

The *diseases* which sometimes affect or destroy this vegetable in Mexico, as well the animals that assail it, may be summed up as follows:

1. *La requitte*, a wasting blight which affects the maize where it is sown upon poor soil and is subjected to damp, cold weather soon after planting.

2. *El carbon*—a vegetable fungus growth, resembling carbon or coal, which appears in the ears and destroys them. This abortion in the fruit is believed to be produced by an insect.

3. *El hanjo*—a species of *uredo*, which forms itself in the ear and ruins it. The disease is generally known as *los Cuervos*.

The animals and birds that attack corn are:

1. A sort of mole—*talpa*—which undermines the fields and destroy the young plants.

2. The *larvæ* of *melolontha*, which not only seize the roots, but often destroy the stalks and ears.

3. Flocks of pilfering birds, with which the corn-fields are covered, if they are not carefully watched during the approach of harvest. Neither day nor night are the ears safe from the attacks of these pilferers; and, in order to protect the crop, watchmen are placed on high stages, overlooking the acres, whence the traveller constantly hears their shouts, during the day, or the crack of the warning whips, during the night.

Maize may be planted in Mexico at different periods of the year, especially in those districts in which, for nine months, there is always sufficient moisture. In the *tierra caliente*, the *rancheros*, cultivate, in this grain, the best spots lying near their dwellings. In the cooler districts they have two kinds of culture—one by irrigation, and another upon a dry soil. The latter mode is subdivided, by the Mexicans, into three kinds—the *humido*, *aventureso*, and *temporal*.

In the first mode of cultivation the *Maiz tardio*, is sown, and it is usually found to be the most productive. A seeding made in a soil capable of preserving the winter's moisture and the humidity of the first spring rains, is called *siembra de aventureso*. In the *temporal*, a quickly ripening species of corn is planted—such as the *maiz cuarentino*—which may be cultivated either before or during the rainy season, from May to November.

It is rare that the common Mexican *ranchero* is sufficiently provident to select the soil for his corn crop, with due care; and accordingly we find that maize is often planted in the midst of fields abounding in stiff ungenial clay.

The present corn production of Mexico is not accurately determined, but it is estimated that it is the chief subsistence of at least five millions of persons, whilst it supplies the only fodder for all kinds of domestic animals. Its average product must therefore be not far from at least twenty millions of bushels.

Corn is a varied article of diet among all classes. The ancient Mexicans made a species of sugar from the juice of the stalk—while the modern Mexicans brew from it a fermented drink, called *pulque de maiz*, or *omayo*. The extremely saccharine pith of this plant is often devoured raw by the Indians, and it has been also frequently used in the manufacture of brandy. The unripe ears are boiled or baked, and sold in the towns and villages to the poorer classes, forming their sole subsistence; while the leaves and stems afford a capital food for beasts. Sometimes these portions of the plant are devoted to architectural purposes, and a neat rustic hut is built of the cornlike stalks, interwoven and thatched with their broad and graceful leaves.

A kind of beer, called *chicha*, is sometimes prepared from the kernels of ripened maize, and is found, by natives and strangers, to be an agreeable as well as wholesome beverage. When the *meal* is boiled in water, and mixed with some farinacious roots, a favorite and exceedingly grateful gruel, known as *atolé*, is formed by the process. In the *tierra caliente*, the kernels are often roasted and ground into *pinole*;—but the most ordinary consumption of this precious vegetable is in the *tortillas*, for which Mexico is so celebrated, and in the preparation of which it is estimated that more than two hundred thousand females, in the republic, spend four or five hours of every day. In order to make *tortillas*, the grains of corn are soaked in water, to which a small quantity of lime has been added, until they are relieved of their shells. The pure and softened pulp is then laid on a flat stone or *metate*, one end of which is slightly raised from the ground. A Mexican woman kneels in the rear of the *metate*, and with another round stone, rolls, macerates, and amalgamates the crushed corn until it is formed into a rich succulent paste. Hard by, a thin metallic griddle is set over ignited coals, which is constantly supplied by another female, who pats the dough into extremely thin and delicate cakes. They are eaten hot from the griddle, but, even when carefully prepared, are deemed insipid and unsavory by foreigners.

Nor are these the only purposes to which this delightful plant and its offal are devoted by the Mexicans. They have discovered, within a few years, that a capital paper, for ordinary purposes, can be

made of its leaves; and they have long ago used them as wrappers for the *cigarritos*, which no loyal native fails to indulge in hourly.

Man and beast — dwellings, food, paper, architecture, and cigars — are thus, in Mexico, all indebted to Indian corn as one of the greatest elements of comfort, sustenance, utility and luxury.

