both sides of the river. They raise corn, beans, melons and gourds of exquisite flavor and of so enormous a size that two of them have been known to weigh six arrobas—150 pounds.

They also raise cotton, from which they manufacture cloth remarkable for its fine texture and enduring quality; and they are fond of hunting the game that abounds in their country.

There has existed on the Gila, from time immemorial, a white house, the origin of which is unknown, much dilapidated by the wear of time; also, the remains of a large aqueduct and fragments of fine porcelain, all of which seems to prove the existence of a civilized race in these regions at some remote period of antiquity.

The Gilas wage war constantly with the Apaches, and since the Spaniards have also been the bitter foes of the latter tribe, the Gilas have been warm friends of the whites, and treat them with the greatest hospitality when they visit their rancherias. When they take prisoners in war, they release them upon the payment of an adequate ransom in money and clothing.

They frequently visit Guaymas in parties of twenty to forty, commanded by chiefs who speak Spanish fluently, and offer their services to the Government. Their arms are bows and arrows, and some have guns.

They are of medium height, stout, copper-colored and with a profusion of hair, which they take great pains to preserve. They wear a strip of goat skin about the loins, and some have shoes of the same; the greater part of them have no covering for the head. The chiefs alone wear breeches and straw hats ornamented with feathers; the Government lately presented uniforms

to the chiefs, and a quantity of cloth to the common people, at which they expressed great satisfaction.

CHAPTER X.

PRESIDIO OF BABISPE.

This presidio is situated in the north-eastern portion of the Department, on the road to Vizcaya. It was formerly garrisoned by seventy-two Opatas, who are now reduced to thirty. It contains the towns of Guachinera and Baserac, and the haciendas Santa Ana and Loreto; it formerly comprised a number of wealthy ranches, but all have been despoiled by the Apaches.

Babispe possesses excellent grazing lands, well supplied with water, and traversed by the river "Yaqui," commonly called, in this Department, the Rio Grande.

The population does not exceed six hundred, including the garrison and their fami-

lies; they manufacture excellent soap, and leather of good quality. Two leagues east of Guachinera is a rich silver mine, deserted on account of the Apaches.

The Opatas comprising the garrison deserve a place in the history of Sonora, for their daring intrepidity in war. They particularly distinguished themselves in the campaigns against the Apaches, and in the civil wars were staunch defenders of the Government.

The only revolt in which they were ever engaged took place in 1820, for some cause unknown; when, being joined by others of their tribe, making their force three hundred men, they marched to Tonichi, where they defeated Colonel Lomban, at the head of 1,000 troops, having previously routed the command of Captain Lurion, and taken him prisoner. After these successes they proceeded to Arivechi, where they completely annihilated a company of sixty men, from Chihuahua, under the command of Captain

Moreno. After leaving Arivechi, they were surprised by two divisions of troops—one from Chihuahua, commanded by Falco, and the other led by Colonel Antonio Narvona, the two composing a force of over 2,000 men. The Opatas met them with coolness and resolution, and maintained the unequal contest in the open plain for more than four hours, when they retreated into the church of Arivechi, where they defended themselves until their last cartridge was expended. This battle, unparalleled in the annals of Sonora, lasted two days and one night.

Babispe is six leagues from the boundary line of Chihuahua; forty leagues from Arispe; thirty from Tucson, and forty-eight from Tubac.

PRESIDIO OF SAN CARLOS DE BUENAVISTA.

This presidio is in the south of the Department, on the main road to the city of Alamos; it is distant from Arispe one hundred leagues, by the way of Hermosillo, and

eighty-five leagues by the road of Matapé. It is situated upon a small hill of naked rock, for which reason the summer heats are intolerable; and were it not for the Rio Grande, which laves the eastern base of the hill, affording frequent and refreshing baths to the inhabitants, the place would be uninhabitable during the hot months.

Notwithstanding its importance as a military position, forming a barrier against the encroachments of the Yaquis and Mayos, it, like the other presidios, has been neglected and suffered to decay.

Its garrison, since 1817, when the presidio began to decline, has been decreasing, and now comprises but one-fourth of its proper force; the soldiers, too, are poorly equipped and seldom paid.

Buenavista deserves to be a place of importance, both on account of its commanding position with respect to the Yaquis and Mayos, and because it is capable of great progress in all matters that are conducive

to the prosperity of its inhabitants. It possesses fertile lands, that might easily be irrigated, on both sides of the river; and as the river is navigable during the greater part of the year, timber, grain, and other productions of the country could be easily transported to Guaymas.

In the neighborhood of the presidio, there is no lack of mines of gold and silver. The pueblos of Cumuripa, the place called Cendraditas, and San Francisco de Borja, now deserted on account of the civil wars, contain mines of both metals, which, when worked, yielded abundantly.

It also possesses excellent grazing lands; most of the stock, however, has been stolen by the Yaquis, who have carried off as many as five hundred cattle on one single occasion. At one time, Don José Otero, a citizen of Buenavista, was compelled to fly to Alamos, leaving his three ranches to the mercy of the Indians, who plundered them of stock to the value of $30,000.

The river which passes through the Yaqui settlements is the largest in the Department; it is only fordable during the dryest season, and is at all times navigable by large canoes. Its current is rapid at Buenavista and many other points; and it contains an abundance of fine fish.

The climate of Buenavista, in spite of the excessive heat, is healthy—the cold moderate, and its water very superior.

In the time of its greatest prosperity, when its garrison was complete, and it was not harassed by revolutions and civil wars, its population amounted to 3,000, including the garrison and the rancheros. Its barracks are now nearly in ruins, and the old chapel, although rebuilt seven years since, is small and scantily supplied with the sacred articles. Most of the time the inhabitants are without a curate or chaplain, unless supplied from the town of Cocori.

A most profitable business for this place would be the transportation of ores to Guay-

mas, where they could be shipped in foreign vessels as ballast. Along the river, above Buenavista, are hundreds of veins of ore of gold and silver—not containing a large proportion of the precious metals, but very abundant; and immense quantities can be extracted at a comparatively trifling expense. In many places, indeed, in the neighborhood of the river, large quantities of ore are scattered about on the surface. Don Ignacio Zuñiga entertained the idea of this project, and obtained a special privilege in relation thereto; but as he died before commencing the enterprise, it was never carried into effect.

In closing this sad record of the presidios, we may remark, that the sufferings of the inhabitants, and the fortitude with which they endured them, are almost unexampled in history.

Hundreds of families, reduced to beggary, have been driven from their homes, after witnessing the slaughter of parents, wives,

and children, by the ferocious barbarians; and not a month has passed, during the last four years, without the plains of the north being bathed in Sonorian blood. In such a state of things, it is the imperative duty of the Supreme Government either to reëstablish the presidios on their former basis, or if this cannot be done, to offer such inducements as would secure the immigration of industrious foreigners, who would colonize those regions that are now deserted, and would, in time, form an impassable barrier against the cruel and desolating incursions of the Apaches.

CHAPTER XI.

CERIS AND THE ISLAND OF TIBURON.

THE Ceris, prior to the invasion of the "Cimarrones" — Pimas and Apaches — in 1779, were located at a pueblo called El Populo, one league east of Horcasitas. In 1789, the few families that survived the war were removed to the pueblo of Ceris, called San Pedro de la Conquista. In 1780, the first regular troops—called "migueletes"—arrived in Sonora, under the command of Col. Elisondo. These put down the Cimarrones by force of arms; and as the greater part of the Ceris took part in the insurrection, they were nearly exterminated in the bloody battles that ensued. Notwithstanding this, the remnant of the Ceris retained

their rebellious propensities; and the insignificance of their numbers not permitting an open revolt, they amused themselves by plundering the ranchos on the coast of Tiburon, and by murdering muleteers and travelers on the highways. They seem to have taken advantage of every occasion when the troops were engaged in quelling the outbreaks of the Yaquis and Opatas, not reflecting that upon the reëstablishment of peace they were certain of being chastised in their turn.

At length complaints against them became so numerous that an expedition, comprising a schooner and two launches, having on board two hundred and twenty infantry and thirty cavalry, was sent to the island of Tiburon, under command of Col. Andrade. After thoroughly scouring the island, Andrade returned, leaving a garrison of twenty-five men, and bringing two hundred prisoners, men, women and children, of which number but thirty were warriors. These un-

fortunate captives were distributed among the inhabitants of the city as servants. Most of these, unable to endure the confinement and irksome labor, made their escape to their old haunts within two months. Not a single Ceri was left upon the island. Sixteen families, comprising thirty-four warriors, were absent from it when the troops landed; and these are supposed to be the ones who afterwards committed depredations in the neighborhood of Guaymas and the ranchos on the coast.

The officers and soldiers of the expedition described the island as being rocky and barren, with but three or four watering places; it being uncertain whether the water was permanent or not during the dry season. Neither fruits, timber nor wild animals were found, the Ceris living upon fish, sacates and certain shrubs upon the coast, as well as the flesh of horses and goats. The exhalations from their bodies emit a most intolerable stench, similar to that of a

putrid carcass, and it is impossible to remain long in their company.

The road from Hermosillo to the embarcadero is level and unobstructed. In the dry season it is necessary for the traveler to carry water with him.

Of all the Indian tribes in Sonora, the Ceris are the most rude and uncultivated. Their morals are corrupt to the last degree. They are excessively addicted to drunkenness, filthy in their habits, and bitterly hostile to the whites. Under the Spanish dominion they were settled at the pueblo of San Pedro de la Conquista, and lands assigned to them for their support; but such was their indolence that they would perform no labor, except to procure the means of gratifying their fondness for ardent spirits.

Their language is guttural and difficult to acquire; and although the inhabitants of Hermosillo have frequent intercourse with the Indians, very few, if any, can converse with them in their own tongue. Their dress

is either of the skins of the pelican or a coarse blanket wrapped around the waist; some wear nothing but a strip of cloth about the loins, and none of them wear shoes. They paint their faces in black stripes, and many pierce the cartilage of the nose and append to it pieces of a green stone resembling glass.

