Abstract

This article endeavours to corroborate Alfredo López Austin’s belief that paragraph V (on medicinal herbs), which is contained in chapter VII of Book XI (on flora, fauna, and mineralogy) of the Florentine Codex (ca. 1577), is an independent work. First, the article analyses the main features that single out paragraph V as an autonomous herbal, including its dearth of lexicographical data, its format, and the references that are made to the Nahua healers who were consulted for its composition. Second, it contextualizes the herbal, shedding light upon the possibility that it was created for the delivery of courses on indigenous medicine at the Imperial College of Santa Cruz of Tlatelolco after the death toll caused by the 1545 cocoliztli.

The herbal of the Florentine Codex

In contemporary studies, three texts dating from the second half of the sixteenth century continue to be treated as essential primary literature concerning pre-Hispanic and early colonial medicine. These are the herbal Libellus de medicinalibus indorum herbis (1552), composed by the Nahuas Martín de la Cruz and Juan Badiano in the Imperial College of Santa Cruz of Tlatelolco; the Historia natural de Nueva España, written by Philip II’s protomédico (royal physician) Francisco Hernández, a “scientific envoy” in New Spain in the 1570s; and the Florentine Codex, the only extant manuscript of the twelve-book encyclopaedia on the world of the Nahuas, Historia universal de las cosas de Nueva España (ca. 1577), which was directed by Fray Bernardino de Sahagún. Sahagún’s interest in indigenous medicine is attested by the information that he decided to incorporate in chapters XXVII and XVIII of Book X, on anatomy, illnesses,
and remedies, and in several passages of Book XI on flora, fauna, and mineralogy.\textsuperscript{2} The production of the \textit{Florentine Codex}, in particular of Book XI, shares several traits with that of de la Cruz and Badiano’s herbal. Sahagún supervised most of it in the College of Tlatelolco, sometime between 1561 and 1565, where he consulted several Nahua healers whose answers were recorded in the Nahuatl language by a group of Nahua assistants trained in Tlatelolco, some of whom Sahagún had taught, among other subjects, Latin and moral and natural philosophy. Later on, in 1575, he received an official commission from Juan de Ovando, president of the Council of the Indies, to translate the twelve books into Spanish.\textsuperscript{3}

Chapter VII of Book XI, on all the different herbs, features a remarkable section on medicinal ones entitled paragraph V, which Mexican scholar Alfredo López Austin conceives as “una obra independiente, simple incrustación al libro.”\textsuperscript{4} After a cursory comparison of paragraph V with paragraphs in the same chapter and with other chapters of Book XI, López Austin notes in passing several reasons to sustain his argument: “[paragraph V] es la única parte de este libro en que se mencionan los nombres de los informantes; hay mucha mayor libertad en extensión de contestaciones; no hay petición de vocabulario relacionado con el tema, que sí es abundante en el resto de la obra.”\textsuperscript{5} Despite López Austin’s finding, paragraph V has been left “untouched,” in the sense that it has only been studied as an integral part of chapter VII in scholarly works that range from volumes on pre-Hispanic and colonial health practices to articles on pharmacology.\textsuperscript{6} Thus, the intention of this study is to elaborate on López Austin’s reasons for claiming that paragraph V stands on its own, and to throw light upon the primary purposes for which it was initially produced. In doing so, this article is divided into two sections. The first sets out to demonstrate the validity of López Austin’s statement, that is to say, it pursues further enquiry into the peculiarities of paragraph V
by discussing the features that make it an autonomous herbal attached to the *Florentine Codex*, namely, its lack of lexicographical-doctrinal notes, its visual presentation, and its naming of the Nahua healers who supplied data. Added to this, parallelisms in content structure between paragraph V and other paragraphs of Book XI will be explored, in an attempt to prove that, although paragraph V was completed as a separate text, it is the result of the same method of data collection that Sahagún applied to the other paragraphs. Having established paragraph V as an independent herbal, the second section contextualizes it in the socio-cultural milieu of the College of Tlatelolco, and tries to argue that the herbal is a product of the college and of Sahagún’s concerns in times of particular duress, when the *cocolitzli* pestilences were causing havoc among the Nahuas.

1. **Paragraph V as an autonomous herbal**

At the end of his prologue to Book I of the *Florentine Codex* Sahagún recounts that his fellow missionaries, accustomed to expressing an interest in the writing process of *Historia universal de las cosas de Nueva España*, usually enquired about his “Calepin.” To their eyes, Sahagún was composing a monolingual dictionary of the Nahuatl language that paralleled the Augustinian Ambrogio Calepino’s overarching Latin dictionary *Cornucopiae*, which, aside from definitions, furnished etymologies, synonyms, and examples of use. In his answer to his brethren, Sahagún partially surrenders to the impossibility of creating said Nahuatl *Calepin*, arguing that he did not avail of written sources as those Calepino had. Sahagún, nonetheless, avows that he was laying the foundations for the composition of a future Nahuatl dictionary by compiling what he names a “a red barredera” (trawl); that is to say, an amalgam of heterogeneous
texts codifying and framing the spoken language within the array of semantic fields that an encyclopaedia-like work was expected to cover. Sahagún was creating a “history,” understood by the custom of the time as an account of the world of the Nahuas, and paid heed to the sources with which he was familiar; not only Calepino’s dictionary but also classical and medieval-Christian textual archetypes, such as Pliny’s *Historia naturalis* (ca. 77 AD) and the Franciscan Bartholomaeus Anglicus’s *De proprietatibus rerum* (ca. 1240-1260), which churchmen used to consult for the composition of sermons. In fact, he intended his text as a doctrinal reference work that would ease the conversion of the indigenous people for his Spanish-speaking fellow friars. With these missionary readers in mind, Sahagún originally aspired to accommodate collected material in a friendly-reader fashion. He devised a three-column page consisting of the Spanish translation on the left, the Nahuatl-source text centrally positioned, and a right-hand column with linguistic glosses, in which Nahuatl terms and grammatical issues pertaining to the Nahuatl text were explained.

