

A transition from indigenous to European technology in colonial Mexico: The case of tequila

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“Tequila is a pale flame that burns through walls and flies over roofs to soothe one’s feeling of despair... On the surface, tequila knows no borders, but some climates are more favorable, just as some hours seem to have been wisely designed to belong to tequila... It is at the highest twilight of doubt and perplexity that tequila teaches us a consoling lesson, its ever-present voice, its wholehearted indulgency.” ~ Álvaro Mutis

The world-famous alcoholic beverage known as tequila can be produced legally only along a strip of western Mexico. It is obtained from an agave tree that grows in that region and is commonly known as *maguey*, a word of Caribbean origin [1]. In the sixteenth century, the Spaniards adopted this word due to the many different versions of the word *maguey* that existed in the native Mexican languages spoken at the time [2]. Moreover, several different types of *maguey* pervaded the warm and moderately humid lands of central and southern Mexico (Fig. 1).

Even before the Spanish invasion of Mexico during the second decade of the 16th century, *maguey* was widely known. A fermented sap is still prepared today from a type of *maguey* that is larger than the better-known variety. It is called *pulque* and is commonly used in fermented form as an alcoholic beverage. Its devoted followers say that the plant is only one step away from being meat: the fibers of its lanceolate leaves were once used to make strings and thick ropes, as well as the rough clothing and shoes worn by the *macehual-li*, the ‘village people.’ The leaf tips were used as nails and needles and in ceremonial rites of immolation. In addition, the dry leaves served to cover the roofs of houses and to build fires. The ashes provided a substitute for bleach. *Pulque* was also used for medicinal purposes: its warm sap was applied to heal wounds and ulcers and to treat the poisonous bite of adders. In addition, *pulque* *maguey* was converted into pulp to produce certain types of paper, such as those used in the historically world-renowned books of old known as *amoxtlí* [3].

The Spanish conquistadores who arrived in Mexico were eager to find a hot alcoholic beverage, and soon discovered the *mexcal-li*, which translates as ‘what’s on the burner.’ Indeed, as has been done from time immemorial, an excellent caramel was prepared from *maguey*, specifically, from the heart of certain low-fiber types of the plant, after it was steamed



Fig. 1. *Agave tequilana* at Hacienda Doña Engracia, Jalisco, Mexico. Photo: Stan Shebs.

and cut into pieces. Aware of its sweetness, the new settlers, with many Andalusians among them, tried to press *mexcal-li* and then distill the resulting juice in pot-stills made of mud, as was done with all spirits back in Spain. What emerged from that process was a drink which we know as *mescal*.

Around 1540, one of the first friars to arrive in Mexico was said to have heard about this type of spirit, after the Spanish assured him it had “plenty of substance and was very healthy [4].” *Mescal* was produced in many places at the time, and even today many villages make their own, which is sold under their village name [5]. Among these, the *mescal* from tequila, or simply tequila, made from a variety known as Weber’s blue agave *tequilana*, is undoubtedly the most popular.

The word *ágave*, which means ‘impressive’ in Greek, was first introduced in the middle of the 17th century by the Swedish naturalist Carl Linnaeus, to refer to the type of *maguey* from which *mescal* could be obtained. The expression ‘Mexican agave’ dates back to the beginning of the 19th century and was first used by the Frenchman Jean-Baptiste Lamarck. Finally, in 1902, the German scientist F. Weber, based on first-hand information sent to him by Leon Diguét from Mexico, provided a more appropriate description [6], stressing the bluish color that set it apart from all the other agaves [7].

Tequila, like many other words linked to this drink, comes from Náhuatl, which is the name of the village that served as the seat of the municipal government, the *corregimiento*. Náhuatl was where tequila was first produced, at the onset of

the colonial period, and over time it developed into one of the first production centers. Tequila means 'grassy area between rocks' or vice versa [8]. The most appropriate conditions for the growth of the blue agave in this very specific geographical location are: an average temperature of 20°C, a height of approximately 1500 m above sea level, an average annual rainfall of 1 m³, and between 65 and 100 days of cloudy skies per year. This region, which eventually became very important for the development of industry, is located northwest of Guadalajara. Over time, it was developed as a route that led to the sea and thus allowed exportation to three cardinal points: North and South America and the Philippines.

