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Here it is. A Nahuatl translation of European cosmology : context and contents of the Izcatqui manuscript in the Royal Tropical Institute, Amsterdam

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Citation
Heijnen, I. (2020, February 25). *Here it is. A Nahuatl translation of European cosmology : context and contents of the Izcatqui manuscript in the Royal Tropical Institute, Amsterdam*. Retrieved from https://hdl.handle.net/1887/85719

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Issue Date: 2020-02-25

Chapter Six
The Cure and Nature: Zodiac Man, *De Materia Medica* and indigenous ecology

World cultural history is infused with an astonishing level of knowledge of local ecology, which is reflected in the large variety of medical therapies and agricultural products that different cultures have created and put to use. This chapter examines the folios of Izcatqui that contain information on both medicine and agriculture. The aim here is to provide a full range of sources that may have been consulted in the composition of those folios of Izcatqui. By the time ms 3523-2 took on its current form, a variety of Old World theories on the physiology of the human body – including theories about the causes of illness and the means through which to cure them – had found their way to the New World. These were then incorporated into theories developed locally. It is pertinent to ask: where does Izcatqui fit into this intercultural framework? In addition, we must consider how the *tlacuiloque* who wrote Izcatqui translated the references to agriculture they found in both Old and New World sources. And we must ask whether or not these sources were altered in any way so as to be fitted to a local Mesoamerican context. Finally, it is important to determine to what extent the information provided by the fragments about medicine and agriculture helps us to draw conclusions about the use of the manuscript. Could Izcatqui have been used as a practical guide, much as the *reportorio* would have been?

6.1 Practices of curing in *Izcatqui*

In Izcatqui, a total of 11 folios (58r-65r; 91r-96r) contain fragments that explain and interpret the medical discourse of the Spanish elite who traveled to the New World. To a great extent, medicine in sixteenth century Spain (as well as in the main part of what is now Europe) was rooted in ancient Greek philosophy. This philosophy had been maintained during the medieval period and did not change drastically until the seventeenth century with the development of the natural sciences (Siraisi, 1990: ix-x). The first of these explanations and interpretations is given as follows:

[f.58r] ℭ *nicā tiquitaz*	here you will see
in totechnematia	you make us know it
yn yquenicā titic	how it is inside us[196]
ca ytechca chicome planeta	it was with the seven planets
yhuan matlactli omome Machiyotl	and the twelve signs

The main theory being advanced, then, was centered around the belief that illnesses and cures were inevitably related to the twelve Zodiac signs and to the Sun, Moon, and the planets Mercury, Mars, Jupiter, Venus, and Saturn.

[196] Problematic translation where *titic* could refer to 'inside us' (personal communication Justyna Olko, 2019).

6.1.1 Zodiac Man

Folio 59v follows up on this introduction with a wonderful drawing of what is unquestionably a male human figure (complete with beard and chest hair) surrounded by different elements in image and iconography (see Figure 52).

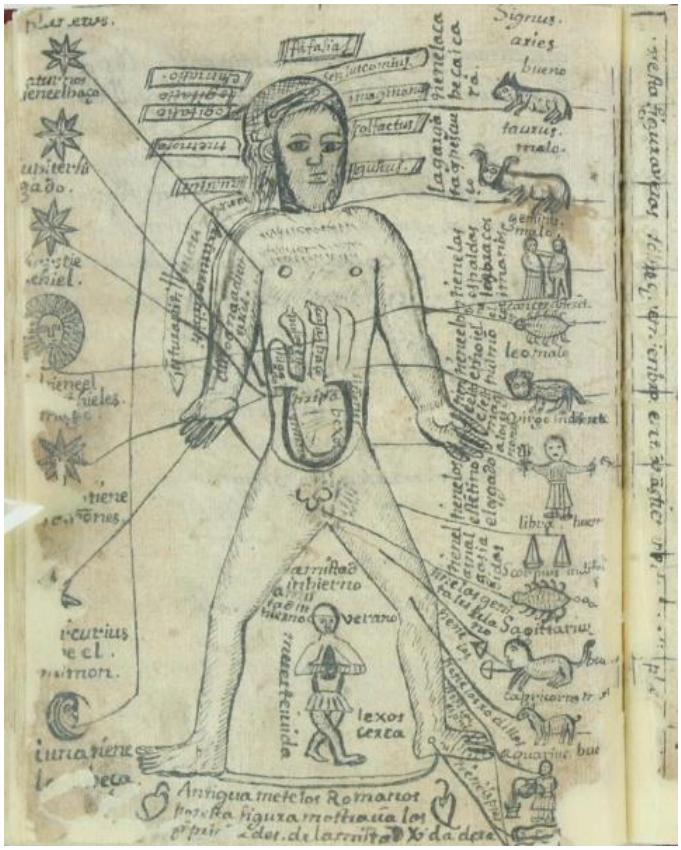

Figure 52. Zodiac Man, ms 3523-2, folio 58v

Nine text boxes appear around the principle figure's head, which catalogue the senses related to our heads. Clockwise they are: *fāfasia* [fantasia], *sensus comius, imaginario, solfactus, gustus, auditus, memoria, logitatio, estimation*. These senses are further explained in text on folio 60v:

ℭ *Izcatqui yn izquitlamantli*	here are all things
yn itechca yn totzonteco	that go with our head
Tlacaquilistli toCuexcochtla[n] catqui	the ability to hear, the back of our head [neck] is
[t]lalnamiquilistli tocuexcochteuh	thought, our neck
ytech catqui	is with
neyolnonotzaliztli achito canahuacā	a bit of imagination, the temple
catq[ui] nematilistli	is with knowledge
tocanahuacā catqui	our temple is
nequatlatzallistli ahaquetzaliztli	nodding the head
toquanepantla catqui	the middle of our head is
Tocennematia tixquach omcatqui	our knowledge, at the front there is
Toneyximachilia huel ōca tixcotoyacac	our memory, there our eye, our nostril
yacnotixquac onca catqui	at the front there is
Totlanecuilis toyacac oncatqui	our sense of smell, is there in our nose

Totlahuelmachilis tocopac catqui our sense of taste, is in our palate

In the drawing, the artist incorporated some information about human anatomy by naming some organs and drawing them in the abdomen: *higado* (liver), *pulmón* (lung), *estomago* (stomach), *cora[zon]*[197] (heart), *baco* (spleen), *riñones* (to the left and right: kidneys). Two other organs that are represented in the abdomen are the *bexos* (vejiga, bladder) and the *tixipa* (or *tripa*, intestines).

In between the feet of the man stands another figure. He seems to have been dressed as a knight, in tights and a short skirt. He holds an object in the shape of a cone in his hands. Surrounding this figure's head it says *amistad inbierno* [invierno] (twice: friendship, winter) and *verano* (summer). To the right of the figure it reads *muerteiuida* [muerte y vida] (life and death). To its left we can read *lexos cerca* [lejos, cerca], close and nearby. On the bottom of the folio, below both figures it says: *Antiguame[n]te los Romanos por esta figura mostrauā las propriedades. de la amistad xrdadera*.