The women perform the greater part of the labor, gathering in the crops, fishing, and selling earthenware and other articles. They are as completely given up to intemperance as their lords and masters. The men are tall, erect and stout generally, having large, black and brilliant eyes; the women are copper colored and not ill looking. The dress of these is the pelican's skin with the feathers, which covers the form from the waist down; the upper part of the body is uncovered. When the Ceri women visit Hermosillo, the ladies of that city, out of charity and a regard to decency, bestow upon them old gowns and other articles of

dress. These are worn until they drop to pieces, the Ceris having no idea of washing their garments.

The Ceris were never a numerous tribe. At one time they amounted to about 2,000 persons; but their present number, including two hundred and fifty-nine on the island of Tiburon, does not exceed five hundred, about eighty of whom may be warriors. Two of the tribe have been celebrated for their obstinate resistance to the government. One was called Ambrosio Salgado and the other Alonzo; both chiefs, who, after the partial destruction and subjection of their tribe, wandered about the country committing numerous robberies and murders; their extreme cunning saving them from being apprehended, until Ambrosio was finally treacherously assassinated by a boy, and Alonzo surprised by a party of soldiers.

These Indians have but one wife each, but latitude is allowed in their conjugal relations. They have no religion beyond the

worship of the moon, which they adore as a divinity. Upon the appearance of the new moon they prostrate themselves upon the earth, kissing the ground, beating their breasts and making innumerable genuflections.

PUEBLO OF CERIS, OR SAN PEDRO DE LA CONQUISTA.

The following statistics relative to this pueblo are taken from the report of its municipal secretary, Don Manuel Cabrera, in the year 1844.

This town is situated to the south of Hermosillo, on the river Sonora. Its extent, from one church to the other, is about one quarter of a league, and its distance from the Gulf of California twenty-eight to thirty leagues.

The inhabitants are generally engaged in agriculture, raising annually about 15,000 fanegas of different kinds of grain. Cattle and horses are abundant, but no mines

worthy of mention exist in this vicinity. The only trees found in the neighborhood are the iron-wood, which is incorruptible; the mesquite, which lasts one hundred years without decaying; the huayacan, a very solid and compact wood; and the huevito, the grain of which is superior to that of the finest foreign timber. Among medicinal herbs, the "confituria" is the most valuable, as it is said to be a specific for hydrophobia.

The agricultural products are various species of wheat and Indian corn, beans of different sizes and colors, pulse, lentiles, Chile peppers, sweet potatoes, garlic, onions, etc. Garden vegetables are not abundant; excellent lettuce, cabbages, cauliflowers and radishes are raised, but their cultivation is neglected. Figs are raised in great profusion; the other fruits are grapes, peaches, apricots, pomegranates, quinces, sweet and sour oranges, limes, citrons and guavas. Of the different beans, the "tamari" is the best; its color is white, its taste peculiar and not

agreeable to persons unaccustomed to it, but it is so easy of digestion that physicians allow it as an article of diet in almost all diseases.

Wheat is generally sown from October to December—sometimes as late as January; it makes its appearance above the ground in eight or ten days, and is harvested from May to July. Two crops of beans are raised annually; the first is planted in February or March, and the second in July and August.

Two crops of maize are also sometimes produced, the most abundant being the crop gathered in November and December; that gathered in July or August is generally of inferior quality, and serves as food for servants. Grain, flour and other products of this pueblo are transported to Guaymas and other places, in wagons drawn by mules and oxen.

There are several grist mills turned by water power; one of them grinds from twenty-five to thirty "cargas" of flour in twenty-

four hours, the others about half that quantity each. The cultivation of sugar cane has been commenced and is gradually increasing.

This pueblo has but one small chapel, no benevolent institutions and no primary school; the mechanical arts are almost unknown; there are one or two carpenters and blacksmiths, who only make a few necessary articles, such as axes, adzes, bits, spurs, etc.

The climate is agreeable and healthy; the population, according to the last census, was 3,000, including fifteen families of Ceris; the municipal government is vested in two justices of the peace, subject to the tribunal of first instance at Hermosillo.

CHAPTER XII.

OPATA SETTLEMENTS.

Ever since the conquest of the country, the Opata tribe has manifested a frank and docile disposition and friendly feelings towards the whites, and has given unequivocal proofs of its love of peace and tranquility.

Three companies of infantry were raised among these Indians, which for many years performed prodigies of valor in the campaigns against the Apaches; it frequently happening that a single Opata successfully encountered eight or ten Apaches. These Indians have never revolted except in the year 1820, when, as has already been stated, they displayed a heroism worthy of commemoration.

The Opatas that now exist in Sonora are engaged in cultivating the soil, though on a small scale; they are not drunkards like the Yaquis, Ceris and Pimas, and but few of them are given to theft. They are excellent as escorts and guards, and are in great demand for this purpose; as they never desert their charge, however imminent the danger, and their powers of endurance are such that they have been known to perform journeys of forty to fifty leagues in twenty-four hours.

They are also entitled to the credit of being the most moral and least superstitious of all the tribes. Their manners and customs are similar to those of the whites; the men generally wear shirts, white drawers, pantaloons and shoes of untanned hide, and the women gowns and petticoats, and "rebozos" of ordinary quality.

Their speech is forcible and eloquent; their language contains many Spanish words and is easily acquired. Their arms were

originally the bow and arrow, but since their establishment at the presidios Bacuachi, Tubac and Babispe, they have been taught the use of fire-arms, and are skillful marksmen; at present the entire tribe use no weapons but the gun and lance.

They are not tall, but are of athletic frames; wary and of unequalled endurance; the women are generally copper-colored, but some are quite fair, having a mixture of Spanish blood.

The Opatas are capable of a high degree of education, and are just and humane in their dealings. In the revolt of 1820, they treated their prisoners of war with the courtesy and consideration usual among enlightened nations, and they put none to death without first trying them before a council of war, and afterwards sending for Catholic priests to administer the last sacrament to the condemned; many of their prisoners were released without ransom.

It is also worthy of mention, that in all

the civil wars among the whites, the Opatas have invariably espoused the cause of the government, except in one or two instances when they were deceived, and believed that they were defending a just cause.

PAPAGOS.

This tribe is numerous, and is situated in the western part of the State to the north of the river Gila; they are from the same stock as the Pimas Altos of Cavorca, Oquitoa, Tubutama, etc.

The Papagos have not like the Pimas been organized in pueblos, but they have generally been obedient to the government, and those of the Gila, who are superior to the western tribes, have assisted the presidios in their campaigning against the Apaches.

The western Papagos revolted in 1840, but were reduced in one brief and decisive campaign; previous to this, they caused great annoyance to the inhabitants of Altar by frequent robberies of horses and cattle.

They subsist principally upon wild fruits, especially the "pitaya," a fruit of exquisite flavor. They move from place to place where this is abundant, and remain until it is exhausted; they make from it a delicious syrup, which they take to the settlements in earthen jars for sale.

In the winter they resort to the settlements of La Pimeria, to dispose of the skins of wild animals and baskets made of the twigs of a shrub called "Mora." One of their articles of food is a delicate species of camote, called "Sayas," which is cultivated and highly appreciated among the whites.

The Papagos of the river Gila are the best and most industrious; they have never faltered in their allegiance to the Government, or taken part in any revolt. Their habitations are fixed and permanent, and they raise wheat, corn, beans, pulse, and lentiles sufficient for their own consumption. They also raise cotton, and manufacture a

stout cloth, which, when doubled, serves them for winter garments. They dwell in small houses of adobe. Theft is rare among them, and they are faithful and hospitable to strangers who visit their settlements.

Both the Gilas and the Western Papagos repudiate polygamy; and both adore the sun, setting aside one day of each week as a festival in honor of their deity. Their language differs but little from that of the Pimas. The Gilas cultivate fruit trees, and possess orchards, peach, pomegranate, quince trees, etc. Both sexes are of lofty stature, of an agreeable appearance, and have a profusion of hair. The rancherias of the western tribes are supposed to be about thirty in number; this, however, cannot be known with any certainty, on account of the migratory character of their inhabitants. Those of the Gilas are more populous, though fewer in number; and there is no doubt that the Papagos outnumber the Pimas and Opatas combined. The Cocomaripas are another

numerous tribe of Papagos, near the confluence of the Gila and the Colorado, bordering upon the Yumas, and other wandering tribes.

CHAPTER XIII.

MINES IN SONORA.

Various works have been written concerning the mines of Sonora, and most of them agree as to the extent, immense richness, and the causes of their decadence. None of these writers, however, whether from want of time or reliable data, have treated the subject with the attention that it merits. The statements which follow may be relied upon as accurate, being based upon authentic information from the owners and directors of mines, and careful personal observation.

We may safely say that the mines of Sonora are almost unknown in the other States of the Republic, and even in the metropolis; it is known, indeed, that such a country as

Sonora exists, and that it is rich in minerals; but this knowledge is about as definite as that generally possessed with regard to Siberia and Southern Africa—derived from the vague accounts that we have read of those countries. This general ignorance, and consequent indifference, together with the lack of the protection and assistance of the Government, have caused a sad decay of our mining interests, and they now retain but a shadow of their former prosperity.

Up to the year 1810, the silver mining establishments continued in a flourishing condition. Quicksilver was then supplied by the respective Territorial deputations to the registered miners, upon a credit of six months, upon their personal security, at a price that never exceeded sixty dollars, and frequently fell to fifty-seven dollars per quintal.