It is very likely that mescal was already being produced elsewhere when the Spaniards settled down in western Mexico. The Spanish authorities outlawed mescal from the beginning, as a potential competitor with the spirits produced in the southern Iberian Peninsula. The authorities claimed 'in good faith' that they wanted to prevent the indigenous and mestizo peoples from constantly getting drunk. A consequence of the outlawing of mescal was its clandestine production, usually in locations that were difficult to access and only known to the indigenous people. That is why some assert that the knowledge needed to produce tequila was around even before the onset of the *Conquista*, although there is no evidence to prove this. Indeed, the oldest known tequila factory belonged to the indigenous people and was located at the bottom of a very high cliff near Amatitan, which means 'amate' or 'paper place.' It dates back to the 16th century, some 50 years after the onset of the Spanish conquest and the occupation of the present state of Jalisco.

The Spanish interdict was not particularly effective since it was rarely enforced. For example, a priest in Tepic wrote a description of the region in 1621 that noted the great virtues of mescal, "clearer than water and stronger than spirit." He also pointed out that, unfortunately, its abuse also harmed one's reputation [9]. However, the opinion of local doctors was always in favor of the alcoholic beverage. In 1638, the governor decided to legalize mescal, create an *estanco*, i.e., a monopoly outlet for commercial sales, and levy taxes. What probably motivated him were not the benefits attributed to the product, rather the increase in its consumption, which would help to meet the pressing economic needs of the government.

Unfortunately, the first taxes collected were used in the construction of a public bathing area. At the time, traders of Andalusian spirits, coming from a region lacking in cleanliness, argued that this was an unnecessary luxury and they succeeded in reinstating the ban. However, the *estancos* were reopened in 1673 due to the urgent need for funds to build a water distribution network. The subsequent arguments for and against mescal only served to prove that the manufacture and consumption of what was called the 'mescal wine of our region' was constantly growing, along with the need to expand the water supply, especially since the population of Guadalajara had experienced rapid growth, beginning in the 18th century [10]. In fact, round 1735, tequila was consumed in almost the same amounts as water. In the face of a possible new interdict, the most notable historian of the time advocated a fierce defense of the legalization of tequila, as can be read in his seminal work of

1742. He was especially concerned that not all villages were paying taxes, which meant that 'a good many resources were being wasted.' He also stated that he would have agreed with a ban on the manufacture of tequila if it had meant the end of its consumption, but instead other sugar-cane based alcoholic beverages, such as *xinguerite* and *bingarrote*, described as extremely harmful [11], were being consumed. Given the large sums of money needed to build the new Government Palace, the mescal wine *estanco* prevailed. However, when in 1785 other means of funding became abundant, e.g., trade, prohibition was again reinstated. This ban lasted 10 years, until money had to be collected urgently to combat emerging epidemics.

During the second half of the 18th century, the effects of colonization were being felt in Guadalajara, 50 years before colonization of the present Northwest Mexico (the present state of Sonora and the Californias) had begun. At the same time there was a growing sense that the land of tequila could no longer be pushed into a corner within the vast Spanish empire but had become a necessary point of transit. With the demands imposed by colonization, the province of Guadalajara was able to benefit by supplying the 'new territories,' where manufacture was still almost non-existent, with tequila although it was also being smuggled in through the northern route. In 1767, by the end of the 18th century, reports coming from the port of San Blas indicated that many thousands of barrels of tequila were being shipped mainly to California and even further, as well as to Central and South America, the Philippines, and even to Mexico City. Records from the beginning of the 19th century note that the jurisdiction of Tequila was one of the richest in the region [12].