The main character is flanked by several easily recognizable elements. Even though the left margin of folio 59v is partly damaged, its drawings and text can be reconstructed to a large extent. To the male figure's left seven *planetas* have been drawn, as also attested to in the text written above their illustrations. From top to bottom appear Saturn, Jupiter, Mars, Sun, Venus, Mercury, and the Moon. To the main figure's right the twelve zodiac signs are depicted, indicated by the word *signos.* The signs are arranged from top to bottom and start with Aries at the top and end with Pisces at the bottom. Both celestial bodies and Zodiac signs are connected to the figure's body and the accompanying text explains to which part of the body the connection obtains. For the planets, that means that Saturn is linked to the spleen; Jupiter to the liver; Mars to the gall; Sun to the stomach;Venus to the kidneys; Mercury to the lungs; and the Moon to the head. The Zodiac signs are linked as follows, from top to bottom: Aries in linked to the head, Taurus to the throat, Gemini to the back and arms, Cancer to the heart, Leo to the chest and lungs, Virgo to the stomach and kidneys, Libra to the intestines and liver, Scorpio to the bottom, and Sagittarius to the genitals. The *tlacuilo* forgot to write the body part to which Capricorn is connected, although a line has been drawn from Capricorn towards the upper leg. Aquarius is linked to the knees and Pisces to the feet. In addition, all Zodiac signs are designated as either *bueno* (good), *malo* (bad) or *indiferente* (indifferent).

On the consequtive folio 59r, efforts have been made to include a sentence in Spanish framed as if belonging to folio 59v and its image. It is damaged to a large extent, but we do have an example of a similar drawing in the reportorio by Sancho de Salaya (1542). Therefore, we can infer that the text originally said: *Por esta figura veras sobre que miembros y entrañas tienen poder los siete planetas, los doze signos, debaxo de la qual esta la figura de la verdadera amistad*.

Similar illustrations of Zodiac Man appear in abundance in medieval manuscripts from Europe, and they similarly portray the twelve Zodiac signs in relation to different body parts and organs, starting with Aries at the head and ending with Pisces at the feet (see Figure 53).

[197] In the abdomen of the male figure, we read 'cora.' I assume this is an abbreviation of 'corazon' or 'heart' in Spanish.

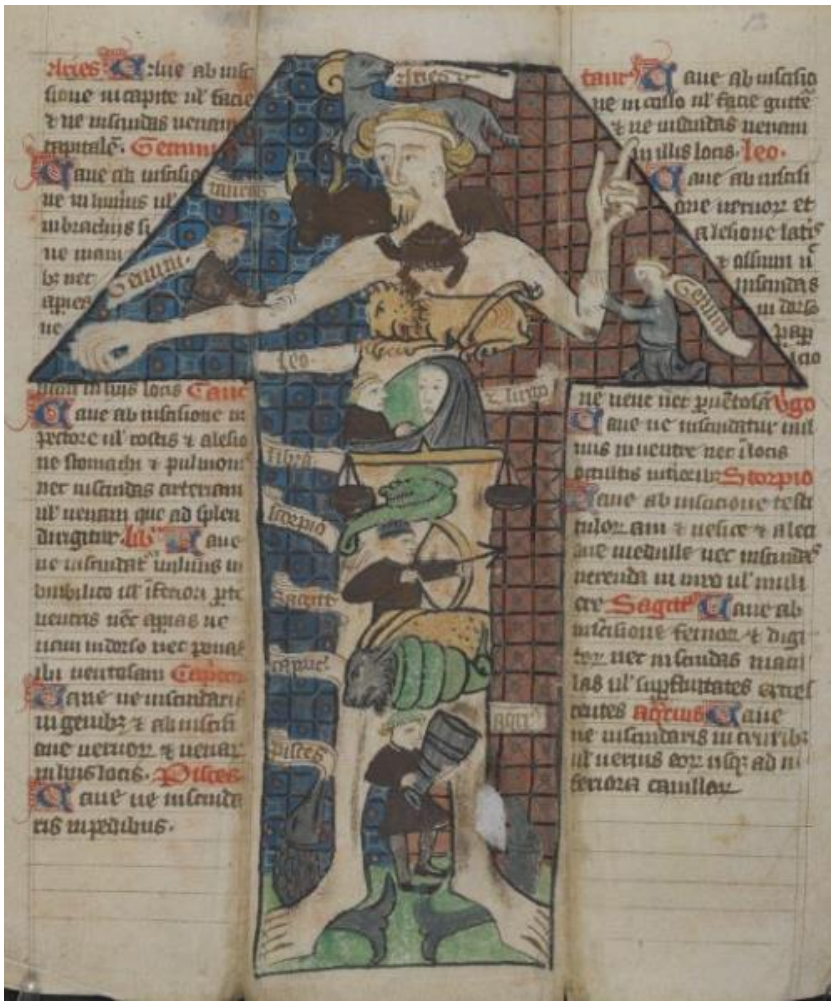

Figure 53. Zodiac Man diagram, from a folding almanac, England, 1st half 15th century, Sloane MS 2250, f. 12r. Available online, British Library.

The claim is that after the sun has set in any one of the constellations, that particular Zodiac sign will rule over its related body part and consequently its health. Thus, the main planets and the sun and moon were taken to govern the internal balance between the "primary qualities of heat, cold, moistness and dryness […] and the power of the planets was strengthened or weakened according to their place in the different Zodiac signs" (Whitfield, 2001: 116).

In order to understand the link between the celestial bodies and health and cures for diverse illnesses, we must return to medieval Hippocratic physiology. According to medieval theory, there are four humors: blood, phlegm, and yellow and black bile (each of them is assigned to be Cold or Hot, combined with either Dry or Moist). These four humors are present in every individual and determine one's physical appearance and health. An imbalance of these humours – due to an excess of one of the humors or a lack of another – was to be remedied by extracting some of that particular humor; for instance, by bloodletting. In accordance with European astrology, stars and the relative positions of planets were of influence to the humor ratio (Cañizares Esguerra, 1999). Certain combinations of planets and Zodiac signs were considered to be dangerous and it was thought that it could be fatal to practice phlebotomy in particular periods. In this medical context, illustrations of Zodiac Man functioned as a mnemonic device, and were often consulted along with drawings of the so-called Vein Man to determine

whether or not bloodletting under diverse celestial circumstances would have a positive or negative outcome (see Whitfield, 2001)

The explanatory text for Zodiac Man starts on folio 59r and is located opposite to the drawing itself. This text is divided into twelve lines and each line explains which zodiac sign rules in which month and whether or not this rule is something to be considered good or bad. For each of the zodiac signs the text on folio 59r reads as follows:

[f. 59r] *quitosnequi yn imarço oquichchihcatl am qli.C*
it means [lit.: it wants to say:], March, the ram, is not good

quitosnequi yn iabril q.q.hue amo quali C
it means, April, the bull, is not good

qtusnequi yn imetztli mayo cocohuame qli. C
it means, the month May, twins. [is] good

qtosneq. yn imetztli Junio tecuictzitli amo qli C
it means, the month June, crab, is not good

qtosnequi metztli Julio tequani quali
it means, the month July, Lion/Tigre [lit.: eater of living beings], good

qtosneq. metztli: agusto ychpochtli amo q.li
it means, the month August, young maiden, not good

qtosneq. metztli: Septiembre pexo quali
it means, the month September scale, good

q.tosneq. metztli: octobre: colotl amo q'.li
it means, the month October, scorpion, not good

q.tosneq. metztli: vienbre tlacamaçatl q.li
it means, the month November man-deer, good

qtosneq. metztli: de dicienbre.tetzon amoqli
it means, the month December, 'bearded (animal)' [i.e. goat capricorn][198], not good

[q.]tosneq. metztli: enero atetecac qli_C
it means, the month January, water pourer, good

[q]tosnequi metztli febrero mixtin a[mo qualli]
it means, the month February, fish, [not good]

[198] Here, the *tlacuilo* decided to write a 'tetzon' which could be 'te(ntli) = lip' and 'tzon(tli) = hair,' forming the expression 'bearded (animal)'for goat. December is the month in which the Zodiac sign Capricorn appears. It is more common to find 'quaquauhtzontli' for 'animal with horns' (Karttunen, 1983: 57), but Molina lists tentzone = barvada persona and quaquauhtentzone for 'cabra'(goat), apparently as 'horned, bearded animal', so tentzon is simply a shortened form for cabra (goat).