"Gambucinos," viz: those miners who, without capital or assistance, worked either in abandoned mines or in those too poor to

tempt capital, were of great benefit to the community; since, being numerous, the aggregate of their labors amounted to a considerable sum. But when the price of quicksilver rose to one hundred dollars, and finally to one hundred and seventy dollars per quintal, a general decline of the mining interests was the result. The gambucinos, among others, were forced to abandon their labors, and this materially impeded the discovery of new mines. Many of them turned their attention to gold mining, which does not require so large a consumption of quicksilver, and made important discoveries of this metal, as we shall hereafter relate.

The mines in Sonora have been worked from time immemorial, as proved by the number of excavations discovered by the first settlers after the conquest, and of which we have no more authentic information than that derived from tradition. On the Cerro Prieto, between the rancho de la Palura and la Cara Pintada, is an old mine called Taras-

ca, that has not been worked for more than one hundred years, and that was, according to tradition, exceedingly rich. In the same Sierra are other old mines, in the neighborhood of which the vestiges of buildings are still visible; and we might cite hundreds of others of the same class.

Among the mines of San José de Gracia there is one celebrated for its richness, which was worked in 1809–10 by a Catalonian Spaniard, named Juan José Carumina. When abandoned by the original discoverer it was full of water. Carumina succeeded in clearing it for two or three hours, and took out a lump of ore weighing three arrobas (75 pounds) which yielded fourteen marks (112 ozs.) of pure silver. Unfortunately, at this time he had the misfortune to break his baling apparatus, and the water rushed in so rapidly as to refill the mine in six or seven hours. Carumina, having expended all of his capital and contracted several debts, was compelled to abandon the un-

dertaking, and repaired to Chihuahua. A company afterwards attempted to work the mine; but after having expended a considerable sum, they abandoned it on account of a fatal accident to one of the workmen.

Most of these old mines, according to tradition, were exceedingly rich. Some of the old inhabitants of San José de Gracia, in speaking of the mine of Carumina, testify that the vein in many places was of virgin silver, and that in others the ore yielded fifty per cent. of pure silver; also, that there was a stratum of red earth that yielded great quantities of gold—they having frequently witnessed the extraction of two and three hundred marks on one single occasion. The depth of this mine exceeds one hundred varas, and those of San Juan de Sonora are said to be equally deep. It is by no means surprising that these mines should have been abandoned by their original proprietors, considering their limited knowledge of mineralogy, and the insufficiency of their

means to enable them to overcome serious obstacles.

In the work entitled "Apostolic Labors of the Society of Jesus," published by one of the members of that order, is the following statement: "In the year 1769 a region of virgin silver was discovered on the frontier of the Apaches, at the place called Arizona, on a mountain ridge about half a league in extent. The discovery was made by a Yaqui Indian, who revealed it to a trader, and the latter made it public. The news of such surprising wealth attracted a multitude to the spot. At a depth of a few varas, masses of pure silver were found, of a globular form, and of one or two arrobas in weight. Several pieces were taken out weighing upwards of twenty arrobas; and one found by a person from Guadalajara weighed one hundred and forty arrobas. Many persons amassed large sums, whilst others found nothing."

This discovery is mentioned, not only in

the work referred to, but in "Los Ocios Espanñoles," and in documents existing in the archives of the missions of Pimeria Alta. Latterly, in the year 1817, Dionisio Robles, an inhabitant of the town of Rayon, fitted out an expedition of two hundred men, and proceeded to Arizona for the purpose of exploring this mine. They examined the spot, making several excavations; but although indications of virgin silver were plentiful, they found but a few grains and one small lump, weighing five marks—seven and one-fourth ounces. As, however, they remained in that region but eight days, when they were compelled to return on account of the Apaches, their want of success is not to be wondered at; and from the previous statements there can be no doubt of the existence of enormous deposits of silver in Arizona.

History and tradition agree as to the discovery of this mine and its subsequent abandonment. They both state that in the year of the discovery—1769—the military

commander of the presidio of Altar seized the larger masses of silver as being the property of the crown; that the parties interested protested against this, and not obtaining redress, appealed to the audience chamber of Guadalajara, which referred the matter to the court of Madrid. At the end of seven years the king declared that the silver pertained to his royal patrimony, and that the mine should be worked for his benefit. This decree, together with the attacks of the hostile Indians, caused the abandonment of the mine, which has continued to the present day. The members of the expedition of Robles unanimously agreed that the entire region was rich in minerals, and that to the east of the scene of their explorations lay a mountain range containing numerous veins of gold and silver, crossing each other in all directions. Don Teodoro Salazar, a man of veracity and great practical experience in mining, confirms this statement; and adds that the earth seems to

invite the hand of man to develope the enormous mineral wealth contained in its bosom.

In treating of the mines of Sonora, we shall confine ourselves to the period since the year 1776, at which time the establishment of a "commandancia general" in the interior provinces of the western state caused an increase of population, and a corresponding activity in mining operations.

The mineral region of the city of Alamos, discovered more than one hundred and fifty years ago, has been constantly worked up to the present time. Its numerous mines, especially "La Quintera," in the Aduana, and the "Europita," in Promontorio, have yielded such immense quantities of silver as to induce Gamboa, in his "Treatise on Mining," to remark that the revenues from Alamos exceeded those from all the rest of the kingdom. In the year when the scarcity of quicksilver commenced to be felt, eighty-four mines were worked to advantage.

From 1790 to 1800, heavy remittances of silver were made from Alamos to the city of Mexico, under the charge of Juan Alvarez, the principal conductor. One of these remittances, in 1799, according to the personal observation of the author, exceeded sixteen hundred bars, and it must be borne in mind that there were other conductors besides Alvarez, though the quantity transported by them was not so great, and that other remittances were made to Chihuahua and Rosario. Large quantities of gold were also remitted, partly in dust and partly in bars; in 1807, a Catalonian, Pablo Trilles by name, remitted on his own account 1,207 marks of gold, all taken from the mine of San Francisco; this was also witnessed by the author.

In 1799, the first discovery of gold in the western part of the State was made at San Ildefonso de la Cieneguilla, of which many incorrect accounts have been published. This discovery was accidental and occurred as follows:

A company of soldiers from Altar, on their way to chastise the Ceris, having encamped in that neighborhood, one of their number, who was strolling about one hundred yards from the camp, observed that the bed of a small ditch formed by the rains was of a yellowish color, and upon further examination, he collected a number of pieces of gold from the size of a lentile to that of a bean. He reported this to the commander of the detachment, who immediately ordered a careful examination of the surrounding country; the result being the discovery of gold in all parts, in greater or less quantity.

The gold lay upon the surface, scattered about like grains of corn. The gambucinos followed its direction to the west to the distance of two or three leagues, where they encountered a natural phenomenon. The beds of all the ravines, within a circumference of more than four leagues, were covered with particles of gold — hundreds of

these particles weighing from one to twenty-seven marks, and presenting the appearance of having passed through a furnace. After the surface gold was exhausted, shafts were sunk and tunnels run through a vein of calcareous stone in some places, and in others through a stratum of red stone, both of which contained gold, and from which large quantities were extracted. A certain Covarrubias took out more than $100,000.

The mine continued to yield in this manner for about eight years, and after that period, although its production was less, the Yaqui gambucinos worked it to great advantage. The mine was actively worked until 1803, when a second mine was discovered, called San Francisco, seven leagues from the first to the east of Cieneguilla.

This was discovered October 4th, 1803, by Teodoro Salazar, who, with four or five workmen, was journeying to a small range of hills in that neighborhood, in search of a mine of which he had received notices.

When within a short distance of the hills, he was obliged to halt in a ravine for the purpose of arranging his loads, and while the servants were thus occupied, he took a handful of sand from the ground, and upon blowing it discovered particles of gold. He immediately encamped, and having in four or five days satisfied himself of the value of his discovery, he returned to the settlements with his trains, their intention being to conceal the fact from the public, and to return alone to the spot with provisions and mining implements. All their precautions, however, proved unavailing; they were followed and discovered in the act of extracting the precious metal, and in eight days the entire population of Cieneguilla and the neighboring places, rushed to the spot.

This mine proved extremely rich; the gold being scattered about on the surface in great abundance, especially in the ravines. In the ravine called San Migueleña, the gold was so abundant that three, four, and even five

marks were often collected in five minutes, the grains being of the size of a bean.

During the year, from fifteen to twenty thousand persons from all parts of the State, and from Chihuahua, Durango and Sinaloa, assembled at this place. The mine was worked with activity until the year 1810, when certain arbitrary proceedings of the Governor disgusted the miners, and induced numbers of them to leave. Nevertheless, for many years the quantity of gold extracted was respectable, and large lumps were occasionally discovered; one, found by a Yaqui, weighed one hundred ounces, and the largest of which we have accounts weighed twenty-eight marks.

Some of these particles of gold were so singular in their form as to merit particular attention. One bore a strong resemblance to the images of our Lady of Guadalupe; some resembled the human body, or portions thereof; and one thin plate was as smooth and brilliant as if burnished by the hand of

a goldsmith. In portions of this mineral region, nearest to the Sierra, much of the gold was mixed with white quartz, which gave birth to the idea, that the gold had its origin in rich veins of quartz in the bosom of the Sierra; and this opinion was afterwards verified by the discovery of a famous mine in the heart of the mountains. The first discoverers were some Yaqui Indians, who labored secretly for several months; it then passed to a gambucino woman called La Jú, and being abandoned by her, was worked by Don Teodoro Salazar.

It is not known how much gold was taken out of this mine by the Yaquis, but they were observed by the traders to have large quantities in their possession. Salazar denounced the mine, established proper works, and after laboring some time without remuneration, struck a pocket of gold which paid all of his expenses and left him a large surplus. His custom was to send up in sacks from the bottom of the mine to the surface,

the virgin gold, quartz, and earth supposed to contain gold, all mixed together, whence it was conveyed to his house. Thus no other person could form even an approximate estimate of the yield of the mine, though it was known to be very rich; and although it is now abandoned and full of water, it would richly repay any person who would reclaim it. There is another gold mine one league from San Francisco, not so rich as the former, but yielding much gold twenty-two and twenty-three carats fine.