The War of Independence in 1810 also aided the tequila cause. War first broke out in Guadalajara, where large numbers of people had embraced the insurgency led by Miguel Hidalgo. Those poverty-stricken supporters lived in miserable conditions and were prone to seek solace in alcohol [13]. The most important action took place between 1812 and 1815, when the warlord José M. Morelos rose up in arms on the southern coast of the Pacific, cutting off communication between the port of Acapulco and the city of Mexico and banning the transport of goods from the Philippines. The port of San Blas had to be used as an alternate, which in turn brought commercial life to the western part of Mexico. This situation was taken advantage of and mescal was shipped in vessels bound for Asia. In 1815, shortly before Morelos was imprisoned and executed, the highest incomes in the history of the mescal wine *estanco* were recorded. But the route to Acapulco was reopened in 1816 and the availability of tequila dropped sharply. Luckily for mescal manufacturers, 1821 saw the independence of Mexico and the end of the avenging blockade established by Spain, which had banned the legal sale of Spanish spirits and other goods to Mexico for more than 15 years. Sales of tequila improved accordingly, but the numbers achieved in 1815 were not surpassed until after 1849: gold in California was to be found within the more than 2 million km² that the US had taken from Mexico, and the tequila shipped from the port of San Blas was the spirit the gold diggers resorted to, despite the fact that they had to travel far to get it. Exports grew over the following

20 years but they ended when the railway system in the United States [14] spanned from coast to coast and cheap bourbon could be supplied from Kentucky.

Part of the earnings the *tequileros* (tequila manufacturers) obtained during this period were used to support General Ramon Corona, the liberal warlord in west Mexico, in his fight first against the conservatives and subsequently against the French. It is only natural that the manufacturers preferred the free trade championed by the liberals over the agenda of the old conservative regime. Precisely due to this support, an outstanding *tequilero* by the name of Gómez Cuervo became the governor of Jalisco, when the Mexicans ridded themselves of Napoleon III's soldiers, which also dealt a fatal blow to the hopes for a Mexican empire. The first thing Gómez Cuervo did once in power was to lower the taxes on tequila, which he compensated by increasing all other taxes.

The republican regime was restored in 1867. Up until then, Mexico had suffered yet another French intervention, the aforementioned invasion by the *gringos*, great political turmoil, and a full-scale civil war between liberals and conservatives. Finally the country enjoyed a long period of peace that brought social and economic transformation with it. Unfortunately, it all came to an end 40 years later with what is known today as the Mexican Revolution [15]. One of its underlying causes was that during those 40 years only a very few individuals had prospered.

Over time, the manufacturing conditions of tequila improved substantially. The manufacturers were very proud of their product and supported efforts to officially name this spirit 'tequila,' as it was already widely known. Traditionally, after having grown in the fields for a period of 10 years, the leaves of the agave plants were cut away with a large steel razor that was fixed to the tip of a stick. This tool is still called *coa*, which means 'snake' in Náhuatl. What was left of the plant was the heart or *piña*. The process, which remained essentially unchanged, is still known as *jima*, another word from Náhuatl, which means 'smooth down' or 'shave.' After being cut into two or four sections, the shaved hearts were transported on donkeys or mules to stone-lined ovens, where they would be cooked for 2–3 days (Fig. 2). The cooked pieces were then crushed by a large stone wheel pulled by one or two animals known as *tahona*. This has been known as the 'Chilean mill' since ancient times, evidencing the contact established along the Pacific coast. The resulting *mosto* (wort) was placed in wells a little deeper than 1.5 m and around 80 cm in diameter and was left there to ferment for a few days. In order to accelerate the process of fermentation, apart from using yeast, there was a *batidor*, a Christian who was immersed up to the waist in the *mosto* and who by slowly wading around for a few hours would stir it. The man's sweat, including urea, became part of the fermented *mosto*, as no doubt did his urine considering the length of time spent in the *mosto* and the heat around the legs. Today a small amount of urea is usually added when the *mosto* starts fermenting. Finally, the *mosto* was transferred to the pot stills and then to barrels or casks, where it would sit ready to be sold and consumed.