The explanation of the drawing is continued on folio 60 and starts with an explanation of the influence each planet has over a certain body part or organ:

[f. 60v] ℭ *Yzcatqui planetas:*	here it is, the planets
ℭ *luna tocpac ca yn techtotzōtecon*	the moon is above us, by our head
ℭ *Centetl huei çitlali ytoca mercurius*	the first great star named Mercury
tochichicauh ytechcā pulmo	bile, it is with the lung
ℭ *Occentetl huey çitlalin ytoca venus*	another great star named Venus
ytechca tocuitlaxillo hyo	it is with the back,
ℭ *Sol tonatiuh toyollo ytechca*	Sun, tonatiuh, is with our heart
yhuan tochichicauh	and the bile
no yh[uan] totlatlalil	also with the stomach
ℭ *Mars centetl huei çitlali ytoca Mars*	Mars, the one great star named Mars
tochichicauh ytecha	is with our bile
ℭ *[O]ccentetl huey çitlalin yntoca Jupiter*	another great star, named Jupiter
yntechca teltapach	is with the liver
ℭ *[O]ccentetl huey çitlalin ytoca Saturnus*	another great star, named Saturn
ytechca telxochiuh ytoca bazo	is with the fat of the liver, named the Spleen

The *tlacuilo* decided to translate the planets as "great stars." The Sun is not just referenced by its Spanish word (*sol*), but also in Nahuatl (*tonatiuh*). The same method of represenation lacks for the Moon; here we read only *luna* and not the Nahuatl word *metztli*. The Zodiac signs in relation to the male figure have been explained briefly on folio 59r, and this is repeated on folio 60r-61v, supplemented with additional information about the body parts to which they are connected:

[f. 60v]	
ℭ *yzcatqui: matlactlomoma machiyotl: Signus*	Here it is: the 12 signs, *signus*
yn ipan motlalia:tonatiuh yn çeçe xihuitl	here settles the sun, each year
yn cece xiuhtica:	during the year
[f. 60r]	
ℭ *Oquichichcatl: ytecha totzontecō:*	the ram is with our head
yhuan toxayac ca quali Amococolis	and our face, it is good, [there is] no illness
- *Quaquahue ytechca tococo*	the bull is with our throat
toq[ue]chquauhyo Amo yectli cocolisço	it is not good, it is full of illness
- *Cocohuame yn itoca geminis:*	twins, called Gemini
ytechca ynōcā tocuitlapan	it is with our back, there
yhuan tacol yhuan toma	and our shoulder, and our hand,
amo quali cocolisço	it is not good, it is full of illness
ℭ *Tecuiçitli telchiquiuh titech*	the crab is with our chest
yhuan ytech tochichicauh xeliuhqui	and it is with our bile, split up
- *Ocellotl ytechca totlatlalil*	Ocelot [lion] is with our stomach
yhuan tocuitlaxilloyo	and our back
amo qualli cocolisço	it is not good, it is full of illness
- *Virgo tetzacatl*[199] *yntechca yteltapach*	virgo, sterile [woman] is with the liver

[199] "esteril, que no tiene hijos" (Alonso de Molina, 1992 [1555]: 110)

yhuan ytlaca ça xeliuhqui	and the person is just divided
- *Tlatamachihualoni tometzquauhyo ytechca*	scale is with the strong leg
[Amo crossed out] qualli	it is good
Amo cocolisço	there is no sickness
- *Scorpius collotl ytecha ytotlacatca*	scorpio, scorpion is with [our body]
ytotlacaxinacho[200] *xeliuhqui*	our [lineage divided]
- *Tlacamaçatl toquexil titech catqui*	man-deer is with our groin
qualli Amo cocolisço	it is good, there is no sickness
[f. 61v]	
- *Quaquauhtentzone ytechca totlāqua*	goat [bearded animal] is with our knee
Amo qualli cocolisço	it is not good, it is among illness
- *Ce Acuic anoço atetecac*	one tiny shrimp or water pourer
totlanitzco cā q[ua]lli amo cocolisço	our shin, it is good, there is no sickness
Mimichtin Centoxocpal nepantla catqui	fish, the sole of the foot, in the middle they are
Auh ca ytechca tocxipil xocoyouh xeliuhqui	and it is with our feet, [fruit is divided]

6.1.1.1 Cultural translation of Zodiac Man in Vaticanus A

In their study on codex Vaticanus B, Anders and Jansen discuss the illustrations of Zodiac Man from ms 3523-2 on folio 59v, as well as a human figure surrounded by the 20 day signs in Vaticanus A (Figure (discussed in more detail in their work on Vaticanus A) (1993: 93-106; 1996: 245-7). Their claim is that the Zodiac Man from ms 3523-2 and the illustration from codex Vaticanus A, which portrays a man that spreads his arms and legs, are both depicted only in style in a fashion similar to the medieval Zodiac Man. The figure from Vaticanus A is surrounded by the symbols for the twenty day signs of the Mesoamerican 260-day calendar and each of them is related to a different part of the body. The twenty day signs are spread in almost perfect symmetry, covering single body parts on the left and right side. This symmetry lacks for the Zodiac Man in ms 3523-2 and some of the zodiac signs are related to multiple body parts or organs in this figure instead of just one at a time. The associated signs do not correspond for both figures either, because the Zodiac signs obviously differ from those of the day signs. Consequently, Anders and Jansen argue that the association of both Zodiac sign Leo and day sign Jaguar with the intestines is merely a coincidence, and that the depictions only share the common idea of a centralized human figure surrounded by signs. The figure in Vaticanus A is not related to any astral influences, in contrast to the European Zodiac Man.

There does exist a Mesoamerican tradition in which the twenty day signs are related to the skin of a deer (as a symbol of nature) and their locations symbolize specific characteristic traits passed on to a child born on a specific day (Anders & Jansen, 1993: 96-7).

Both European and Mesoamerican cultures have a familiarity to relate symbols of time to parts of a physical body of either human or animal nature. This similarity is likely one of the reasons for the presence of a human figure surrounded by the twenty day signs in the early colonial Vaticanus A. It combines the tradition of the deer skin and the twenty days signs with the European tradition of the human figure related to astral bodies (Anders & Jansen, 1996: 245). According to the original colonial explanatory text below, the representation was used as a guide in the selection of a proper method to cure an illness. This method than, had to take into the account specific characteristics of the day sign that was related to the part of the body in pain. Although a link to astral influences is missing in the illustration from the early colonial codex, it is apparent that the genre of the Spanish *reportorio* was known in Mexico by at least the mid-sixteenth century. And it is also apparent that it was discussed and

[200] Literally "the seed of our body."

