

Reading Medicine in the Codex de la Cruz Badiano

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Bicultural medical practices have long been the norm in Western societies. Looking at the history of Western medicine, we find the constant adaptation of foreign ideas and materials. Humoral medicine, the translations of Dioscorides, and the search for ancient remedies like balsam are all indicative of Europe's desire to adapt and change medical information that came from radically different periods and cultures. Within the colonial context of the sixteenth century, recent scholarship has often focused primarily, although not exclusively, on how Europe adapted medical information from the colonies or on how European practices were imposed upon the colonial subjects. My purpose here is to show how one particular medical text, the *Codex de la Cruz Badiano*, illustrates the ability of indigenous inhabitants to appropriate European forms to their own ends, even when seemingly conforming to European traditions and theories. The *Codex* offers insight into the surprising ways in which biculturality can manifest itself, both in terms of content and in reading and writing strategies.

One of the challenges inherent in the melding of history of science and ideas and Mesoamerican studies is that it is nearly impossible to be comprehensive in any one study. In the case of Mesoamerican studies of the early modern period, scholars focus on pre- and post-conquest indigenous cultures and rely on a knowledge of indigenous languages and history. Mesoamericanists have often looked at indigenous cultures in isolation or have tried to isolate the elements of indigenous culture from the colonial hybrid culture that developed after the Spanish Conquest. On the other hand, traditional history of science is often Eurocentric even when it treats indige-

nous colonial subjects and often leaves the study of indigenous ways of seeing the world to anthropologists and ethno-historians. In the past only a small number of Anglophone historians of science have mastered indigenous languages, or even Spanish, well enough to make sense of Mesoamerican science and medicine.

This is not to say that no one is working in this area. Antonio Barrera's recent book on the scientific enterprise carried out by Spain in the New World, is an exciting new chapter in the incorporation of Latin America and Spain into traditional history of science.¹ Volumes have been written on the shift in natural history and in science in general during the sixteenth century, but few do more than mention texts authored by indigenous peoples.² Anthony Grafton's work *New Worlds Ancient Texts* explores the interaction of sixteenth-century intellectuals with the scholastic textual traditions and illustrates how those texts were used as tools for understanding the New World, as well how those tools were modified and discarded.³ Grafton's book is one of the most striking examples of the incorporation of colonial Latin American texts into the Western canon, but only focuses on the European aspects of the texts he studies. Anglo-American history of science can still profit from a better understanding of colonial Latin America, especially in regard to the texts written by indigenous authors.

In Latin America and Spain there is a broader sensitivity toward the biculturality inherent in many colonial texts;⁴ but unfortunately publica-

¹ Antonio Barrera, *Experiencing Nature* (Austin, University of Texas Press, 2006).

² David Freedberg, *The Eye of the Lynx: Galileo, his Friends and the Beginnings of Modern Natural History* (Chicago: University Chicago Press, 2002); Paula Findlen, *Possessing Nature* (Berkeley: University of California Press, 1994); Lorraine Daston and Kathleen Park, *Wonders and the Order of Nature* (New York: Zone Books, 1998); Pamela H. Smith and Paula Findlen, eds. *Merchants and Marvels* (New York: Routledge, 2002); and Londa Schiebinger, *Plants and Empire* (Cambridge: Harvard University Press, 2004).

³ Anthony Grafton with April Shelford and Nancy Siraisi, *New Worlds, Ancient Texts: The Power of Tradition and the Shock of Discovery* (Cambridge Mass.: Belknap Press, 1992).

⁴ Serge Gruzinski, *Mestizo Mind* (New York: Routledge, 2002); Donald Robertson *Mexican Manuscript Painting* (New Haven: Yale University Press, 1959); Gruzinski, *Painting the Conquest* (Paris: Flammarion, 1992); Carlos Viesca Treviño, "El Códice de la Cruz Badiano, primer ejemplo de una medicina mestiza," in *El mestizaje cultural de la medicina novohispana del siglo XVI*, eds. José María López Piñero and José Luis Fresquet Febrer (Valencia: Instituto de estudios documentales e históricos sobre la ciencia, 1995), 71–90; Jaime Vilchis and Antonio Mazuecos, "Salud y Alimentación" in *Ciencia y Técnica Entre Viejo y Nuevo Mundo* (Spain: Ministerio de Cultura, 1992); and José María López Piñero and José Luis Fresquet Febrer, "El mestizaje cultural de la medicina novohispana del siglo XVI y su influencia en Europa," in *El mestizaje cultural de la medicina novohispana del siglo XVI*, eds. José María López Piñero and José Luis Fresquet Febrer (Valencia: Instituto de estudios documentales e históricos sobre la ciencia, 1995), 9–23.

tions in the history of science and ideas as practiced in Spain and Latin America are often inaccessible in the United States and Northern Europe, marginalizing many of these historians and their work.⁵ The same can be said for scholarship in the history of literacy. Sad to say, each group is often under-informed about advances in the others and articles intended for one audience are often lacking in details necessary for the others. A careful analysis of the *Codex de la Cruz Badiano*⁶ illustrates how the text has much to offer the history of science and of ideas, and how this study complements already existing studies of early modern literacy and botany. Mesoamerican texts follow a different standard of literacy and a different concept of medicine, both of which are potentially illuminating to Europeanists. Bicultural texts show us a great deal about how European and indigenous views of the body and culture came together. They serve as a window into a period of interconnected colonization, resistance and acculturation. By incorporating the *Codex de la Cruz* into the canon of early modern histories of science and literacy, our understanding of both the colonial enterprise and the resiliency of indigenous culture in the early modern period becomes richer and more nuanced. Even though the *Codex* can be read as a reflection of antagonistic colonial processes of domination and resistance, on closer examination the culture it reflects is much more flexible and complex.

The *Codex de la Cruz Badiano* is a Mexican herbal completed in 1552. Known also by the title of the first English translation, *The Badianus Manuscript* and by its Latin title, *Libellus de medicinalibus indorum herbis*, the codex is written in a Latin that incorporates many indigenous words. All the illustrations are labeled with their names in Nahuatl, the still-living language of the Aztecs and many other Mesoamerican groups. This paper uses the name “*Codex de la Cruz Badiano*” in keeping with the convention used by most Latin American scholars. This designation not only highlights the presence of both the author and the translator but also puts the herbal within the tradition of the pre-conquest codices. Visually the *Codex* is strikingly similar to a sixteenth-century European herbal. Like many herbals, it is divided into chapters according to diseases, beginning at the head, proceeding down to the feet and ending with signs of imminent death. Almost every folio has a stylized color drawing of a plant or plants that dominates

⁵ López Piñero and Fresquet Febrer, “El mestizaje cultural.”

