Traditional Medicine Among the Nahua: Contemporary and Ancient Medicinal Plants

Research Year: 2005
Culture: Aztec
Chronology: Colonial to Contemporary
Location: Ixhuatlán de Madero, Northern Veracruz, México
Site: Amatlán

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Abstract

This research project is a study of Aztec plant usage and taxonomy and the continuation of this knowledge to the present-day Nahua. Fieldwork was carried out in the village of Amatlán in northern Veracruz during the months of May to July 2005 and was sponsored by the Foundation for the Advancement of Mesoamerican Studies, Inc., (FAMSI). Over fifty medicinal plants were collected from this site with the help of three female healers as well as a number of laywomen who had knowledge about certain plants used in that village. For each of the plants collected, its taxonomy, uses, and location were observed and recorded. A photographic record of the plants was also kept. The plants were later identified at the herbarium of the Universidad Nacional Autónoma de México. Preliminary results of this study show a continuation of the medicinal plants belonging to the Aztec taxonomy into the present day.

Resumen

Este proyecto de investigación es un estudio de la taxonomía de plantas medicinales usadas por los aztecas y su continuación hasta los nahuas de hoy en día. El trabajo de campo se llevó a cabo en la comunidad de Amatlán (ubicada en el norte de Veracruz) durante los meses de mayo a julio del 2005; el proyecto fue apoyado por la Fundación para el Avance de los Estudios Mesoamericanos, Inc., (FAMSI). Se recolectaron más de cincuenta plantas medicinales en esta comunidad con la ayuda de tres curanderas y de varias mujeres con conocimiento sobre plantas medicinales. La taxonomía, los usos y la ubicación de cada una de las plantas recolectadas fue observada y registrada. También se llevó a cabo un registro fotográfico de estas plantas, las cuales fueron identificadas por el personal del herbario de la Universidad Nacional Autónoma de México. Los resultados preliminares indican una continuación de la taxonomía azteca hasta el día de hoy.

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Introduction

This research was carried out from May to July 2005 in northern Veracruz, in the Nahua village of Amatlán, which is in the municipality of Ixhuatlán de Madero, approximately two hundred kilometers north of the Cazones River (see Figure 1, below).

