

Cacao (*Theobroma cacao* L.) as medicine in New Spain and Europe, 1500s–1600s

LILIANA SCHIFTER*

Introduction

When we think of chocolate in the present time, we think of a culinary ingredient, particularly used by bakers. However, chocolate in the form of candy bars or a hot drink mixed with milk and sugar is a rather recent innovation. One might even dare to say that from the historical perspective, these are the relatively least popular uses, since during most of its history, cacao was considered as a therapeutic drug, while chocolate was a cold and bitter beverage prepared by mixing roasted and ground cacao seeds, water and other natural ingredients.

In Mexico, before the Spanish conquest, cacao was the main ingredient of cold chocolate, which was considered a medicinal beverage, its history going back to the times of the Olmec and the Maya, i.e. the first to prepare it for therapeutic and ritual purposes. After the arrival of the Spaniards, both preparation and use radically changed. The aim of the present study is to analyse the use of cacao as a medicine in both the ‘Old’ and ‘New’ Worlds, with particular focus on similarities and divergences as perceived within different medical systems.

Historians of medicine in New Spain have traditionally emphasised the elements of syncretism and acculturation of medical knowledge, in which indigenous resources occupied a central place. In recent years, a critical view developed that strongly calls the previous approach into question. It cannot be denied that the circulation and re-appropriation of medicinal resources were carried out by different actors who both shared and disputed such resources. Yet, one may identify practices and representations originating in indigenous civilisations immersed within the new culture that emerged as a result of the colonial shock, namely, the so-called neo

* PhD, Universidad Autónoma Metropolitana, México, liliana_schifter@hotmail.com

Hispanic medical culture.¹ It is equally true that not all information circulated in an equally free manner. Moreover, concrete actions were undertaken to gain control over certain subjects and bodies of knowledge. This contributed to their transformation or disappearance, inasmuch as they were incompatible with institutional attitudes. This was the case of all non-academic expressions of the ‘art of healing,’ as well as of the representations of the human body beyond the Galenic paradigm, then prevalent in the colonial institutions.

Characterising a phenomenon as broad-scoped as the neo Hispanic medical culture demands analysing intersections between spaces, practices and representations which emerged and provided the conditions for the development of a medical culture, in which both natives and Spaniards participated. This culture must be considered different, in regard to many of its components and conceptions of disease, relative to its counterparts in Europe, Africa and Asia, and its medical pluralism is reflected in medical and surgical works printed in New Spain during the sixteenth and seventeenth centuries.

Native ‘informants’ were essential to the transmission of Mesoamerican medicine to ‘inquirers’ such as Bernardino de Sahagún (c. 1500–1590), Francisco Hernández (1514–1587) and the Jesuit or Augustinian friars whose works I discuss here. The construction of collective identities promoted in this type of works made the names of these ‘informants’ become invisible, resulting in the deletion of their individuality and subjectivity. In this paper I am particularly concerned with the process of appropriation and transit of knowledge. The focus falls on the mechanisms which are put into action when something—cacao, in this case—or some specific cultural practice moves from one context to another, or from one place to another, and how they are transformed, enriched, impoverished, acquire new meanings or lose their original identity along this process.²

It is worth observing that the time frame I set for the present study corresponds exclusively to the sixteenth and seventeenth centuries, while I intentionally left the eighteenth century out. The reason is that the conceptions of medicine, chemistry and *materia medica* became substantially different after the 1700s, as a function of the gradual, but definitive replacement of the therapeutic system based on the Galenic theory of humours by new chemical medicines obtained through chemical practice.

Cacao and chocolate in pre-Hispanic Mexico

The botanical name of the cacao tree is *Theobroma cacao*—food for the gods or divine food—as given by Carl Linnaeus (1707–1778) in 1753. While the tree grows in most of the tropical and equatorial areas of the Americas, its

use as the main component of a special beverage, chocolate, requiring careful preparation, certainly originated in Mesoamerica. The oldest evidence of its use in the continent is afforded by Olmec pottery, and consists of deposits or sediments of theobromine, an alkaloid similar to caffeine and cocaine and that constitutes a specific marker of the presence of cacao.³

The natural and cultural history of the cacao seed has been a subject of intensive scientific inquiry along the past 25 years. Some researchers focused on the natural distribution of the cacao tree to determine its geographical extension, archaeological identification of cacao plant remnants, deciphering hieroglyphics on ancient ceramics and analysis of pottery residues, thus contributing to the growing corpus of knowledge on the pre-Hispanic history of cacao. Recent studies demonstrated that the early Olmecs prepared and consumed cacao, possibly in liquid form, in their first capital, San Lorenzo (Mexico), as early as in 1800–1000 BC. In 2011, Powis et al. published the results of an analysis of 156 pottery samples from San Lorenzo, La Loma and Zapote sites, and confirmed the presence of cacao in 17% of the containers. While the nature of the cacao products consumed with these utensils is unknown, liquid cacao was detected in some samples.⁴

Powis et al. further describe the interesting case of an elite festivity in San Lorenzo, where several hundreds of vessels were found in a burial pit that contained disjointed remnants of sacrificial victims. The shapes and large number of these vessels point to a well-attended, post-interment celebration, including the preparation of cacao beverages which were ritually served, perhaps together with other drinks. The pottery might have been intentionally broken at the end of the ceremony, in which case it represents an instance of conspicuous destruction of wealth. Four of eleven vessels tested positive for cacao, and they clearly point to the special nature of this mortuary event, which is unique for the Olmec world to date.⁵ This evidence demonstrates that the Olmecs were involved in the production and consumption of cacao products as early as 1800–1000 BC.