⁶ Martín de la Cruz, *The Badianus Manuscript* Intro., trans., and ed. Emily Walcott Emmart (Baltimore: The Johns Hopkins University Press, 1940); Martín de la Cruz, *Libellus de Medicinalibus Indorum Herbis*, 1552, trans. Juan Badiano (Mexico: Fondo de Cultura Económica/Instituto Mexicano de Seguro Social, 1991).

the top two-thirds of the page (see Fig. 1, p. 173). The bottom of the page contains descriptions of how the plant is used and what other plants are necessary to cure the particular illness with which the plant is associated. On some occasions the illustrated plants are not included in the Latin descriptions; conversely, many plants described are not illustrated. Folios 38r, 38v and 39r⁷ contain only illustrations of labeled plants (see Fig. 2, p. 174) and a few other folios contain only written descriptions. The entire codex comprises sixty-three folios of text and drawings organized into thirteen chapters.

From the first folio of the Codex we learn that the author is one Martín de la Cruz, “an Indian doctor from the College of Santa Cruz, who did not complete any professional studies, but rather was an expert by way of pure experience.”⁸ The last folio tells us that the translator, Juan Badiano, was an Indian professor at the College of Santa Cruz, who undertook the translation into Latin at the behest of the Franciscan Jacobo (also known as Diego) de Grado. We must infer that the translation was from an original Nahuatl text, composed or, more likely, dictated by the indigenous doctor De la Cruz. Unfortunately that original, if it ever existed, has disappeared.

The participation of De la Cruz and Badiano in the College of Santa Cruz is in itself significant. In the mid sixteenth-century the Franciscan order had built the College in Tlaltelolco, a city in the Valley of Mexico which is now a suburb of Mexico City, with the aim of educating young indigenous men, generally of the nobility, to become priests. They received a tri-lingual education in Latin, Spanish, and Nahuatl and had access to a library of European books. De la Cruz was apparently the indigenous doctor in charge of the health of the students.⁹ In his introduction De la Cruz says that he has written this “little book of Indian herbs and medicine” at the behest of Francisco de Mendoza, the son of the former viceroy of Mexico, Antonio de Mendoza, who intends to use it “to recommend the Indians to his Royal Majesty” (fol.1v). Thanks to the archival research of Carlos Viesca Treviño we now know that Martín de la Cruz was a practicing indigenous doctor who was born before the conquest and was already of an advanced age by 1552. He had a particularly close relationship with Vice-

⁷ All references are to folios in the 1991 facsimile of the *Libellus de medicinalibus indorum herbis*.

⁸ All translations to English are my own, generally based on the Spanish translations from the 1991 edition. Translations from Nahuatl are my own.

⁹ Carlos Viesca Treviño, “. . . Y Martín de la Cruz, autor del Códice de la Cruz Badiano, era un médico tlaltelolco de carne y hueso,” *Estudios de Cultura Nahuatl* 25 (1995): 479–98.

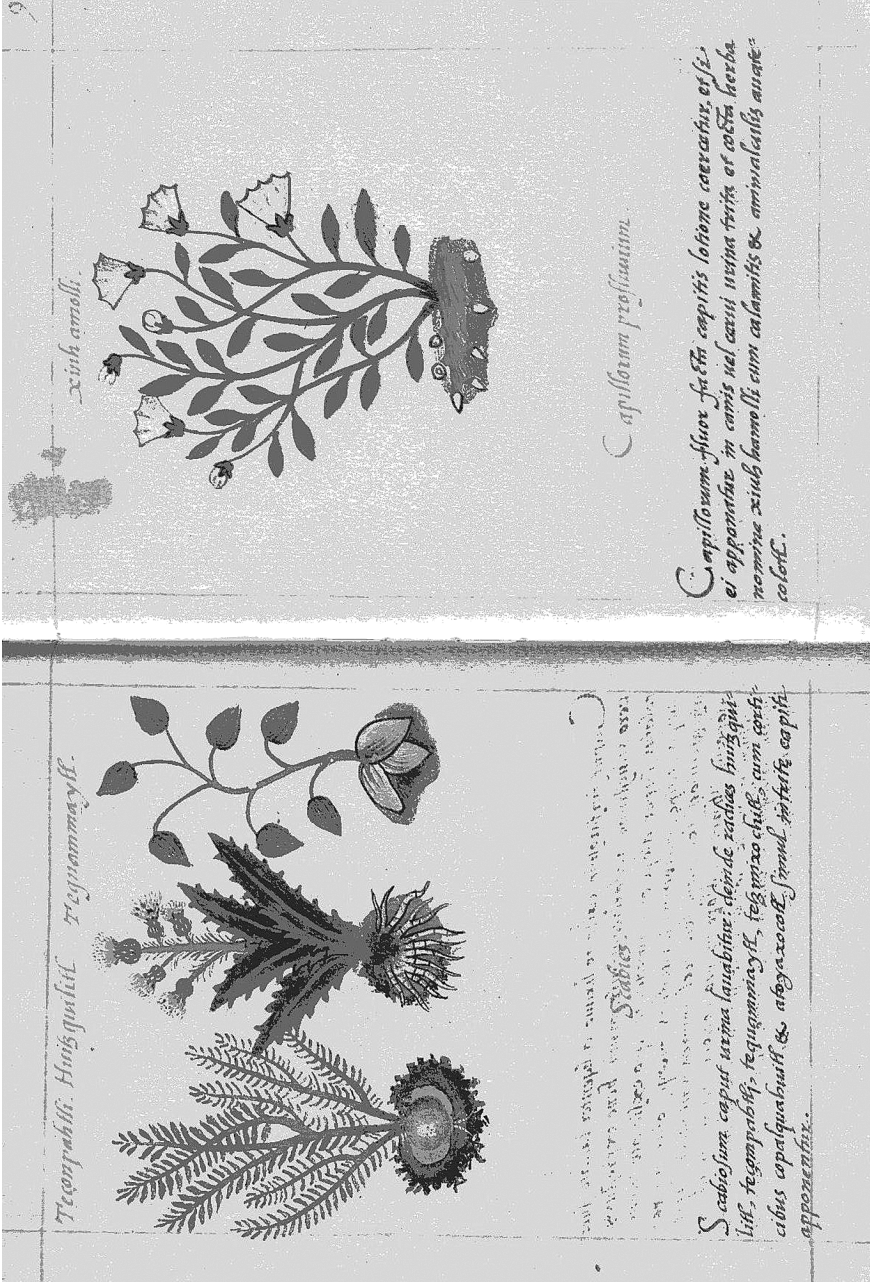


FIGURE 1: Folios 8v and 9r, typical pages from the Codex with the plant portrait and label in Nahuatl and the description for its use, in this case for scabies and hair loss. Note the indigenous glyph for water at the base of the plant *xiuh amolli*. Reproduced with permission from Fondo de Cultura Económica and El Instituto Mexicano de Seguro Social.

roy Mendoza and had been granted special favors by him.¹⁰ Perhaps he wrote this “little book” to repay a favor to his friend the viceroy and perhaps, as I discuss later, he took the viceroy’s request as an opportunity to capitalize on European technologies now at his disposal. As evidenced in the records kept in Tlaltelolco, the viceroy had continued his patronage for the Colegio de Santa Cruz even after he left Mexico to become the viceroy of Peru.¹¹ Most likely he continued his relationship with De la Cruz through his son, Francisco. Antonio de Mendoza had given the Colegio very large gifts of land and livestock as recently as February of 1551, so the Franciscans in charge of the school would have been very happy to give the viceroy and his son what they requested. The herbal was commissioned by the Mendozas as part of a shipment of botanical specimens that exemplified the agricultural/medicinal wealth of the New World. This shipment was presented to the king, Phillip II, by Francisco de Mendoza as a way of encouraging the crown to support pharmaceutical cultivation and trade and to put the Mendoza family in charge of that trade.