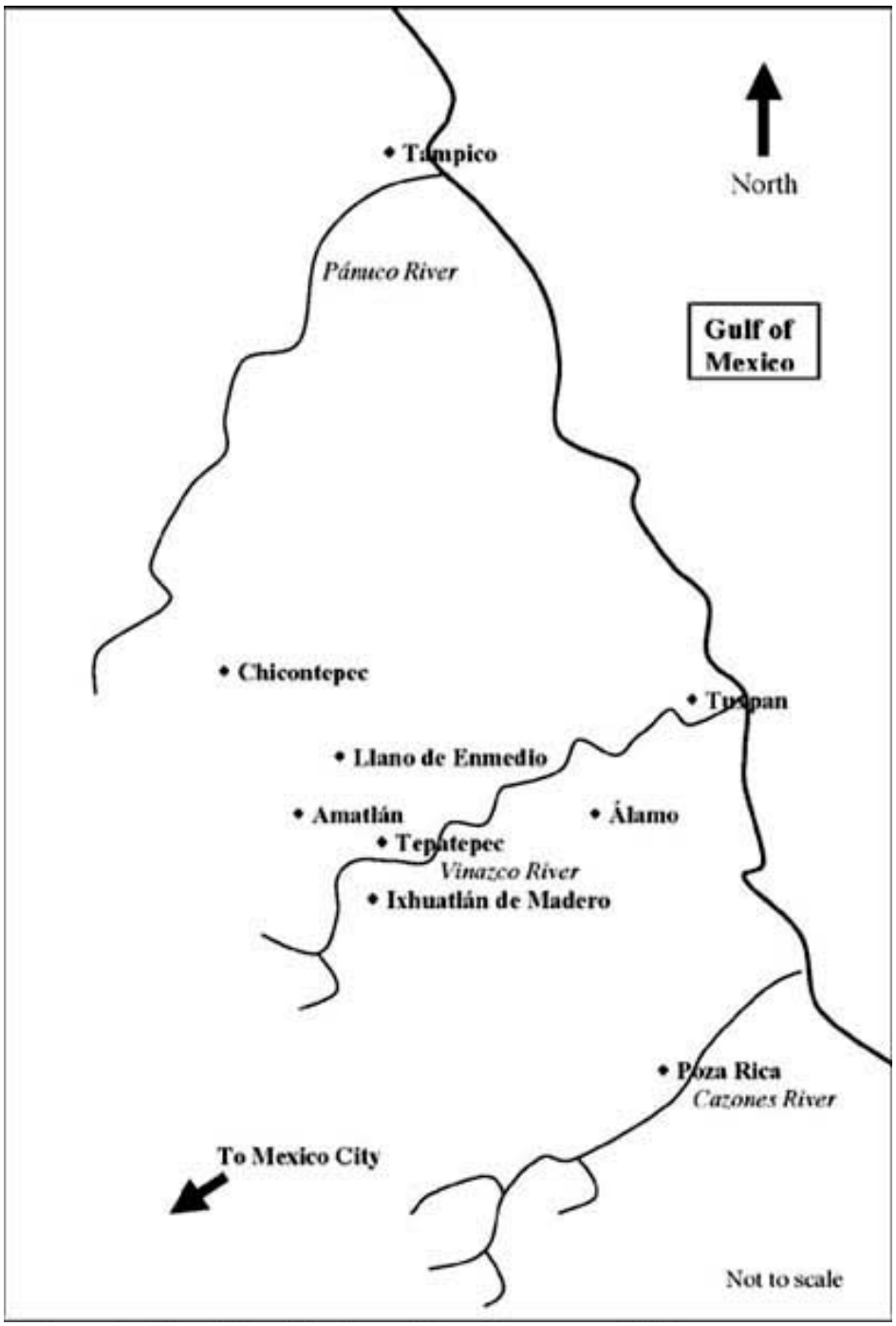

Figure 1. Map of Amatlán in northern Veracruz, México.

There are marked differences between the mountainous and the coastal areas and between the irrigation and temporal zones of the area (Ruvalcaba Mercado 1998a, 1998b). Many rivers, such as the Vinazco, Moctezuma, and Tamuín flow from the Sierra Madre mountains towards the Gulf of México, providing abundant water to the region. However, during certain drier months of the year there are many areas around Amatlán that receive almost no water at all, either from the streams or from rainfall. Though this region has traditionally been associated with steep hills and deep valleys, the area where Amatlán is found is characterized by rolling hills and plains.

The high rainfall during the wet season has given rise to dense tropical forest in the lower areas and temperate oak-ash forest in the highlands (Chamoux 1987; Escobar Ohmstede 1998; Farfán Morales 1988; Oliver Vega 1988; Sandstrom 1978), which has led to a high biodiversity of plants and animals (Villaseñor, Ibarra, and Ocaña 1998). There are approximately six hundred species of medicinal plants that have been recorded for the region (Avendaño Reyes 1994). Some of the plants that are found in this area include avocado (*Persea americana*), ceiba (*Ceiba pentandra*), papaya (*Carica papaya*), datura (*Datura candida*), different types of gourds (*Crescentia alata*), bamboo (*Arthrostylidium racemiflorum*), mahogany (*Swietenia humilis*), guava (*Psidium guajava*), chilies (*Capsicum spp.*), among many others. These are all domesticated plants, though many of them are found in the remaining forest; most of them have been modified by the people and are grown in their home gardens. In fact, those that are found in the secondary forest, such as mahogany, ceiba, and bamboo, are edge species and indicators of long-term human disturbance (Anna C. Roosevelt, personal communication 2005).

Health and Illness among the Nahua

The Nahuas of this region have traditionally viewed illness and health as dynamic changes in the body. Health is maintained when the body is kept in equilibrium and illness comes about when this equilibrium is lost (Ortiz de Montellano 1987; Sandstrom 1991; Signorini and Lupo 1989; Viesca Treviño 1986). The most common causes of disease for the present-day Nahua are spirits called ehecatl. These spirits can enter the body of a person and bring misfortune, illness, or even death. This etiological concept can be easily associated with the folk causation of *malos aires* (harmful/evil airs) found in much of Mesoamerica.

Figure 2. *Barrida* during a maize ritual.