However, the Mayan world was the space and time crossroads in which cacao became an object of artistic representation, and took part in the most important milestones of life. Numerous utensils of all sorts were used to handle and store cacao; cylindrical containers were especially designed to drink it, and codex-style vessels used in ceremonies depict political and spiritual leaders enjoying the foamy beverage.⁶ The Mayan archaeological site in Colha, northern Belize, yielded several stirrup spout ceramic vessels containing food and beverage residues. Highly sensitive laboratory analysis of vessels recovered from burial sites for the elites enabled researchers to determine that chocolate was consumed by the pre-classic Maya as early as 600 BC.

The presence of cacao in the elegant classic Maya vessels certainly bears witness to the high value the ruling class attributed to this beverage. The Maya had a long and continuous history of preparing and consuming chocolate from the pre-classic period throughout the Spanish conquest.⁷ Cacao also had a strong presence in other Mesoamerican cultures; both the fruit and the beverage prepared from the seeds are represented in paintings in Teotihuacán, as well as in Mexica and Mixtec codices, which include abundant representations of gourds, jugs and all sorts of vessels to prepare the succulent drink, which was consumed at luxury feasts.

Cacao, and the beverage prepared from it—*cacahoatl* (cacao water)—played a unique role in the life of these civilisations, especially the Mexica, who had developed a vast empire by the time of the Spaniards' arrival. To the Mexica, cacao was one of the most important offerings, and was also considered as a valuable currency, which was used to pay taxes. Several mentions to cacao appear in Bernal Díaz del Castillo's (1495–1583) *Historia verdadera de la conquista de la Nueva España* (1632), which confirm the commercial and social significance of this plant in the times of Moctezuma II (1466–1520).⁸ In addition, cacao was a symbol of power, wealth and glory, which prevailed from the initial constitution of the empire throughout the Mexica's military conquests and the expansion of their trade connections to areas far away from the centre of the Mexico Valley. This vast empire eventually became the main enemy of the Spaniards, when they reached the Mexican coast in the sixteenth century. During the colonial period, they also represented the main cultural counterpart in discussions relative to significant fields of knowledge, such as medicinal plants and their application to various diseases.

Health and disease according to the Mexica: a short introduction

To the Mexica, humans were made of three distinct and coexisting mystic entities, which had to be kept in harmonious balance to maintain health, otherwise imbalance occurred, resulting in the loss of this precious physical state. The first such entity was the *tonalli*, located in the head and with influence on the sleep/wake cycle; in addition, it promoted growth and was conceived of as a glow of celestial origin. The second was the *ihiyotl*, namely, a breath of air that settled in the liver, and was related to aspects such as desire, courage, passion, vigour, craving and greed; it was typically related to the underworld. The third entity was the *teyolía*, located in the heart, and related to vitality and mental aspects, such as emotions, consciousness and will; this entity was properly human. In the Mexica's view, health and disease revolved around the idea of balance and

imbalance. While each mystic entity was located in some specific organ, they were simultaneously distributed all throughout the body, and their functions were understood as complementary and confluent.⁹ In addition to balance within each individual body, human beings also had to maintain a balance with the cosmos, including their relationship with the gods, divine forces and other members of society. Balance depended on the individual's permanence within boundaries which implied moderation in all aspects of life, i.e. the spiritual, economic, nutritional and even sexual.

Within this worldview, disease was seen as the consequence of imbalance, which could be triggered by a myriad of factors able to change the structure or function of the human body and its relationship with other creatures. The precarious balance of the body could be disrupted by natural agents, as e.g. prolonged exposure to the sun, or accidents, such as hard blows, falls or sprains; by supernatural agents, mainly objects inhabited by spirits which caused disease when they came into contact with humans either through touch, smell or taste—such was the case of some plants, spring waters, rocks or flowers; or by divine intervention, as individual or collective punishment for lack of faith or obedience to the gods.¹⁰ In Europe, as well as among Europeans in Spain's American colonies, the Hippocratic-Galenic theory still prevailed in the sixteenth century, and thus provided the conceptual framework for studies of indigenous plants and other elements with which the Spaniards came in contact in New Spain.¹¹ Cacao was analysed from this medical perspective, giving rise to notions and practices which were applied to the treatment of the sick and are discussed below.

The Mexican encounter with the Spaniards and the publication of the earliest medical works in New Spain

The arrival of the Spaniards to the Americas and their subsequent conquest of the territory in the sixteenth century led to a confrontation between two extremely different views of health and disease, although both converged in the use of medicinal plants as part of their *materia medica*. In the second half of the sixteenth century, New Spain was home to a group of physicians and naturalists, who, as temporary or settled residents, took on the task of writing about local diseases and the medicines used to cure them. These authors were part of a generation that came to New Spain as young or middle-aged men, some of them with degrees earned at distinguished European universities, while many others had graduated at the new Real y Pontificia Universidad de México in New Spain. As professional or empirical physicians or members of religious

congregations, they published several books with important contributions to medicine and natural history.¹² Below I discuss the earliest medical texts printed in New Spain, with emphasis on mentions to cacao and chocolate, followed by a short commentary.¹³

Libellus de medicinalibus indorum herbis, or *Códice de la Cruz-Badiano* (1552), was written by Martin de la Cruz, “a native physician from Santa Cruz College, with no professional studies,”¹⁴ and translated by Juan Badiano, a native of Xochimilco, who was a student at Santa Cruz. The book—delicately decorated with numerous and detailed illustrations—deals with medicinal plants and indigenous medical treatments for different diseases, and was written in Latin in an European style. However, its content, but for very exceptions, is entirely indigenous.¹⁵ *Libellus* was conceived of as an ‘herbarium,’ similar to those available in Europe at that time. Herbariums were basically collections of drawings of medicinal plants, organised according to the diseases for which they were indicated, accompanied by a short text describing their medical use. It is worth observing that the indigenous medicine classified diseases according to an anatomical order, i.e. from the head to the feet. Over 150 native plants used in pre-Hispanic medicine are listed in *Libellus*, and also supernatural beings of the indigenous religion have a veiled presence.¹⁶ Although there are no explicit references to gods and their relationship to diseases, one can infer them by reading between lines.¹⁷