The Codex passed into Phillip II’s library at the Escorial and then into the hands of Diego de Cortavila. From there it made its way to the Barberini library in Italy, perhaps through the machinations of Cassiano dal Pozzo, and was later incorporated into the Vatican library. In 1991 Pope John Paul II repatriated the codex, and it now resides in the National Library of Anthropology and History in Mexico. A copy of the Codex, probably made as the original was being sent to Italy, has been found in the Royal Library at Windsor Castle and has only recently become the recipient of scholarly attention.

The contents of the Codex present a number of challenges. Many have dismissed the work as derivative, slavishly patterned after European herbals. Indeed, the Codex de la Cruz is a striking example of the impact of the colonial enterprise on indigenous culture. After all, the work was intended to be used by a European family to persuade a European monarch to look on them favorably. In many cases indigenous writers and possessors of local knowledge were pawns used by the Spanish to increase their personal and national wealth and status. Indeed, the Codex also serves as a dramatic illustration of the cultural hegemony imposed by the Spanish on the native populations. In the thirty years that had passed since the fall of the Tenochtitlan in 1521, the Spanish had managed to educate an entire generation in

¹⁰ Ibid.

¹¹ *Códice Mendieta*. Vol II. Ed. Joaquín García Icazbalceta (México: Francisco Díaz de León, 1892), 241–48.

alphabetic reading and writing. Not only did the Spanish alphabetize Nahuatl, they also imposed Latin as the language of culture and medicine. In the Codex we see not only the use of alphabetic Nahuatl in the labeling of the plants and the descriptions of other simples in the text, but also the recognition of Latin as the appropriate language for an herbal, a convention that was only just beginning to change in sixteenth-century Europe. The native authors of the Codex carefully imitated the appropriate linguistic tone and style of similar herbals written in Europe and knew enough about European medical theory to cite appropriate authorities. In one instance (fol. 19v) there is a direct citation of Pliny on the use of bezoar stones, and Pliny's presence is also felt in the naming of diseases.¹² Unfortunately, as Del Pozo points out, it is practically impossible to know whether a disease with a European name like "condiloma" in the Codex is the same "condiloma" referred to in Pliny, or if it is some other indigenous disease unknown to Europe.

European medical theory also seems to be present in several places where there are references to the humoral medical tradition. Chapters 2, 6, 7, and 9 deal directly with issues of heat and cold, and in fol. 7r the author states that a medicine can be administered in either hot or cold water depending on the quantity of heat or cold present in the patient. Fol. 20r makes reference to a "noxious humor" (*noxium humorem*), and in fol. 53v the "evil humor in the chest" (*malus humor pectus occupans*) is treated. Fol. 49r is dedicated to the "remedy for black blood" or melancholy and there is mention on fol. 43r of "pallida cholera" or pale cholera. In other instances scholars have found evidence of what they believe to be the doctrine of the signatures and of sympathetic medicine.¹³ The plant called *tzotzocaxihuitl*, or wart herb, is prescribed for the treatment of warts, and the illustration of this plant shows it covered in small round dots resembling warts (fol. 52v). Elsewhere, patients suffering from a "contracting" knee are advised to consume the feet and legs of birds, rabbits, and hare. These examples are often cited as evidence that the writers of the Codex were using a European model and basing their cures on European humoral and sympathetic medicine, or at the very least that their medical practice had

¹² Efrén Del Pozo, "Valor Médico y Documental del Manuscrito," *Libellus de Medicinalibus Indorum Herbis*. 1552, trans. Juan Badiano (Mexico: Fondo de Cultura Económica/ Instituto Mexicano de Seguro Social, 1991), 193–207, 194.

¹³ Martín de la Cruz, *The Badianus Manuscript*. (1552), ed. and trans. Emily Walcott Emmart (Baltimore: The Johns Hopkins University Press, 1940), 250; 269; 278; 307.

been contaminated by European theory.¹⁴ As I will show below, these elements can also be read as reflections of indigenous culture.

The fact that the Codex is in Latin only furthers the assumption that this work is predominantly European. The formal aspects of the Codex demonstrate that the author and translator probably had at least one European herbal that served as a model, as well as a copy of Pliny's *Historia naturalis*. Missionaries usually carried medical texts with them and it is likely that these books formed part of the Franciscan library, although according to the library catalogues contained in the *Códice Mendieta*, the only texts with possible medical content available in the libraries were Pliny and some volumes described as *filosofía natural*, which may or may not have included medical information.¹⁵ How the authors of the Codex de la Cruz were able to create a work that looked so much like a contemporary European herbal should be the subject of further research into the Colegio de Santa Cruz and the texts available there. In any case, the Spanish were successful in their attempts to colonize the inhabitants of New Spain and have them produce recognizably European works. The Mendoza family's desire to exploit both their relationship with De la Cruz and his knowledge of medicinal herbs and practices also underscores the colonial nature of the work. It would be foolish to deny the European influence in the Codex de la Cruz-Badiano, but it would be equally foolish to ignore its indigenous elements and the ways in which indigenous culture resisted complete colonization.

Nahua¹⁶ culture is present in myriad ways in the Codex de la Cruz, most strikingly in its sensitivity to indigenous literacy. We often assume literacy to be purely alphabetic and bibliographic, and that assumption makes it difficult to recognize non-European texts for what they are. Mesoamerican society, contrary to what is often believed, was a highly literate society, even if it was not alphabetic. The tradition of texts, in the form of

¹⁴ Del Pozo, "Valor médico . . ."; Emmart, "Introduction and notes"; Alfredo López Austin. *The Human Body and Ideology*, Vols. 1 and 2, trans. Thelma and Bernard Ortiz de Montellano (Salt Lake City: University of Utah Press, 1988); Debra Hassig, "Colonial Mexican Herbals of the Sixteenth Century," *Res* (1989): 30–53; and Bernard Ortiz de Montellano, *Aztec Medicine, Health and Nutrition* (New Brunswick, N.J.: Rutgers University Press, 1990).

¹⁵ *Códice Mendieta*, 255–68.