The treatment for illness among the Nahua consists of a series of techniques for removing the offending spirit from the patient's body, which consist of complex rituals where a combination of prayers, invocations, medicinal plants, and anthropomorphic cut paper figurines is used. An important part of the ritual is a *barrida* – ritual cleansing – by which the body is cleansed of the disease-causing spirits (Figure 2, shown above). The healing specialist will restore the balance by removing the spirit from a person's body. Offerings are made to the offending spirits who are coaxed from the body and exhorted to leave (Figure 3 and Figure 4, shown below).

Figure 3. Offering made to paper representations of ehecatl.

Figure 4. Using medicinal plants in a healing ritual.

Project goals

The aim of this research was to determine how the classification of medicinal plants and the practicing of rituals by the Nahua healing specialists of Amatlán fit into the larger complex of Aztec medicine. Information obtained can shed light on the roots of this traditional medicine and whether it will continue to survive in the face of great pressures from the increasingly global world.

A further goal was to respect the indigenous and local knowledge of the people of Amatlán regarding their medicinal plants. In order to protect their local knowledge, I have taken active steps in this report to minimize the amount of information regarding their actual uses of these plants. Though I have included the scientific names of the plants collected and, in some cases, also the local names, I have tried to avoid mentioning what each of these plants is specifically used for as well as the parts used and their preparation. The healing specialists themselves do not share much of their esoteric knowledge with other people, especially other healers, and therefore they asked that I protect their knowledge in my own work.

Research design and methods

The ethnographic research focused on the healing specialists living in this village. There are nine healers in this village, two are men and seven are women. The healing specialists can be divided into three types: (1) curanderos and curanderas, the ritual specialists, who intercede for people with the supernatural realm and carry out major religious rituals, (2) parteras, the midwives, who use various techniques to treat women and preside over childbirth, and (3) sobadores and sobadoras, who set bones and displaced organs back into place through massage. The preceding categories are not discrete, since many of the specialists practice more than one type of healing technique. The curanderos and parteras use medicinal plants much more frequently than do the sobadores.

The healing specialists are very knowledgeable about the plants that can be used medicinally and regularly use them in their healing techniques. Some of the female healers are midwives and use the plants for the women they attend to; others prescribe them for illnesses such as espanto (soul loss/magical fright) or envidia (extreme jealousy); and others use them in complex healing rituals to drive away offending wind spirits (ehecatl) from their patient's body (Figure 5, shown below).

Figure 5. Treatment for *espanto* by exhorting person's soul to return.

I met and interacted on a regular basis with four of these healers as well as one lay healer who was considered to possess very deep and detailed knowledge about medicinal plants and their uses. All of them were women; they were interested in sharing their knowledge with me and were happy to show me the plants they used for healing. They possess an extensive knowledge of many plants and did not hesitate to talk about how they are recognized, used, and classified. I carried out unstructured and informal conversations with these healing specialists and also accompanied them when they collected the plants from their solares (house plots or home gardens), fields, or when they gathered them along paths and streams (see Del Ángel-Pérez and Mendoza 2004 for an in-depth study of home gardens in Veracruz). Figure 6, below, shows one of the women gathering plants along the local stream.

Figure 6. Collecting medicinal plants along stream.

Preliminary results

Over 50 medicinal plants were collected during this field season (which, together with the plants collected during previous field seasons add up to over 150 specimens); they are spread out over 33 families, with all but three of the families having only one or two plant members. The exceptions are Asteraceae with three plants, Euphorbiaceae with three plants, and Solanaceae, which has six plants (see Table 1, below).

Table 1. List of plant species and families collected	
Acanthaceae	Jacobinia spicigera Schl.
Amaranthaceae	Amaranthus spinosus L.
Anacardiaceae	Spondias mombin L.
Annonaceae	Annona globiflora Schltdl
Annonaceae	Rollinia mucosa (Jacq) Baill