Sahagún makes allusion to this two-fold doctrinal-lexicographical objective of *Historia universal de las cosas de Nueva España* in titles, prologues, and passages of the final manuscript. Thus, in Book XI, the text considered in this study, he qualifies the potential evangelical application of its linguistic and cultural knowledge on fauna, flora, and mineralogy by entitling it “bosque, jardin, y vergel de lengua Mexicana;” by describing it as a “noble joia de la recamara de la predicacion euangelica;” and by claiming that the book furnishes churchmen with: “exemplos, i comparationes, [que] quanto mas famjliares fuer[en] a los oientes, i por palabras, i lenguaje mas vsadas, entre ellos, dichas: tanto ser[an] mas efficazes: i prouvechosas.” The importance that Sahagún bestows upon the use of daily, metaphorical language, resonates with the expertise he obtained whilst training and acting as a preacher. From an early age, as a
Franciscan novice in the friary of Salamanca where he took his vows, Sahagún was used to reading and hearing metaphors, similes, and fixed phrases related to the natural world in sermons written by prestigious members of his order, like St Anthony of Padova, Fray Roger Bacon, Fray Nicolaus de Hacqueville, and Fray Olivier Maillard, whose florilegia or compilations of sermons were generally held in Franciscans libraries. Animals were represented as human exemplars with behaviour to be praised or reprehended: cunning foxes; faithful doves; vindictive sneaks; hard-working bees; and humble ants. Likewise, minerals and plants, whether their growing stages and forms, fragrance, and gamut of colours, assisted in the recreation of a given ambience in religious texts. Subsequently, as a writer of sermons himself, Sahagún consulted these doctrinal texts as well as the encyclopaedias that were considered preaching auxiliary works, including not only Pliny and Anglicus’s works, but also Isidore’s Etymologiae and the Franciscan Juan Gil de Zamora’s Historia naturalis, all of which were filled with similes, metaphors, and exempla associated with the natural world. Once in New Spain, Sahagún lacked the same material in the Nahuatl language and, instead of translating his known sources, he decided to compile it in the Nahuas’ own words so as to better facilitate their understanding of the Christian message. In other words, Sahagún ensured that Book XI abounded in lexicographical data for the writing of a future “Nahuatl Calepin” and, at the same time, he supplied liturgical tropes with which, he hoped, missionaries would capture their Nahua audience’s attention more effectively.

Throughout the chapters of Book XI, on mammals, birds, insects, trees, and plants, the reader finds numerous characterizations of these as human exemplars, together with etymologies, fixed-phrases, sayings, and collocations. For example, we are informed of the habits of the protective tlaquatl (opossum), which carries their young around and, if caught, “[it] cries, it squeals; true tears come forth;” of the
annoying *cuicuizcatl* (barn swallow), which is “a warbler, a crier, a constant warbler, an awakener of the sleeping;” and of the small and disappointing *tlaoecapuli* (cherry shrub, a thin-fleshed tree, bitter to the taste that “offends one. It is not regarded by anyone; it is not respected.”

Regarding etymologies, Sahagún notes that the *tzcicatana* (ant) receives the name of *tepehuani* (conqueror) because “when [these ants] follow their path, they go in a wide stream. So it is said they draw up for battle;” and that one of the names of the American bittern is *ateponaztli* because, like the *teponaztli* (slit drum), “it sounds from a distance like a two-toned drum, so loud is it.”

As for the codification of fixed-phrases, sayings, and similes that associated human traits with the natural world, a few of a copious list of examples throughout Book XI include the epithets *quimichin* (mouse), a “busybody” one that likes eavesdropping, and from which the saying “niqumjcchtí” (“I mouse him” or “I eavesdrop on one”) derives, and *avevetl* (cypress), which is used, because of its shade, to refer to protective parents.

It is to be noted that the description of this cypress resumes with several collocations and specific terminology on a tree’s stages of growth. Thus, it is said that this cypress “thickens, extends its branches, extends branches everywhere, forms foliage. It sheds foliage, its sheds butterfly-like leavers. It towers above, it excels.”

In other cases, the collocations are even separated from the main body of the text, appearing in a final line, and written in the first-person singular. For example, the description of the *izcauitl* (edible earthworm), which was sold in markets, finishes with: “I gather izcauitl; I take izcauitl; I roast, I cook, I sell izcauitl.”

Like previous and subsequent chapters of Book XI, chapter VII, comprising twelve paragraphs on different herbs, offers a wide range of etymologies, fixed-phrases of comparative nature between herbs and human beings, and collocations. As pointed out by López Austin, the exception to the rule is paragraph V. A cursory glance allows
the reader to notice that the paragraphs flanking it, that is, paragraph IV on edible herbs and VI on further herbs, stand out for their lexicographical data. For instance, in paragraph IV, under the entry of *maxten* (onion with numerous roots), we read: “it is said of him who engenders many, whose many children live, ‘He has offspring like the *maxten*.’”

Likewise, the *texoxoli* (chilli-red plant), which is described as beautiful but with a disappointing odour, is believed to typify someone living off appearances; someone “who covers himself well, who wraps himself.”

As for etymologies, in paragraph IV we find that the name *quauitzquilitl* (drooping edible herb) originates from the sentence “[i]t eats me [as] I eat it,” because “it first pricks one as it is eaten.”

Finally, regarding collocations, some of the herbs of paragraph IV that are described by inserting verbs and adjectives with which they tend to combine are the *acaxilotl* (edible root), with the verbal form in the first person singular “I grub up, I chew the *acaxilotl*,” and the *xaltomatl* (sandy tomato), depicted with this string of adjectives: “some are white, some black. They are sweet, very sweet; juicy, very juicy; round, round like a stone, very round.”

Similarly, in paragraph VI several entries portraying herbs continue to unfold how recorded data was tailored to suit the lexicographical aim. Thus, the bitterness of the *iztauhyatl* (Mexican wormwood) is alluded to by adding a sentence with comparative forms—“*i*it is bitter, very bitter, surpassingly bitter”—; the *azpan xiuittl*, a medicine for rubbing the face, is accompanied by an example of use referring to this action—“I wash my face with azpan”—, and the brief description of the *epaçotl* (Mexican tea) concludes with a verb with which it usually collocates: “I put *epaçotl* in the sauce.”

The dearth of lexicographical information in the herbal of paragraph V implies that its original manuscript would have been conceived for other purposes rather than linguistic and doctrinal, and that, eventually, Sahagún inserted it in Book XI because it
suited his purpose of creating a “historia” and a “red barredera” of the Nahuatl language. The incorporation of said manuscript to occupy paragraph V of chapter VII also meant that its initial format had to conform to that of the *Florentine Codex*. In other words, the scribes working under Sahagún’s direction adapted the original contents of the herbal to a bilingual two-column arrangement, in which the Spanish text was given prominence. In this respect, further cursory glances at paragraph V and those flanking it continue to reveal striking differences.