Technical and hygienic conditions improved by the 1870s, with the import of copper pot stills, which not only were more hygienic but also reduced the amount of liquid losses, and the



Fig. 2. A distillery oven loaded with agave *piñas*, the first step in the production of tequila. Photo: Tobias Hesse.

replacement of wood by steam in order to speed the cooking of the mescal. In addition, mechanical equipment was introduced to crush the mescal more quickly. Exports also started around that time. The first exports were tentative and were directed to the southern United States, but before the end of the century tequila was also being sold in Western Europe as well as in neighboring countries such as Guatemala and El Salvador, which since then have been faithful and enthusiastic consumers. Significant effort was also invested into selling tequila at fairs and exhibitions, both in Mexico and abroad, since it allowed the traditional producers to make themselves known and to gain new clients. At those events, richly ornamented medals, plaques, and certificates were often awarded to outstanding tequilas. These forms of recognition, as a reflection of nostalgia, nowadays serve as symbols of pride for the factories that long ago won them.

During those years, measures were also being taken to encourage industrial and agricultural improvements. A very popular action was that of an apothecary named Lázaro Pérez who, after several analyses, stressed the great virtues of tequila but warned that "people should clearly understand" that it had to be consumed in moderation. In his own words, these are but a few of the qualities of tequila:

"It whets the appetite for food [...] eases difficult digestion; strengthens gastric functions [...] aids the prompt scarring of wounds ... eases pain and prevents the swelling of twisted ankles—when applied with a stupe—, invigorates those functions weakened with age [...] quenches thirst and the sense of hunger [...] helps in rebuilding strength after an excessive physical effort and awakens the intelligence [...] keeps boredom at bay and provides pleasant sensations." [16]

This was not the first time the healing properties of tequila were described. But apart from what we know was said about tequila in the 17th century, when its legalization was sought, there seems to be no direct evidence of the health benefits of tequila. In 1812, an excerpt from the newspaper *Diario de México* stated:

“Pure wine has the virtue of healing illnesses, as people in the places where it is not prohibited well know ... It eases menstruation pains when a well-balanced use is made, and prevents pain around the groin when it is lukewarm. It kills worms and prevents the breeding and such of other insects. When consumed lukewarm it eases the pain of women in labor. To be able to experience these beneficial effects tequila has to be in its purest state and not diluted in water. It can be purchased on *Espíritu Santo* street, between houses number 3 and 4.”

Between 1900 and 1915, the production of tequila almost doubled, while the number of manufacturing factories was approximately the same. Many guild members mistrusted the use of glass bottles purchased in Germany. Thus, in 1906, the first large-scale glass factory was built in Monterrey, which was able to supply a sufficient amount of glass bottles and at cheaper prices. Until then, everything had been transported in large wooden barrels (*pipones*) like the ones still in use today, and kept in approximately 33-liter decanters known as *dama-juanas* (demijohns). The bottles turned out to be more practical and were also reminiscent of, in a period of elixirs and syrups, medicine bottles. The emergence of the glass industry also gave way to the appearance of the famous *caballitos*, which are the tiny glasses, almost cylindrical in shape, that imitate the traditional, hollowed horns previously used to drink tequila.

Tequila played a large role in 1918, when the infamous ‘Spanish flu’ pandemics struck the world. A combination of tequila, lemon, and salt was recommended to fight infection. This form of consumption remains common practice today, albeit for non-medicinal purposes! It was believed that lemons, especially those grown in Mexico, contributed to combating disease because they were very rich in vitamin C. However, the real purpose of this cocktail, apart from its vasodilator quality, was no doubt to insure the prosperity of tequila producers and salesmen. The Spanish flu was followed in 1920 by the famous prohibition in the United States, which banned the manufacture of alcoholic beverages as well as their consumption. This gave way to the clandestine production and illegal importation of tequila. Judging by the producers’ success, these 13 years were busy times, as enormous loads of tequila were shipped to the United States.