Apocynaceae	Plumeria rubra L.
Araliaceae	Dendropanax arboreus (L) Decne & Planch
Asteraceae	Artemisia mexicana Willd.
Asteraceae	Eupatorium sp.
Asteraceae	Tagetes erecta L.
Bignoniaceae	Parmentiera edulis DC
Bombacaceae	Bombax ellipticum Kunth.
Bromeliaceae	Tillandsia reurbata L.
Burseraceae	Bursera simaruba (L) Sarg.
Burseraceae	Protium copal (Schl & Cham) Engl.
Cactaceae	Hylocereus undatus (Haw) Britton & Rose
Cactaceae	Nopalea cochenillifera (L) Salm-Dyck
Dryopteridaceae	Tectaria heracleifolia (Willd) Underw.
Dryopteridaceae	Tectaria sp.
Elaeocarpaceae	Muntingia calabura L.
Euphorbiaceae	Croton guatemalensis Lotsy
Euphorbiaceae	Croton soliman Cham & Schltdl
Euphorbiaceae	Pedilanthus tithymaloides (L) Poit
Fabaceae	Caesalpinia pulcherrima (L) Sw.
Fabaceae	Harpalyce arborescens A. Gray
Labiateae	Ocimum basilicum L.
Labiateae	Ocimum cf. Micranthum
Lamiaceae	Salvia amarissima Ort.
Malvaceae	Heliocarpus glanduliferus Robinson
Malvaceae	Hibiscus rosa-sinensis L.
Meliaceae	Cedrela mexicana M. Roem.
Musaceae	Musa sp.
Myrtaceae	Psidium guajava L.

Nyctaginaceae	Mirabilis jalapa L.
Nyctaginaceae	Mirabilis longiflora L.
Phytolaceaceae	Rivinia humilis L.
Poaceae	Arundo donax L.
Pteridaceae	Adiantum tenerum Sw.
Rosaceae	Rosa chinensis Jacq.
Rubiaceae	Hamelia erecta Jacq.
Rutaceae	Citrus sinensis Osbeck.
Sapotaceae	Achras zapota L.
Sapotaceae	Pouteria salicifolia Stadl.
Simaroubaceae	Picramnia antidesma Swart.
Solanaceae	Capsicum annum L.
Solanaceae	Cestrum dumetorum Schltdl.
Solanaceae	Cestrum sp.
Solanaceae	Solanum madrense Fern.
Solanaceae	Solanum nudum Kunth.
Solanaceae	Solanum werdlandii Hook
Sterculiaceae	Guazuma ulmifolia Lam.
Thelypteridaceae	Thelypteris cf. Tetragona (Sw) Small
Violaceae	Hybanthus attenuatus (Humb & Bonpl ex Schultes)
Zingiberaceae	Cydista potosina (K Schum & Loes)
Zingiberaceae	Zingiber officinale Rose

The majority of the plants were gathered in the home gardens belonging to the healing specialists I interviewed. However, several of them, such as *Harpalyce arborescens, Adiantum tenerum, Cedrela mexicana, Croton soliman, Bursera simaruba*, and *Protium copal* were obtained in the *milpas*, cattle pastures, or the few patches of remaining forest.

Discussion

The plants collected in this study are used by the people for a variety of conditions, including common illnesses such as colds and stomachaches, gynecological ailments, broken or sprained limbs, culture-bound syndromes (including *espanto, necaxantle*, displaced organs, *malos aires,* etc.), and ritual cleansings.

Figure 7. *Hamelia erecta Jacq*. A medicinal plant identified by the shape of its leaves and flower. Classified as a xochitl.

Knowledge about plants is spread throughout the population; this is especially the case for the plants used for common illnesses and conditions. Women (who tend to be the primary care-givers) can easily access the plants needed to heal themselves or a family member and use it in the appropriate manner. For problems that require a healing specialist, though the patient is very likely to know the name of the plant and be able to recognize it, the secret knowledge about its uses and medicinal powers will primarily be held in the hands of the healing specialists. Most healing specialists guard this deeper

knowledge quite jealously from other healers since much of the aura surrounding their healing power comes from this knowledge.

Figure 8. *Bursera simaruba* (L.) Sarg. A medicinal plant identified by the color and texture of its bark.

Plants are used extensively by the healing specialists. They are carefully chosen based on the symptoms and possible etiology of the illness that the patient has brought. Healing specialists have an intimate knowledge of plants that can be used medicinally and they apply this knowledge in prescribing and using the plants to heal. This knowledge is based on a complex, indigenous, Nahuatl classification system very similar to the Aztec taxonomy of medicinal plants (Gates 2000). The Aztecs divided plants into four classes, according to their uses: edible, medicinal, ornamental, and

economic. However, within each of these larger classes the plants were also described by the way the five senses (touch, sight, smell, taste, and hearing) observed them and it was through these descriptions that the plant was then classified (Gates 2000; Hernández 1942). A very similar classification and taxonomy can still be observed in Amatlán (see Figure 7 and Figure 8, above; and Figure 9, Figure 10, and Figure 11, below).