Cacao is mentioned as an ingredient of remedies prescribed for five particular diseases. Different parts of the plant were used as a function of the targeted condition. For example, an ointment consisting of various herbs, roots of trees, stones, pale earth and cacao flowers, or *cacahuaxóchitl*, was recommended for foot injuries. This ointment was meant to be applied under heat, and from its composition one might infer it might have had an analgesic and relaxing effect. Then, to combat fatigue, a beverage made of natural cacao seeds, a selection of barks and leaves, flowers, herbs and water was recommended to prepare the body and the mind for arduous tasks. This preparation was not meant to cure any specific illness, and was exclusively indicated for officials of the ruling class, who were the only ones authorised to drink cacao, a restriction also enforced by the Maya.

Other remedies prepared with cacao were prescribed to treat fear and madness, affections of the ‘Old’ World without cultural correspondences among the natives. Their presence in the book might represent an attempt to make it more accessible to European readers. Throughout the book there are clear correspondences between the concept of disease in the human body according to the indigenous worldview (which included external and internal conditions) and the use of the *materia medica* as part

of the specific treatment. From this perspective, the text is a hybrid of two worlds.¹⁸

Almost twenty years later, in January 1570, Philip II, King of Spain, sent his royal physician and apothecary, Francisco Hernández (1515?–1587) to New Spain with a mission: to make a list of all herbs, plants, trees and seeds with medicinal properties, and to gather all possible information from native and Spanish physicians, surgeons and herbalists. Hernández stayed in New Spain from 1571 to 1577;¹⁹ one of the many results of his ambitious expedition was the compilation of the first book on Mexico's natural history: *Historia natural de las plantas de la Nueva España* written between 1574 and 1577.²⁰ This book became the mandatory reference on the subject for several centuries despite difficulties for publication, and was ground breaking in regard to the introduction of New Spain's *materia medica* into Europe. Hernández classified each plant according to its evident physiological effects, and sought to subsume them under the Galenic categories, using the nomenclature of his time.²¹ He thus considered the cacao tree, or *cacahoaquáhuatl*, to be “temperate, cold and wet in nature, with a bitter to sweet taste.” He distinguished between five different types of cacao trees, with different size and fruits, and mentioned the seeds of the *quauhzapatlali* tree, used to prepare a beverage for the treatment of acute illnesses, fevers and liver disease, but that in large amounts could result in excessive weight gain.²² Hernández also mentioned *chocóllatl*, a beverage prepared with *cacahoatl* and *póchotl* seeds in equal amount, which was beneficial to the exhausted. Next he described its preparation, which involved roasting and grinding the grains, which were then placed in a pot to which water was added, followed by frothing to produce foam. The resulting oily supernatant and foam were set aside, while softened “native grain” (maize) was added to the remaining fraction. Just before drinking it, a portion of the liquid was poured into a drinking container, and the warm foam was incorporated again.²³

This is the first written mention known of the word *chocóllatl*, although it was probably employed years before, as oral transmission usually precedes written records. Shortly after, the word appeared transformed into *chocolate* in documents from Oaxaca, Chiapas and Guatemala, and the beverage became a common object of study. Hernández's work was a fundamental source of knowledge about the nature and properties of cacao and the beverages prepared from it.

One of the texts written by chroniclers who were not physicians, but which became considerably influential, was *Tesoro de medicinas para todas las enfermedades*, a compendium of Mexican *materia medica* written by Gregorio López (1542–1596).²⁴ López came to New Spain from Madrid, and without any formal studies worked as physician at *Hospital of Huaxtepec*,

where he wrote *Tesoro de medicinas* between 1580 and 1589. For reasons we could not establish, this book remained unpublished for many decades, but many copies of the original manuscript were made and sent to various destinations to be used as a pharmacological guide by Spanish priests in hospitals.²⁵

The book begins by a description of the qualities of herbs and other aspects of the *materia medica* with which practitioners ought to be duly acquainted to make a proper use of them, namely, the Galenic qualities of heat, coldness, dryness and moisture, for which López included a scale in ascending order from one to four. Yet, as in the case of Hernández, there is strong evidence that also López included aspects of the indigenous knowledge of medicinal plants, however, presented in the style then accepted by Europeans. As a rule, the remedies containing cacao and chocolate suggested by López were indicated for fever and diarrhoea.²⁶ In another section, he suggested using chocolate as vehicle for administering strong purgatives.²⁷ Finally, in accordance with *Libellus*, he recommended an ointment made of cacao and other ingredients for the treatment of sores. In López's work, both cacao and chocolate are considered medicines.

Within the Jesuit bibliography produced in the sixteenth century, *Historia natural y moral de las Indias*,²⁸ by the Spaniard José de Acosta (1539–1600), published in Seville in 1590, was perhaps the most famous in the Americas and Europe. The popularity it enjoyed was not only due to its wide circulation in the 'New' World and its numerous translations and re-impressions, but also and mainly to the author's innovative way of describing American novelties to European eyes. *Historia natural y moral de las Indias* is a scholarly example of taxonomic recording of the natural abundance of the indigenous world.²⁹ Mentions to cacao are found in book IV, chapter XXII, entitled "Of Cacao and Coca." Acosta mentioned chocolate, not cacao as such, which he recommended to treat colds, and as a remedy for the unsettled stomach. He also described different preparations, including several flowers and spices, such chili. In his opinion, these components had influence on the resulting chocolate, since they communicated their cold or hot properties to it.