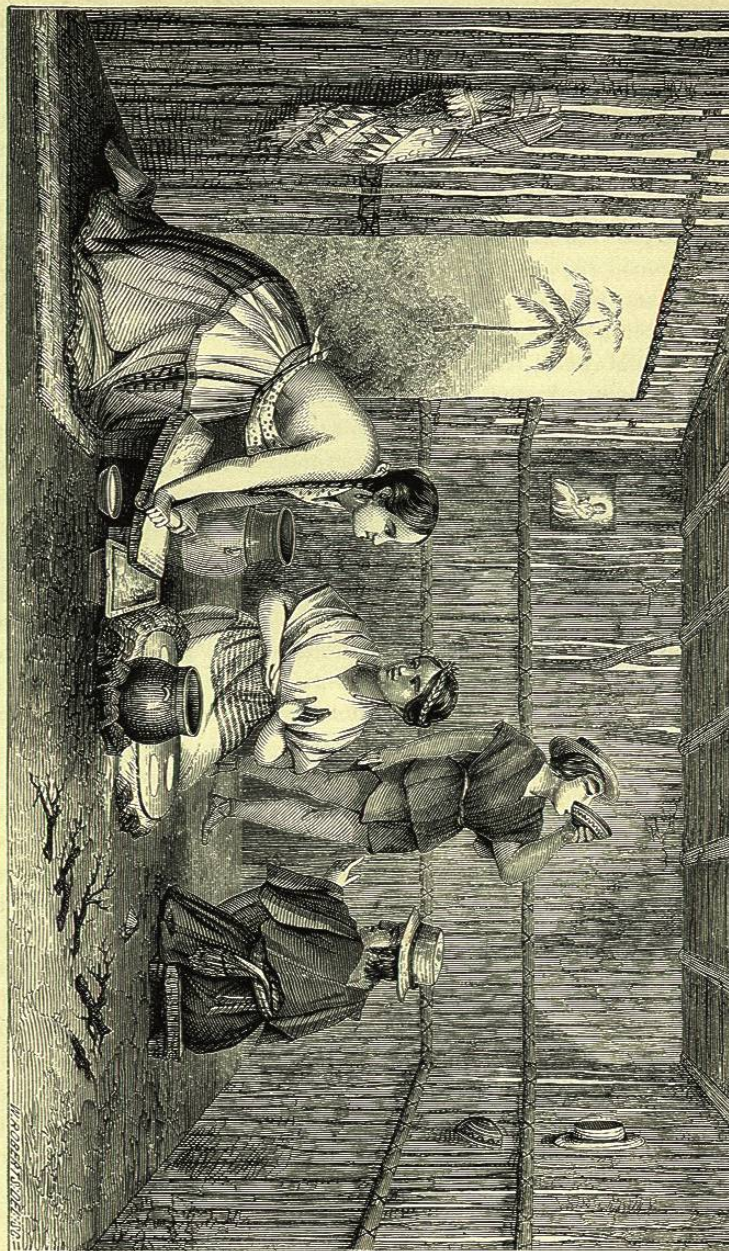
The extraordinarily productive BANANA is to the inhabitants of the *tierra caliente* what maize is to those who dwell in the loftier and cooler regions of the table land. An acre of wheat will supply the wants of three men, but an acre of Bananas, or *plantains*, says Humboldt, will support fifty.

The MAINOC, *cassava bread*, *jatropha manihot*, the JUCA or YUCA, as it is known in the West India islands, is peculiar to the *tierra caliente*, but is more used on the western than eastern coasts of Mexico. A fine flour is made of the root, which in its raw state is poisonous. When deprived of all its juice by pressure, the residuum is a farinacious pulp, forming a pleasant food whose consumption, however, is not likely to increase in Mexico.

The cultivation of RICE is not extensive. On the east coast between Alvarado and Guasacualco, and on the western between Jamiltepec and Huatulco, it has been grown in some few spots; but it does not appear to please the popular taste sufficiently, ever to enter largely into the list of national productions either for export or home consumption.

The OLIVE was one of the banned and forbidden products of the Spanish colonies; but notwithstanding the inhibitions we have already cited in this section, the tree was planted in various portions of the country both previous to the revolution, and during intervals of repose whilst the war of liberation was waging. The archbishop of Mexico was one of the first to cultivate a plantation of it at Tacubaya near the capital. At the beginning of this century, Joaquin Gutierrez de los Rios, commenced the culture at his *hacienda* de Sarabia, within the district of Salamanca, in Guanajuato, and succeeded admirably; but his trees were destroyed entirely during the revolution. At present some large plantations have been made, in the same state, at several *haciendas*, and, especially, at that of Mendoza, where 30,000 olive trees were set out, in 1849.