During much of the 1920s and early 1930s, large amounts of tequila were supplied to the emergent oil-producing lands on the coast of the Gulf of Mexico, but the open oil wells in the Middle East reduced the local market significantly. The situation worsened when the government of Lázaro Cárdenas implemented an agrarian reform program, which led to the breakup of the *latifundios* or ‘big estates’ and split the tequila industry into farmers and manufacturers, who did not always see eye to eye. The first attempts at the organization of trade unions were then carried out, but the resulting institutions were too weak to be effective [17].

The fierce nationalism in Mexico that gave support to the successful Mexican Revolution in the 1920s also led to important contributions in the humanities and visual arts. This was especially so in Jalisco, the land of tequila, through the success

of a filmography known as *ranchera*, which highlighted the values of non-indigenous rural life in Mexico. Overall, tequila made its way into the growing Mexican middle class, which a few years earlier would have shunned a drink produced by lower-class, rural people. In fact, tequila was considered appropriate at times of great patriotism. Thus, from the 1930s on, and continuing nowadays, tequila became ‘the Mexican drink par excellence.’ Nonetheless, the *popis* (dandies) would continue scorning tequila for the following 40 years.

World War II resulted in a huge increase in demand for tequila. The production of spirits in war-torn countries such as England, France, Russia, and Poland was strongly restricted while soldiers on the battlefields were in large need. Exports rocketed between 1941 and 1944, from 21,000 to almost 5 million liters. The end to these benevolent times, at least for the tequila industry, mainly affected the manufacturers. A Spaniard monopolized the tank wagons and other types of cargo and, with all sorts of dubious tricks, signed a contract of exclusivity both with the city of Monterrey regarding the bottle supply and with a distillery located next to the railway. This resulted in the introduction of cheaper liquors, produced under substandard hygienic conditions. Documents of the U.S. Department of Health, although compiled once production and the market were normalized, showed that tequila bottles often had been refilled without being previously rinsed, as many of them contained shards of glass. Subsequent steps taken to protect the tequila manufactured in Jalisco were to no avail. The bureaucratic jungle was worsened by the aforementioned Spaniard’s chicanery. However, as soon as the armistice was reached, he returned to his native land, without, not surprisingly, an agreement regarding his extradition.

With the excuse of better controlling tequila production and distribution, taxes on tequila bottles entering the United States dramatically increased. The situation for producers was further complicated by consumers’ mistrust, which greatly minimized tequila consumption. Bulk tequila exports sunk from 5 million liters in 1944 to only 9000 liters in 1948. Intense efforts were therefore made to reorganize the industry and thus to increase sales. In 1949, the government passed the first regulations on a standard of quality. This was a hard-fought battle lasting 9 years. The government also took advantage of the wave of success brought on by the international agreement on the denomination of origin, signed by many countries in Lisbon in 1958, and managed to register the brand ‘tequila.’ The following year saw the foundation of the National Chamber of the Tequila Industry, which is still active today.

Furthermore, apart from the establishment in Guadalajara of the first glass factory, the aim of which was to supply the tequila industry, other actions were taken in order to regain the market, in particular, technical improvements and better hygienic conditions, such as the use of stainless steel in pot stills and barrels. In addition, some manufacturers reduced the alcohol content (and therefore the price) of their tequila to a little less than 40 % by using distilled water, to make the drink more palatable [18].

Unfortunately, the resulting explosion in demand was not mirrored by an increase in the raw material: the blue agave. To

be able to reach a wider market, a questionable regulation made in the name of 'quality' was passed in 1964; it allowed the addition of different types of sugar (mainly cane sugar) in amounts of up to 30 %, and later, in 1970 up to 49 %, during the fermentation process. This regulation has not been modified [19]. In 1991, the production of blue agave was scarce and some unscrupulous *tequileros*, in collusion with deputies and employees in the Ministry of Trade and Industry, nearly succeeded in changing the official regulation to allow an added sugar content of 90 %. Fortunately, this measure was avoided thanks to the prompt response of several concerned citizens and the support of a senator representing Jalisco.