Another relevant work on Mexican *materia medica* published at the end of the sixteenth century is *Problemas y secretos maravillosos de las Indias*, published in New Spain in 1591.³⁰ The author, Juan de Cárdenas (1562?–1609) was born near Seville, travelled to New Spain in his youth, where he learned medicine at Real y Pontificia Universidad, and graduated as Doctor of Medicine in 1590.³¹ Cárdenas undertook the task of analysing the "nature, properties and effects" of chocolate in chapters VII and VIII, with a "clinical eye," according to humoral theory. Within this frame-

work, he concluded that cacao was “cold in the first degree and dry in the second”.³² However, whereas chocolate was cold in nature, it caused heat within the patient’s body, and was beneficial to health because it sustained the body and helped expel harmful humours. He observed that preparation ought to include a careful selection of the correct ingredients for each patient, because also the properties of the components exerted influence.³³

The physician and Augustinian friar Agustín Farfán (1532?–1604) was also from Seville. Farfán learned medicine in Alcalá de Henares and Seville; after his arrival in New Spain in 1557, he enrolled at Real y Pontificia Universidad, where he became a Doctor of Medicine in 1567, as Juan de Cárdenas has done before him. In 1592 he published *Tratado breve de medicina y de todas las enfermedades que a cada paso se ofrecen*.³⁴ The intended recipients and beneficiaries of the remedies and treatments described were Spaniards and Neo-Spaniards residing far away from the few cities where most physicians, surgeons and apothecaries lived and practiced in accordance to the framework of European learned medicine.

Tratado breve describes three remedies which include cacao as an ingredient. One is an emollient ointment meant to heal wounds on the nipples and lips,³⁵ which was prepared with roasted and grounded cacao seeds mixed with several oils and other components.³⁶ Farfán also recommended drinking “very hot chocolate in the morning” to encourage defecation. The third remedy was a beverage exclusively prepared with indigenous ingredients, which was indicated to “undo kidney stones.”³⁷

Farfán’s book was designed to be useful for isolated communities lacking the meagre resources sent from the metropolis. Hence, he prescribed numerous indigenous herbs as substitutes for European drugs. Interestingly, in this way, whether consciously or unconsciously, Farfán succeeded in appropriating the indigenous knowledge of these plants, and including it into the framework of European medicine, without providing any context for the indigenous origin of the remedies described.³⁸

Comments and remarks

As a whole, the works discussed above reflect the outcomes of a collective experience in *materia medica* gathered along many decades of intensive interaction and exchange between indigenous healers and newcomers. In particular, Hernández’s book is the extraordinary result of an inquirer interested in recording information on therapeutic knowledge, and informers willing, or forced, to convey information about their environment and culture. The colonial ethos, therefore, was a fundamental condition for the construction of knowledge during the addressed period.

In regard to cacao and chocolate, the prevailing medical theory in New Spain at that time, i.e. the Hippocratic-Galenic, characterised cacao as

having mixed qualities derived from different parts of the fruit, but as being predominantly cold, dry and earthy; yet, also hot, wet and related to the air.³⁹ The notions and principles of indigenous medicine were transformed and reinterpreted to assimilate them into the European worldview. The mystical elements associated to the beverage in the pre-Hispanic world were eliminated, and the cacao seed was included in medical books as one more component of the *materia medica*, without any magical or religious attribution whatsoever.

These early books do not indicate any significant difference in the preparation of chocolate between natives and Spaniards. The beverage was commonly consumed at room temperature and mixed with spices, while only in rare occasions it was sweetened with sugar. During the second half of the century, the arrival of cacao imported from Central America in New Spain, and the fact that it was no longer used as currency lowered the price of the seeds, and thus drinking chocolate became a common practice for everybody in New Spain.⁴⁰ This was a major difference relative to the Pre-Hispanic world, when cacao was reserved for a very special few.

Together with the publication and circulation of the aforementioned books, the pre-Hispanic cacao and chocolate were transformed into components of the Neo Hispanic *materia medica*. Therefore, from this perspective, these books might be seen as a complex operation of appropriation of pre-Hispanic knowledge and healing practices by the European colonisers, with rejection and deliberate censorship of others.⁴¹

The medical system prevailing in the seventeenth century and medical works published in New Spain and Europe

From the very moment it arrived in Spain in the sixteenth century, cacao travelled through maritime and other trade routes which connected European countries; by the seventeenth century its use was well documented and widespread. The culinary and medical applications of cacao reached Italy, France, England and Holland, among other countries. Also during this period, Catholic countries, such as France and Spain, entered into controversy on whether the use of chocolate transgressed ecclesiastical fasts; opinions pro and con consumption spread across the continent. Such polemics between physicians and the clergy is no reason for surprise, since it was not clear to them whether the beverage was a magnificent food, or the first comfortable and pleasant remedy created by nature to be useful in medicine.⁴²

At the same time, medical systems underwent major changes starting at the turn of the century, however, without involving a complete break

with previous practices. Several doctrines and procedures became intermingled, those of alchemists/chemists, Aristotelians, Hermetic philosophers and atomists, among others. The new and the old coexisted and continuously fertilised each other. As a result, a new way of understanding therapeutics developed during the seventeenth century, connected to the application of chemical practices to the preparation of medicines. A therapeutic reorientation of alchemy/chemistry, and the application of its practices to the art of the apothecaries resulted in the emergence of specialised methods and innovation also in the pharmaceutical laboratory.⁴³

One of the most relevant works published during this period dealing with these issues in depth was written by the Spanish physician Juan de Barrios (1562–1645?). Barrios arrived in New Spain around 1590, after a long journey across the best Spanish universities of his time. *Libro en el cual se trata del chocolate* was published in New Spain in 1609.⁴⁴ In this book, Barrios recommended the beverage, which he described as “precious,” and criticised all those who condemned it and sought to ban it. In his opinion, chocolate could replace “lunch and some other foods, including meat.” Yet, he was aware that it was impossible to try and give a single account of the beverage effects, since its composition varied substantially from one preparation to another—it could contain different types of flowers, spices, dyes, etc. Like other authors before him, Barrios was convinced that the benefits or problems derived from drinking chocolate depended on its composition, i.e. the additional ingredients and their effect on the patient according to their temperament (cold, hot, dry or moist).