Figure 9. *Plumeria rubra L*. A medicinal plant identified by the color of its flowers and the milky latex exuded when cut.

Figure 10. ***Nopalea cochenillifera*** **(L.) Salm-Dyck. A medicinal and edible plant grown in people's home gardens.**

Figure 11. ***Artemisia mexicana*** **Willd. A medicinal plant identified by the color of its leaves; grown in people's home gardens.**

Figure 12. *Achras zapota L*. Edible and medicinal plant growing in a person's home garden.

Plants are recognized by the people of Amatlán by their physical attributes; the people use several markers to identify a plant's physical appearance: shape of the leaves ("its leaves look like they have fingers"), striations on the leaves, nodes on the stalk ("looks like cane"), size, color, and shape of the fruits ("small like coffee" "looks like [a] peach"), whether it has thorns or prickles, color of the leaves ("it is a small green tree"), color, size, and shape of the flowers ("this one has a white flower, there are others that are red…[the fruit] open up and look like cotton wool"), general shape of the plant ("it looks like a maguey"), scent ("it smells nice"), and the chemical properties of the plant ("if [that plant] gets on your hands or your eyes it will hurt, it itches/burns").

Figure 13. *Musa sp*. Edible and medicinal plant grown in the milpas and home gardens. Classified as a xilotl by the Nahua.

The above differentiation of the physical attributes of medicinal plants was also a part of Aztec taxonomy, as can be seen in Francisco Hernández's seminal book, *Historia de las Plantas de Nueva España,* as well as in Fray Bernardino de Sahagún's *Florentine Codex*. The first book is not only a list of many plants found in México during the colonial period, but also their uses and taxonomy. The Aztec names for the plants described their physical appearance and/or their uses, for example the plant

Ololticapitzalpahtli, which means the round (*ololtic*) diarrhea (*apitzalli*) medicine (*pajtli*) (Hernández 1942[1572]:8). This name describes not only the fact that the plant is medicinal, but also what it is used for and what it looks like. This form of taxonomy makes it easier for the people to identify plants because their names become descriptors. Amongst the people of Amatlán, a similar type of taxonomy is used, for example there is a plant referred to locally as *sesecpajtle*, which means the cold (*sesec*) medicine (*pajtli*). It is used for headaches and colds by the people.

Figure 14. *Hybanthus attenuatus* (Humb & Bonpl. Ex Schultes). Medicinal plant growing along paths and streams, encouraged in healer's home garden.

The plants are also identified by where and when they grow, as well as where the people can find them. Some of the plants might resemble each other, but the healing specialists know that they do not grow during the same time of year or they flower at different times and hence they can differentiate between them. Other plants (such as *Bombax ellipticum, Hylocereus undatus, Pouteria salicifolia*) grow primarily in people's home gardens; if anyone needs part of that plant for medicinal purposes, they tend to know who grows it and whether they will share it (see Figure 12, Figure 13, and Figure 14, above).

Among the Aztecs (Hernández 1942 [1572]) the place where the plant grows and/or is found is a very important descriptor. This information includes the soil or terrain where the plant is found ("it is from hilly places" [Hernández 1942 [1572]:194], "it is born…in swampy places" [Hernández 1942 [1572]:69], or "it grows in the forest" [Sahagún

1963:136]), the climate of that area ("it is born in temperate places" [Hernández 1942 [1572]:60]), or whether the location is domesticated or not ("in flat, rural, and cultivated places" [Hernández 1942 [1572]:211]). These factors regarding the location of the plants are important in determining their identification and taxonomy. Healing specialists know where plants are found and use that knowledge to determine if a plant is indeed the one sought as well as its medicinal properties.

Figure 15. *Solanum nudum* Kunth. Classified as a xihuitl by the Nahua.

The present-day Nahua taxonomy for medicinal plants consists of four interrelated parts: (1) the type of plant it is, (2) its organoleptic property (taste, smell, and texture), (3) its temporal quality (hot, cold), and (4) its shape. Each of these factors direct the healing specialist's selection of a particular plant.

Figure 16. *Muntingia calabura* L. Classified as a cuahuitl.