Also to the south, in the Sierra, veins of gold were found, which were worked by persons who had their establishments in the creek of San Blas; but in a few months the waters of the creek failed and put a stop to the operations. From the personal observation of the author, and information derived from persons well acquainted with the facts, it may safely be said that the average annual yield of the mine of San Francisco, in the time of its prosperity, was from four to

five millions of dollars. Quitovac, San Antonio, Sonoita, El Zoñe, La Basura, San Perfecto, Las Palomas, El Alamo, El Muerto and Vado Seco, are gold mines discovered from 1834 to 1844, of which we will speak more fully hereafter.

Among the old mines, we may mention those of Cajon, six leagues from San Francisco and twelve from Cieneguilla, most of them of gold; and those of the hacienda of Santa Rosa, near Cajon, which yielded great quantities of silver in 1798, 1799, 1800 and 1802. Don Jacinto del Pino, who worked one of these mines, presented the author, when a child newly baptised, with four arrobas of selected ore, which yielded sixty-two marks of pure silver. The average of the proportion of the best ores was six, eight and twelve marks to the arroba, and of the poorer, two to four marks.

There was a scarcity of ore in the Santa Rosa mines on account of the narrowness of the veins, and some of them were so hard

that much powder was required for working them.

All parts of this mountain are impregnated with veins, which cross each other in every direction; and in fact, we may safely say that the entire Sierra is one vast bed of precious minerals.

It is rarely the case in these regions that nature is so prodigal in her favors as to confer, at once, the precious metals and that which is necessary for extracting them; thus, in the mines of San Francisco so rich in gold, water is extremely scarce, being brought from the river Arituava, seven leagues distant, and sold at three or four reals per barrel, and in the dry season at one dollar. There being no timber fit for building, the houses are framed of a green wood, which is very frail, and the walls are of upright poles filled in with clay. If the waters of the river were conducted to the placer, or if artesian wells were sunk and reservoirs formed, so as to wash the im-

mense deposits of earth that contain the fine gold, it is probable that the yield would equal, if not exceed, that of former times. During the rains, which are generally of brief duration in these regions, lagoons or ponds are formed; but as the soil is sandy, these last but a few days. The gold mines near San Antonio de la Huerta were particularly favored, being in the immediate neighborhood of the Rio Grande. These mines are said to have been rich, and the gold was found in coarse grains; the largest ever found weighed forty marks.

The gold mines of the presidio of Bacuachi are celebrated in the State, as well as those at the copper mines of Cananea. The gold is coarse, and pieces have been found weighing twenty-five marks. These mines might be made to yield abundantly, but those who work them are in constant danger of being cut off by the savages.

The mines of Jotahiqui, in the northern part of Pimeria Alta, are doubtless as rich

as those of Cieneguilla and San Francisco; these were discovered in 1818, and had been worked but a few days, when the Apaches murdered the proprietor and several of the workmen; for which reason the place was abandoned.

The mines of Vado Seco, to the north of the pueblo of San Ignacio, on the road to Tucson, were abandoned for the same cause, after having been worked but a short time.

In the last century was discovered the famous placer Sobia, ont he main road to the city of Alamos, half way between that place and Varoycea. This mining settlement is now reduced to a single rancho, although mines of gold were discovered after the surface deposits were exhausted.

The placers and mines of gold at Aigame, eighteen leagues to the south of Hermosillo, yielded extraordinary quantities of the precious metal. The "Prietas," "Verdes," and others of the richest mines were abandoned as soon as they commenced to fill with

water. The gambucinos remained for some time afterwards, working the abandoned mines and causing great damage to them, as their labors were conducted without regularity or proper precautions.

In the mineral regon of Mulatos, in the eastern part of the State, at the entrance of the Sierra and seventy leagues from Hermosillo, two gold mines were found, from which were taken several thousand marks of metal, of twenty-four carats fine.

Besides the mines above mentioned, which are now abandoned, others have been discovered, some of which are at present occasionally worked.

CHAPTER XIV.

MINES THAT ARE WORKED AT THE PRESENT DAY.

The mineral region of San Javier, thirty-five leagues east of Hermosillo, and in the neighborhood of San Antonio de la Huerta, was celebrated in the middle of the last century for its numerous silver mines, the most noted of them being Naguila, Las Animas, Los Afuerenos and La Grande; these yielded abundantly, as shown by the enormous quantities of silver remitted to the city of Mexico.

La Naguila is situated on the highest hill in this region, in sight of the main road; its ores were formerly abundant, and their "ley" (proportion of silver) ten marks to the "carga;" it however filled with water, and

although an attempt was made to work it, it was abandoned upon encountering a certain kind of rock called "caballo."

Las Animas is also one of the old mines, and is now choked with earth; the "ley" of its ores was four or five marks to four arrobas; its vein is narrow but contains an abundance of ferruginous ore, which, though rejected by the miners in former times, yields three to four marks of silver to the "carga." The ores "de azogue" (reducible by quicksilver) are also abundant, and of about the same "ley."

In Los Afuernos the vein is half a vara in breadth, and was profitably worked by a certain Castillo. The mines of La Grande were equally rich with the others, and a person named Esquer has undertaken the task of reöpening them.

At San Javier was established the second territorial mining deputation; and there was distributed quicksilver to all the matriculated miners of the province of Upper Sonora.

The mines of this settlement are worked at the present day, but not with activity, as they are principally in the hands of the gambucinos, who labor without method or assistance; nevertheless, the annual yield of silver is considerable, most of it being "de fuego" (reducible by fire). In every direction may be observed veins of metal unexplored, with the exception of a few superficial excavations.

The mine of Subiate, eleven leagues to the south of Hermosillo, was discovered in the year 1813. Its first owners not being able to pay their expenses, sold it to two persons called Monge and Muñoz, who, by increasing the number of workmen and carrying on their operations in accordance with the mining regulations, derived a handsome profit from a mine hitherto worthless. Muñoz, having acquired sufficient wealth, sold his interest to Francisco Montevideo, who continued the operations in company with Monge until the death of the latter, who

left a large fortune; Montevideo then became sole owner of the mine and has worked it up to the present time. Its average "ley" does not exceed five to six marks to three "cargas," but occasionally ores are found which yield two to three marks to the "arroba" (twenty-five pounds). At present, the water flows into it, to the serious prejudice of the owner, whose sole profits, for some time past, have been derived from furnishing supplies to his workmen.

The mining region of Varoyeca was discovered in 1792. Its first mine, four leagues to the south on the road to Alamos, yielded almost fabulous quantities of silver, and was first worked for some years by the padre Valdés. The fame of its wealth attracted a large number of persons from other parts of Sonora and from abroad, and many traders amassed large fortunes by supplying this multitude with provisions. The padre above mentioned is said to have possessed so charitable and benevolent a disposition, that he

gave to all comers an opportunity of working in the mine, so that while the yield was abundant, there was scarcely a poor person to be found in Varoyeca. The fame of this worthy ecclesiastic has been handed down to the present generation, and a testimonial of the affectionate regard entertained for him still exists in the shape of a number of sacred articles of pure silver presented to the parish church; their value being not less than $30,000.

This mine, after passing through various hands, and suffering from the attacks of the gambucinos, is now worked by Don Salvador, who, at an expense of some thousands of dollars, has cleared the works that were choked with earth and is now extracting good ores.

All the hills that environ Varoyeca are of mineral formation; and the fact of their not being explored at present, is owing to the high price of quicksilver and the scarcity of laborers.

The mining region of the city of Alamos, which comprises the Promontorio, three leagues, and the Aduana, one league, to the west, and the face of the small mountain range on the south, contains eight leagues of pure mines, most of them on the slopes and in the gorges of the said sierra. In every direction are seen old and new mines, so that it may be said, without exaggeration, that there is not a hand's breadth of the soil which does not contain some vein of precious metal.

Among the richest and most ancient mines, that of Quintera holds the first position, several millions having been taken from it since its discovery, one hundred years ago. It is of immense depth—vulgar rumor states it at two miles. It has been abandoned by its owners, and is now worked by gambucinos.

The mine called Balvaneda, situated in Promontorio, belongs to José Maria Almada. It was formerly very rich, and now yields

handsomely, though the water flowing into it causes trouble and expense.

La Europita, also in Promontorio, is now worked by Don Manuel Salido.

La Cotera, in the Aduana, is now worked by Don Bartolo Almada.

Santo Domingo, also in the Aduana, is worked by Don Ignacio and Don Saturnino Almadas. The mine of Nacacherán, in the same, is worked by Don Pedro Perron; La Libertad, by Don Manuel de la Brena.

That of Minas Nuevas is worked by Don Pedro Garces and the legatee of the late Don José Maria Moreno. This mine was discovered in the beginning of the present century, and is situated two leagues to the west of Alamos.

There are many other mines in this region that are abandoned on account of the high price of quicksilver; nevertheless, its yield of silver is greater than that of any other mining region in the State, and all the capitalists in the city of Alamos are indebted

to the mines for their fortunes. There are also many old mines of whose origin we know nothing, except from tradition. Of these, we will only mention Piedras Verdes, five leagues to the north of Alamos; Narvares, in the Promontorio, which is full of water; Calesa, in the Aduana, and "Los Cangrejos."

There are three large haciendas for the reduction of metals in the city of Alamos, called "La Aurora," "La Ubalama," and "Las Cabras;" five in the Aduana; one in Talajiosa; that of Larragoitias; that of Los Espinosas, and the old hacienda of Promontorio. There are also two in Minas Nuevas, making eleven in all.