It is worth observing that during the seventeenth century, the composition of chocolate was modified in most European countries, except for Spain. The most popular preparation consisted of a mixture of roasted and grounded cacao seeds mixed with vanilla and sugar and dissolved in hot water, very much similar to that consumed today. Eventually, water was replaced by milk in some countries.

Barrios’ is the first book about chocolate written in New Spain. He observed it was excellent for anyone: children, pregnant women, and weak or elderly people. Seeking support for his arguments from Cárdenas—one of the most respected authors on this subject, Barrios suggested four different types of chocolate in accordance to the four temperaments. Barrios and Cárdenas did not consider cacao to be a simple, but rather a complex substance with an earthy, dry and cold part, and a fatty part that was wet and hot. For this reason, they recommended to combine it with other drugs, such as cinnamon or vanilla. From the Galenic perspective, therefore, besides a foodstuff, chocolate was also a medicine, as well as the first polypharmaceutical medicine with agreeable taste, which patients welcomed with pleasure.

Meanwhile, in Spain, Antonio Colmenero de Ledesma (1583–?), a physician in Écija (Seville), was writing *Tratado de la naturaleza y calidad del chocolate*, published in 1631. In this book, which became immensely popular in Europe, Colmenero described the plant origin, the variable quality of the cacao seeds, and the relevance of other ingredients in the preparation of chocolate. He also explained how to prepare the beverage according to the Neo-Hispanic fashion, and finally the type and amount of chocolate suitable for each person.⁴⁵ Colmenero de Ledesma was a chocolate enthusiast. Although not a physician, he had carefully read the works by Cárdenas and Barrios, who he cited when characterising cacao as a simple element of predominantly cold and dry nature, but with a complex composition. The influence of Cárdenas and Barrios is also present in Colmenero de Ledesma's assertion that the addition of different components (spices, chilis, herbs, sugar, etc.) conferred chocolate diverse characteristics.

Also in Spain, the apothecary Friar Esteban Villa (d. 1660), a remarkable and influential experimental man of science, published his third book, entitled *Libro de simples incógnitos en la Medicina* (1643). This book included some information about chocolate, which Villa considered useful to activate urination, and also for the treatment of asthma and stomach weakness.⁴⁶ Villa adopted a midway position between considering chocolate as a medicine or a foodstuff, or perhaps he considered it to be both at the same time. According to him, when taken in small amounts, the beverage definitely had therapeutic applications. However, when consumed in large volume, it behaved as a foodstuff, due to its complex and nutritious composition.⁴⁷ Interestingly, Villa did not attempt to characterise the beverage according to the medical system of humours, the reason being he was a fierce advocate of chemical medicines, which he obtained by himself in his own laboratory.

During the seventeenth century, cacao was also mentioned in works published outside Spain. Both England and France imported Colmenero's wisdom together with cacao seeds from the American colonies, and exploited them with the powerful marketing tool of novelty. In France, Philippe Sylvestre Dufour (1622–1687) published *De l'usage du caphé, du thé, et du chocolate* (1671). In this book, Dufour brought together treatises on coffee, tea and chocolate, which were relatively new in Europe. The treatise on chocolate included its early history and described methods for preparation. Certainly, he had avidly read enough to identify a series of international writers who had pontificated on the merits of coffee, hot chocolate and tea. Claiming to have translated all of them, he took the unprecedented step of binding them together into one single volume.⁴⁸ Dufour claimed to be a pharmacist, whose commercial ties made him more knowledgeable than any learned man could ever be through intellectual

contemplation alone.⁴⁹ In his opinion, chocolate was a health-giving medicine.

William Hughes (d. 1683) wrote *The American physician, or, A treatise of the roots, plants, trees, shrubs, fruit, herbs, etc. growing in the English plantations in America* (1672), in which he described “the place, time, names, kindes, temperature, vertues and uses of them, either for diet, physick, etc.”⁵⁰ This seems to be the earliest work in English on the medicinal virtues of North American tropical plants. The available evidence suggests that Hughes began his career in 1651, with a privateering voyage to the West Indies, during which he visited Barbados, St. Kitts, Cuba, Jamaica and mainland Florida. He appears to have spent a good deal of time visiting British plantations in Jamaica and Barbados, where he observed and made descriptions of a large number of New World tropical plants, including the potato, yam, maize (“the wheat of America”), banana, avocado (“Spanish pears”), chili pepper, watermelon, sugarcane, guava, prickly pear, coconut and manioc. Hughes’s work considerably contributed to the spread of the American indigenous use of plants “either for Meat or Medicine.”⁵¹ His description of cacao is one of the longest in the book, and includes recipes and suggestions for medical use.⁵²

Henry Stubbe (1632–1672), an English physician, published in London *The Indian Nectar or a Discourse Concerning Chocolate* (1662). This treatise is both a medical discussion of chocolate and a critique of the assessments made by other physicians. One of Stubbe’s goals was to convince the English that chocolate was a powerful medicine, and that he was the leading expert in the country. The book is a first-hand account of the various methods to make chocolate and of its uses in South America in the seventeenth century. According to Stubbe chocolate mixed with Jamaica pepper “moderately provokes Urine and the monethly evacuations in women; it strengthens the Brain, comforts the Wombe, dissipates Winde, concocts and attenuates gross and crude Humors.”⁵³ When vanilla was added, it gave chocolate “an exceeding sweet smell: and excell other Simples, being extraordinary strengthning for the Heart: they beget strong Spirits, and of a firm mixture; they promote digestion in the Stomach, and by their heat concoct crude and gross Humours.”⁵⁴ He also mentioned that preparations with achiote grains could “purify the Blood more, and strengthen the inward parts.”⁵⁵ Stubbe was perhaps the most widely respected and quoted English authority on chocolate of his time.⁵⁶