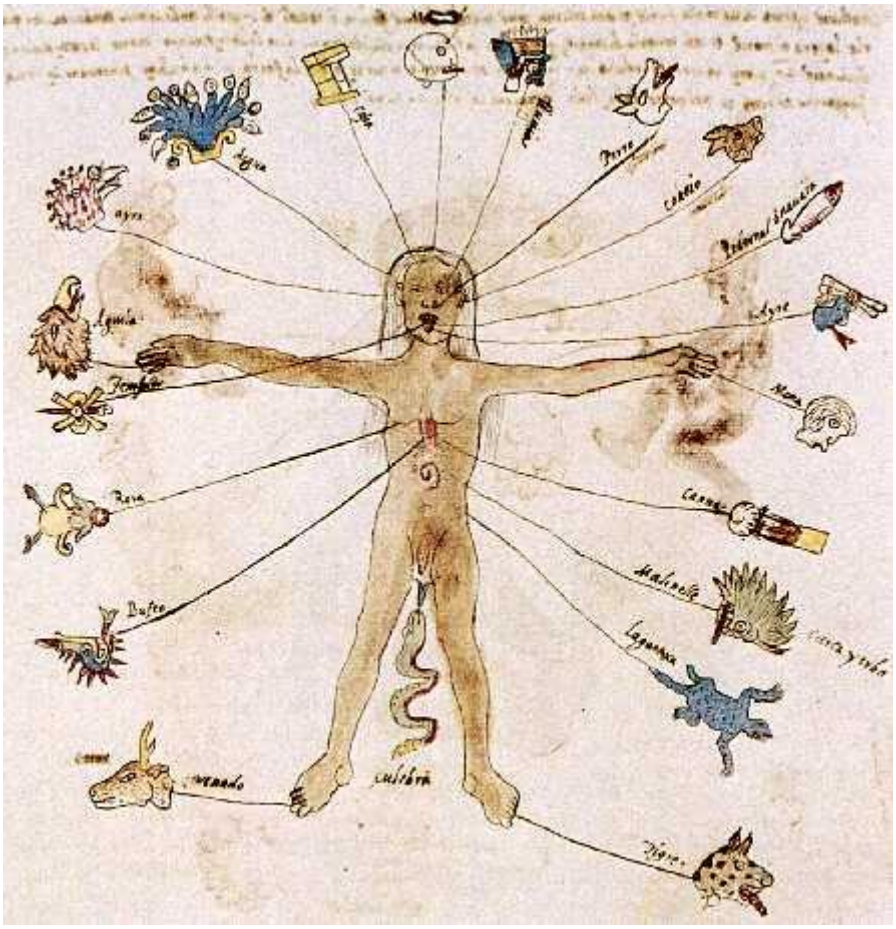

Figure 54. Image of a human figure surrounded by twenty day signs. Codex Vaticanus A, f. 54r.

that some aspects of it were incorporated into known practices, such as is expressed in Vaticanus A.

6.1.2 Vein Men

It is unclear how to properly translate a word that is used in Izcatqui frequently: *tlalhuatl*. According to Karttunen, this should be translated as "tendon" or the tissue that connects muscles to its adjacent bone (1983: 274). The word for "blood vessel" *tlalhuayō*, would seem to be more appropriate in the context of Vein Men (*ibid*.: 274). This Nahuatl word however appears only once (1983: 274). The online dictionary of Nahuatl (GDN) recognizes neither *tlalhuayō n*or *tlalhuatl* as "blood vessel", just as "nerve." One explanation for this is that the meaning of this word has changed over the years to incorporate the word "blood vessel." Nonetheless, even though a different word was selected, the authors were perfectly aware of the exact anatomical item they were dealing with. To see that this is the case, consider the following fragment:

[f. 61r]

Izcatqui yn izquitlamatli	Here are all the things
ytotlalhuayo ynicmiximatiz	of our blood vessel, that we thus may know
yn ipā pa ycani nezohuazque	where to bleed oneself

[f. 61r: image of Vein Man]

Imtlalhuatl tixqua nepantla ycac	the nerve in the front, in the middle
ycac yehuatl yn iquac techcocohua totzonteco	it stands when the head sickens us
¶ *Auh yn tocanahuaca yhuan yn ocan*	and the temple, with
tixcalco mani ytlalhuatl	our eyelid, flat is the nerve
ca yehuatl ynic [f.62v] *titlachiya ca yehuatl*	it is in order to see it
¶ *In tlalhuatl ometotexipal*	the nerve of our two lips
titech nenecoc mamani	which can be found on both sides
yn tocā Reoma	that is named *Reoma* (rheumatism?)
¶ *Inic centlalhuatl totechal*	the first nerve
yn techicac yehuatl yn iq[ua]c	is with us when
mococohua ytixtelolo yhuan	the eye is sick and
yquac pozahua yn toxayac	then our face is swollen
yhuan [i]n iq[ua]c mococohua yn tocamachal	when our mandible is sick
¶ *Intlalhuatl ytoca circular*	the nerve named circular
yehuatl yn iquac techcocohua tochichcauh	when our bile sickens us
ynhuan tomatzōtzōpas[201] *yhuan teltapach*	needle and liver
¶ *ye ytlalhuatl totlaquaticpac*	[already] the nerve that is on top of
ycac yehuatl yn itechcocohua tocuitlaxilloyo	the sacrum, sickens us
topitzahuaca	our belt
¶ *In tlalhuatl oncan toquexilco ycac*	the nerve which is in our groin
yehuatl ytechcocohua yn totlanitzco	hurts our leg
¶ *In tlalhuatl onca tohuey ycxipil titech*	the nerve there in our big toe of our foot
yehuatl ynepātla ycac yehuatl yn iq[ua]c	in the middle
techcocohua toquexilco yhuan tociacac	hurts our groin and our armpit
[¶] *In tlalhuatl oncā toyacaticpac ycac yehuatl*	the nerve over our nose
ynic cencā tichoca	makes us sniff/cry
[¶] *Ome tlalhuatl oncā tonenepil titech ycac*	two nerves that are in our tongue
yn itzintlan tonenepil yn toca agitides	under our tongue are named *agitides*
yehuatl yn techcocohua y[n] tocuitlapā	our spine, back is hurting us

[etc.]

[f. 63v]

¶ *Ce tlalhuatl oncā tomapilhuey nepātla*	one nerve in the middle of our great finger
yhuan tocxipil nepantla ycac yehuatl	and in the middle of the big toe of our foot

[201] *tzotzopaztli*: "needle, thin knife."