Babicanora, discovered at the end of the last century, eight leagues to the east of Arispe, and four from Sonoquipe, in the sierra running north and south, was very rich when worked by the intendente, Don Alejo Garcia Conde, who also established a hacienda for the reduction of ores below

Sonoquipe, one mile from the bank of the river. Being abandaned by Garcia Conde, it was denounced by Don Salvador Moreno, who discovered a vein of surpassing richness. At his death it was abandoned, and is now worked by a few gambucinos, at the risk of their lives; this point being particularly exposed to the Apaches.

The mine of Tajo, in the jurisdiction of Cucurpe, is of great antiquity, and its first possessor is unknown. Being now full of water, and in a ruinous condition, no one dares to attempt its exploration, although every one is convinced of the richness of its ores. It is worked at present by two or three persons, on a very small scale.

La Alameda; this mineral region, situated seven leagues to the west of the pueblo of Nacameri, was discovered in 1835. Its mines are all of silver, of different degrees of richness, the ley of the best being seven marks to the "bulto," (nine hundred pounds) and of the poorest, three. It has

been almost deserted on account of the Apaches; two mines only being worked by gambucinos, who are in constant fear of losing their lives.

Batuco, contains both gold and silver mines and "placers." These are seldom worked, on account of the Apaches.

Rio Chico, in the south-western part of the State, forty leagues from Hermosillo, and near the Rio Grande, is one of the most ancient mineral regions of Sonora; and in the last century produced great quantities of silver and gold, there being both mines and placers of the latter. At present the gambucinos are working a few of the mines, without order or method.

El Aguajé is a mineral region of the last century. Its most interesting silver mines are Guillamena, Ubarbol, and La Grande. One of them is now worked by Juan José Buelna; the others are abandoned, except by the gambucinos.

Minas Prietas, belonging to Aigame, are

worked by two or three persons, at a great disadvantage, on account of the want of sufficient means. There is no doubt that they would yield largely, if sufficient capital were brought to bear upon them.

Suaque contains many mines of gold and silver, which, to this day, have been worked with little activity, by persons of small means. Notwithstanding this, it has at times yielded largely. At present, but two mines are worked, on a small scale.

Saguaripa, a Pima puebla, contains numerous mines, most of which are deserted. There are two in operation, which yield but little more than their expenses, their owners not possessing a sufficiency of capital.

La Trinidad is one of the oldest mineral regions in the State, at the base of the Sierra Madre. Its entire area is composed of mines, most of which have never been worked. There is at present but one in operation, and its labors are carried on with

but little activity, on account of the scarcity of funds.

Six leagues to the north of the road to the town of Cavorca others are worked by the gambucinos, according to their method, or rather, their lack of method. They attack the pillars or supports of the mines, thereby causing their total ruin.

San Ildefonso de la Cieneguilla; scarcely any region equals this in its number of veins of gold and silver. Its first mine, called "Descubridora," discovered four years after the first placers, yielded abundant quantities of silver ores—the "ley" of the poorest being five to seven, and of the best, twelve and fifteen marks to the "bulto" of three "cargas" (nine hundred pounds).

Its owner, Don Antonio Enrique de Castro, by an approximate calculation, received from it in less than four years, $2,000,000, and as much more was distributed among the brokers and traders, who purchased the small pieces of silver which were weekly

paid to the workmen. Fifty small establishments, for crushing ores, were in constant operation, and their proprietors realized large profits. Castro erected a large establishment for the reduction of ores, being the only one in Sonora that was worked by mule or horse power; and every fifteen days he extracted four or five hundred marks, besides the "plata de fuego" from the jars (vasos). This state of things continued for five years, when they reached a spot where the vein was crossed by a rock, called by miners "caballo," and it was nearly a year before this obstruction was removed. A short time afterwards, the director of the mine, a person of great intelligence and experience, died, and the vein being crossed by another similar rock, all efforts to trace its course proved fruitless. The owner having during this delay expended the greater part of what he had received from the mine, in attempting to remove the obstacles above mentioned, became discouraged and obtained

permission to remove the pillars. These yielded nearly half a million, but although the mine was secured by supports of strong and imperishable timber, and in some places with stone and mortar, the gambucinos, in a few years, left it completely in ruins.

Many other mines were discovered in the neighborhood of this, but none so rich or abundant in ores. Only one exceeded it in the quantity of its ores, viz: the Cerro Colorado, six leagues to the east of Cieneguilla, on the right of the road to the placers of San Francisco, which also belonged to Castro. Its vein was so wide and soft, that one man with a pick (barretero) could excavate about one hundred "cargas" daily, but its "ley" did not exceed five to seven ounces to three "cargas," so that it was not considered profitable to work.

Castro also worked other mines, some of which were profitable, and others not. The one most celebrated for its richness, although this lasted but for a short lime, was San Ati-

lano, where, in the vein of silver, were frequently found small pockets containing considerable quantities of coarse gold—consequently its ores contained a proportion of gold. This mine was worked for three or four years and then abandoned, as was also that of San Teodoro, which was at first exceedingly rich; some of its ores, of a yellowish color, yielding nearly fifty per cent. of pure silver.

Castro abandoned his operations, which for many years sustained the mining interests of that region, and was succeeded by Teodoro Salazar, who still continues to work these mines at intervals, but without sufficient activity to excite a spirit of enterprise in others, contenting himself with very moderate profits. A few poor persons also labor in some of the abandoned mines, hiring two or three workmen when they can afford it.

The placers of gold support a few Yaqui gambucinos, who gain generally from six to eight reals per day; sometimes not more than

three or four. They occasionally discover rich spots, which are soon exhausted by the multitude of gambucinos that rushes to them. The distance from the old placers one and a half leagues west of Cieneguilla, to the Gulf of California, is twenty-five leagues, and all of the intermediate country is impregnated with gold; the time will doubtless arrive when this spacious region will yield countless riches.

La Basura: this is the first mining region of gold and silver discovered in the country of the Papagos, (in 1835) and is situated eight leagues to the north of Cavorca. Its mines are numerous, especially those of gold; but although these are of marvelous richness, this lasts but a short time, as the deposits extend but a short distance below the surface. This region, which formerly contained a population of two or three thousand souls, is now almost abandoned, owing to the emigration of its inhabitants to other places supposed to be more abundant in gold.

San Perfecto was the second discovery made in the Papago country; it is now nearly deserted.

Quitovac was the third discovery made in the western part of the Papago country, fifty leagues from Cavorca and from the town of Guadalupe. The placers were first worked, they being very abundant in gold, which lay in grains on the surface as at San Francisco and Cieneguilla. Afterwards many mines were opened to the depth of ten or fifteen varas, some of which yielded from four to eight ounces of gold to the bowl, (batea) and others not more than three cents. The largest lump of pure gold taken out weighed twenty-one marks, but a piece of gold-bearing quartz—nearly all gold—was found, that weighed more than thirty marks.

San Antonio, another placer, three leagues to the west of Quitovac, was discovered a few days after the latter, and was exceedingly rich at the surface. The discovery of these placers was owing to Father Faustino

Gonzales, who prevailed upon the Papago Indians to reveal their locality, these tribes having previously imagined that they would be put to death if the existence of their treasures were known. Their scruples having been overcome, they conducted Don Dionisio Gonzales and some others to the spot, and in a short time the whites and Indians, in great numbers, were working amicably together; as in the outset there were no scales to weigh the gold, certain persons took advantage of the simplicity of the Indians and exchanged silver and copper money for its bulk in gold. Women also made fortunes by selling the miserable bread that they made; a lady of one of the best families is said to have obtained eight ounces for four or five dozen tortillas. Gonzales made a large fortune; so did a number of others, who, however, soon squandered their wealth. The placer continued rich for several years, and was worked until 1841, when the Papagos rose and expelled the whites.

After quiet was restored, a few persons returned to Quitovac and worked some mines discovered after the placers, in the neighborhood of an abundant spring, capable of supplying a population of thirty to forty thousand.

Sonoita is a valley in which are situated the most western settlements of the Papagos; it is twelve leagues from Quitovac, on the road to Upper California. None but gambucinos and a few traders frequented it, on account of its exposure to the hostile tribes. The gold was very fine and light, so that an ounce in weight was nearly double the bulk of the gold from other places.

Alamo Muerto is sixteen leagues west of Cavorca, and contains gold and silver mines and placers; it was discovered in the same year as Quitovac, and although its ores yield a fair proportion of silver, the scarcity of quicksilver has prevented their being worked to any great extent. There were, however, ten mines in operation at the time of

the rising of the Papagos, all of which were abandoned. The placers of gold were of little consideration.

Las Palomas, two leagues to the south of Alamo Muerto, were rich placers of gold similar to those of Quitovac; several business houses and many stores for the sale of provisions were located there. It was abandoned on account of the Papagos, and is now frequented merely by a few Indian gambucinos, who are satisfied with enough to provide them with food.

El Zoñe was discovered in 1844, and is as yet but little known. It contains numerous gold mines—some of them quite rich at the surface; from one of them was taken a mass of quartz of twenty-five pounds weight, yielding fifty per cent. of pure gold.

It would require a volume of formidable dimensions to describe all the mines of Sonora, or even those which have come under the personal observation of the author. It will be sufficient to state that from the "rio

del Fuerte," which divides Sonora from Sinaloa to the river Gila on the north, and from the Colorado on the north-west to the Sierra Madre on the east, there is not a settlement or rancho which does not contain a vein of gold, silver, lead or copper; and placers, although not so general in the interior, abound all along the northern and western frontiers.

CHAPTER XV.

MINES OF IRON, LEAD, COPPER AND QUICKSILVER.

Between the presidios of Tucson and Tubac, there is a range of mountains called Madera, and the puerto de los Muchachos, scattered about the base of which are enormous masses of pure iron; some of these were transported to Tucson, and for many years were to be seen in the plaza of that presidio. Old soldiers relate that in their numerous campaigns against the Indians, they found in Mogollon, a range of mountains in the Apache country, many iron mines, and masses of this metal on the surface; also lead and copper. They made similar statements in relation to the mountains on the frontier of the country of the Papagos, and the tribes of the Colorado.