Other works which mention cacao and chocolate as medicines are *Pharmacopoea Galeno-Chemica*, published in Frankfurt in 1651 by Joannis Danielis Horstius, *Pharmacopoeia Collegii Regalis Londini* (1677), and *Pharmacopoea Schrodero-Hoffmaniana*, by Johannes Iacobus Magnetis, published in Geneva in 1687, which includes a recipe to prepare chocolate

translated from Colmenero's book. In 1698, Nicolas Lémery (1645–1715) published *Traité universel des drogues simples* to aid physicians and pharmacists in their fight against counterfeiting. This book includes a section devoted to cacao, in which Lémery described the cacao tree and its fruits and seeds, which constituted the basis of chocolate.⁵⁷ Lémery described to the virtues of its effects as fortifying, digestive and antitussive. He also mentioned the benefits of the cacao butter extracted from the seeds to polish the skin.

Comments and remarks

With the publication of the aforementioned works, the process of eliminating ideas and concepts related to religious or symbolic (cultural) elements of medicinal plants, including cacao, came to its conclusion. The authors privileged the utility (practical sense) of the 'objects,' and left out all symbolic, religious and fantastic aspects. Hence they were seen as and transformed into 'accessories' in the medicinal arsenal of their cultural market. Arguably, the aim of these authors was to reduce such aspects to a minimum to make them easily transferable to a new environment. In this process, all details considered irrelevant were suppressed.⁵⁸ Extensive news about cacao travelled across Europe, and more particularly about the therapeutic application of chocolate, while both—cacao and chocolate—came to be seen as outstanding components of the *materia medica*, being endorsed in numerous scientific works published in New Spain, as well as in many countries in Europe.

From a social perspective, the chemical composition of cacao possibly determined to a large extent the appropriation of chocolate, which had powerful effect on the senses. Consumption of chocolate has been long associated with enjoyment and pleasure. It is commonly claimed it has the ability to lift the spirit, induce 'highs,' and make people feel good.⁵⁹ Also the addition of sugar, milk and other flavour enhancers led to its adoption as a tasty food, and gradually replaced its medical applications. This new product, and the industry that grew around it, was far more profitable than its handling as a medicine prepared accordingly to pre-Hispanic recipes.

Final remarks

The medicinal properties of cacao were highly appreciated in pre-Hispanic Mexico and at the same time, it was the main ingredient of beverages exclusive to the political, military and trade elites. In the latter case, it was consumed in solemn ritual ceremonies, in conjunction with other material and immaterial components currently lost to us. It was, thus, clearly

associated with social practices which go well beyond the boundaries of medicine. To the pre-Hispanic civilisations, the spiritual or religious aspects related to chocolate were inseparable from the therapeutic activity it might have had.

With the arrival of the Spaniards, this complex context disappeared, and *Theobroma cacao* L. became a medicinal resource also effective according to the Hippocratic-Galenic system. In Neo-Hispanic sixteenth-century medical works, this and other Mesoamerican plants were assimilated to European ingredients and practices. The spiritual attributes proper to the indigenous worldview were blurred, inasmuch as these texts sought to incorporate these newly encountered elements of the *materia medica* into the then prevailing medical system.

During the seventeenth century, works published in New Spain and Europe acknowledged chocolate as beneficial to health within the framework of the humoral theory, and thus it was introduced into European medicine. Its popularity grew, while consumption during ecclesiastical fasts became a subject of controversy between members of the clergy and physicians, who never came to terms about this subject. At that time, the Galenic dietetics considered most foodstuffs as medicinal from the perspective that they restored health, so chocolate could be considered both nourishment and/or medicine.

Likewise, from the seventeenth century onwards, chocolate definitively became one of the most coveted and delicious delicacies, first in European courts, and then among the general population who could afford it. Along this process, which evolved throughout the eighteenth and part of the nineteenth centuries, the original recipe was modified according to the taste of consumers in different countries, and eventually it came to be considered as a treat associated with pleasure, and no longer as a medicine.

The medical reinterpretation of chocolate has, however, also continued along with its redefinition into a commodity. At present, many scientific studies have shown that among other features, traditional chocolate is one of the most concentrated sources of flavanols, a subgroup of the natural antioxidant plant compounds called flavonoids. Evidence gathered along the past ten years indicates that moderate chocolate consumption might have protective effects against cardiovascular disease. Several mechanisms were proposed to explain this positive action, including metabolic, anti-hypertensive, anti-inflammatory, and anti-thrombotic effects, as well as effects on insulin sensitivity and the vascular endothelial function.⁶⁰ These facts further contribute to the already abundant experience with and research of cacao and chocolate ever since it was discovered by ancient Mesoamerican civilisations many centuries ago, and are a living testimony of the ongoing global fascination with this plant and its subproducts.

Either as a medicine or a tasty treat, chocolate is present in our everyday lives regardless of where we live, and it undoubtedly is one of the most significant legacies of the pre-Hispanic culture to the world.

Notes

1. For instance, the domestic use of peyote (*Lophophora williamsi* (Lem.) J.M. Coult.) and the global use of tobacco; see Angélica Morales, “Tres caminos posibles: una ausencia, una marca tipográfica y un evento fortuito. El peyote y otras hierbas en la materia médica (siglos XVI–XVII)” in José Pardo-Tomás & Mauricio Sánchez Menchero (ed.), *Geografías médicas: orillas y fronteras culturales de la medicina hispanoamericana, siglos XVI y XVII* (México, 2014), 47–74; Mauricio Sánchez-Menchero, “Una historia cultural de las primeras referencias impresas del tabaco (siglos XVI y XVII),” in Pardo-Tomás & Menchero (ed.), *Geografías médicas*, 75–98.