Visually speaking, paragraph V captures immediate attention for two main reasons. First, every entry is numbered, with the figure appearing on top of the name in both the Nahuatl and the Spanish columns, a pattern of presentation that does not feature anywhere else in the twelve books of the *Florentine Codex*. Interestingly, a scribe added the numbers once the text had been inserted and, as López Austin notes, numbers are omitted at times, for example, when the scribe jumps from entry 79 to 90, from 101 to 103, and from 121 to 123. Since the herbal reaches up to number 150, it is possible that the scribe who jotted down the numbers set himself the task of finishing paragraph V with this round figure. In other words, he numbered each entry by comparing both the original and the copy, a task during which, upon realizing that some entries had been left behind, he still maintained the original number of 150.

**NOTE TO EDITORS**, please insert here 2 images uploaded with the title “1 Beginning, folio 291v” and by its side “2 Beginning, folio 292r”. For ease of identification I’ve numbered all the images in order, 1 to 5. Please note that the two illustrations should be placed next to each other as the left and right-hand pages of a book. I sincerely apologize for not having it done myself, I just don’t know how to do it. The two-page image should be accompanied by this caption:
The second visual characteristic that singles out paragraph V as an autonomous herbal has to do with the language in which entries are written and with the nature and size of their accompanying illustrations. For the first thirty-one herbs, the manuscript only contains the Nahuatl text on the right-hand column, written by one scribe, whereas the Spanish translation on the left is missing. This space is occupied by a drawing related to each herb, either showing its growing process, its mature state, or portraying several types of the same herb and the manner in which it was prepared as a remedy for an illness. For example, the fourth herb, the centli ina, which is said to cure fever, is represented by three different shrubs with a distinctive shape; and number eighteen, the necutic, a thick root used as eye medicine and for genitals, is being prepared by a woman who rubs it to extract its substance.

As for the Spanish translation, with handwriting dissimilar to that of the Nahuatl text, it begins in the thirty-second entry with the çoçiatic (Indian poke), which is equated to a xonacatontli (little onion), and translated into Spanish as resembling a “cabeça de ajos.” From then on, the manuscript maintains the Spanish-Nahuatl columns that characterize the Florentine Codex, and the illustrations depicting the relevant herb are minimized within a box that tends to be situated in the Spanish column, right before the herb is described. What this modification in the presentation of contents is telling us is that, perhaps, the original herbal consisted only of the illustrations and the Nahuatl text—had it resembled the Libellus de medicinalibus indorum herbis, drawings would have been centred and their description would have
appeared underneath.\textsuperscript{33} There might have been an initial attempt to transfer the pictorial and written information of the original herb to the two columns of paragraph V, which is what appears up to entry 32. Afterwards, Sahagún must have factored in the importance of translating the information of these New World herbs and remedies for the Spanish officials of the Council of the Indies, and he might have decided to translate the Nahuatl text. Thus, the illustrations, very likely more relevant in the original manuscript, lost their original status in the copy, which privileged the written text in Spanish. In addition, the insertion of the translation, or of some explanatory notes in Spanish in the left-hand column, contributed to keep the symmetry of contents aligned with the right-hand one in Nahuatl. Had the illustrations continued to occupy the full length of the left-hand column, the reader would have found that, on some occasions, when the Nahuatl text of the right column expands along two folios, such as in herb 71, the left-hand column could have left blank spaces or given prominence to the illustrated herb, either by stretching it along the column or by drawing it in different stages.\textsuperscript{34} Alongside these, brief Nahuatl passages, like those describing herbs in entries 42 and 43, would have looked discordant with their small-scale illustrations.

NOTE TO EDITORS, please insert here 2 illustrations uploaded with the title “3 Description of herb 71, folio 304v” and by its side “4 Description of herb 71, folio 305r”. Please note that, as above, the two illustrations should be placed next to each other as the left and right-hand pages of a book. It should be accompanied by this caption:

Description of herb occupying two folios. The Biblioteca Medicea Laurenziana, ms. Med. Palat. 220, f. 304v and 305r. Reproduced with permission of MiBACT. Further reproduction by any means is prohibited.
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Since the original manuscript of paragraph V preceded the creation of the Florentine Codex and had to adapt to its overarching structure, we are left to wonder about its genesis and whether it was born out of a dissimilar context, unconnected to Sahagún’s. Thus, the following pages cast some light upon the overall breakdown of contents of herbs of/in chapter VII and upon the manner in which information was collected, in order to argue that the original text of paragraph V must have belonged to Sahagún. To begin with, the full description of two herbs, one of which belongs to paragraph V, are reproduced for comparison. The xoxocoyolcuecuepoc (oxalis), included in the fourth paragraph, on edible herbs, is depicted as: “The stem is cylindrical, long. It has blossoms, it is a blossomer, so it is called xoxocoyolcuecuepoc. It is very tasty; it is like the tomato. It grows only when the rains set in anew.” In turn, the tlalchichic (a drinkable root) of paragraph V is depicted as: “just a cylindrical root. It is just like an herb, not tall. Its foliage is ashen. He whose stomach is swollen or who has diarrhoea is to drink it. First it is boiled; thereupon it cures. It grows in Teuhtlalpan.” As observed in the two entries, coinciding elements are the physical description of the herbs and their use—the xoxocoyolcuecuepoc (oxalis) is edible; the tlalchichic (a drinkable root) is a remedy for stomach ailments—, followed by the time or the location to find it.
Although, in opposition to every chapter of Book XI and to other paragraphs of chapter VII, paragraph V does not manifest a lexicographical interest, it does deal with identifying features, properties, and location, like other entries of paragraphs on herbs. Thus, thanks to the entries informing paragraph V, the reader learns whether the root and the trunk of the herb have a noticeable shape; whether the herb is characterized by a certain colour and fragrance; whether it is good to relieve a given pain or cure a disease; whether, in order to prepare a remedy, the herb is crushed, boiled, dried or mixed with other herbs and anointments; and whether it is found on mountains, in valleys, or in a specific town area, such as in the aforementioned Teuhtlalpan. As a matter of fact, this reference to the name of an exact location—other entries cite Xochimilco, Coyotepec, Tezcatepec, Chillocan, and Xaltenco—also serves to differentiate paragraph V from the other paragraphs of chapter VII, and is suggestive of the distances that herbs must have travelled in the hands of expeditionary merchants.