In 1801, when Father Faustino Gonzales (a man of benevolent disposition and spotless character) was missionary to Cavorca, an Indian of the tribe called Tadchidume, to the north of the Colorado, presented him with a jar of pure quicksilver, assuring him "*that at the foot of a hill in his country, there was a small lake of this heavy water*," being entirely ignorant of the name and qualities of this production of nature. His extreme simplicity, and the lack of a competent interpreter, prevented Gonzales from obtaining more explicit information.

The padre had relations with Don José Velasco, an influential inhabitant of Cieneguilla, and notified him by letter of this important information; but as at that time all branches of business were much depressed, and quicksilver abundant and cheap, no further attention was paid to the matter.

According to tradition, a quicksilver mine exists in the mineral region of Rio Chico.

Don Ignacio Araiza, of Hermosillo, who

devoted his life and entire fortune to mining —dying deeply in debt—made an examination of some stones from the hill called Santa Teresa, and ascertained that they contained quicksilver; but as at that time the price of that metal was low, the art of extracting it entirely unknown in the State, and the vein of metal very narrow, this discovery excited little or no interest.

There are several copper mines in the interior of the State, and many more on the frontier; of these we will mention a few.

La Cananea is a mountain range, forty leagues to the north of Arispe; all of this region abounds in copper ores, and in many places contains virgin copper. These mines were actively worked in the last century by the House of Guea, of Chihuahua, who took out thousands of quintals of copper ore, much of which contained a proportion of gold. When the House of Guea was dissolved, the operations at Cananea were abandoned; but were afterwards resumed by Don

José Perez, of Arispe, although with less activity than before; several thousand quintals, however, were taken out, and sold at Guaymas or shipped abroad. After the death of Perez, the mines were worked by his son and others; but the want of capital and the incursions of the Apaches soon caused their total abandonment.

Antunes, an old region of gold mines, also contains copper mines, which were worked from 1828 to 1830. Notwithstanding the abundance and excellent quality of the ores, the enterprise failed on account of the inexperience of the proprietors and the absence of a proper system of reduction.

Tonuco, twelve leagues west of Hermosillo, contains veins of copper ores which yielded about twenty-five per cent. of pure metal; its mines are now abandoned.

Bacuachi, twenty leagues west of Hermosillo, contains in its surrounding hills many copper mines which have been but superficially explored.

La Cobriza, a small mountain range, twelve leagues to the west of Horcasitas, well deserves its name, as its entire surface is impregnated with copper. No practical examination of these mines has as yet been made.

In the mountain range of Guachapa, near the presidio of Tucson, there are many veins of virgin copper, from which were made the bells of the said presidio.

Lead is rarely found in the interior of the State, but abounds in Cieneguilla and the frontier of Arispe. It is also found at Batuco, San José de Gracia, Aduana and Promontonio. Cieneguilla and Arizpe contain the greatest quantity of lead. The auther saw at the first mentioned place, in 1797, in the house of Castro, over one thousand bars of lead, weighing from four to seven arrobas each; and in Arispe, more than one thousand quintals were deposited at one time for the use of the garrison.

Agua Caliente, Alamo Muerto, and the

other mineral regions of the Papago country, also contain lead in abundance.

OTHER MINERALS AND STONES OF VALUE.

Veins of copperas are found at San Antonio de la Huerta, San Javier, Cieneguilla, Agua Caliente, and other mineral regions of the frontier. In San José de la Pimas there is a small hill entirely composed of black lead. Small pieces of it, without any preparation, mark as well as pencils imported from abroad. In San Javier is a vein of a dark color, on the face of a hill, from which is extracted a compact earth. By dissolving this in water a fine ink is obtained, similar to the Indian ink from China.

In Oposura there is a hill composed of excellent marble, of which the altars in all the churches of Sonora are built; drinking cups, salt-cellars, inkstands, etc., are also made from it. In the pueblo of Ures there is also a hill that contains marble; but not in such abundance as the one in Oposura.

The hill of "La Campana," in the city of Hermosillo, is of marble as white as that of Italy; and Oposura and Ures, besides marble, contain jasper and alabaster. In Guaymas, excellent stone for building is procured from the hills that surround the bay. This was discovered in 1828.

The building stone of Hermosillo, near the hacienda of Chine Gordo, was discovered in 1847 by an architect who was employed by Don Manuel Iñigo. The existence of this kind of stone was previously unknown in Hermosillo. The city of Alamos also contains excellent stone for building, of which most of its houses are constructed. Near the mouth of the river Colorado are found muriate and carbonate of soda, and saltpeter or nitrate of potash, in great abundance; these also exist in the interior of the State, though not to so great an extent. Flint is found, both in the interior and in the mountains on the frontier; and loadstone exists in the Cañada de Barbitas, ten

leagues from Hermosillo, and in various mountains of the Apache country. Calcareous stone, of which lime is made, is common throughout the State; and in the neighborhood of Cucurpe there is a vein of crystal, which possesses the peculiarity of being incombustible.

In concluding this description of the mines of Sonora, we may observe that, although experience goes to prove that they are generally sooner exhausted than those of Guanajuato, Zacatecas, etc., this rule has many exceptions. There are mines in the region of Alamos, discovered more than a century since, that still yield largely. In this connection, also, may be mentioned "La Naguila," in San Javier; Los Preciados, in San José de Gracia, Tajo, Babicanora, and many others. It should also be borne in mind, that many mines in the last century were abandoned in good condition; and among other reasons for this, the following may be cited. The owners of these mines were generally

Spaniards, who regarded the poorer ores as of no value—as they had no establishments for their reduction on a large scale—and confined their labors to the richer ores and virgin silver which they frequently encountered. When these were no longer found in abundance, they contented themselves with what they had already gained, and abandoned the mine, which naturally became choked or full of water. The gambucinos who then took charge, generally confined their operations to the pillars, and left the mines in a most ruinous condition. Windlasses or pulleys were almost unknown; and when the mine could not be kept free of water by buckets drawn up by hand, it was abandoned. It is impossible, for many reasons, to make an exact statement of the average annual products of the mines of Sonora; we however quote from the "Memoria Estadistica del Estado de Occidente," published, in 1828, by Don Juan M. Riesgo and Don A. J. Valdes, as follows: "Gener-

ally speaking, the minerals of Sonora and Sinaloa are rich and abundant; and it is impossible to estimate what energy and enterprise might accomplish in these vast regions, overflowing with their treasures of copper, lead, platina, quicksilver, gold and silver. Their present annual production of gold and silver bullion is computed at two millions of dollars, notwithstanding the imperfections that exist in every branch of mining."

In our judgment, this calculation is entirely incorrect; as when the States of Sonora and Sinaloa were united, there were no reliable statistics upon which to base an estimate.

Confining ourselves solely to the mineral regions of Sonora, from the city of Alamos to Sonoita on the west, and Arizona on the north, we may safely estimate the average annual production of the mines, from 1835 to 1842, at $1,500,000.

CHAPTER XVI.

APACHE TRIBES. — THEIR POPULATION, MANNERS, CUSTOMS, ETC.

The principal tribes of the Apaches that border upon our territory, are the Coyoteros or Pinaleros, the Tontos, the Chiricahuis, the Indians of Sierra Blanca, and the Mogollones. It is impossible to form an exact estimate of their numbers, as they have no fixed habitations; and the most reliable data that we possess on this point, are the accounts of the troops that have been engaged in the various campaigns against these savages. It is probable that the entire number of Apaches in Sonora is not more than three thousand, and persons well acquainted with the frontier say that the warriors of the tribes hostile to the whites do not exceed one thousand.

At present there is not an Apache settlement in the State; a few families live at the presidio of Fronteras, composed of old people and their children, born and brought up in Sonora. These frequently act as guides for the troops, being well acquainted with the topography of the country, and never losing a trail even in the darkest nights.

The Apaches are of á bilious temperament, and their disposition is crafty, fickle, bold, haughty and suspicious. They carry their distrust to an extent unequaled among other barbarous tribes, and this is especially manifested among relations and members of the same family. No Apache is ever found off his guard, nor does he lay aside his arms even for a moment.

Their stature and color vary in different tribes, but they are all of swarthy complexion and well proportioned, with long hair and little or no beard. They paint the face —especially the women—with ochre, and the chiefs, both principal and subordinate,

wear caps of deerskin more or less decorated with feathers, according to their rank. Their dress consists of shoes, called "teguas," breeches of goat or deer skin, and a tunic or frock of the same, open at the sides; the dress of the women is similar, with the exception of a short petticoat reaching to the knees; both men and women have very small feet, owing to their constantly wearing shoes from their infancy. The women adorn themselves with ear-rings of shell, or small green and white stones resembling crystal, and some of the men wear similar ornaments.

They are constantly wandering from one mountain range to another, seeking the most inaccessible places, in order to avoid the troops sent in pursuit of them, and have no habitations worthy of the name. When they form a temporary settlement, their dwellings are wretched huts of poles covered with grass, with a small door barely admitting a grown person. If the place is wooded, they

encamp at the foot of a tree, and cover the lower branches with grass to protect them from the rain; but as a general thing they live in the open air without shelter of any description.

They are shocking gluttons when they have an abundance of food, a single Apache having been known to devour at one meal the lungs, liver, entrails and kidneys of a large cow; but they endure hunger and thirst with wonderful patience and fortitude, going, at times, four or five, and even eight days without food or water, excepting a few roots and the mountain parsley, which, when chewed, relieves their thirst. Formerly, before cattle were abundant on the frontier, they subsisted on horse flesh and that of various wild animals, the sacate and other herbs; but now that they have the run of so many haciendas and ranchos, abounding in cattle, they live principally upon beef, and the wild fruits that their country produces in profusion. These savages pay no respect

to old age; even those who have been renowned for their courage and ability, are treated with neglect when their youth and vigor have passed away. Being of robust frames and hardy constitutions, and accustomed to brave all weathers, many of them attain a great age, and the ordinary duration of life among them is from seventy to eighty years.