2. An interesting and profound discussion of the notion of agnotology and its application to the Mexican *materia medica* can be found in Angélica Morales, José Pardo-Tomás & Mauricio Sánchez-Menchero (ed.), *De la circulación del conocimiento a la inducción de la ignorancia, siglos XVI y XVII* (México, 2017), 1–20.

3. Cacao has a unique chemical composition, with more than 500 different compounds, including members of the methylxanthine class; *T. cacao* is the single Mesoamerican plant that contains theobromine as primary methylxanthine, which therefore behaves as a unique marker of the presence of cacao in pre-Columbian artefacts. See W.J. Hurst, S.M. Tarka Jr., T.G. Powis, F. Valdez Jr. & T.R. Hester, “Cacao usage by the earliest Maya civilization” in *Nature* 418 (2002), 289–290.

4. Terry Powis, Ann Cyphers, Nilesh Gaikwad, Louis Grivetti & Kong Cheong, “Cacao use and the San Lorenzo Olmec” in *Proceedings of the National Academy of Sciences* 108:21 (2001), 8595–8600.

5. Enrique Villamar, “Prácticas mortuorias olmecas” in *Arqueología Mexicana* 87 (2007), 55.

6. Sophie D. Coe & Michael D. Coe, *La verdadera historia del chocolate* (México, 1999), 40–50; Jean-Michel Hoppa, “Maestros del cacao: los mayas” in *Artes de México* 103 (2011), 29–35.

7. Hurst et al., “Cacao usage,” 290.

8. Martín González de la Vara, *Historia del chocolate* (México, 1992), 70–81.

9. Alfredo López-Austin, “Cosmovisión y salud entre los Mexicas”, in Alfredo López Austin & Carlos Viesca (ed.), *Historia general de la medicina en México*, vol. 1 (México, 1984), 106–118.

10. Carlos Viesca, “Hechizos y hierbas mágicas en la obra de Juan de Cárdenas” in *Estudios de Historia Novohispana* 9:9 (1987), 17.

11. For some overviews see e.g., Luis García Ballester, *Galeno* (Madrid, 1972), 34–40; Luis García Ballester, “Alma y enfermedad en la obra de Galeno” in *Cuadernos Valencianos de Historia de la Medicina y de la Ciencia* 12 (1972), 225; Francisco Guerra, *Historia de la Medicina* (Madrid, 1982), 65.

12. Morales, “Tres caminos posibles,” 47.

13. Patricia Barriga, *El cacao como medicamento en las recetas y remedios novohispanos, siglos XVI al XVIII*, MA dissertation, Universidad Nacional Autónoma de México (México, 2012).

14. Martín de la Cruz, *Libellus de medicinalibus indorum herbis* (México, 1964), 149.
15. Germán Somolinos D'Ardois, "La fusión indoeuropea en la medicina mexicana del siglo XVI" in Gonzalo Aguirre Beltrán & Roberto Moreno de los Arcos (ed.), *Historia general de la Medicina en México*, vol. 2 (México, 1990), 128.
16. Xavier Lozoya, *La herbolaria en México* (México, 1999), 14-15.
17. Carlos Viesca, "El Libellus y su contexto histórico" in Jesús Kumate (ed.), *Estudios actuales sobre el Libellus de Medicinalibus Indorum Herbis* (México, 1992), 59-65.
18. Andrés Aranda, Carlos Viesca, Gabino Sánchez, Gabriel Sánchez, Mariblanca Ramos de Viesca & José Sanfilippo, "La materia médica en el Libellus de medicinalibus indorum herbis" in *Revista de la Facultad de Medicina de la UNAM* 46:1 (2003), 12-17.
19. Patricia Aceves, *Química, botánica y farmacia en la Nueva España a finales del siglo XVIII* (México, 1993), 234-240.
20. Francisco Hernández, *Historia natural de las plantas de la Nueva España* (México, 1959), 67-90.
21. According to Lozoya, 38 plants were mentioned in common by Hernández, Sahagún and Martín de la Cruz, most of which could be botanically identified and most importantly, all of them still have medicinal use in the present time. Lozoya: *La herbolaria en México*, 56.
22. Francisco Ximénez, *Cuatro libros acerca de la naturaleza y virtudes de las plantas y animales que tienen uso medicinal en Nueva España* (México, 2001), xi-xx.
23. Ximénez, *Cuatro libros*, 158.
24. Gregorio López, *El tesoro de las medicinas para todas las enfermedades* (México, 1672), 1-1v.
25. Juan Comas, "Un caso de aculturación farmacológica en la Nueva España del siglo XVI: El Tesoro de Medicinas de Gregorio López" in *Revista del Instituto de Investigaciones Antropológicas* 1:1 (1964), 148; Fernando Ocaranza, *Historia de la Medicina en México* 2nd ed. (México, 2011), 80-95.
26. López, *El tesoro de las medicinas*, 10-10v, 19v-20.
27. *Ibid.*, 35v.
28. Joseph Acosta, *Historia natural y moral de las Indias* (México, 2006), 1-6.
29. Edith Llamas, "Jesuitas que sufren, plantas que alivian: poderes ocultos contra la religión cristiana en las misiones del noroeste mexicano" in Morales, Pardo-Tomás & Sánchez-Menchero (ed.), *De la circulación*, 49-72.
30. Juan de Cárdenas, *Primera parte de los problemas y secretos maravillosos de las Indias* (México, 1913), 1.
31. Viesca, "Hechizos y hierbas mágicas," 40.
32. De Cárdenas, *Primera parte*, 98.
33. *Ibid.*, 99.
34. Agustín Farfán, *Tratado breve de medicina y de todas las enfermedades que a cada paso se ofrecen* (México, 1592), 1.
35. Cacao was indicated for the treatment of wounds also in *Libellus* and *Tesoro de las medicinas*.
36. Farfán, *Tratado breve*, 121-122.
37. *Ibid.*, 211.
38. José Pardo-Tomás, "Y los remedios serán los más caseros: el arsenal terapéutico mesoamericano en la obra de Fray Agustín Farfán: entre la desconfianza y la expiación" in Morales, Pardo-Tomás & Sánchez Menchero (ed.), *De la circulación*, 17-48.