yn iquac otztli otztiya nima mitzminas	when a pregnant lady becomes pregnant will bleed herself
anoço mixihui yhuan ytotlacatca	or/perhaps to give birth and our womb
[f.63r second image of Vein Man]	
Auh yn occetlalhuatl	and another nerve
tocuitlapan onoc yehuatl	is in our back
yn iquac techcocohua yn telchiquiuh	then our chest is hurting us
In tlalhuatl totzintamalpan onoc	the nerve which is in our buttocks
quinamiqui[202] *tometzquauhyo*	stretches to our thigh
In tlalhuatl tohuey mapil titech onoc	the nerve that is extended in our large finger of our hand
yhuan yn itech toçihua ytzti yehuatl	and our woman, it [is] cold
yn iquac mococohua yn totzōteco	and thus hurts our head
yhuan yn tixtelolo	and the eyes as well
Ome tlalhuatl tacayo ytechpā mani	two nerves in the bladder
yntoca Venus Scia ticcas yehuatl	named Venusia[203] we will be it
ynacā mometzcaxania çihuatl Woman	it hurts the flesh or skin of the leg of the
In iquac huelo aquimatque	when it unravels what we know
yn huelo aquitaque yn ixquich ymachiyotl	when it unravels what we see, all the signs
yn izquitlamatli omito yn ocā huelnezohuas	all things said, from there they bleed
yhuan y[n]ca tlalhuatl [f.64r] *ypan quizas yn estli*	blood will emerge from the nerve
Auh nican huel namech melahuilis	and here it will be declared
ca yn ixq[ui]ch yn tlalhuatl	that from all nerves
yn ip[an] nesq[ui]xtillo yq[ua]c	they extract
yno tlaq[ui]loc	they cover with chalc
Auh nahui tomatzotzopas tlalhuayo ymoçohuas	and four blood vessels of our wrist will extend
yn iq[ua]c Ayamo tlaquallo	then no one eats
yh[ua]n monequi Aquimatisque	and it is necessary that [we][204] will know it
yn iq[ua]c Aquezq[ui]xtisque yn icxitl	when the foot
Anoço maytl Anoço tlamistli	or the hand, or […]
Anoço yn canin monequi Auh yhuan	or where it is necessary, and
monequi ce apaztli	one bowl is necessary
Aquitemitisque ynatotomili	the warm water will swell
ynic amo tecocos	thus it will not hurt

For the images of Vein Men in ms 3523-2, there seems to have been limited care for the aesthetic appeal to the reader. Details of the human figure are not of importance and neither are its intrinsic proportions. *Reportorios* often contained illustrations of such a man in order to show the location of veins together

[202] Lit: "it meets our thigh."
[203] The shape of the bladder as seen on an ultrasound is described as having a butterfly shape. The Venusia is a genus of moth, and possibly therefore the bladder is named Venusia.
[204] Lit: "who."

with a list of ailments that could be relieved by drawing blood from particular locations. These drawings, together with an explanatory texts, "reminded the phlebotomist which vein was related to the alleviation of pain and disease in each corporal region" (DelBrugge, 1999: 11; Whitfield, 2001). The first illustration of Vein Man in ms 3235-2 (f. 61r) shows him in a frontal position and the lines that indicate the veins are in accordance with the figure of the *reportorio.* The second figure in the Andrés de Li version is standing with its back to the reader in order to indicate the veins at the back side of the human body. Although the second figure in ms 3523-2 (f. 63r) shares the same lines as the figure shown from the back side in the *reportorio,* this figure is facing us from the front. Again, it is not certain whether this was done on purpose, whether the exact meaning of the illustration was not well understood, or whether the image just happened to be copied incorrectly.

6.2 Medical treatments in Izcatqui contextualized through colonial sources

Folios 91 through 93 describe twelve ways to cure pains or illnesses with at least two types of medicinal plants. The fragments and their translations read as follows:

[f. 91r] *℄ Nican pehua centlamātli*	here it begins
[f. 92v] *℄ Nican motenehuan*	here are mentioned
in isqui[ch]tlama[n]tli	all things
in itoca patli	named medicine
carto bendito, artemesa,	cardo bendito, artemisia
rota Arbabo ena in occequi xihuitl	*ruda, hierbabuena*[205] and some other grass
yn itlatollo ca mochi quinanamiquis	all of its history will help
yn aquin tley quicocohua	who are sick
[Initial] *Inic centlamatli ynic pati*	the first cure
yn aquin ytzontecon mococohua	[for those] whose head is sick
çan xoxouhqui yn cōnis	just drink something green
yion tlamanistin carto bendito Artemesa	[...] Cardo Bendito, Artemisia
Anoço yacacpa moltasas[206]	or the nose will throw up
[Initial] *Inic ontlamatli ycpati*	the second cure
yn aquin yn ytozqui mococohua	[for] the one whose throat is sick
ça xoxouhqui:	just green
Anoço yn tlāco mococohua	perhaps [when] teeth are sick
Anoço tlanquallo	perhaps the biting
ehuatl contecaz	it will stretch itself there
y carto bentito:	the Cardo Bendito
caquichicahuas yhuan ycpachihuis	it will strengthen and it will calm
yn totlan quequetol	the pain of the teeth
[Initial] *Iniquetetl ycpati*	the third cure

[205] The scientific name for *ruda* or common rue in English (also known as Herb of Grace) is *Ruta graveolens* (Petit-Paly et.al., 1989: 488). The plant is an evergreen and carries small, yellow flowers. It is native to Central and Southern Europe and was introduced to the Americas for medicinal reasons (ibid.). *Hierbabuena* is spearmint or *Menta spicata (*Taddei-Bringa *et.al.).* Both *ruda* and *hierbabuena* are known in Mexico to have medicinal characteristics.

[206] This seems to be *tlaça*, "to throw up" (see Molina *tlaça* "echarse por estos suelos, o de alto a baxo despeñándose.

yn aquin yn inacazqualo	[for those] who's ears are hurting
yn aoc motlacaqui ynacaz con	and can no longer hear with his ear
contequilisque yn yyaya	scratch it repeatedly
yhua conis	and it will come back [the hearing]
[Initial] *Inic nauhtletl* [sic] *ycpati*	the fourth cure
yn aqui yn icueyxcochtla mococohua	[for those] whose back of the neck is hurting
anoço cuexcoch [f. 92r] *tlayocoya*	perhaps [has] angina
yiacacpa oyas omotlaxilis	place [medicine] in the nose
no yehuatl ycuexcochhuaqui	the back of the neck will be smaller [read: cure]
[Initial] *Inic macuilamatli ycpati yquenin*	the fifth cure
yxtelolo mococohua	[for those with] a sick eye
yntla [a]noço yxitla cahuis nequi	if the white of the eye wants to leave the face
yxcohomotequilis[207] *anoço*	scratch the face, perhaps
homotocas ynixqc yn aço	then it will disappear
yx na[ci?]pa chihuilistli	eye
[Initial] *Inic chiquacentlamatli ycpati*	the sixth cure
yn aq[uin] nitechica	[translation of this cure remains unclear]
cohuamiyahuatl	
ytechcotecazque	
[Initial*] Inic chicontlamatli ycpati*	the seventh cure
yn aquin […] chiquiuh mococohua conis	[for those who][…] is sick
Aaço yqu[…]ch	[…]
mococohua yquech tlaco[n]	the middle of its neck/throat is sick
tecatz […]	[it is filthy]
yn aço tzonpilhui yyacacpa	perhaps to have a flu, through its nose
omotlaxil[…][…] quipollohua	threw up […]
ynalahuac Anoço	phlegm or
yy[…] ça quitlayeltiya yn tlaqualli	[…] to suffer from nausea, [of] the food
Anoço toyollo mococohua	perhaps our heart is sick
Anoço teltapach oytlacauh	perhaps the liver is filled
Anoço yytlacauh yn eztli	perhaps [it is in] pain, the blood
ytoma yeccapa ytopochcopa[n]	our hand, in a good place, to our left hand
ca yc yolis yn eztli quiyolitia	it will live a good life, the blood,
it gives life	
Anoço tletl ytech motlalia ytoyollo	perhaps fire, it will provide our heart
[Initial] *Inic chicuetlamatli ycpati yn aqui*	the eight cure
yn aqui ytech mochihua xochizihuiztli	[for those[with 'spine of the flower'
	[hemorrhoids]
Anoço tlayeli [f.93v] *mopahuazis yn atl*	boil it in water is bad
ynima nicmopatlaz ypantli	I will cure it with medicine
yhua bino	and wine
Anoço yehuatl nica bino	here the wine
no yc ycuizis camiyeyecoz	take it, try it

[207] *Ixco*: "face."