One of the reasons for the increase in demand during the 1980s and 1990s was that the upper classes began to accept the 'Mexicanization' of their palate and thus finally embraced tequila, because of its digestive qualities but also reflecting the enormous increase in imported spirits due to the long-standing devaluation of the Mexican currency. However, this also resulted in periodic, extreme increases in the price of tequila, in part derived from the belief that, as for many other products, 'the more expensive, the better.' Thus, for some, expensive tequila became a status symbol. What is to be appreciated is the trend of making tequila with a higher percentage of agave. Nowadays, there are almost 500 manufacturing companies able to boast that their product is '100 % agave.' This is ensured by the Tequila Regulatory Council, founded in 1994 and formed by government representatives, agave producers, and tequila manufacturers. The Council is headed by a businessman who is not allowed to do business with any of the council members. One of its responsibilities is to certify that a bottle of tequila sold as *añejo* (aged) was kept in oak barrels for at least one year, and for at least 3 months in the case of *reposado* (rested) (Fig. 3). Tequila labeled *blanco* (white) can be bottled and is ready for consumption as soon as the desired alcohol content is obtained. It should be noted that tequila cannot remain in the oak barrels for more than 3 years, otherwise it begins to decay. This is the reason why there is no aged tequila, only tequilas of high quality, and why good tequila is, relatively speaking, not very expensive.

Over the years, the Tequila Regulatory Council has grown in size and has consequently become overly bureaucratic, to the detriment of its fairness and utility. It is increasingly unable to fulfill its stated aim, to properly regulate the production of agave and the manufacture of spirits, shielding the industry from the huge price volatility of the raw materials. The Council has failed to develop a long-term plan that would offer steady growth. In all probability, if the government had been more honest and rigorous in the pursuit of its stated aims, fewer important Mexican companies would have passed into foreign ownership.

According to international agreements such as the Lisbon Agreement or the one Mexico reached with the European Union in 1997 [20], tequila can only be manufactured in a particular region of Mexico. It is therefore regretful that in several countries, including Japan, Spain [21], and South Africa, counterfeit, low-quality tequila is made with full impunity. This type of tequila is known as 'chemically pure.' This is not to imply that the appropriate use of chemicals is objectionable per se: there are many insecticides, fertilizers, as well as new products to

improve the hygienic conditions of factories all of which have improved the quantity and quality of tequila.

Fields of the jagged agave dominate the central strip of Jalisco. They allowed the production of 199 million liters of tequila in 1999, a significant rise from the 91 million produced in 1994. Two thirds were sold around the world, but 65 million liters were consumed in Mexico. This amounted to more than 650 million *caballitos*, or what the American would call *shots*. In fact, patriotic enthusiasm resulted in a two-fold increase in the national consumption of tequila within 10 years, whereas exports increased by a little more than 40 %. Together this amounted to 250 million liters. On a positive note, most of these exports are increasingly in the form of bottles, and the economical spillover that remains in Mexico has increased correspondingly, from 3 % to 30 %. It is also encouraging to know that quality tequila is being favored. The production of tequila made with 100 % agave, which was 15 % in 1995, reached nearly 60 % in 2009. This has been due to demands in local consumption because exports are mainly 51 % agave. While the American market has ignored quality tequila this has not been the case for Europeans, who tend to prefer the high-quality brands, although even around Europe the worst can be found in plenty of bars and pubs [22].

Tequila is sometimes combined with a carbonated soda made of grapefruit or *pomella*; in a 'margarita cocktail,' to which lemon juice and a few drops of Cointreau are added (the juice of other fruits can also be added: mango, tamarind, zapote, tangerine, strawberry, etc.). A 'vampire' includes tomato juice; a 'changuirongo,' also known as *charro negro*, is made with



Fig. 3. Tequila being rested or aged in oak barrels. Photo: Tobias Hesse.

ginger ale. It can be added to a *sangrita*, made from orange juice and spices. Together with a bite of a slice of lemon and dash of coarse sea salt tequila can 'prevent the flu.' Of course, it can simply be enjoyed 'straight.' Tequila, unlike what is often seen in films of the 1940s and 1950s, must be sipped slowly, letting it run from the tongue to the palate and breathing it in, as with the best spirits. In fact, not long ago, a delicate, stylized glass was 'scientifically' designed in Germany to allow a fuller savoring of tequila, but many still prefer the traditional glasses.