The father of a numerous family is generally recognized as its head or chief, including both the children and grand-children, who generally reside in the same settlement; in some cases this distinction is conferred upon that member of the family who has most distinguished himself in war, but many Indians are so impatient of control, that they prefer to live alone with their wives and children.

Polygamy is common among them, and an Indian frequently has six or seven wives. These perform all the manual labor, and from the skins of wild animals killed in the

chase, manufacture the necessary articles of dress for themselves and their husbands; they also build the huts, collect fire-wood, watch the animals while grazing, and in short, perform all the drudgery that is generally assigned to man. Their marriages are affairs of mere bargain and sale; the groom purchases his bride from her father for a certain number of skins or weapons; in some cases for a horse; if these are accepted by the father, the match is made without regard to the inclinations of the daughter. The women are treated with the greatest harshness and severity, and their lives are frequently sacrificed to the jealousy of their lords. The marriage is often dissolved by mutual consent, in which case the wife returns to her father, who is obliged to return the articles received in exchange for her.

The women frequently elope, not being able to endure the hardships to which they are subjected; and escaping to another settlement, place themselves under the protec-

tion of some chief, or Indian of renowned valor; in which case the husband preserves a prudent silence.

Occasionally several "rancherias," or settlements, are united at the same place, either for the purpose of war or hunting. When they meditate an attack upon their enemies, the tribes contiguous to each other assemble generally in the most inaccessible parts of the mountains, and appoint their bravest warrior as chief, to carry out their plan of operations. In these cases it is forbidden to light a fire, and sentinels of tried vigilance are posted at every point of exposure.

Their favorite diversion is dancing, which they practise at night to the music of a rude drum; both sexes take part in this with loud shouts, violent gesticulations and the most grotesque contortions of the limbs. If the object of the dance is to celebrate a victory, the scalps of the slain, fastened to poles, are triumphantly flourished, or are sometimes planted in the center of the arena, and the

Indians dance around them for hours, uttering the most diabolical yells.

The Apache believes in the existence of a Supreme Being, called "Yastaritaune," or Chief of the Heavens; but he has no conception of the divine attributes, nor of future rewards and punishments.

He understands the brevity and uncertainty of life, and confines himself to the enjoyment of the present; forgetting the past, and taking no heed for the future. Nevertheless, there are not wanting among them persons who are eager to understand the truth of our religion, believing that upon its Divine Founder depends their future happiness or misery.

They have cunning soothsayers among them, in whose prophecies they repose implicit confidence. These charlatans also profess to cure diseases by a variety of ridiculous ceremonies. They burn the bodies of their dead. On these occasions much sorrow is manifested by the relations of the deceased,

especially by the widow, who abandons herself to the wildest grief, and leaves her home for another settlement. It is supposed, by some who have had much intercourse with these Indians, that they believe that the soul after death enters the body of some bird; and as the screech owl is imagined to be particularly favored in this respect, they hold it in great veneration.

In cases of sickness, when the disease refuses to yield to the application of herbs—the only remedy with which they are acquainted—they abandon the patient, placing a heap of cinders and a little water at his head. The meaning of this custom is unknown.

The women bear children without pain or difficulty, and plunge their infants into cold water immediately after birth. If they are taken in labor upon a march, they retire from the road for a short time; and then resume their journey, carrying the newly born child slung from the irshoulders in a basket.

These Indians use no salt, which is not found in their territory; and they feel the want of it so little, that they take no pains to procure it from the white settlements. They generally eat their meat raw; and one tribe—called Coyoteras—eat the flesh of the coyote, although its taste and smell are excessively disgusting.

No quality is so much esteemed among the Apaches as courage; and so highly do they regard this, that none of their number is held in any esteem until he has given proofs of his valor on one or more occasions. After he has thus signalized himself, he is distinguished by the appellation of "Sanquie," meaning gallant or high spirited.

They obtain fire from the friction of two kinds of wood, called "sosole" and "lechugilla;" they also use the flint and steel, but prefer the first method.

The Apache lives in a state of nature, recognizing no law except that of force. Their chiefs exercise no authority except in

war, although they retain their rank in time of peace; and each family or individual is governed by no rules except their own inclination: consequently, there is an utter want of security among them, the weaker being invariably plundered by the stronger.

The father of a family exercises authority over his children during their infancy; but when they arrive at the age of puberty, they recognize no superior except the chief who leads them in war. Bows and arrows are put into their hands at the age of seven years, and they soon become skillful marksmen.

These savages are vindictive to the last degree, and have never been known to forgive or forget an injury. This feeling was strongly exemplified by the murder of Don Leonardo Escalante, a most estimable citizen of Bacuachi, in 1829. This gentleman, in assisting to quell a tumult among the Apaches in the city, had the misfortune to put out the eye of one of the Indians with

a whip lash. He regretted the occurrence extremely; cured the man at his own expense, and presented him with horses, clothing, etc. The savage professed to be entirely satisfied. Nevertheless, for eleven years afterwards he watched for an opportunity of killing his victim; and finally accomplished his purpose, on the road between Bacuachi and Fronteras.

Their hunting parties are often large—men, women and children attending them. Their plan is to encircle a tract of land four to six leagues in circumference, and then set fire to the grass: the frightened animals fly in all directions, and fall an easy prey to the expectant hunters.

They hunt the deer singly or in couples. Covering the head with the skull and horns of a dead stag, and sometimes clothing themselves with the skin, they creep on all fours towards the herd; and as the deer permit their approach without the least suspicion, they slaughter them at their leisure. They

also make use of the same artifice in war.

They care little for the flesh of birds, though they kill them out of pure wantonness; neither do they eat fish, although these are abundant in their rivers, but simply make use of their bones for certain purposes.

They hold the beaver in great esteem, both on account of its flesh and fur, of which they make cloaks, blankets and other articles of clothing.

On the 19th of March, 1846, the Apaches first attacked the rancho of Metatitos, and afterwards, on the same day, Bamuri, the hacienda of Manuel Maria Gandara; they murdered thirteen persons, and burned the houses at both places, carrying off four hundred and fifty horses, some of them of great value. A vaquero made his escape and imparted the tidings to Gandara, who was on his way to Bamuri, and the latter, scarcely crediting the account, changed his course to Topagüi, eight leagues distant. Here he

represented to the authorities the best plan of surprising the savages in their retreat, and having collected a small force of whites and Yaqui Indians, he started in pursuit of the enemy. Meanwhile the inhabitants of Guadalupe, two leagues from Ures, sent a body of eighteen men, well armed, under the command of Don N. Bustamente, who was accompanied by his son; and these in a few hours came up with the enemy at the rancho de la Noria, belonging to Francisco Romo. Here they were utterly routed by the savages, leaving four of their number dead upon the field, including the two Bustamentes.

When Gandara and his men reached Bamuri, the Apaches had retired to the other bank of the river Ures; the next day they proceeded to the well of Victor de Aguilar, where they murdered five persons, making in all twenty-two victims, besides one woman killed at Bamuri, and three youths carried into captivity.

The audacity of the barbarians was never more forcibly exemplified than in this instance, and it seems almost incredible that they should have been able to perpetrate these outrages and escape with impunity, in the immediate neighborhood of the towns and ranchos surrounding the capital, where there were white, Yaqui and Opata troops, comprising over five hundred men of the battalion from Sinaloa, and a number of auxiliary troops on their way to Arispe.

In the month of April, of the same year, sixteen persons — men, women and children — left Bacanuche, the hacienda of Don Ignacio Perez, for Arispe; they were attacked by the Apaches in the mountains, and being entirely unarmed, eight men were killed, and the women and children carried off.

In 1849 the Apaches attacked a train of persons on their return from Upper California to their homes at the river San Ignacio, and killed several; among others, Don N.

Siquieros, an estimable citizen and skillful physician.

In the same year, they made a descent upon the rancho of a Spaniard — sixteen leagues from the capital—who was at the time in Upper California; murdered his wife and several herdsmen, and carried off his two marriageable daughters, besides all articles of value that they could take with them. Between the presidio of Janos and Babispe, they attacked a train composed of several wagons, attended by Americans and other foreigners. When the Indians came within hail, they professed that their object was not to fight, but to exchange cattle for fire-arms, and having thus removed the suspicions of the whites, the latter foolishly allowed them to examine their arms. The Indians immediately commenced an attack, but were finally repulsed by the Americans, who made a resolute defense; they, however, lost five men and one wagon. In January, 1850, these barbarians poured down

from the northern frontier, and carried on their depredations to a fearful extent. They attacked, on the same day, the presidio of Bacuachi, and the hacienda of Tetuachi, four leagues to the south of Arispe. At Bacuachi, they killed two laborers who were engaged in herding cattle, wounded a soldier, and drove off all the stock belonging to the place; at Tetuachi they burned all the buildings, and the inmates escaped with the greatest difficulty. At Tucson they drove off all the cattle in sight of the inhabitants, and having surprised a party from Cucurpe, bound to Upper California, they killed five persons, wounded a number of others, and carried two women into captivity. On the road from Batuc to Oposura they surprised another party, on their way to the interior; murdered seven persons and carried off all the animals and articles of value.

We will not shock our readers by further recapitulation of these lamentable occurrences, which so plainly mark the abject

and indolent nature of the people of Sonora. God grant that they may awaken from this lethargy, which is leading them to their utter destruction.

APPENDIX.

PRESENT CONDITION OF SOME OF THE PRINCIPAL MINES OF ALAMOS DISTRICT.

THE Promontorio mine, otherwise known as the Almada mine, is at present owned and worked by Don José Maria Almada; this is one of the best mines in the district, its ores being exceedingly rich and abundant.