[Initial] *Inic chinauhtlamatli ycpati*	the ninth cure
yn aq[ui]n nitexihui Anoço tamaço cocoliztli	perhaps the illness of the frog
Anoço ytiyauh Anoço ytipozahua ycuitl	will go away, perhaps it will swell the arm
apāpa omotecaz ypatli	put the medicine on there [the arm]
nauhtlamanixti Aço ytla alahuac	four things in front and only inside
ychuezis yhuan monequi Achito coniz	will slide and a small amount will come
yçihuapātli ypan […]nis ynpiltōtli yniyaxix	of the medicine of the woman [with] the urine of the children[208]
[Initial] *Inic matlactlamatli ycpati*	the tenth cure
yn aquin omotec ynica yncochilo	for who laid itself down here, the knife
Anoço ytztli […]omotequilis	or obsidian knife [?], it will cut
Auh ytla camohuelliti:	it is very strong/powerful
[…] ypā motecazqui Anoço nacahayo[209]	[…] those who laid themselves down, with flabby skin
[…]an çan achito monequiz yn ixiuh?]	they need to cover [their skin] with some herb
yo yn cardo bandito	of the Cardo Bendito
[Initial] *Inic matlactlamatli once ycpati*	The eleventh cure
yn aquí yyomotla quicocohua yehua[tl] motenehua	[for those] who hurt their flank, he needs
yçiuhca quahuaqliztli	to become skinny fast
mototomis[210] *yn atl yc mopatlas*[211] *ypantli*[212] *coniz*	[drink water]
Anoço hocācotecazque	
[f. 93r]*Inic matlactlamatli omome ycpatli ynaqui*	The twelfth cure
ynaqui Adonahui oc totoqui[213] *yc oniz*	[for those] who have a fever/is in pain, they will drink
Anoço yc motlanoquilis	perhaps it will purge
yniq[ua]c oconnic	then it
motlaquētis hueliquac yyepehua	they will dress themselves now, it already begins
yyahuihuiyoca ynconizq[ue]	trembling with cold, they will drink it
Iinitial] *Inic matlactlamatli omey ycpatli*	The thirteenth cure
ynaqui oquiqua Anoço oconic	[for those] who ate or drank it
micohuani pātli	something deadly, poison
Anoço tocatl anoço colotl	perhaps [of the]]spider, or [of] scorpion
Anoço petlaçolcohuatl	perhaps [of the] centipede
Anoço petlaçolcohuatl	perhaps [of the] centipede
Anoço tequacolhuatl oquiq[…] coniz	perhaps [from] the wizard […] he will drink
ypatli ynauhtlamanixtin ypatli	the medicine, four things [times], the medicine

[208] Read as such: spread a small amount of the medicine of the woman, mixed with the urine of children, and spread it four times over the infected arm.
[209] *nacahayo*: "flácido" in Spanish or "flabby" in English.
[210] *totomio*: "hair"
[211] *patla*: "change"
[212] *pantli*: "banner, flag." The words 'hair,' 'change,' and 'banner' in combination with medicine and drinking water does not make sense.
[213] Unclear if it should be read as *totonqui* "warm, fever' or as a derivation of *totoquiliztli* "pain."

A medical treatise – such as the fragments above – would not traditionally be part of a *reportorio*. As Izcatqui's very existence centers around pre-existing texts, it is not a far stretch to hypothesize that this fragment also derives from an already circulating text – either in Spanish or Nahuatl – that was reworked to fit the purpose of writing ms 3523-2. The easiest way to try and search for (a) possible source(s) is to find references to the plants mentioned as cures in Izcatqui. By doing so, one may be able to contextualize this medical treatise within a literary discourse in the first century of a colonial (Central) Mexico. By following this methodology it becomes apparent that two types of plants are referred to in colonial writing: *ruda* and *hierbabuena.* In addition to the medicinal features of the plants *ruda* and *hierbabuena*, *cardo bendito* (also known as Cardo Santo) and the family of the Artemisia were well known plant species and have been documented for their medicinal purposes as well.

6.2.1 Cardo Bendito (Cardo Santo) and colonial literature

Dictionaries define *cardo* as "thistle" in Spanish. However, it is rather difficult to find the correct species to go with the name Cardo Santo, as different sources are not in accordance with one another and refer to a multitude of not only species but genera as well. Therefore, in the following I will list possible Cardo Santos plants that are known to Mexico. The online *Biblioteca Digital de la Medicina Tradicional Mexicana* of the UNAM (Universidad Nacional Autónoma de México, Mexico City) is a collection of a large range of plants and their medicinal use throughout Mexico by indigenous peoples. The digital library not only describes where these plants are currently in use, but also lists their historical references. The library lists Cardo Santo three times and for all three instances it refers to the genus *Cirsium*, which is a member of the Compositae family, more commonly known as thistles. There are over 200 species, of which the library mentions *Cirsium mexicanum DC*, *Cirsium subcoriaceum*, and *Cirsium anartiolepis petrak*. The genus *Cirsium* is described as "cosmopolitan" because it is found throughout Eurasia, Africa, and North America. Its species *mexicanum* is native to Mexico and Central America (Invasive Species Compendium online http://www.cabi.org/iscbeta/datasheet/119800, consulted April 3rd 2014), but the other two species are found in parts of Mexico as well. The most striking difference between the three species discussed by UNAM is the colors of the flowers, which are purple, yellow, and red respectively.

Figure 55. Cirsium Sp. in the State of Tlaxcala, Mexico. Photo courtesy of Ludo Snijders.
Figure 56. Detail of flower of Cirsium Sp. Photo courtesy of Raul Macuil Martínez.

The vast indigenous knowledge of the medicinal power of native plants and the interest in them for those arriving from the Old World is reflected in a number of colonial writings. Vegetation is a recurrent theme on murals, demonstrated by the colorful painted walls in Teotihuacan, for instance. Although

originally created in the context of Mesoamerica's rich pictorial expression throughout history, these murals flawlessly took their place in another religious context – that of the Catholic monastery. And just as in Teotihuacan, painted plants did not just play a mere decorative role, but expressed a very tangible function: to combine and harmonize the world of both the mendicant and the indigenous peoples. The monastery of San Francisco in Tepeapulco was the first one established by Franciscans in the Mexican state of Hidalgo (Ballesteros, 2000: 17). It was here that the most famous Franciscan missionary, Bernardino de Sahagún, began his collaboration with a dozen elderly men and four others who he had taught Latin to collaborate and write parts of the 12 books of his *Historia General de las Cosas de Nueva España* (Ricard, 1974: 41; Léon-Portilla, 2002: 144, 146-148).

Figure 57. Cardo Santo as depicted on a mural in the convent of San Fransciso Tepeapulco, Hildalgo Mexico. Photo courtesy of Raul Macuil Martínez.

There are several authors who mention the *cardo* (or Cardo Santo) and artemisia plants in their documentation of the early years of the Spanish presence in current Mexico. We find references in the *Historia General de las Cosas de Nueva España* in the work by Fray Bernardino de Sahagún; in the *Libellus de Medicinalibus Indorum Herbis* by Martín de la Cruz; in the *Quatro Libros* and *Obras Completas* by Francisco Hernández, and in *Tesoro de Medicinas para Diversas Enfermedades* by Gregorio López. All but de la Cruz, were born in Spain and travelled to the New World, where a royal incentive, no doubt mixed with a dose of pure curiosity into the yet to be explored continent, resulted in a veritable corpus of encyclopedic accounts of Mexico's natural resources.