¹⁶ The term "nahua" refers to the overarching culture shared by speakers of Nahuatl. The group we refer to as the Aztecs was merely one of many Nahua groups living in Mesoamerica and they referred to themselves as "mexicah." Since it seems that neither Martín de la Cruz nor Juan Badiano was a mexica the term "Nahua" is most appropriate.

scrolls, screen folds, fabric paintings, stelae and other architectural forms, predates the conquest by many centuries. These texts consist of pictoglyphs, stylized conventional representations of specific objects and ideas, and other individualized artistic renderings of concepts and things. Noted Mexican scholar Miguel León-Portilla describes the pre-conquest texts from what is now Mexico as showing the interplay of written symbols and oral interpretation.¹⁷ Elizabeth Hill Boone has described how these texts carry both phonetic and semantic content.¹⁸

The pre-conquest Mesoamerican cultures had annals that recorded significant events, ritual books that were used in divination and other genres that were used to tell mythic and religious stories. In all only 15 pre-conquest codices have survived to the present, all of which are examples of the aforementioned genres. It is also known that there were many other kinds of books, primarily for keeping records, none of which survived the Spanish conquest.¹⁹ In the case of the codices that survived, specific glyphs were used to indicate culturally significant objects and ideas. In some instances glyphs were direct representations of things, in others they were phonetic in nature, indicating the sounds of a word without representing the word itself and in others the glyphs metaphorically represented an object, such as the representation of a flower or flint coming from someone's mouth to indicate either song or slanderous speech. Even though the Codex de la Cruz is essentially an alphabetic text, the use of illustrations and native glyphs discussed below point to a more bicultural sensibility and a retention of pre-conquest modes of writing.

The drawings that accompany the Codex continue in these indigenous traditions, although this continuity is not always immediately apparent. In many ways these drawings are stereotypical. The vast majority have the same root systems and indistinguishable leaves and flowers. They are far from lifelike. Debra Hassig dismisses any significant indigenous influence in these drawings, preferring instead to focus on their European aspects. She is correct when she points out the color modulation and the lack of heavy outlines are different from the illustrations in pre-conquest codices.²⁰

¹⁷ Miguel León-Portilla, "Have We Really Translated the Mesoamerican 'Ancient Word'?" in *On the Translation of Native American Literatures*, ed. Brian Swann (Washington: Smithsonian Institution Press, 1992), 313–38.

¹⁸ Elizabeth Hill Boone, "Introduction: Writing and Recording Knowledge," *Writing Without Words*, eds. Elizabeth Hill Boone and Walter Mignolo (Durham: Duke University Press, 1994), 3–26, 17–19.

¹⁹ León-Portilla, "Have We Really," 318.

²⁰ Hassig, "Colonial Mexican Herbals," 34.

Nonetheless, the actual glyphs that occur in the De la Cruz are unmistakable. They are a part of the long pictographic textual tradition in Mesoamerica and can be found in calendars, on ceramics, and in the pre-conquest codices. For example, the symbol for stone occurs repeatedly in the roots of plants illustrated in the Codex de la Cruz (fols. 21v, 22v, 24r, 26r, 27r, 34r, 38v, 49r) (see Fig. 2, p. 174). In her work on cadastral manuscripts from the sixteenth century, Barbara J. Williams has identified many specific glyphs that indicate soil type, most of which are based on the glyph for stone.²¹ While the stone glyphs in the Codex de la Cruz do not match any of those identified by Williams, they are different from each other in orientation, color, detail and the ways in which the roots of the plants grow through or around them, perhaps indicating the kind of soil in which these plants grew. The glyph for water occurs on two occasions (fol. 9r and fol. 61r). In the first instance, the text makes no mention of this but in the second the plant is described as growing in water (see Fig. 1, p. 173). Some of the flowers resemble the glyph for *xochitl* (flower). These recognizable glyphs tie the Codex to other indigenous texts and the tradition of native literacy.

The Codex de la Cruz Badiano exemplifies other kinds of native literacy as well. Since pre-conquest texts were composed on paper screenfolds or scrolls, on animal skins, or on pottery, or built into the architecture of important buildings, they could be viewed in many different ways. They could be read from left to right, right to left, top to bottom or in boustrophedon. Often the direction of reading changed from page to page of a codex with calendrical indicators or footprints to show the direction of reading. The Codex de la Cruz Badiano shares several interesting traits with these other kinds of texts. The very nature of an herbal makes its reading non-linear. Seldom does one read a work of this sort from start to finish; rather we read it to find the information we need and often skip around looking for related information. This format would have appealed to sixteenth-century native Mesoamericans precisely because it did not force them to conform to ideas of linear narrative. When Mendoza requested a book on Indian herbs and medicines we do not know if he specified the form the book should take. We do know that De la Cruz and Badiano had access to Pliny's *Historia Naturalis* and used it as a guide; yet they did not

²¹ Barbara Williams and H. R. Harvey, *The Códice Santa María Asunción* (Salt Lake City: University of Utah Press, 1997); Barbara Williams, "Pictorial Representation of Soils in the Valley of Mexico: Evidence from the Codex Vergara," *Geoscience and Man* 21(1980): 51–62.

copy his narrative format, choosing instead the less linear form of the herbal. Similarly the use of pictures, a commonplace in the herbal tradition, would appeal to a culture already accustomed to non-alphabetic textual communication.

While the lack of strict linearity in the herbal reflects indigenous reading habits, the illustrations point to another manifestation of indigenous literacy: the ability to read pictures and interpret all the information contained in them. Some of the best examples of this are fols. 38r, 38v and 39r, three pages without text that contain the paintings of twenty-eight plants. They are not glossed or described in any way, although the Nahuatl name accompanies each plant (see Fig. 2, p. 174). One of these plants is labeled *couaxocotl* (fol. 38v) and shows a green plant with large ovoid, opposite leaves, and stems terminating in round reddish fruit. Climbing either side of the main stalk are two snakes that appear to be consuming the fruit. Since no text accompanies the painting, one has only the illustration and native name to rely upon for meaning. For the intended European audience neither of these clues would help very much, but for the native Mesoamerican they would be more than adequate. The name translates into English as “snake fruit,” but even the individual unable to read European alphabetic script could read this plant name from the illustration alone. This reader could also tell that the plant grew in rocky soil, something legible only in the drawing since its name indicated nothing about the plant’s habitat. A similar situation occurs with the plants *azcapan ixigua tlahcolpabtli* (fol. 13v) or “trash-medicine herb that grows in anthills” and *nonochton azcapan yxua* (fol. 28r) or “prickly pear herb that sprouts in anthills” (see Fig. 3, p. 181). In each case the plant is identified in the text as growing near anthills and the illustrations confirm this. The ants have different colors and in the first they appear to be climbing the plant or living on it, while in the second they are shown in the dirt around the roots. Again, a native reader/interpreter could discern information about these plants and their habitats without actually reading the alphabetic script.