Plants are divided into different types: if they are epiphytes they are called *cuamekatl*, herbaceous plants are *xihuitl*, woody plants or trees are *cuahuitl*, if it is an edible weed then it is called *kilitl*, and *xochitl* are identified by their flowers and hence are ornamentals. Only a few of the plants collected have the term *pajtli* (cure) in their name or taxonomical identification, even though the plant itself might be considered a *xihuitl* or other type of plant (Bye 2000). Plants can also be identified by the types of fruits they produce, for instance a suffix of *xilotl* indicates a tender fruit (such as a banana, called *cuaxilotl*; see Figure 13), while *xocotl* indicates a more acidic type of fruit (such as plum, *xalxocotl*, or orange, *alaxox*). A plant that produces a tuber will have the denomination of *iteso*, though this might not be apparent from the plant's name, such as *caxtilanchile*,

which is in the Zingiberaceae family. Finally, a reed- or cane-like plant will be classified as an acatl (see Figure 15 and Figure 16, above; and Figure 17, Figure 18, and Figure 19, below).

Figure 17. *Jacobinia spicigera* Schl. Classified as a xihuitl.

Figure 18. *Citrus sinensis* Osbeck. Classified as xocotl.

Figure 19. *Hylocereus undatus* (Haw) Britton & Rose. Classified as a *cuamekatl*.

As previously stated, the current taxonomy for plants has come directly from the Aztec one. This is evident in the Colonial texts and codices wherein the plants described are divided into the same categories used by the present-day Nahua. The *Florentine Codex* in particular divides plants into *quahuitl* (which includes all the different types of trees defined by the Aztecs, including dried or dead trees), *xihuitl* (all the different herbs in the taxonomical system), *nanacatl* (all the different mushrooms), *quilitl* (the edible herbs), *xihuitl patli* (medicinal herbs), and *suchitl* (the flowers or blossoms) (Sahagún 1963). This differentiation between different plants has been maintained to this day. However, as can be seen above, the present-day Nahua divide plants into even more groupings by also including the different types of fruits, tubers, and reeds. The Aztec system seems to be more inclusive, while the Nahua one splits the plants up even further. Perhaps the influence of the western division of plants is felt by the people in the village and so they have incorporated other means of classifying their plants into their taxonomy.

The organoleptic quality of the plant refers to its taste, smell, or texture (Etkin 1996:153; Heinrich 1998). The healing specialists of Amatlán include qualities such as bitterness ("But the plants could not be bitter because she is pregnant"), irritant ("And it is not good to ingest chili or coffee [with this illness]"), sourness, or sweetness ("its juices are not sour, [but rather] are very tasty") in the classification and taxonomy of the medicinal

plants that they use. Among the Aztecs the organoleptic qualities were also important determinants in dividing and classifying plants. Plants can also have similar qualities as those found in Amatlán, especially those to do with taste: "it is tasty, savory, pleasing" (Sahagún 1963:126), "its root is not bitter" (Sahagún 1963:159), "it has an aromatic flavor" (Hernández 1942:197), "its root burns somewhat" (Sahagún 1963:160). This aspect of the classificatory system appears to be very important in identifying and classifying different plants. These qualities continue to be necessary to help healers and other people determine the medicinal properties embedded in the plant. It not only suffices to know what the physical appearance of the plant is, but also have the knowledge of what types of organoleptic properties are important for healing.

The texture of the leaves, especially if they attach to people's clothing or skin, is another important aspect in the classification of the plant among the people of Amatlán. With the Aztecs the same is true, wherein the texture of the leaves, stem, or flowering parts become necessary to identify the plants and their healing properties. The knowledge possessed by the Aztecs regarding medicinal plants was very extensive, as can be seen in both Sahagún's (1963) and Hernández's (1942) works. They name and describe the properties of hundreds of plants and include the various qualities and properties that are important determinants in their classification and usage.

Currently in Amatlán, plants to maintain good health in pregnant or postpartum women are meant to be sweet; pregnant or lactating women cannot ingest bitter or sour plants because they, or their child, could be harmed. People who are suffering from *espanto* should also avoid irritating substances because they interact negatively with the body as well as with the healing plants that are used to treat this illness. These bitter, sour, or irritating plants are used primarily for gastrointestinal conditions, such as diarrhea, or *latido*, which is a strong, palpitating pain ranging from beneath the navel to the diaphragm level.