According to the work by Sahagún, the Castilian cardo is a *huitzquilitl*, which translates as a thorny plant. The illustrations in the Historia General point to exactly that spiny character (see Figure 58). These are said to have a beneficial effect on the digestive system and purify the intestines (Book 11: folio 136 and 137).

Figure 58. Huitzquilitl, quaujtzquilitl, chichicaquilitl and tonalchichicaquililtl
From Bernardino de Sahagún, Historia General (Florentine Codex) Book 11, folio 136.

The following colonial book that refers to a cardo species is the *Libellus de Medicinalibus Indorum Herbis*, a beautifully illustrated catalogue by Martín de la Cruz. The text is a Latin translation by Nahua nobleman, Juan Badiano, of an original Nahuatl text which is no longer available (De la Cruz, 2000: iii). In the introduction to the 1939 English translation of William Gates, Bruce Byland writes that the original text was authored by Nahua physician Martín de la Cruz at the Colegio de Santa Cruz at the convent of Tlatelolco (*ibid.*). As such, the *Libellus* is also known as the Codex de la Cruz-Badiano, honoring its author and translator. The Latin version reached Spain in 1552 and became part of the library collection (later to be incorporated in the Vatican Library) of Cardinal Francesco Barberini. In 1990, the book was returned to Mexico by Pope John Paul II and is now stored in Mexico City (De la Cruz, 2000: iii). The catalogue is divided into thirteen short chapters. The first twelve are a guide to a physician in his or her selection of plants. More specifically, the text explains how to combine plants in order to cure a range of conditions, whether these relate to the sight, internal pains, or a new mother's milk production. The thirteenth chapter describes the physical characteristics of a patient who is losing the battle of fighting off an illness and so is about to die.

On four occasions, *huitzquilitl* (f. 9v; 41r; f. 50v) or another member of the thistle family *quauhtla huitzquilitl* (f. 32r) is part of a recipe, to be used either as a rubbing or to be taken as a digestive. Three of these recipes are illustrated, two of which are named *huitquilitl* (see Figure 59) and one *quauhtla huitzquilitl* (see Figure 60). Although different in name, they are a *huitzquilitl* with just one flower instead of multiple one. According to the "Analytical Index of Plants," – which was used to identify possible botanical origins for most of the plants by Mexican scholars in the 1960s – *huitzquilitl* ("thorny edible; thistle") is a cardo species or Cynara scolynmus L. *Quauhtla huitzquilitl* ("thorny edible growing in the woods").

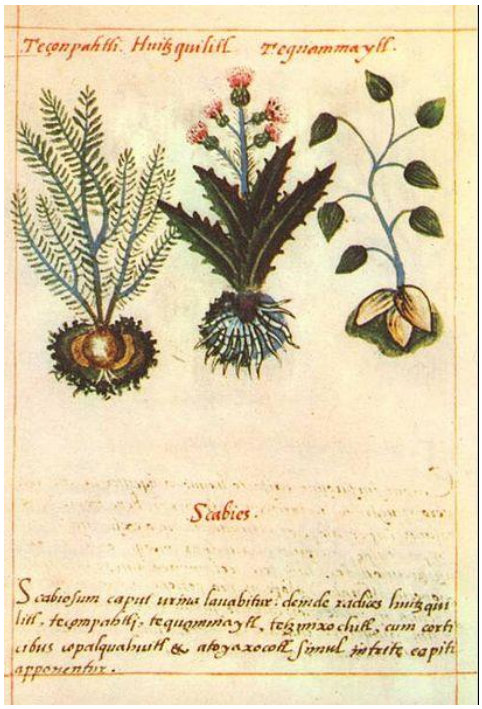

Figure 59. Huitzquilitl in Libellus de Medicinalibus Indorum Herbis f. 9v
Figure 60. Quauhtla huitzquilitl in Libellus de Medicinalibus Indorum Herbis, f. 32r.

According to De la Cruz, the cardo is used to cure scurf of the head; an abdominal chill; "black blood" and inflammations (recipes in his work on folios 10, 55, 73 and 90).

A third and fourth source with which the tlacuiloque of Izcatqui could have been familiar with were the *Quatro Libros* and *Obras Completas* by Francisco Hernández (ca. 1515-1587). Being the royal doctor at the time, Hernández was ordered by King Philip II to travel to the New World in the 1570s to become chief medical officer. Once there, he was to document as much as possible about medicinal plants, give a portrait of the areas' natural history, and collect ethnographic data from the Valley of Mexico (Hernández, 2000: xi). He is described as being "one of the greatest physicians, historians, and naturalists in Spanish history" (Weiner, 2000: 3). Hernández is also known for his extensive translation of the *Natural History* by Pliny, and his writings on Galen and Aristotle. Hernández stayed in Mexico for seven years and returned to Spain in 1577. On his return, he brought with him an extensive manuscript describing the natural history of (a part of) the New World. One copy, his corrected draft, is stored in Madrid; another complete copy was presented to his royal principal and got destroyed in a fire in the seventeenth century. Fortunately, copies, translations, and prints of parts of the manuscript were made prior to the fire, so Hernández' work has not been lost completely.

Hernández' work demonstrates his special interest in plants and their medicinal purposes. More than 3,000 plants are recorded in his writing, many of them accompanied by paintings made by indigenous artists (Weiner, 2000: 4). References to the work by Hernández for the present study derive from two publications: *Obras Completas* and *Cuatro Libros*. The first publication clearly mentions the use of a plant named *cardo.* The fragment below is from second volume, book five, chapter CXLII, page 267 of the *Obras Completas* 1959 publication:

"*Del CHICÁLLOTL o cardo*

El *chicallotl,* que otros laman *chichicallotl,* es un espino
con raíz ramificada, de donde echa tallos blanquecinos y espinosos,
hojas como de cardo santo, largas, angostas, sinuosas,
espinosas y de color ceniciento; flores redondas amarillo
rojizas y a veces blancas, parecidas a las de adormidera; fruto
oblongo, estriado. áspero y lleno de semilla negra y pequeña.
que molida y tomada en dosis de dos dracmas evacua todos
los humores, pero principalmente los pituitosos y los que dañan
las articulaciones. Tiene sabor y olor parecidos a los del
síser. Su leche mezclada con leche de mujer que haya dado a.
luz una niña y aplicada a los ojos, cura las inflamaciones de
los mismos; es efic'az contra los accesos de las fiebres y cura
las úlceras de las partes sexuales; la flor eplicada cura la sarna.
El sabor de esta hierba es amargo y su temperamento caliente
y seco. Dicen algunos que el jugo destilado de ella y
de los renuevos del *mizquitl* disuelve las nubes de los ojos,
consume la carne superflua. calma el dolor de la jaqueca y auxilia
notablemente en otras enfermedades semejantes. Nace
en el campo mexicano. tanto en lugares montuosos como en
los campestres."