In order to account for this almost systematic appearance of similar items of information in the portrayal of herbs throughout the paragraphs of chapter VII, López Austin suggests the existence of a fixed questionnaire for data collection. Sahagún seems to have obtained specific data on New Spain’s fauna and flora for the first time in Tlatelolco between 1561 and 1565; material that ended up recorded in an early draft of the Florentine Codex, known as the Códices matritenses of the Academia de la Historia. López Austin has specifically checked the sections on herbs of said manuscript (Book V) against its final correlated text in the Florentine Codex (chapter VII of Book XI), and referred to the evolution that the information undergoes by naming the list of herbs of the Códices matritenses the “Breve relación,” and their expanded version of the Florentine Codex, the “Relación extensa.”37 López Austin’s argument is that, dissatisfied with his initial gathering of data, Sahagún requested the presence of several
titicih (indigenous physicians) from the Tlatelolco area, so that they amended and enriched his previous collection. Thus, the “Breve relación” of the Códices matritenses served as a guide to compose the “Relación extensa.” For the writing of this more detailed version Sahagún designed a questionnaire, which López Austin reconstructs, after careful analysis of contents, as: “1. What is it? (in the case of plants: What part of the plant is it?) 2. What does it look like? 3. What does it cure? 4. How is the medicine prepared? 5. How is it administered? 6. Where is it found?” In an attempt to clarify the manner in which this questionnaire links all the paragraphs of chapter VII and, therefore, proves that the herbal of paragraph V is connected to Sahagún’s work, the following lines focus on a potential source for this questionnaire and the identity of the informants involved.

One of the most likely sources deployed by Sahagún when itemizing the questions to be asked on herbs is Historia naturalis. Pliny’s work was perused for the teaching of natural philosophy in the College of Tlatelolco; it is thought to have influenced both the Libellus and Book XI of Historia universal de las cosas de Nueva España; and it shows a striking association of contents with the questionnaire that, as López Austin maintains, Sahagún devised. In Books XIX to XXXII of Historia naturalis, Pliny deals with remedies deriving from garden plants, such as flowers, fruits, and vegetables; those deriving from wild plants and forest trees; and those from other living creatures, such as aquatic animals. Overall, he organizes his information by applying two categorisation formats; he either refers to the diseases that the remedies are supposed to cure or, as in the majority of books, he depicts the plants and the animals, which is followed by their healing properties. For example, in chapter II of Book XXVII, the reader comes across the following portrayal of the aconite, a poisonous but useful ingredient in compositions for the eyes:
[It] has leaves like those of cyclaminos or of the cucumber, never more than four in number, slightly hairy, and rising from near the root […]. The root is slightly curved, like a scorpion’s tail, for which reason some persons have given it the name of “scorpio.” […] This plant is found growing upon the naked rocks known as “aeonæ;” and hence it is, according to some authorities, that it is called “aconitum,” there being not so much as dust even about it to conduce to its nutriment. Such is the reason given for its name by some: but according to others, it receives this appellation from the fact that it fatally exercises the same effects upon the body that the whetstone does upon the edge of iron, being no sooner employed that its effects are felt.40

The breakdown of contents that builds up this passage, and which tends to coincide in other chapters or entries of Pliny’s books on herbal remedies, consists of a physical depiction of the herb by referring, for ease of identification, to its leaves and roots; of etymologies—reasons for the herb being named aconite and scorpio—; of location to be found; and of the effects that the herb produces on the human body.

Similarly, in Book XI of the Florentine Codex, in the first paragraph of chapter VII, on “herbs which perturb one,” we read that the nanacatl (hallucinogenic fungus):

grows on the plains, in the grass. The head is small and round, the stem long and slender. […]. It is a remedy for fever, for gout. Only two [or] three can be eaten. It saddens, depresses, troubles one […]. One eats it in honey. I eat mushrooms; I take mushrooms. Of one who is haughty, presumptuous, vain, of him it is said: “He mushrooms himself.”41
A comparison between Pliny and Sahagún’s texts reveal a matching presentation of data. The portraits of not only theaconite and the nanacatl (hallucinogenic mushroom) but also of the aforementioned tnalchichic (a drinkable root), which is included in the paragraph V of the Florentine Codex, coincide in offering information on physical characteristics, location, effects produced by their consumption, and, in the case of the aconite and the nanacatl (hallucinogenic mushroom), the etymology and fixed-phrases related to the word, respectively. This high recurrence of items is indicative of a textual analysis exercise, of which Sahagún, as a teacher of natural philosophy and Latin at Tlatelolco, had considerable experience. One of the tasks that he would have requested from his students was the imitatio or paraphrasing of a given text, as suggested by Quintilian in his seminal teaching guide Institutio oratoria, another book catalogued in the library of the college. According to Quintilian, prior stages to paraphrasing or textual appropriation involves a word-for-word scrutiny and the translation of every sentence, which, in turn, unfolds the textual organization of ideas. On his search for a pattern of questions that encapsulated herbs’ features, Sahagún would have recalled this exercise; he would have examined the structure of Pliny’s books on herbs and deduced the most recurrent building blocks used to describe them. In other words, Sahagún would have figured out and jotted down questions requesting information on identifying features, effects caused by their consumption, whether harmful or curative, posology, location, and linguistic issues, the replies to which coincide, overall, with López Austin’s suggested questionnaire for chapter VII, on herbs, of Book XI. Before meeting with his informants, Sahagún would have selected the most pertinent questions to be asked, a choice that depended on the purpose behind his gathering of data. Thus, during the process of obtaining material for what eventually constituted paragraph V, Sahagún
excluded his question on linguistic issues as he did not intend to collect information for lexicographical-doctrinal purposes.

Regarding the identity of the Nahuas who answered these questions, two noteworthy excerpts are available. The first one is the concluding lines of paragraph V, which report that data had been supplied by “los medicos del Tlatelulco Sattiago viejos y muy esperimentados en las cosas de la medicina, y que todo ellos curan publicamente.”45 The names of these indigenous physicians, coupled with the neighbourhood or area where they performed their healing duties, are listed as:

Gaspar mathias, vecino de la concecion / Pedro de sattiago, vecino de san[ta] Ines / Francisco Symon, vecino de santo toribio / Miguel damjan, vecino de s[anto] toribio / Felipe hernandez, vecino de Sancta Ana / […] Miguel garcia, vecino de Santo Toribio / Miguel Motolinja, vecino de Santa Ana / […]

For López Austin, the identification of these informants, nowhere else to be found in the *Florentine Codex*, stands out as a remarkable feature to classify paragraph V as an autonomous herbal. His suggestion is buttressed by the fact that their names appear at the end of the document, as if to close down an independent text only concerning this matter.