We drink tequila in sorrow as well as in celebration. As the saying goes, *para todo mal, mescal, y para todo bien, también* (mescal to fix what's wrong, as well as to accompany what's right). Perhaps, the most meaningful enjoyment of tequila is when there is an opportunity to celebrate one's Mexican nationality: at patriotic festivities or when the country's soccer team "plays like never before, but loses as always." I conclude with an English version of several verses singing the praises of tequila, written by an *inspirado vate saltillero*, that are usually recited when tequila is having its effect:

Tequila, gentlemen, is more magic than anything.
It dissipates the feelings of sadness; it calms down the afflictions.
It makes the lover skillful. It makes the singer sing in tune.
If your body is weak, it lifts your spirits.
It gives you determination and a relish for love in the battle;
It warms you in winter. It excites you in the summer
And it offers you consolation and hope at all times.

In all, tequila is God's gift.
The Holy Mother Church should declare it
The second blessed water, or sacred,
And use it in baptisms as a chrism of grace

and in the last rites so that the soul
can leave this valley of tears
in good spirits and feeling no distress.

Notes & References

Notes

1. On 10 May 1973 the Mexican government published the *Diario Oficial de la Federación* (The Federation's Official Journal), in which protection under the 'denomination of origin' was declared. On 9 December 1974, this protection was extended to the territory of origin, that is, Jalisco state and a few villages in neighboring states.
2. In Náhuatl, the most widely spoken of all indigenous languages, it's known as *mètl*; in Otomí, which is spoken in the Hidalgo state, as *guada*; in Purèpech or Tarasco, spoken in Michoacan, as *atocamba*; it is known as *ki* in all Mayan dialects and as *kaku'yste* in Huichol or Wirràrica, a language still spoken between Nayarit and Jalisco, in the Western Sierra Madre mountain range.
3. In the 17th century, Joan de la Concepció, a barefooted Carmelite, wrote in the *Romanç Històric*: "*De los magueyes retorcidas fibras / volúmenes de Historia die-*

ron muchos" (Many history volumes were produced / from the twisted fibers of maguey).

4. Only in the state of Jalisco do the villages (approximately ten of them) put their name on the mescal label: Apulco, Quitupan, Tuxcacuesco, Tonaya, etc. Oaxaca is also a popular site of production: some producers have put the worm that breeds in the plant in the bottle. (This does not modify the flavor in any way.)
5. 'Ágave' became 'agave' when Mr. Weber adapted it to the French language. Also, the change was due to a trait in Mexican speech, as inherited from Náhuatl, which consists of stressing the penultimate syllable of every word.
6. Another version states that the word comes from *tequio*, the mineral that miners were allowed to keep after every day's work; someone pointed out that tequila meant 'workplace.' It is not common to find toponyms on qualities or defects of the inhabitants, nor there is any reason to question the other version, as it is clear and corresponds to the actual landscape.
7. Throughout the 18th century, the population of Guadalajara increased from 4000–5000 to approximately 30,000.
8. They were headed by Miguel Hidalgo, the priest that started the war and who was defeated in the vicinity of Guadalajara.
9. This took place in 1869, near Chicago.
10. The problem was that liberalism was out of control, similar to the current situation in Mexico.
11. The first was Productores de Tequila S.A. in 1933. It became Tequila S.A. 2 years later, with the aim of giving the firm a more flexible structure.
12. Less than 38 % results in a bland-tasting tequila, although in some brands it is 35 %.
13. It was confirmed in 1993 and 1997.
14. The agreement was reached in Brussels on 22 May.
15. 'El Sombrero' was manufactured in Tarragona some years ago, licensed under Porfirio Juárez & De Tequila Co. But it does not seem to exist. Not long ago, I attempted to visit one such factory in Talavera de la Reina but could not find it! Nor did I see a single agave there.
16. Data provided by the Tequila Industry Council.

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