Moving away from questions of literacy and reading techniques we find that the medical practices inherent in the Codex also reflect indigenous sensibilities that a westerner might overlook or misunderstand. It is helpful to understand the Aztec view of the body, since the view of the body is closely tied to the medical practices described in the text. Like their European contemporaries, the sixteenth-century Mesoamericans sought a correspondence between the body and their natural and social world.²²

²² López Austin, *Human Body*, 162.

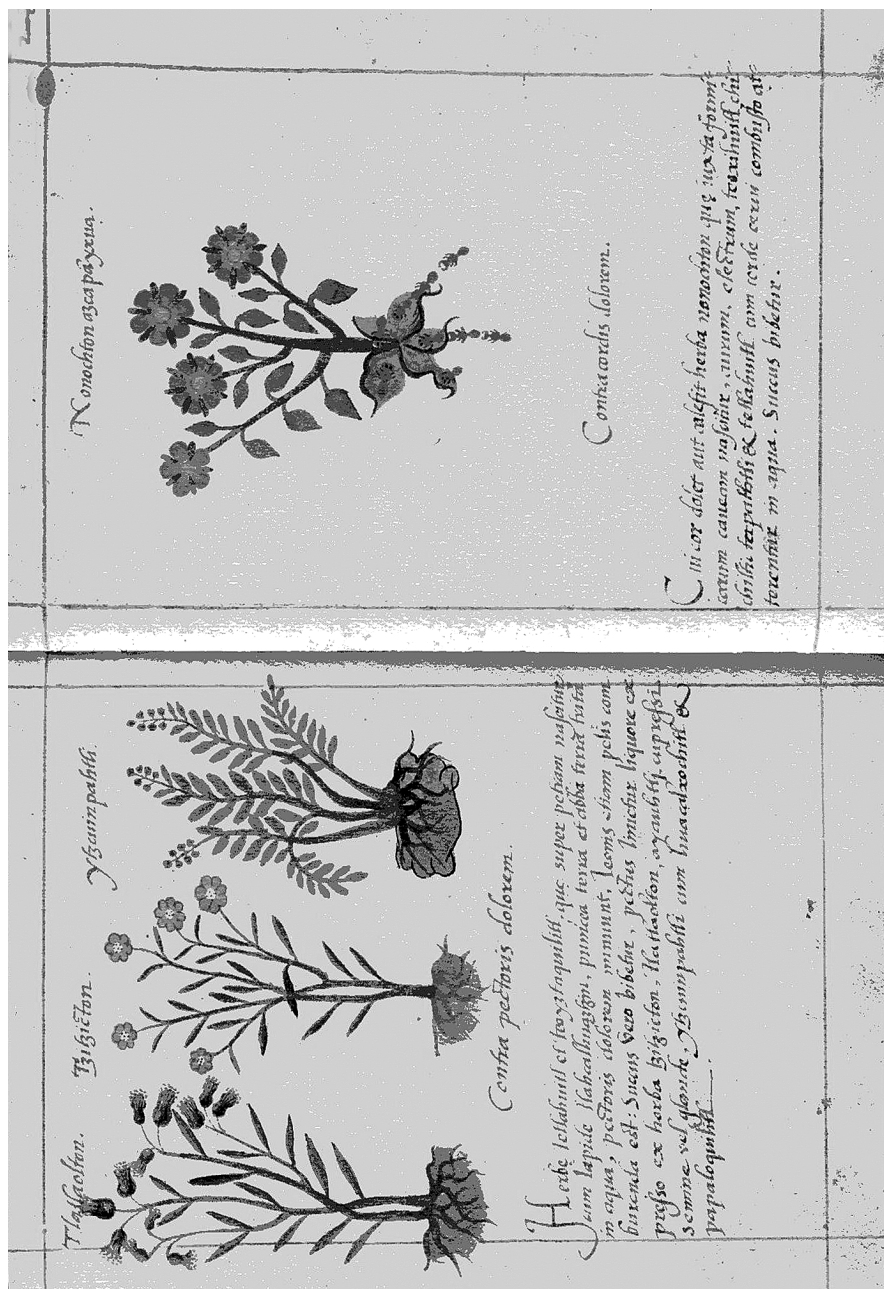


FIGURE 3: Folios 27v and 28r. Illustration of the plant *nonochton azcapan ixua*, the “herb like prickly pear which grows in anthills.” Reproduced with permission from Fondo de Cultura Económica and El Instituto Mexicano de Seguro Social.

Anthropologists Alfredo López Austin, Bernard Ortiz de Montellano and Jill Furst, among others, have contributed greatly to our knowledge of Nahua medicine and physiology. Thanks to their work we now understand that in the Aztec world three animistic entities inhabited the human body, all of which resided above the navel. Even though there are clearly three different kinds of soul or animistic forces, their descriptions overlap in post-conquest sources and at times it can be difficult to differentiate between them. Nonetheless the belief in these three forces—the *tonalli*, the *teyolia*, and the *ihiyotl*—strongly influenced how native Mesoamericans viewed the body and its connections with the rest of the natural world.²³

The first of these entities, the *tonalli*, inhabited the upper part of the head and was responsible for the heat or life force of an individual. It was associated with the sun, the supreme source of this life force. Since the *tonalli* was a part of a larger force, it could leave the body at any time and a person had to be ever watchful that their *tonalli* did not stray or diminish. Blood was the primary carrier of this energy and the hair also contained a great deal of *tonalli*. The second entity, the *teyolia*, most closely parallels the Christian soul and its primary residence was in the heart. Unlike the *tonalli* the *teyolia* was individual to each person and represented the seat of memory and intelligence. It also produced heat and was most closely associated with water and rains. The third animistic force or entity, the *ihiyotl*, had its seat in the liver. Associated with wind and air, particularly noxious and fetid air, in a human being the *ihiyotl* was responsible for strong emotions and was often tied to witchcraft. Like the *tonalli* the *ihiyotl* could leave the body, but it was connected to the breath and wind rather than to blood and the sun. It was nourished by the breath and present in it. Thus, each individual could affect other people and things by breathing on them. The health of an individual depended on the balance of these three entities, and they in turn were affected by outside forces as well. Knowledge of this aspect of Nahua culture greatly enhances our reading of the indigenous medical theory present in the Codex de la Cruz. The idea of a tripartite soul closely associated with the natural elements would not have been unfamiliar to sixteenth-century Europeans, but the Nahua animistic forces existed, and continue to exist today in indigenous Mesoamerican groups, independent of the European world view and they had a unique impact on how medicine was and is practiced in Nahua culture.

Many of the diseases and treatments described obviously reflect these

²³ Jill Furst, *A Natural History of the Soul in Ancient Mexico* (New Haven: Yale University Press, 1995), 180.