The VINE, like the olive, was a forbidden fruit to Mexican agriculturists under the Spanish dominion, except in a region about Parras whose extreme northern remoteness from the capital perhaps exempted it from the general inhibition. Elsewhere, throughout the colony, vineyards were ordered to be destroyed wherever they



TORTILLERAS.

were attempted; and this rule seems to have been enforced very generally, except, at Tehuacan, in the state of Puebla and at some points in the Misteca in Oajaca. The value of Spanish wines imported annually before Mexican independence, reached the ample sum of \$700,000; and as the French and Germans have, since the opening of the ports, availed themselves of the benefit for their own trade, it is very questionable whether the vine will ever become an article of extreme produce as long as the present race occupies the soil of Mexico. In 1843, the vine was still chiefly cultivated at Tehuacan and at Parras. Plantations had been made in the neighborhood of Zelaya, but the actual production of the region about Parras may be estimated from the returns of the interior custom house of that district through which 616 barrels of native brandy weighing 2,693 arrobas of 25 lbs. each and 323 barrels of wine of 1,035 arrobas, together with 204 tierces of raisins, had passed during the previous year.

Chile PEPPERS or *capsicum*, are extensively cultivated on the table lands. This pungent vegetable is not only used upon the table or in the food of all classes as an occasional agreeable stimulant, but has become one of the regular necessities of life. It is either ground and mixed with the various sauces and stews that always form part of a Spanish meal, or is stuffed with pleasant condiments and eaten as other products of the garden. No Mexican will pass a day without a dish of the genuine article, and even foreigners who wince under its excoriation upon their arrival in the country, soon become as fond of it as the natives.

Mexico produces nearly all the garden stuffs which are either natural to or have been introduced into the United States, but either in consequence of the climate, or of a careless mode of cultivation, they do not generally equal our own in quality or flavor. The *tomato* is very fine, luscious and plentiful; and, next to corn, Chili and *frijoles*, is probably most extensively consumed.

The *frijol*, a rich, nutritive, brown bean, altogether different, however, from the ordinary *Garrabanzos*, is universally found on the tables of Mexican gentlefolks and in the humble platters of the Indians or Mestizos. Various kinds of this valuable esculent are raised in the republic; but the dark bean of Vera Cruz is always sought as a delicacy in the houses of the upper classes throughout the republic. It is both wholesome and nourishing. Mixed with the stimulating gravy formed of *chile*, and eaten with a *tortilla* or corn cake, it soon becomes a necessary of life to a stranger who resides for any length of time in Mexico. Some of our country

men have become so fond of the food, that they have brought the bean with them upon their return to the United States, and now supply their table with it instead of *homing*. From the *frijol*, the *tortilla*, and the *Chile pepper* we pass to the great national liquor, which requires generally longer time to win the favor of foreigners.

THE MAGUEY — METL, or AGAVE AMERICANA, is a species of Ananas, or Aloe, from which is made octli or *pulque*, the favorite beverage of the lower and middle classes of Mexicans, especially in the central parts of the table land.

This plant grows wild in almost every part of Mexico, yet the people do not extract a liquid from it, except in the neighborhood of Puebla and the capital, where its consumption is enormous. The principal plantations are in the States of Puebla, Mexico, Guanajuato, and a small portion of Valladolid. The districts most celebrated for the excellence of their liquor, are in the vicinity of Cholula and the Plains of Apam. So great was the consumption of this favorite national drink, that the small municipal tax upon it, at the gates of the cities, amounted, before the revolution, to \$600,000 — and, in the year 1793, to upwards of \$800,000.

Pulque is so little known in Europe, or in the United States, that some account of the process, by which it is made, may be acceptable.



MAKING PULQUE.

“The Maguey, or aloe, from which it is extracted, differs but little, in appearance, from those which abound in the south of Spain, and are known — though of a much smaller size — in England. Its growth is slow, but when arrived at maturity, its leaves are usually from five to eight feet in length, although some considerably exceed these dimensions.