The Tiriti mine, to the south and adjoining the Promontorio, is said to be still richer, but its vein is not so wide; it is owned by James Brady of Guaymas, who is about to commence running a tunnel into it. The pillars of this mine were taken out some forty years ago by Pascual Gomez, and two of them yielded $80,000.

The Dios Padre mine, adjoining the Pro-

montorio on the north, was, prior to 1860, owned and worked by Fernando Araña, son-in-law of José M. Almada. In August, 1860, Andrew J. Wiley, an artist from California, visited Alamos, made the acquaintance of Araña, and having learned the history of the mine, purchased it; and returning to California, associated himself with Messrs. W. W. Light, D. Madox, U. F. Moulton, Skinker, Backus, Beard, Sanborn, Oatman, Robinson and L. A. Garnett. Mr. Wiley is now engaged in sinking a shaft, and being a practical miner and a persevering man, will probably soon reap the reward of his labors.

The Quintera and Libertad are mines to the north of the Dios Padre; the Pulpito, on the same lead, was discovered within the last two years, by a Mexican of the lower class, who worked it secretly, packing the ore upon his back some two miles to a secluded spot, where he extracted it in a rude manner. José Maria Almada, ascertaining the richness of the ore taken out by the

Mexican, at once took steps to denounce the mine for himself; but his whole time and attention being absorbed by the Promontorio mine, he permitted the Mexican to continue his labors.

In January, 1861, Mr. Rountree purchased the rights of both parties, suffering the Mexican to prosecute his work, as he was rather benefiting the mine than otherwise. Mr. Rountree's associates in this mine are Messrs. W. W. Light, Johnson Price, Thos. Finley, Robt. S. Stilwell, J. R. Hardenburg, and other citizens of Sacramento and San Francisco. They are about to commence operations upon the mine, which is extremely rich, and will doubtless yield fortunes to its owners.

The Nacacharama mine, situated nine miles from the city of Alamos, is one of the most celebrated in the district, having been extensively worked by the Spaniards in the early days of Sonora; but for many years it has been abandoned on account of the

influx of water. For the last twenty-five years it was claimed by Don Pedro Peron, who has attempted to work it; but having no machinery for clearing it of water, except a common windlass and bucket, he became discouraged and abandoned the enterprise. The mine remained idle until August, 1860, when the writer visited Alamos, and purchased the mine for himself, Hon. J. G. Baldwin, Messrs. Thomas H. Williams, Wm. S. Long, Henry Fouche, Solomon Heydenfeldt, Samuel Doake, and others. This mine has the reputation of being one of the richest in the world.

The Vista Nacacharama, now known as the Sacramento Company's mine, was lately denounced by the writer for himself, Messrs. Ira Oatman, Goggins, Bowman and Whiteside; the latter has lately gone to Alamos to superintend operations. This mine promises to be equally as rich as the Nacacharama.

The Mina Grande, Europa, Iglesia and Palomas are all well spoken of by tradition.

The first two were denounced by Michael Gray in January, 1860, and afterwards sold to John Heard, who is now working them.

The Cerro Colorado mine is situated some eight or nine leagues from the city of Alamos, on the bank of the Mayo river, and derives its name from the reddish color of the mountain in which it is located. It was formerly owned by Castro and Don Manuel Salida, and afterwards by Dr. W. J. Hill, of Alamos, who sold one-half of his interest, some few months since, for $12,000. Messrs. J. S. Garwood, E. D. Wheeler, Michael Gray and others, of San Francisco, were the fortunate purchasers. The last owner of this mine, Don Manuel Salida, took from it more than a million of dollars; and at the time of his death gave orders to blow the mine up, which was accordingly carried into effect by his peons. The writer visited the mine in company with Dr. Hill; but on account of its dilapidated condition, could not explore it. At a depth of seventy feet is a chamber

twenty feet in diameter and twenty-five feet high, the walls of which, impregnated with virgin silver, glittered like diamonds by the light of a solitary candle.

In working the mines of this district, it is not unusual to discover spots of exceeding richness—called by the Mexicans "bonanzas"—and from one of these from two to three hundred thousand dollars are frequently extracted.

The San José mine is situated six miles from Alamos, at the locality called "Minas Nuevas," and is owned by W. J. Hill and E. B. Johnson, who are now getting up machinery for the purpose of working it. Tradition speaks of it as exceedingly rich.

Many other mines might be mentioned in the district of Alamos but little, if any, inferior to the foregoing.

The number and wealth of these mines; their neighborhood to a large stream—the Mayo—the abundance of timber in that vicinity, and the freedom from the incursions

of the hostile tribes; the cheapness and abundance of labor, and the facilities for transportation to the coast, combine to render the district of Alamos one of the most desirable locations for mining purposes in the whole world.

WM. T. ROBINSON.

PROVISIONS

RELATIVE TO THE DISCOVERY OR DENOUNCEMENT OF MINES IN MEXICO. FROM THE "ORDENANZAS DE TIERRAS Y AGUAS."

MINES may be acquired by discovery or denouncement.

The discoverer of mineral lands hitherto unknown, may hold three claims of the dimensions prescribed by law; and he who discovers a new vein in a mineral hill already known, may hold two such claims, being obliged to designate the same within ten days; but he who finds a new mine in a vein already known, shall not be considered a discoverer.

Denouncement may take effect with respect to mines that have been deserted or abandoned, or whose proprietors have failed to fulfill the conditions prescribed by the

ordinances. No person can denounce two adjoining mines in the same vein; but he may hold one by denouncement and the other by purchase or other lawful title.

Ecclesiastics, regular or secular, of either sex, cannot acquire mines; neither can the judges or notaries of any mining district within their own jurisdiction—though they may in any other department—nor can the managers or other employés of the owners of a mine hold any other within a thousand varas from the first, although they may denounce it for their employers.

Formerly, foreigners could not acquire mines within the Republic; but permission to this effect has since been granted, by the decree of March 14th, 1842.*

Veins or mines may be discovered or denounced, not only on vacant and common lands, but on those belonging to private persons; the discoverer or denouncer being

* This decree is to be found in the "Febrero Mexicano," edition of four volumes, vol. I, page 17.

obliged to pay for the surface of the land that he occupies, and for any damage that may result from his labors, the amount to be fixed by experts appointed for the purpose. But if any person shall denounce a mine within a town or settlement, the working of which might cause damage to the public buildings, or other prejudice, the denouncement shall not take effect without the consent of the local authorities.

Whoever discovers a mine shall present himself to the mining tribunal or directive "junta" of that district, setting forth in writing his birth-place, residence, profession and occupation, and the peculiar characteristics of the place, hill or vein that he solicits; all which circumstances, with the time of the application, shall be duly registered by the Notary in the proper book, and a copy thereof delivered to the discoverer for his protection, and notices shall be posted in public places for the information of the neighborhood.

Within the term of ninety days, the discoverer must open a shaft upon the vein or veins recorded, one vara and a half in diameter at the top and ten varas in depth; which having been done, one, at least, of the members of the "junta," accompanied by a notary (or in default thereof, two assisting witnesses) and an expert skilled in mining, shall visit the place in person to inspect the course and direction of the vein, its breadth and other particulars; taking an exact account of all these, that it may be added to the record. Possession shall then be given to the discoverer, in the name of the nation; his claim shall be measured off, and stakes placed at the boundaries thereof, and a certified copy of all the proceedings, which shall serve as proofs of title, be delivered to him.

If within the aforesaid term of ninety days, any other person shall claim a right to the said discovery, the case shall be heard and decided in favor of him who adduces the best proofs; but if said claim shall be

made after the expiration of ninety days, it shall not be entertained.

Whenever the question arises as to who was the discoverer of any mine, he shall be considered as such who first found metal therein, although others may have prospected it; and in case of doubt upon this point, judgment shall be given in favor of him whose name first appears on the record.

He who denounces a mine as deserted and abandoned, must make application in writing in the same manner as a discoverer: setting forth the location of the mine, its last possessor—if known—and those of the adjacent mines, if they are occupied—all of whom shall be duly cited to appear. If they do not appear within ten days, the denouncement shall be publicly proclaimed upon the three following Sundays; and there being no opposition thereto, notice shall be given to the denouncer to open within sixty days an excavation upon the vein of at least ten varas in depth, which shall be examined and

inspected by an expert duly qualified. The said expert shall also examine the condition of the different works of the mine, making an exact statement of everything, and entry thereof in the proper book of records of denouncements. This report having been made, and the claims measured off, possession shall be given to the denouncer notwithstanding opposition, unless such opposition has been set up within the term prescribed by law, in which case the matter shall be tried between the parties. If the former owner of the mine should appear, and oppose the denouncement, after the expiration of the term of proclamation, and while the denouncer is making use of the sixty days allowed him for sinking a shaft, the said owner shall not be heard as to the possession of the mine, but only as to the property thereof; and if this should be decided in his favor, he shall satisfy the denouncer for the expenses he has incurred: provided, that the latter has not acted in bad

faith, in which case he is entitled to no compensation. If the denouncer should not complete the shaft or work required, or take possession within sixty days, he shall lose his right, and any other person may denounce the mine; but if the denouncer be prevented by any insuperable obstacle from fulfilling his duties, he shall apply to the tribunal, soliciting that in consideration of the circumstances it may grant a sufficient extension of the time, during which no opposition shall be entertained, any more than in the previous term of sixty days.

Where any person denounces a mine as abandoned on account of the nonobservance of any of the ordinances that prescribe this penalty, the denouncement shall always be granted upon good and lawful proof of the matter alleged.

Lastly: it is to be observed that no one can denounce a mine for another person without having his power of attorney or letter of authority; neither can any one

denounce a mine for himself alone, being a member of a company formed prior to the denouncement; it being his duty to mention the names of his companions in the application made by him, under the penalty of forfeiture of his own interest.