Nahua beliefs about the body. Again, the work of López Austin, Ortiz de Montellano, and Furst helps to clarify this. Where many scholars have felt that the remedies for balancing heat and cold in the body are adaptations of the European theory of the humors, these anthropologists have proved that this was in fact an indigenous concept as well and that the balancing of temperatures was seen as a way of balancing the three life forces. The *Codex de la Cruz* addresses the treatments for both excessive heat and excessive cold in chapter seven and chapter nine, as well as in other places. One of the remedies for heat is pouring a potion over the head, the seat of the *tonalli*. The treatment for cold includes drinking pulque, a beverage considered hot by nature. Although these may seem merely to be European treatments, or rather the indigenous adaptation of European treatments, they are indeed native responses to the ailments.

Some of the illnesses treated in the *Codex* are in themselves alien to European medical theory of the time and more obviously reflect indigenous medical theory. In chapter eight there is a section devoted to “Trees and flowers for the treatment of exhaustion felt by those who administrate the Republic and hold a public office.” This “illness” comes in a chapter that also describes treatments for illness occurring in the pubic area, the buttocks, the bladder, the legs and the feet. The treatment calls for the use of a number of fragrant flowers and leaves gathered in the early morning when aromatic oils are most concentrated and then infused in water. The blood of wild animals, particularly that of jaguars and other wild cats, was added to the aromatic water and rubbed over the body of the official and the brains and bile of wild cats, coyotes, and the white skunk were used to saturate the body. A more profound understanding of Nahua society makes it clear why the exhaustion of public officials required special treatment.

Emmart, the first translator of the *Codex* into English, saw the use of these animal parts as an example of European sympathetic medicine and commented generally on the importance of public officials and administrators in Aztec society,²⁴ but she was unaware of the deeper implications of societal hierarchy in Nahua culture. According to López Austin, within the hierarchy of Aztec society members of the ruling classes were thought to have greater amounts of the vital forces present in human beings. Since their work was seen as “arduous, tiring and complex, burdened with sacrifices and privations,” government officials “required [. . .] continuous magico-religious strengthening.” The treatment described in the *Codex*

²⁴ Emmart, *The Badianus Manuscript*, 278.

addressed all of the three animistic centers of the body. Aromatics of all sorts were used to attract *tonalli* and, as I mentioned before, this force was highly present in blood.²⁵ Since it was concentrated in the heads of all creatures, the brain also contained large amounts of *tonalli*. The use of fragrant flowers and leaves to attract this life force, partnered with the use of the brains of animals, makes logical sense in the Nahua world. The *ihiyotl*, associated with the liver and the god Tezcatlipoca, was nourished by the bile of animals and by the skunk, an animal closely associated with this god. The water baths cool the heart, or *teyolia*, which generates excessive heat during work, and the treatment thus restores balance in the official. The inclusion of this illness with ailments afflicting the feet, buttocks, and groin is also significant. In Nahua culture the buttocks are considered the beginning or foundation of the body and the particle *tzin* (*tzin-tli* = buttocks) is used metaphorically to indicate a foundational status or position at the beginning or base of something. Since officials carried the burden of the administration and maintenance of society, it makes sense that their illnesses would be grouped with the foundation of the body.

Other ailments not recognized by European medical theory include the treatment of those struck by lightning in Chapter nine, which also discusses treatments for melancholy, hemorrhoids, heat, injuries and difficult digestion, among other things. The treatment of those caught in a whirlwind, those crossing a river, and travelers of all sorts are all discussed in Chapter ten, which also includes treatments for stupidity, warts, fear, lice, and body odor. In the Nahua universe, each of these “diseases” caused an imbalance in the human body that must then be restored. Lightning, which originates in the layer of heaven closest to the earth, the home of water/rain beings, affects the *teyolia* which is most closely associated with water and rain. The inclusion of this disease with melancholy or black blood with its accompanying *malus humor pectus occupans* is indicative of the importance of treating the heart or *teyolia* in this chapter. Chapter nine also describes treatments for excessive heat and fever, both of which point to an imbalance of *teyolia* and/or the *tonalli*. In the diseases discussed in chapter ten we also see problems related to the imbalance of vital forces. The wind, associated with the *ihiyotl*, could upset the balance of gases within a human being and rivers were associated with supernatural beings, usually malevolent ones, who were hungry for a person’s vital forces. A person who was traveling accumulated evil spirits and forces that could harm him and thus

²⁵ López Austin, *Human Body*, 389, 216.

had to take measures to ward off and expel these forces.²⁶ Travelers wore blossoms filled with other aromatics as protective charms, yet another example of the use of aromatics to attract and keep vital forces. In the Codex de la Cruz the herb *tonatiuh ixihuah*, or the “herb of the sun,” was used to treat fear and timidity, a disorder associated with a lack of *tonalli* (fol. 53r). The Nahuas associated intelligence with the *teyolia* and heart, and Martín de la Cruz includes lack of intelligence with the other diseases in Chapter ten. He prescribes a potion made with *iztac yolloxochitl*, or white heart flower, for its cure—obviously treating the heart with this plant (fol. 53v). The same herb, *yolloxochitl*, is used in a charm to protect travelers, individuals at risk of losing some of their vital forces to malevolent spirits. The preoccupation with treating the odors of a sick patient and underarm odor, both in chapter ten, and halitosis and hiccups in chapter five, points to other associations with *ihiyotl* and the gases that accompany it. As mentioned earlier, aromatics were often used to treat public officials and travelers and incense was used in the treatment of hiccups. In the case of fever, the use of aromatics was contraindicated. Furst points out the awareness and preoccupation of Mesoamericans with the different gases that emanate from both the environment and the human body. This awareness translates to a special sensitivity to gases and smells in medical treatments, a practice that is clearly present in the Codex de la Cruz.

In spite of the wealth of indigenous medical knowledge present in the Codex, there persist important questions of authorship and European influence. One of the most difficult problems posed by the Codex is that of determining the roles played by De la Cruz and Badiano. De la Cruz states that he was the author, but if that is the case, to whom do we attribute the inclusion of patently European material? If De la Cruz was an older man at the time of the composition of the Codex and assuming that he did not have the skills necessary to translate his own work into Spanish or Latin, should we then assume that Badiano was more than a translator, and perhaps should be considered a co-author of the text who modified it appeal to a European audience? There is no mention of the illustrators of the Codex, and we are left to speculate as to the identities of the painters. However, these are particularly European concerns. Within the pre-conquest Mesoamerican tradition, the distinction between the painters of books, the *tlacuiloque*, and the interpreters of books, the *tlamatinime*, is fuzzy at best.²⁷ We have no record of “authors” per se but we do know of the impor-

²⁶ López Austin, *Human Body*, 260–61.