“In the Maguey estates, the plants are arranged in lines, with an interval of three yards between each. If the soil be good, they require no attention on the part of the proprietor until the period of flowering arrives, at which time the plant first commences to be productive. This period is very uncertain; ten years, however, may be taken as a fair average, for, in a plantation of one thousand aloes, it is calculated that one hundred are in flower every year. The Indians, know, by infallible signs, almost the very hour at which the stem, or central shoot, destined to produce the flower, is about to appear, and they anticipate it, by making a deep incision and extracting the whole heart, or central portion of the stem, as a surgeon would take an arm out of the socket, leaving nothing but the thick outside rind, thus forming a natural basin or well, about two feet in depth and one and a half in diameter. Into this the sap, which nature intended for the support of the gigantic central shoot continually oozes, in such quantities that it is found necessary to remove it twice, and even three times, during the day. In order to facilitate this operation, the leaves on one side are cut off, so as to admit a free approach. An Indian then inserts a long gourd, (called *acojité*,) the thinner end of which is terminated by a horn, while at the opposite extremity a small square hole is left, to which he applies his lips, and extracts the sap by suction. This sap, before it ferments, is called *Aguamiel*, (honey water,) and merits the appellation, as it is extremely sweet, and does not possess that disagreeable smell which is afterwards so offensive.

“A small portion of this *aguamiel* is transferred from the plant to a building prepared for the purpose, where it is allowed to ferment for ten or fifteen days, when it becomes what is termed *Madre Pulque*, (the mother of Pulque,) which is distributed, in very small quantities, amongst the different skins or troughs, intended for the daily reception of the *Aguamiel*. Upon this it acts as a sort of leaven; fermentation is excited instantly, and in twenty-four hours it becomes Pulque in the very best state for drinking. The quantity drawn off each day is replaced by a fresh supply of *Aguamiel*, so that the process may continue during the whole year without interruption, and is limited only by the extent of the plan-

tation. A good maguey yields from eight to fifteen quartillos or pints, of *Aguamiel* in a day, the value of which may be taken at about one *real*, or twelve and a half cents;—and this supply of sap continues during two, and often three months. The plant, therefore, when about to flower, is worth ten dollars to the farmer; although, in the transfer of an estate, the *Magueyes de corte*, ready for cutting, are seldom valued, one with another, at more than five. But, in this estimate, an allowance is made for the failure of some, which is unavoidable, as the operation of cutting the heart of the plant, if performed either too soon, or too late, is equally unsuccessful and entirely destroys the plant. The cultivation of the Maguey, where a market is at hand, has many advantages, as it is a plant, which, though it succeeds best in a good soil, is not easily affected either by heat or cold, and requires little or no water. It is propagated, too, with great facility; for, although the mother plant withers away as soon as the sap is exhausted, it is replaced by a multitude of suckers from the old root. There is but one drawback on its culture, and that is the period that must elapse before a *new* plantation can be rendered productive, and the uncertainty with regard to the time of flowering, which varies from eight to eighteen years. But the Maguey grounds, when once established, are of great value, many producing a revenue of ten and twelve thousand dollars per annum.

“The natives ascribe to Pulque as many good qualities as whiskey is said to possess in Scotland. They call it stomachic,—a great promoter of digestion and sleep, and an excellent remedy in many diseases. It requires a knowledge of all these good qualities to reconcile the stranger to that smell of sour milk or slightly tainted meat, by which the young Pulque drinker is usually disgusted; but if this can be surmounted, the liquor will be found both refreshing and wholesome, for its intoxicating qualities are very slight, and as it is drunk always in a state of fermentation, it possesses, even in the hottest weather, an agreeable coolness. It is found, too, where water is not to be obtained; and even the most fastidious, when travelling under a vertical sun, are then forced to admit its merits.

“It is only to be met with *in perfection* near the places where it is grown; as it is conveyed to the great towns in hog-skins on mules or asses. During this tedious process the disagreeable odor increases and the freshness of the liquor is lost. A strong sort of brandy, called *Mexical*, *Mescal*, or *aguardiente*, is likewise prepared from the aloe, of which there is a great consumption in the coun-

try. Nor is the utility of the plant confined to this; the Aztecs prepared from its leaves the paper on which their hieroglyphics were written, pieces of which, of various thickness, may be found at the present day. The more fibrous parts supply the country with *pita*, a strong thread or twine, which is made up into ropes and used not only in the interior, but on the western coast as cordage for vessels. It is not so pliable as hemp, and is more liable to be affected by the weather; but it is extremely tough and durable, and consequently of very general utility. The preceding plate contains an aloe in full produce, with the leaves cut, the central cup displayed, and the skin, gourd, and scraper used in extracting the sap.”¹

Mexico is filled with varieties of Aloes and Cacti. A species known as the Organos—whose tall, erect and fluted columns shoot up to a height of ten, fifteen or twenty feet, is used in many parts of the table land for fences. Planted in close rows, its fine spines and firm limbs afford an impervious wall against intruders, whilst the tops of these evergreen and growing barriers are almost always covered with the most beautiful blossoms. In many districts of Mexico these *cacti* form one of the most picturesque as well as useful features in the landscape.

¹ Ward's Mexico in 1827, vol. 1, p. 55.