The second excerpt that provides more clues on Sahagún’s other informants is included in the *Códices matritenses*. A note in folio 172r/v, which was not transferred to the *Florentine Codex*, unveils that, already in the early 1560s, Sahagún aimed to collect material related to illnesses and remedies for, what he entitled, a “Libro de Medicina.” This reference to his objective of composing such a book is of the outmost importance as it highlights Sahagún’s attempts to create a book on indigenous treatment of diseases,
an undertaking that ran parallel to the gathering of material for what eventually became *Historia universal de las cosas de Nueva España*. Thus, there exists the possibility that the original manuscript that was transferred to paragraph V was elaborated around this period, as part of Sahagún’s “Libro de Medicina”. Those intensively involved in its composition, that is, “[l]os que fueron viendo paso a paso este Libro de Medicina, todos mexicanos,” were listed in the same manner as those at the end of paragraph V, that is to say, by naming them and specifying their neighbourhood:

Juan Pérez, de San Pablo; Pedro Pérez, de San Juan; Pedro Hernández, de San Juan; Joseph Hernández, de San Juan; Miguel García, de San Sebastián; Francisco de la Cruz, de Xihuitonco; Baltazar Juárez, de San Sebastián; Antonio Martínez, de San Juan.47

Impossible as it is to determine whether this omission of data in the *Florentine Codex* was Sahagún’s voluntary action or that of those assistants whom he had commissioned, what these two passages—at the end of paragraph V and in the *Códices matritenses*—tell us is that a minimum of fourteen or fifteen men were the experts on Nahua medicine, including herbal remedies, who were consulted. This number of informants speaks volumes of the significance Sahagún attached to research on indigenous medicine and ties in with his method of data collection; that is, the more experts he had to inquire the better, since they enabled him to gather a further extent of material and crosscheck the effectiveness of their healing practices.48 That Sahagún opts to name them is also revealing of his acquaintance with all these knowledgeable men. By supplying their identification, he certifies the accurateness of his writings—deriving no less than from practitioners themselves—, and brings to the fore their significance
within the Nahua community; the fact that they were recognized healers in the neighbourhood in which they practised.

2. A contextualization of the herbal of paragraph V

Having established the status of paragraph V as an independent herbal, bereft of doctrinal and lexicographical purposes, and yet possibly linked to Sahagún’s endeavours to compose a “Libro de Medicina,” covering data on illnesses and indigenous remedies, this section looks into the context in which information was extracted, and attempts to account for why the herbal was written in the first place.

When Sahagún began gathering material on Nahua medicine for this “Libro de Medicina” in the early 1560s, he resided in the Imperial College of Santa Cruz of Tlatelolco. Officially opened in 1536, the college reached its peak in the first decades of the second half of the century, when, according to the archival manuscripts of the *Fondo franciscano*, the Franciscans schooled around one hundred *colegiales* (collegiate teenagers)—children of caciques and nobles who entered the school aged 8 to 10 and stayed for a minimum of three years as interns taking superior studies—, and around four hundred *parvulitos*—younger indigenous boys who only attended school to learn prayers, basic literacy fundamentals, and music. The circulation of illnesses in the communities in which the *parvulitos* lived meant that the college was ripe for the spread of disease and, at a time of shortage of licenced medical practitioners, it comes as no surprise that the friars relied on a regular cohort of native healers in order to cater for the infirm, whether pupils or themselves. In fact, religious institutions like Tlatelolco are known to have provided, not only in New Spain but also elsewhere in the colonies, for the adult population. Like in Europe, the mendicant orders built up infirmaries and hospitals annexed to their friaries, where the indigenous patients were tended by healers
of their own race, as these were thought to be more suitable in dealing with their nature and temperament.52

The Nahuas’ spectrum of healers varied from shamans to specialist practitioners, such as phlebotomists, bonesetters, and midwives, who had received training within their family in anatomy and medicinal plants.53 In the case of Tlatelolco, some of the healers whom the Franciscans must have commissioned were those Sahagún consulted, in his own words, “muy experimentados en las cosas de la medicina, y que […] curan publicamente,” and these must have belonged to distinct groups; the panamacac (apothecaries) and the titicih (physicians). Sahagún described the former in chapter XXIV of Book X of the Florentine Codex as men who cultivated their own herbs and sold them in the market. In lieu of costly and unavailable European medicines, the Franciscans would have relied on the panamacac’s (apothecaries) familiarity with the curative virtues of the local plants that were unknown to the Spaniards. Just like in European friaries, in which the mendicant orders availed of their own gardens, the friars of Tlatelolco must have continued the practice of growing vegetables, flowers, and medicinal herbs for their own use—and perhaps for the supply of drugs to private practitioners—, also with the indispensable help of expert panamacac (apothecaries).54 The second group of Nahua healers that assisted the infirm in the college, the titicih (physicians), created a niche of colonial medical staff in institutions founded for the indigenous peoples, whether hospitals or schools.55 Sahagún described them in chapter VIII of Book X as knowers of remedies in the form of herbs, stones, and trees, and acknowledges that they used these to heal people, such as when setting bones and purging them.56 In addition, regular diseases of the New World that they would have treated included gastrointestinal infections, dysentery, influenza, pneumonia, arthritis, viral fevers, Chaga’s disease, and tuberculosis.57
The most celebrated *ticitl* (physician) associated with the College of Tlatelolco was Martín de la Cruz. His name appears in a sixteenth-century document that brings word to the second Viceroy, Luis de Velasco, about him and another healer from Tlatelolco, named Antón Hernández, in the following manner: “han hecho y hacen muchas y buenas curas, especialmente en los colegiales que están en el colegio de Santiago de esta ciudad.” Aside from assisting the students and Franciscan brethren of Tlatelolco, de la Cruz acted as physician to distinguished figures like the first Viceroy, Antonio de Mendoza. Of special interest is that de la Cruz’s reputation gained strength under Velasco, who, in 1553, awarded him a licence to form, together with two other Nahuas, Antón Martín and Graviel Mariano, the first examining tribunal of indigenous physicians, which, as customary in European universities, consisted of three members. De la Cruz must have been selected on merit, and thanks to his relationship and familiarity with the administration of an official and religious institution like Tlatelolco. In fact, de la Cruz’s appointment to this tribunal happened only one year after his involvement in the codification of the first indigenous herbal of the New World, the *Libellus*.

Written in beautiful calligraphy, lavishly illustrated, and bound with golden thread and a red velvet cover, the *Libellus* was an expensive gift prepared at the College of Tlatelolco for the emperor Charles V. The prologue and the epilogue of the herbal explains that de la Cruz supplied data on illnesses and indigenous remedies in the form of herbs, roots, and compound medicines to Juan Badiano, a former Nahua student and eventually tutor at Tlatelolco who translated the information into Latin. The aim of the herbal was twofold; it was meant to resume financial support for the intellectual and social activities carried out at Tlatelolco—an end that was met, as allocated funds were put into effect by Philip II and Viceroy Antonio de Mendoza in 1553—, and it was also
expected to lay the foundations for a lucrative market of New Spain’s herbs in Europe to be run by the Mendoza family, which eventually failed to flourish.\textsuperscript{61} The writing of the \textit{Libellus} in the college in which de la Cruz practised as a physician, and with the aim of fostering the allocation of financial support for said institution, presents as logical. There exists, nevertheless, another possible reason behind its composition, which would connect the \textit{Libellus} with paragraph V of the \textit{Florentine Codex}, and which had to do with the role the college played as a centre of knowledge on indigenous medicine.