²⁷ Elizabeth Hill Boone, *Stories in Red and Black: Pictorial Histories of the Aztecs and Mixtecs* (Austin: University of Texas Press, 2000), 25–27.

tance of the painted book in Mesoamerica and the interplay between the text and its oral interpreter. In some ways the relationships among De la Cruz, Badiano and the anonymous painters of the Codex reflects this pre-conquest situation but in a slightly inverted fashion. If De la Cruz was the *tlamatinime* or sage, then Badiano was the scribe who interpreted his spoken words alphabetically adding his own views and knowledge. We do not know whether the drawings came before the alphabetic text and in some ways it does not matter. What matters is the interplay between the authors of the Codex and the different expertise they brought with them to the text. All of the authors of the Codex were indigenous and sensitive to indigenous beliefs and practices. Badiano and probably the anonymous painters had also been exposed to European culture and practices and this information colored their participation in the project, but it did not change the reality that in spite of its European appearance, the Codex is an indigenously produced work that reflects primarily indigenous sensibilities. It is an interesting possibility that the authors of the Codex had a superficial enough knowledge of European humoral theory to assume that it was the same as indigenous animistic theory. Just as Europeans reading the Codex would see references to humors and sympathetic medicine, so too would the indigenous readers of European texts have seen references to humors as examples of the imbalance of the *tonalli*, *teyolia*, and *ihiyotl*. The European “contamination” seen by so many scholars in the Codex might actually be more a reflection of indigenous ethnocentricity and misinterpretation of European texts, rather than the wholesale acceptance of European medicine.

With its presentation of pre-conquest beliefs and practices, it is possible, although not necessarily helpful, to read the Codex as a work of indigenous resistance to Spanish hegemony. Hidden within a work that looked and sounded almost completely European, these elements of indigenous thought might seem subversive or deliberately concealed. In fact, the Codex de la Cruz is so successful in imitating European forms that Debra Hassig proclaimed in her 1989 article that the only New World elements present in the Codex are the plants themselves. In Hassig’s view the Codex is European in all other ways. That the indigenous elements are frequently viewed as being completely overshadowed by the European structure of the Codex may actually point less to the complete domination by Spanish hegemony and more to the frequent scholarly tendency to see all colonial texts as examples of domination or resistance. Within this dominant discourse, typified by the European genre of the herbal, we find indigenous elements that

may actually seem to actively resist foreign domination. On the other hand, these elements might also point to a moment in history and literature in which two disparate cultures could exist on equal footing, complementing each other and exemplifying a process of mutual acculturation. As twenty-first century readers and scholars we must recognize the hybridity of this text and treat it as the blended text it is, instead of forcing it into one category or the other.

Usually when one speaks of acculturation in the colonial context, one refers to the assimilation of the colonized people to the colonizer's way of life and thought and to the loss of "pure" native culture. In their article "Hybridity and Its Discontents" Carolyn Dean and Dana Liebsohn make the important point that a contemporary search for "purity" does a huge disservice to the reality of early modern colonial culture in Latin America. We limit indigenous expression to only those things that look like pre-conquest artifacts and ignore other important indigenous products.²⁸ The *Codex de la Cruz* is precisely the kind of text that defies any search for purity since neither indigenous nor European culture dominates the work; rather, both saturate the text. Aztec culture had a long tradition of incorporating the beliefs and practices of the communities they conquered into their own practices. The incorporation of the alphabet and the form of the herbal was a natural response to the influence of another culture. For the residents of Mesoamerica, this adaptation of another mode of communication was natural and beneficial and it may have seemed odd to them that the Spanish "conquerors" did not do the same and adapt some of their techniques as well.

While it is easy to criticize the process of colonization and its subsequent destruction of indigenous ways of writing and recording information, the *Codex de la Cruz Badiano* exemplifies the beneficial adaptation of European alphabetic script to indigenous culture. The *Codex de la Cruz* is one of the only substantial examples we have of indigenous persons documenting their herbal knowledge for an ostensibly European audience, in large part because of the European conquest and colonization of Mesoamerica. Indigenous modes of writing offered a fluidity of reading and interpretive techniques that the European system could not offer, but the European alphabet afforded the indigenous authors of the *Codex de la Cruz* an opportunity to record their medical knowledge for possibly the first time ever. The indigenous systems of recording knowledge were ideal for document-

²⁸ Carolyn Dean and Dana Liebsohn, "Hybridity and Its Discontents," *Colonial Latin American Review* 12 (2003): 5–35.

ing historical events, histories of particular groups, ritual procedures, and tribute receipts but it was not particularly useful in recording how to harvest and use medicinal plants. As mentioned earlier, the herbal, because of its flexible reading order and the extensive use of illustrations, was an ideal genre for indigenous authors to appropriate. Martín de la Cruz and Juan Badiano were able to record indigenous knowledge that had probably never been recorded before and at the same time share that knowledge with their European audience. We have no clear indication as to whether De la Cruz and Badiano believed that their herbal would be made available to their compatriots, but based on the multiple layers of meaning in the Codex, it is clear that both a European audience as well as an indigenous one had much to gain from it. The Mendoza family was hoping to gain financially by monopolizing the trade in New World herbs²⁹ and the Spanish crown was also deeply interested in profiting from medicinal exports from the colonies.³⁰ Even though the Spanish never truly capitalized on the potential medicinal profits afforded by the knowledge contained in the Codex de la Cruz, the herbal was ultimately successful in preserving indigenous medical philosophy and practices in a way no other text was able to equal. The Codex also brings into relief some of the colonial forces, as well as the transitions and changes, that were taking place in sixteenth-century Europe. The conquest had profoundly altered the production of texts and the way that medicine was practiced in Mexico, and not necessarily to the detriment of indigenous writing systems or medical practice. In contrast, the impact of Mexican products and theories was slow in arriving on the continent and often medicines arrived unaccompanied by the knowledge of how to use them well.³¹

Products from the Americas made their way into European natural histories of the time but, to use J. H. Elliott's term, their impact was "uncertain." As Elliott points out, the New World and all its resources were "incorporated into an essentially Europocentric conception of history"³² and this concept of history included natural history. New World plants made their first notable European appearance in Monardes's *Historia Medicinal* (1565–74) which was translated into English in 1577 by John Fram-

²⁹ Viesca Treviño, ". . . Y Martín de la Cruz," 493.

³⁰ David C. Goodman, *Power and Penury: Government, Technology and Science in Philip II's Spain* (Cambridge: Cambridge University Press, 1988), 209–50.

³¹ Londa Schiebinger, *Plants and Empire* (Cambridge, Mass.: Harvard University Press, 2004).

³² J. H. Elliott, *The Old World and the New 1492–1650* (Cambridge: Cambridge University Press, 1970), 1–27.

pton as the *Joyfull Newes Out of the Newe Founde Worlde*. All of the medical treatments in this work are purely European and Monardes himself never left Spain, relying instead on information from soldiers and correspondents in the colonies. Indigenous information was scarce and considered unreliable.³³ American plants also slipped into Andrés Laguna's Spanish translation of Mattioli's Dioscorides but were a small fraction of the plants included in the work.³⁴ None of the successful European herbalists like Brunfels, Fuchs or Mattioli had ever been to the New World and instead relied upon specimens and information brought back by conquistadors, explorers and colonists. One of the few texts written by an actual herbalist/doctor who had been to New Spain, Francisco Hernández's *Historia Natural de Nueva España*, languished in Spanish custody for over fifty years before being published by the Lincei Academy in a drastically revised and edited form entitled the *Rerum Medicarum Novae Hispaniae Thesaurus* (1651).³⁵ The Lincei were "overwhelmed" by the multiplicity of things not just in the New World, but in a new universe³⁶ and the Hernández texts typified this surfeit of knowledge. Most Europeans were unsure of what to do with the new botanical information from the New World, and as a result ignored it or attempted to force it into existing modes of thought.