39. Barriga, *El cacao*, 92.
40. González de la Vara, *Historia del chocolate*, 36–38.
41. Pardo-Tomás, “Y los remedios,” 29.
42. Francisco Javier Puerto, *El mito de Panacea* (Madrid, 1997), 341.
43. Mar Rey Bueno, “De exámenes, ramilletes y simples incógnitos: la obra farmacéutica de fray Esteban Villa en la Biblioteca Histórica Marqués de Valdecilla” in *Documentos de Trabajo U.C.M. Biblioteca Histórica* 04:05 (2004), 7.
44. The complete title of the book is: *Libro en el cual se trata del chocolate, qué provechos haya y si sea bebida saludable ó no, y en particular de todas las cosas que lleva, y qué receta conviene para cada persona y cómo se conocerá cada uno de qué complexión sea para que pueda beber el chocolate, de suerte que no le haga mal*. Barrios’s book survived through a transcription made by the lawyer Antonio de León Pinelo in a work he published in 1636. The latter is a treatise on cacao and chocolate; the author stress its richness as both medicine and foodstuff, as well as its value and cultural tradition; see Antonio León Pinelo, *Cuestión moral si el chocolate quebranta el ayuno eclesiástico* (México, 1994), 1–16.
45. Antonio Colmenero de Ledesma, *Tratado de la naturaleza y calidad del chocolate* (Madrid, 1631), 23–45.
46. Rey Bueno, *Documentos de trabajo*, 4.
47. Esteban Villa, *De simples incógnitos en la Medicina* (Burgos, 1643), 4–5.
48. Philippe Sylvestre Dufour, *De l’usage du caphé, du thé et du chocolate* (Lyon, 1671).
49. Philippe Sylvestre Dufour, *Traitez nouveaux & curieux du café, du thé et du chocolate: ouvrage également nécessaire aux medecins, & à tous ceux qui aiment leur santé* (Lyon, 1685), 8.
50. William Hughes, *The American physician, or, A treatise of the roots, plants, trees, shrubs, fruit, herbs, etc. growing in the English plantations in America* (London, 1672), 1.
51. Philip Wilson & Jeffrey Hurst, *Chocolate as medicine* (London, 2012), 55.
52. Hughes, *The American Physician*, 2–45.
53. *Ibid.*, 53.
54. *Ibid.*, 54.
55. *Ibid.*, 57.
56. Louis E. Grivetti & Howard-Yana Shapiro, *Chocolate: history, culture and heritage* (Hoboken, 2011), 56–59.
57. Nicolas Lémeury, *Traité universel des drogues simples* (Paris, 1698).
58. Angélica Morales, “La construcción de una narrativa sobre la naturaleza americana: Mundo Nuevo o Descripción de las Indias Occidentales de Joannes De Laet (1625)” in Morales, Pardo-Tomás & Sánchez-Menchero (ed.), *De la circulación*, 231.
59. The key to this action might be a chemical called anandamide, which is similar to compounds released when cannabis is taken; see Gordon Parker, Isabella Parker & Heather Brotchie, “Mood state effects of chocolate” in *Journal of Affective Disorders* 92:2–3 (2006), 150–151. Chocolate might also interact with a number of neurotransmitter systems (including dopamine, serotonin and endorphins) which contribute to appetite, reward and mood regulation; see Tobias Esch & George B. Stefano, “The neurobiology of pleasure, reward processes, addiction and their health implications” in *Neuroendocrinology Letters* 4:2 (2004), 238–241.
60. Giuseppe Lippi, Massimo Franchini, Martina Montagnana, Emmanuel J, Favalaro, Gian C. Guidi & Giovanni Targher, “Dark chocolate: consumption for pleasure or therapy?” in *Journal of Thrombosis and Thrombolysis* 28:4 (2009), 482.

Abstract

Cacao (*Theobroma cacao* L.) as medicine in New Spain and Europe, 1500s–1600s. Liliana Schifter, PhD, Universidad Autónoma Metropolitana, México, liliana_schifter@hotmail.com

The Olmec, Maya and Mexica were familiar with the properties of cacao (*Theobroma cacao* L.) which they used as the main ingredient of beverages served to elites. Following the arrival of the Spaniards, cacao became gradually popular in New Spain. Initially prepared in the traditional way and keeping most of the ingredients used by natives, it eventually came to include also others which came from Europe. At the end of the 1500s, cacao travelled across the Atlantic together with its medicinal connotations, being mostly enjoyed by the upper classes. Scientific studies began to be conducted soon after in Spain, France and England, leading to the earliest publications about chocolate and its properties. From that time onwards, cacao earned a place in the medical literature of the ‘Old’ and the ‘New’ Worlds, being perceived as an important healing means able to restore the physical balance and general health of the sick. While cacao was included in therapeutic preparations all along the colonial period, it lost most of its cultural and magical connotations over time; from the 1800s onwards it came to be mainly seen as a sweet treat.

Keywords: Cacao, sixteenth century, medicine, indigenous civilisations, New Spain, Europe