In some passages of his translation into Spanish of Books X and XI of the \textit{Florentine Codex}, Sahagún takes the opportunity to digress on how the epidemics of the sixteenth-century, popularly known as \textit{cocoliztli} (pestilence or illness), had shattered the life of the college to its core. Sahagún expresses his dismay at the outbreak of “tres pestilencias muy vnjuerales: y grandes,” namely, the plague of smallpox of the 1520s, of which Sahagún says that “morio casi infinita gente;” another plague that took place in 1545, during which “en toda esta nueva españa murio la mayor parte de la gente que en ella [vi]via;” and the outbreak that was playing havoc whilst Sahagún was dictating this passage to one of his scribes on 8\textsuperscript{th} November 1576, when he worryingly recounts that the death toll “siempre ha ydo creciendo […] desde veynte, de tre[yn]ta, a quarenta, de cincuenta, a ses[en]ta, y a ochenta y de aq]uij adelante no se lo que sera.”\textsuperscript{62} Sahagún is vocal about his personal experiences in these harrowing circumstances. The second epidemics, he says, “dio un gran bacque al collegio,” and in the Tlatelolco area he claims to have buried “mas de diez mijll cuerpos” until he was infected to the point of dying.\textsuperscript{63} Now, in 1576, the same catastrophe threatens to repeat itself, for he laments that “casi no esta ya nadie en el collegio muertos, y enfermos, casi todos son salidos.”\textsuperscript{64} In establishing comparisons between the two plagues, Sahagún notices that the death toll keeps on increasing owing to lack of food and, to be noted, healers and physicians.
Although in the late summer of 1576, “anduujeron […] sãgradores sangrandolos, y medicos curandolos, y religiosos […] para cõfesarlos y consolarlos,” all of this came to an end once these also fell tired and ill.65

In the middle of this human tragedy Sahagún despairs, praying for divine and imperial intervention “porque a durar mucho todo se acaba.”66 Referring in particular to how the College of Tlatelolco could prove vital in times of illness and depopulation, Sahagún addresses the emperor Philip II, claiming that “el Rey, nuestro Señor, tuujera mas vasallos en [esta republica Indiana]” if “los indios vujeran sido instruydos en […] la philosophia natural, y medicina […] porque en esta ciudad de Mexico, vemos por nuestros propios ojos, que aquellos que acuden a sangrarlos, y purgarlos, como conviene, y con tiempo sanan.”67 In this passage Sahagún confirms how productive the instruction of the indigenous peoples in medicine was and appears to echo his experience as a tutor at Tlatelolco. As a consequence of the second plague of the mid 1540s, which had devastated the basin of Mexico and taken a huge toll on the pupils of Tlatelolco, the college had introduced in its curriculum the study of indigenous medicine. Badiano and de la Cruz, authors of the Libellus, are believed to have delivered the courses.68 As for Sahagún, the Franciscan chronicler Jerónimo de Mendieta corroborates his didactical and pastoral duties in the college in chapter XLI of Book IV of Historia eclesiástica indiana, reporting that: “[Sahagún] trabajó hasta la muerte en la instrucción y doctrina de los niños de principales indios que allí concurren de toda la tierra a enseñarse más perfectamente a leer y escribir, y a saber latinidad y medicina, según su menester.”69 The last few words confirm that Sahagún taught Nahua young men indigenous medicine, a subject which entailed the learning of what Mendieta clarifies in chapter XV of said book as “medicina que ellos usan en conocimiento de yerbas y raíces, y otras cosas que aplican en sus enfermedades.”70 The
time span of this type of instruction and of Sahagún’s involvement is unknown—Mendieta only states that it happened for “un poco de tiempo.” If one goes by Mendieta’s assertion and Sahagún’s confession of his close encounter with death during the second plague of 1545, it is likely that his wish to learn Nahua medicine started soon afterwards, and that he taught a course on it intermittently, perhaps for less than one decade during which he was in and out of the college, devoted to other pastoral and proselytizing duties. It is also during this period that Sahagún must have engaged in the composition of the “Libro de Medicina” to which he refers in the Códices matritenses. For his own personal instruction, and for the writing of such work, Sahagún would have relied on physicians and tutors of the college, like de la Cruz and Badiano, as well as on the other titicíh (physicians) and panamacac (apothecaries) whose names he quotes in the Códices matritenses and in the concluding lines of paragraph V.

To be also noted is that Sahagún’s interaction with these Nahua experts shows a continuity in the gathering of data on Nahua medicine. That is to say, de la Cruz’s commission to contribute to the production of the Libellus in 1552 was not an isolated case in the college. In fact, the production of a “Libro de Medicina” and of the herbal of paragraph V connects with the healing and pedagogical activities of the institution. Friars like Sahagún needed herbals, not only because of their practical interest in growing vegetables and medicinal herbs in their garden, but also because once the college decided to offer courses on Nahua medicine, both tutors and their indigenous students, who were being accustomed to studying from written sources like Pliny’s Historia naturalis, needed manuals on indigenous theory and practice. The codification of medical knowledge in what Sahagún names “Libro de Medicina,” in the well-structured description of herbal remedies of paragraph V and, maybe, in other herbals that have not survived, like de la Cruz and Badiano’s original manuscript in the Nahuatl
language, probably manifests a real-life application; their creation could correspond to an attempt to supply pre-Hispanic *materia medica* for friars and students of the college, so that they learnt how to heal those infirm inside and outside its premises.