Some of the above relationships between the plant's property and the person's condition did exist among the Aztecs, especially the astringent, bitter properties associated with treating diarrhea (Hernández 1942:8; Sahagún 1963:137). Hernández (1942) noted down many plants used to treat gastrointestinal disorders and hence there are many plants to work with and determine the taxonomy. One plant in particular that appears in his book is *chilipatli* (called *xilipajtli* by the people of Amatlán); its name means chili medicine or irritating/spicy medicine. The plant that I collected was identified as *Croton soliman*, though Hernández (1942:422-424) has it as *Croton cortesianus*. Nevertheless, both of them are used to treat diarrhea as well as skin conditions. It is described as a *xihuitl* yet its medicinal properties are identifiable from its suffix of "*pajtli*." It is a skin irritant and hence discouraged in people's home gardens, though it grows wild along disturbed areas such as paths and *potreros* (cattle pastures).

Interestingly, the rough texture of a plant (its ability to attach itself to people's clothing) determines its use, which in the case of Amatlán is gynecological. For instance, women who frequently miscarry are told to take an infusion of a "sticky plant" (*jehuite chicloso*)

in order to help the fetus continue to attach itself to the uterus and come to term at the appropriate time. Also, young women who menstruate heavily are given a tea of another "sticky" plant called *cuamimisi* to keep their blood inside and not menstruate as much (see Ortiz de Montellano and Browner 1985 for an in-depth study of plants used for reproductive purposes in Oaxaca). This aspect of the plant was not evident in the texts relating to the Aztecs. Conversely, plants that are irritating are used to stop a woman's fertility altogether so that she no longer has any children or menstruates. Such is the case of *xiloxochitl*, which is also mentioned in the *Florentine Codex* (1963:206). In my sample, this was identified as *Bombax ellipticum*, which is one of the options given by the editors of the *Codex*. The *Codex's* description of the plant is also very similar to the one I collected. Its Nahuatl name describes its appearance rather than its uses; it means "the brush-like flower." Unfortunately its uses are not described in the *Codex*, so it is difficult to know what the Aztecs used it for.

The temporal quality of the plant refers to a balance of the humoral properties, in particular hot and cold (Tuchinsky 1995), within the plants (see also Logan 1973). Plants can be considered to be *fresca* (cool) or *caliente* (hot) among the people of Amatlán. Among the Aztecs, the humoral properties included hot and cold, but also damp and dry (see for instance Hernández 1942:32). The plant's temporal property is an important determinant in its usage since they usually are used to treat an opposite humor, i.e. hot to treat cold, dry to treat damp, etc. This is the case both in the past as well as among the present-day Nahua.

The majority of healing plants in Amatlán has a cooling property; there seemed to be very few hot plants. Such was not the case in the Aztec classification, where there were many plants with any combination of the humors. Many of the cool plants in Amatlán were used to treat conditions related to reproduction, in particular birth. The birthing process and the associated blood and fluids are considered extremely hot and hence dangerous to other people, in particular children and other pregnant or lactating women. These fluids are considered so hot (and polluting) that they can burn someone who is unprepared and/or uninitiated in healing. A mixture of cool plants is used to bathe the mother and the newborn so that the balance of hot and cool is once more restored. Only a midwife is deemed able to withstand the polluting and burning properties of blood and bring the dyad back into balance. One of the plants that is included in this healing mixture is *Tagetes erecta*, known in Nahuatl as *sempoalxochitl* (twenty-flower). This plant is also important in religious and healing rituals carried out by healing specialists; it is mentioned briefly in the *Florentine Codex* (Sahagún 1963:214) though neither its taxonomy nor its uses are mentioned. It is a cool plant among the people of Amatlán (see Figure 20, below).

Figure 20. ***Tagetes erecta*** **L.**

The only situations where the healing specialists indicated that they used hot plants were for *espanto*, after a stroke, and to heal *caída de matriz* (displaced or fallen uterus). When someone has *espanto* their soul has left the body, which therefore causes the person to feel very cold. It is through a mixture of hot plants and *aguardiente* that the person's soul is exhorted to return and the balance is regained. I only met one person who had suffered a stroke, but her family and the healing specialist insisted that the only way for her to regain her former strength was to rub certain hot medicinal plants (basil, garlic, and onion) over her skin since her flesh was now dead and it had to be revived. The woman's family also believed that the doctor at the local clinic would have a hot injection to bring her back to normal. For *caída de matriz*, the plants that are used (*mala mujer, cacatxihuitl*) have a hot property and they are used in conjunction with hot treatments, such as steam baths and massage.