Perhaps one of the most important ramifications of the Codex de la Cruz is that in it we see that the indigenous inhabitants of New Spain were actually much more culturally open and sophisticated than their Spanish conquerors. Much has been made of the concept of *mestizaje* or cultural mixing in Latin American but too often it refers to the gradual "whitening" of indigenous culture. In this case the *mestizaje* is bilateral, at least in the case of the composition of the Codex de la Cruz.³⁷ At a time when Europe was having difficulty making sense of the New World and struggling to incorporate American products and information in a meaningful way, the authors of the Codex were rapidly able to incorporate Old World techniques and genres into their already existing modes of recording informa-

³³ Daniela Bleichmar, "Books, Bodies and Fields," in *Colonial Botany*, eds. Londa Schiebinger and Claudia Swan (Philadelphia: University of Pennsylvania Press, 2005), 83–99.

³⁴ José Luis Fresquet Febrer, "Terapéutica y materia médica americana en la obra de Andrés Laguna (1555)," *Asclepio* 2 (1992): 53–82.

³⁵ Francisco Hernández, *The Mexican Treasury*, ed. Simon Varey, trans. Rafael Chabrán, et al. (Stanford: Stanford University Press, 2000); Simon Varey, Rafael Chabrán, and Dora Weiner, eds. *Searching for the Secrets of Nature: The Life and Works of Dr. Francisco Hernández* (Stanford: Stanford University Press, 2000).

³⁶ Freedberg, *Eye of the Lynx*, 10.

³⁷ Viesca Treviño refers to the cultural *mestizaje* that happens in the Codex ("El Códice . . .") and has a different view of the text than the one elaborated here.

tion. In his seminal work on post-conquest Mesoamerican culture, *The Nahuas After the Conquest*, historian James Lockhart explains that while alphabetic literacy never reached the majority of the indigenous Mexican population, every community had at least one literate member who could function within alphabetic colonial society while relying heavily on oral tradition and native forms of writing.³⁸ He eloquently describes post-conquest indigenous texts: “these documents, though most of them are ostensibly in Spanish genres, are not only more individual in their language, conventions and content than the Spanish counterparts, but more complex in belonging to two traditions than one. They are both more difficult and potentially richer . . . than Spanish records.”³⁹ The complexity inherent in the Codex de la Cruz Badiano proves Lockhart’s point. In it we find a richer combination of information and genres than in its European counterparts, and at the same time, we find a text significantly more difficult to decipher. The ideal readership for the Codex did not exist at the time of its composition. In fact it is possible that the ideal readers have only recently come into existence as scholars attempt to disentangle the multiple layers of meaning woven together in the Codex de la Cruz and become more familiar with the languages and cultures contained in it.

Instead of viewing texts written in the sixteenth-century New World colonies either as being reflections of European thought and practice or as representations of indigenous beliefs and reactions, perhaps it is more fruitful to consider these texts as the rich and varied texts that they are. In the case of the Codex de la Cruz we have a clear example of how the Spanish ruling classes trained and exploited the surviving indigenous peoples of the Aztec empire as well as how these same individuals were able to exploit the knowledge and technologies brought to them and imposed by the invading forces. The Codex has much to offer scholars interested in questions of literacy, early modern botany, colonial studies, art history and linguistics. For Latin Americanists, especially those continuing in the tradition of Lockhart, the Codex affords a glimpse into the process of alphabetization and into the preservation of indigenous modes of thinking, while at the same time it typifies the European herbal tradition, something that Latin Americanists often know little about. The study of works like the Codex de la Cruz helps to elucidate the complexities and subtleties of culture contact and to enrich traditional Western scholarship. Texts like this show how the

³⁸ James Lockhart, *The Nahuas after the Conquest* (Stanford: Stanford University Press, 1992), 330–31.

³⁹ Lockhart, 7.

“non-dominant culture” often has surprising ways of adapting and incorporating new knowledge to its existing paradigm, even when that method paradoxically seems to come from within the dominant discourse.

Perhaps the most important lesson provided by a deeper understanding of the *Codex de la Cruz Badiano* is that we should be careful when assuming that works that look European in fact represent a complete Europeanization of the indigenous authors. Dean and Leibsohn clearly demonstrate how we see works as showing indigenous influence only when that influence is visible and “visibility thus tricks us into recognizing the native only in very limited and circumscribed ways.”⁴⁰ Their example of the cathedral in Cuzco, a building constructed using indigenous methods and materials that in the end looks completely European is analogous to the writing of the *Codex de la Cruz*, a work that in the end looks like a European herbal but whose content and composition is almost completely indigenous. If we only recognize indigenous culture in things that look indigenous, then we are reducing the complexity of sixteenth-century Mexico, and as Dean and Leibsohn say, “colonizing colonial culture.”⁴¹

Colonial texts are always multivalent and polyphonic and should be approached as such. To understand them fully we not only have to recognize the invisible indigenous presence in the content but also within the techniques used to write and read the text. We assume that all alphabet texts are read using European conventions but in the case of the *Codex de la Cruz Badiano*, and, I would contend, many other bicultural texts from sixteenth-century Mexico, this is simply not the case. It is easy to assume that the alphabetization of native culture led to the demise of pre-conquest literacy but as shown here, those ways of reading and writing continued, albeit in a form that Europeans felt was wholly their own. Alphabetization may have led to the eventual fossilization of oral culture but it also allowed for an unprecedented means of recording indigenous knowledge that native technologies could not provide. Part of the imperial mythos is that the conquering culture appropriates native resources and co-opts native knowledge at the same time it seeks to devalue and destroy the colonized culture. We continue this activity when we assume that all post-conquest texts are slavish imitations rather than innovative adaptations. As Matthew Restall points out in his discussion of the “Myth of Native Desolation,” “native cultures proved resilient and adaptive and many natives, especially elites,

⁴⁰ Dean and Leibsohn, “Hybridity and its Discontents,” 15.

⁴¹ *Ibid.*, 26.

found opportunity in the Conquest-era transition.”⁴² The resiliency apparent in the Codex de la Cruz Badiano is yet another link in the chain of re-evaluating the early years of the conquest and understanding the fluidity of medical practices and literacy in the early modern period.

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⁴² Matthew Restall, *Seven Myths of the Spanish Conquest* (Oxford: Oxford University Press, 2003), 102.

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