The herbal of paragraph V might have belonged to the corpus of texts that Sahagún and other tutors used in their delivery of courses on Nahua medicine at Tlatelolco. As this article has attempted to demonstrate, Sahagún’s authorship—or, rather, direction and supervision of its writing—rests on the fact that the herbal and the other paragraphs of chapter VII, in which it was eventually inserted, derive from the same *modus operandi*. In the same manner as he decided to collect and codify the metaphorical language of the Nahuas when referring to the natural world for their effective indoctrination rather than translating his known European sources—similes, metaphors, and exempla found in Pliny, Anglicus, Isidore and Zamora—, Sahagún collected data on local medicine rather than translating his known sources—European herbals like the *Hortus sanitatis*—, for he was also conscious of the latter’s inapplicability. In order to gather this material, Sahagún would have created a very similar questionnaire, covering items such as physical description, effects, posology, and location of herbs, and recorded the answers provided by the Nahua healers whom he names. It remains to be explored whether the college could be put forward as an institution that, likely during the mid-sixteenth century, prepared the Nahuas to become “recognized” practitioners of indigenous medicine by instructing them on anatomy, illnesses, and remedies—all of which appears in Books X and XI of the *Florentine Codex*—, so that they passed their exams in front of an official tribunal of three members, one of whom (de la Cruz) had been a physician and tutor at the college.

On another note, the autonomous nature of the herbal stresses the complexity of *Historia universal de las cosas de Nueva España*, to which Sahagún also added other
Nahuatl texts that had been completed before the 1560s, such as the *Libro de la rethorica* and the book on the conquest; Books VI and XII, respectively, of the *Florentine Codex*. The existence of the herbal in Book XI comes to demonstrate that the composition of his encyclopaedic work extends beyond the doctrinal and lexicographical purposes that this very study has presented in the first section. What paragraph V and other chapters on medicine in the *Florentine Codex*, and in earlier drafts like the *Códices matritenses*, might be telling us is that Sahagún’s work mirrors his concerns not only on *cura animae*, the healing of the soul, but also on the healing of the body. Sahagún sought to compose an encyclopaedic referential text in Nahuatl that aided the transmission of the Christian faith to the Nahuas because, as he claims in his famous opening lines of *Historia universal de las cosas de Nueva España*, he was a physician of the soul. Nevertheless, as this study has also pursued to convey when placing the herbal in its socio-cultural milieu, Sahagún was equally concerned with the Nahuas’ physical health. The herbal of paragraph V is one text with which he contributed to the work performed by “a physician of the body.”

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1 Bibliography drawing on these three works for an understanding of indigenous medicine is vast. A selection of studies that are commonly cited includes those by Gonzalo Aguirre Beltrán and Roberto Moreno de los Arcos, *Historia general de la medicina en México*, vol II. *Medicina novohispana, siglo XVI* (México: Academia
First evidence of Sahagún’s codification of data on Nahua medicine surfaces in earlier drafts of the Florentine Codex, such as the Primeros memoriales of Tepeapulco (ca. 1559-1561), which contains an anatomical list and a catalogue of illnesses and remedies, and the Códices matritenses of Tlatelolco (ca. 1561-1565), in which specific information on medicinal herbs is added.

For further reference, see Fray Bernardino de Sahagún, Florentine Codex: General History of the Things of New Spain, edited by Arthur J. O. Anderson and Charles E. Dibble, 12 vols. (Santa Fe/Salt Lake City: School of American Research and University of Utah Press, 1950-1982), vol. I [the prologues], 54-56. On the process of composition
of this and other works attributed to Sahagún, see Jesús Bustamante García, *Fray Bernardino de Sahagún: Una revisión crítica de los manuscritos y de su proceso de composición* (México: UNAM, 1990).

4 López Austin “De las plantas medicinales y de otras cosas medicinales,” *Estudios de Cultura Náhuatl* 9 (1971), 125-230, 127. Paragraph V is available in its Nahuatl version, and translated into English, in Anderson and Dibble’s edition, see vol. XI, 141-191. For Sahagún’s free translation into Spanish, see López Austin and Josefina García Quintana’s edition, *Historia general de las cosas de Nueva España* (Madrid: Alianza, 1988). The World Digital Library facilitates a digitalized copy of the *Florentine Codex*, in which paragraph V extends from folio 139v to 181r of the third volume. As regards the disposition of the herbs, so far it has not been clarified whether there is a thoroughly-planned order of entries, except for the fact that herbs make up most of the herbal, appearing from entries 1 to 142, as opposed to medicinal stones and other healing sources, which are added at the end and occupy entries 143 to 150, such as tiger meat, worms, and healing baths for pregnant women, those injured, and those suffering from scabies.


7 Sahagún, *Florentine Codex*, I, 50.

8 Having started off as a monolingual dictionary, popularly entitled by the author’s surname, by the end of the sixteenth century the Calepin turned into a polyglot vocabulary. The dictionary is also known to have influenced other New World lexicographical works, like Fray Juan Baptista de Lagunas’s *Diccionario breve y compendioso en la lègua de Michuacan* (1574). For further reference, see Bustamante García, “Retórica, traducción y responsabilidad histórica: Claves humanísticas en la obra de Bernardino de Sahagún,” *Humanismo y visión del otro en la España moderna:*

Pilar Mánynez’s introduction to El Calepino de Sahagún: Un acercamiento (México: UNAM, 2002) is also an indispensable source to understand Sahagún’s lexicographical interest as it compiles and analyses references and studies on the subject.

9 Sahagún, Florentine Codex, I, 47.


11 Sahagún, Florentine Codex, I, 51, 71. Surviving drafts of this arrangement, known as the Memoriales con escolios, can be consulted in the Códice matritense de la Real Biblioteca, which has been digitalized by the Biblioteca Digital Mexicana.

12 See, for instance, prologues to Books I, IV, VI, VII, X, and XII of the Florentine Codex; Sahagún, Florentine Codex, I, 50, 62, 65, 68, 73, 101.

13 Sahagún, Florentine Codex, I, 87. This study quotes the Spanish prologues edited by Anderson and Dibble, who respected the inconsistent diacritic and idiosyncratic marks of different sixteenth-century amanuensis.

14 The library of the College of Tlatelolco, the institution in which Sahagún spent many years of his life, catalogues these and many other collections of sermons. For a reconstructed inventory, see Michael Mathes, Santa Cruz de Tlatelolco: La primera biblioteca académica de las Américas (México: Secretaría de Relaciones Exteriores, 1982).
Pedro M. Cátedra’s study of medieval sermons remains a valuable reference on the use of rhetorical figures and stories in connection with the natural world, see Sermón, sociedad y literatura en la Edad Media: San Vicente Ferrer en Castilla (1411-1412): Estudio bibliográfico, literario y edición de los textos inéditos (Valladolid: Consejería de Cultura y Turismo, 1994).

Bert Roest, A History of Franciscan Education (c. 1210-1517) (Leiden: Brill, 2000), 211, 286-289. For further reference on the use of natural histories and bestiaries as works from which preachers borrowed similes and exempla, see Avelino Domínguez García and Luis García Ballester’s introduction to the first three books of Gil de Zamora’s encyclopaedia; Historia naturalis I-III (ca. 1275-1296) (Salamanca: Junta de Castilla y León, 1994).