Finally, the shape of the plant and its parts is also an important indicator of its taxonomy and uses. In the case of the healing specialists of Amatlán, the shape of the plant was especially important in determining its use for reproductive purposes. One plant in particular (*Hybanthus attenuatus*) was classified into two separate types by one of the healers based on the shape of its flowers: "For a girl it is this same one but another type, there is a difference in the flowers, that other one is split like a little girl's part." Hence one variant of the plant was meant for conceiving a female child while the other was for a male child.

Conclusions

As stated previously, the aim of this research was to ascertain whether there was a continuation of Aztec plant taxonomy and use into the present day. Most of our knowledge about Aztec medicine comes from the codices and texts written by the Colonial Spanish scholars and Aztec elite (Coe and Whittaker 1982; Gates 2000; Ruiz de Alarcón 1629). Since Amatlán is in the peripheral areas of the ancient Aztec state, the information recovered will enable a broader and more sophisticated view of Aztec medicine.

The information presented thus far is still under analysis, yet preliminary examinations indicate that there is some overlap between the medicinal plants mentioned in early colonial texts, such as the *Libellus de medicinalibus indorum herbis (Badianus Manuscript), Historia de las plantas de Nueva España*, and the *Florentine Codex* and those used by the modern-day Nahua of northern Veracruz.

This overlap is particularly notable in terms of plant taxonomy, both the gross taxonomy (*cuahuitl, xihuitl, acatl*, etc.) and the more specific taxonomical attributes, such as the organoleptic and temporal qualities as well as the shape of the plant. There is much less overlap in terms of the actual plants used by both groups as well as their specific uses. Nevertheless, the taxonomy of the plant continues to determine its uses to this day, hence if a plant is bitter or astringent it is very likely to be used to treat diarrheic conditions. In the *Badianus Manuscript, Florentine Codex,* and *Historia de las plantas de Nueva España* there are many plants that share the same Nahuatl name as the present-day plants used by the Nahua yet their scientific taxonomy does not coincide. Those that do share the same scientific name include: *Arundo donax, Spondias mombin, Psidium guajava, Artemisia mexicana, Tagetes erecta, Plumeria rubra, Parmentiera edulis, Bombax ellipticum, Croton sp., Hylocereus undatus, Mirabilis jalapa,* and *Mirabilis longiflora*.

Arundo donax was used by the Aztecs for excessive heat (Gates 2000:79); among the Nahua it is used for bathing a postpartum woman to remove the excessive heat produced by the blood and fluids of the birthing process. *Spondias mombin* had several uses amongst the Aztecs, including dysentery (Gates 2000:123), for which it continues to be used among the people of Amatlán. The Aztecs used *Plumeria rubra* for treating wounds and, though the usage has changed slightly in Amatlán (it is now used to treat discolorations on the skin due to sun exposure), the usage continues to be for dermatological problems. Its Nahuatl name, *cacaloxochitl*, continues to be used in various parts of México (Miranda and Valdés 1991), yet in Amatlán it is called *tlatokxochitl*. *Psidium guajava* was used for dysentery amongst the Aztecs, which is the same usage given to it by the Nahua; its name, *xalxocotl*, also remains the same across time (De la Cruz 1991 [1552]:45).

Some of the other plants collected existed in the Aztec taxonomy yet their current uses are significantly different. Preliminary explanations for this could be the fact that the

region of northern Veracruz during the Aztec period was peripheral and hence many of the plants used by the Aztecs would not be the same as those used by the people of that area during that time. Another reason would be the introduction of many species by the Spaniards, which are now used by the people of Amatlán. They have incorporated these plants into their own taxonomical system and have used them for many purposes, including medicine.

Future analysis of the plants collected is required to be able to determine the extent to which the Nahua and Aztec taxonomical systems correspond to each other as well as the continuation of the usage and knowledge of medicinal plants into the present-day. This data will help preserve this information as well as expand our knowledge about the base and diversity of Aztec and Nahua bio-taxonomy and medicinal systems.

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