In doing so, Sahagún observed the preaching precepts of respected Franciscan rhetoricians like Fray Roger Bacon and Fray Ubertino of Casale. Bustamante García, “Retórica, traducción,” 347-348; Ríos Castaño, Translation as Conquest, 53, 87.

This study quotes Anderson and Dibble’s edition of the original text in Nahuatl and their translation into English. The original text reads: “choca, pipitzca, vel quijça imjxaio,” Sahagún, Florentine Codex, XI, 11; “tlatlatole, tzatzatzinj, tlatlatoanj, cochhiçanj,” 28; “teiolitlaco, aiac ica, atle ipan itto,” 122.


Sahagún, Florentine Codex, XI, 17-18, 125, 108.


24 “In aqujn mjec qujmololoa, qujmoquentia,” Sahagún, Florentine Codex, XI, 199.

25 “Nechonqua noconqua […] [,] ipampa in achtq teqzoponja ic moqua,” Sahagún, Florentine Codex, XI, 137.


28 Sahagún, Florentine Codex, XI, I, 47.

29 López Austin, “De las plantas,” 127-128.

30 This is the pattern of the Florentine Codex, with the source-Nahuatl text on the right-hand column and the Spanish translation on the left. The translation is given prominence because, as in the intended three-column page of the Memoriales con escolios, the work was originally created to have been consulted by members of the Church; Spanish speakers like Sahagún. It is not the first time, however, that one of the two texts is missing; it equally happens in Book II, on ceremonies, where the first chapters appear only in Spanish and the sacred chants of the appendix, only in Nahuatl.

31 Sahagún, Florentine Codex, XI, 142, 145. Only speculation exists on the tlacuiloque (painter-scribes) who produced the illustrations. The expressive naturalness of the images and the admirable skill in the detailed drawing of roots, stalks, leaves, fruits, and flowers reveal that they must have had the herbs in sight whilst performing their task; Sánchez Ruiz, “La farmacia,” 63.

32 Sahagún, Florentine Codex, XI, 147.
For the most extensive critical edition of the *Libellus de medicinalibus indorum herbis*, also known under the name of *Codex de la Cruz-Badiano*, and referred hereafter as *Libellus*, see *Libellus de medicinalibus indorum herbis, Manuscrito azteca de 1552, según traducción latina de Juan Badiano, versión española con estudios y comentarios de diversos autores* (México: Fondo de Cultura Económica, Instituto Mexicano del Seguro Social, 1991). This edition comprises relevant studies on the context of the work and its authors by Ángel María Garibay Kintana, “Introducción,” 3-8; Germán Somolinos d’Ardois, “Estudio histórico,” 165-191; and Efrén C. del Pozo, “Valor médico y documental del Manuscrito,” 193-208.

The format of the *Libellus* did away with this problem as the drawing of the plant could be larger or smaller and there was no need to fill in a space.


López Austin, “De las plantas,” 127.

López Austin, “The Research Method,” 147. He infers these series of questions by concentrating on consistency in answers. Nevertheless, chapter VII displays some replies or entries that neither incorporate all of these items nor follow the same order of enquiry.

Pliny, the Elder, *Historia naturalis*, translated by Henry Thomas Riley, (Perseus Digital Library, 1856), 5220-5221. The original reads: “folia habet cyclamini aut cucumeris, non plura iii, ab radice, leniter hirsuta, radicem modicam […], cauda radicis incurvatur paulum scorpionum modo, quare et scorpion aliqui vocavere. […] nascitur in nudis cautibus, quas aconas nominant, et ideo aconitum aliqui dixere, nullo iuxta, ne pulvere quidem, nutritente. hanc aliqui rationem nominem adtulere; alii, quoniam vis eadem esset in morte, quae cotibus in ferri acie deterenda, statimque admota velocitas sentiretur.”


Mathes, *Santa Cruz de Tlatelolco*, 64.

Marcus Fabius Quintilian, *De institutione oratoria*, translated by H. E. Butler (London: Heinemann, 1922), 159.

The original quote, in Spanish, appears as an illustration in Anderson and Dibble’s edition of Book XI, no page number. It can also be consulted in the World Digital Library, Book XI, folio 180v.

World Digital Library, folios 180v and 181r. Sahagún also names the scribe who took down the informants’ accounts as “Pedro de rraquena. v[ecino] de la Cõcep[cion].” See López Austin, “Sahagún’s Work,” 211.


Ríos Castaño, *Translation as Conquest*, 174-175.
Silvermoon’s PhD dissertation, *The Imperial College of Tlatelolco and the Emergence of a New Nahua Intellectual Elite in New Spain (1500-1760)* (Duke University, 2007), offers the most recent and exhaustive study on this institution. For further reference, see also José María Kobayashi, *La educación como conquista: Empresa franciscana en México* (México: El Colegio de México, 1974).

Silvermoon, *The Imperial College*, 75-86.

Newson, “Medical Practice,” 375.


Risse, “Shelter and Care,” 73, 76.


Ortiz de Montellano, *Aztec Medicine*, 123-124. Raquel Álvarez Peláez has referred to the titicih’s (physicians) duties in her analysis of the “Relaciones geográficas” of Mexico, Tlaxcala, and Antequera; see, in particular, *La conquista de la naturaleza*

Viesca Treviño, “Y Martín,” 488. For further reference on de la Cruz’s social background and duties as a recognized physician of the colony, Viesca Treviño’s article continues to be ground-breaking.

The inferred in-between steps of the composition process of the herbal see Badiano possibly writing down what de la Cruz dictated or told him in Nahuatl, and then organizing everything into a treatise, modelled by medicinal herbals like the widely-circulated *Hortus sanitatis* (1491). Another work that left an imprint on the contents of the herbal is Pliny’s *Historia naturalis*; Pozo, “Valor médico,” 194; Somolinos d’Ardois “Estudio histórico,” 185.

Viesca Treviño, “Y Martín,” 496-497.

Sahagún, *Florentine Codex*, I, 94. These three main epidemics have been studied, among others, by Álvarez Peláez; *La conquista de la naturaleza*, David N. Cook, *Born to Die: Disease and New World Conquests, 1492–1650* (Cambridge: Cambridge University Press, 1998); and Malvido, “Illness, Epidemics.”

Sahagún, *Florentine Codex*, I, 84, 94. Risse, “Shelter and Care,” 77, states that, only in 1545, this fulminating *cocoliztli* is estimated to have killed 800,000 natives.


70 Mendieta, Historia, II, 42.