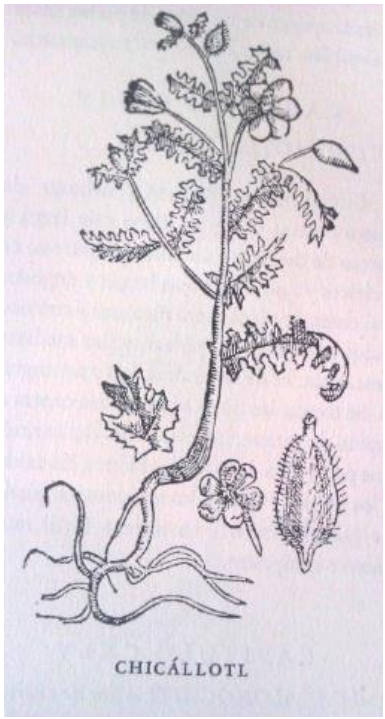

Figure 61. Chicallotl or cardo as depicted in the Obras Completas

The drawing from the Obras Completas however, does not illustrate a *Cirsium g*enus but rather to a *Argemone mexicana* L.

The final colonial author that mentions c*ardo santo* is the *Tesoro de medicinas para diversas Enfermedades* by Gregorio López (1542-1596). At the age of twenty, López left for New Spain. Here he became known a mysterious wandering man, devoting his life to honor God and gifted with a spirituality that enabled him to "penetrate hearts, and [being in] the company of angels" (Bilinkoff, 2003: 115). His wandering spirit led him through different (indigenous) villages. Several times he fell ill under his extreme fasting and malnutrition, but according to his biographer friend and priest Francisco de Losa, he never lost track of his spiritual quest, and took time to counsel others on the faith as well. It is probably during his stay in Zacatecas (province of la Huasteca) while hospitalized during illness, that he composed his *Tesoro.* He penned down his information from indigenous knowledge gathered during previous journeys and finished it in 1589. His health failed him during the years to come and he eventually died during the summer of 1596 (Bilinkoff, 2003: 115). As said, López finished his *Tesoro de Medicinas para diversas Enfermedades* in 1589 (see Figure 61).

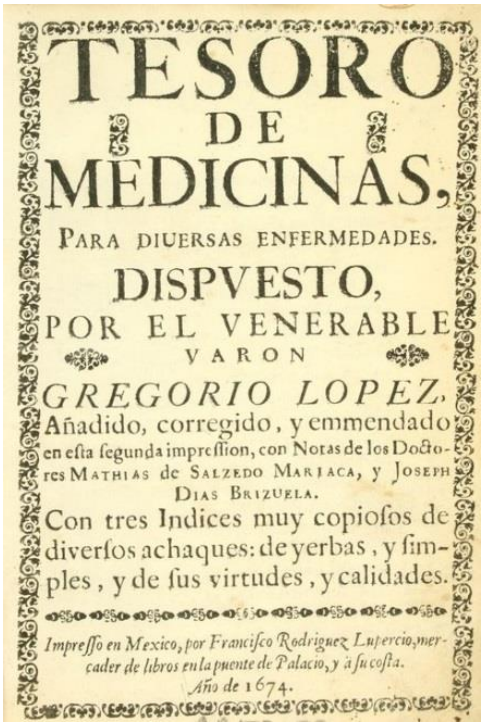
TESORO
DE
MEDICINAS,
PARA DIVERSAS ENFERMEDADES.
DISPVESTO,
POR EL VENERABLE
VARON
GREGORIO LOPEZ,
Añadido, corregido, y emmendado
en eſta ſegunda impreſſion, con Notas de los Doctores MATHIAS de SALZEDO MARIACA, y JOSEPH DIAS BRIZUELA.
Con tres Indices muy copioſos de
diverſos achaques: de yerbas, y ſimples, y de ſus virtudes, y calidades.
Impreſſo en Mexico, por Franciſco Rodriguez Lupercio, mercader de libros en la puente de Palacio, y à ſu coſta.
Año de 1674.

Figure 61. Cover of Tesoro de Medicinas by Gregorio López. Mexican edition 1674.

His work circulated as a copied and handwritten manuscript up until the moment it was first printed in 1672 in Spain. The book was such a success that it was printed a second time two years later in Mexico and yet again in 1708 and 1727 in Madrid as well. The success of the book was due for the most part to its accessibility. It provided simple recipes that were manageable for those without means in rural areas and in the lower classes in the city. In his work, he mentions for 28 illnesses that *cardo santo* is of help. Examples of illness or conditions are tumors; troubled minds; swollen eyes; pain in the ear; rheumatism; stomach cramps and headaches.

The *tlacuiloque* of Izcatqui could have been familiar with any of the writing of the authors mentioned just now. The paragraph above would seem to point to an interest in and familiarity of the

medicinal purposes of some of the herbs that the *tlacuiloque* included in the eighteenth century Nahuatl text of Izcatqui.

6.3 Nahuatl renderings of 'Master Doctors'

The discussion in Izcatqui on the medicinal use of cardo santo and artemisia continues with the following:

[f. 94v]℄ *Yzcatqui yn qu[e]nin motocaz*	here it is, how it will follow
ynic motocaz ynauhtlamanixtin ypa[?]	thus it will follow, the four
cemixtli ymocalaquis ytomapil	are in sight, it will enter our finger
yp[an] cepoto pan ceq[uar]rto	a point, a quarter
ça mochiuhq[ui]ynic motocasqui	it just continues
huel iq[ua]c yhual momana metztli	thus good, comes the offer of the moon
anoço yquac ytlayahualohua	maybe it is covered
ca huelitecopatzinco	by authorization of
yntohueytlatocauh	of our Great Lord
yn Sancto padre in o[m]pa Roma	the Holy Father, there in Rome
yc titopatisque yctechmotlaocolilia	who gives us mercy, so that we can cure ourselves
℄ *Ca yzcatqui: nica[n] pehua*[214]	here it is: here it begins
oc centlamatli ynquenin nepatiloz	how each thing will be cured
Yn ixquich cocoliztli	all illness
yn quiyacatia yehuatl	it spears it/he points it
yn cenca nohuiya mococohua yn tlacatl	everywhere people are very sick
ytoquechtlan poçahua	the neck is swollen
yni[…]hohu[e]tzi[215] *yn tococo*	[…] our throat
Auh yntlacatle y[…]nonamictiya	and the people […] are pairing up
Ypatli	Medicine
ca yehuatl nima[n] […]c iuhcan	here it is
ycmocochua […]	when it is sick

This text is followed by nine short paragraphs, each of them beginning with the same sentence: *Quitohua yn occe tiçitl ytoca […]* which translates as: "it says [of] another doctor named […]. The closing paragraph of this section of Izcatqui provides a recap of the content of the nine preceding ones:

[f. 96v]	
Auhca[n] nican omotocayotique	and here they have been mentioned
yxpantzinco yn dios yn totecuiyo	before God, our Lord
Auh yhua ypanpā Bonifacio quitohua	and with Bonifatius it says
Ma xiquimacacan yn ixquich yn intechca	may they all have been given something to go with
yn cocoliztli	the illness
maxiquimacacā yxiuhtzintli	may they have been given the herb
ynic amo momiquilisque	so that they will not die
ma yuh mochihuā huel neli patisque	let it be that they will cure very well

[214] Written in capitals.
[215] *huetzi* "to fall."

Estos Maestros de doctores	these masters of doctors
Juliano. costiatino. dioscorides.	Juliano Costiatino, Dioscorides
nicolao giliberte. Bonifacio	Nicoloa Giliberte, Bonifacio

So what preceded this paragraph must have been a discussion of several methods the *maestros* employed to cure using herbs of some origin. The names of the maestros refer to Pedianus Dioscorides (see below) and probably Julianus Alexandrinus the Methodist, Constantinus Africanus, Nicolaus Salernitanus and Gilbertus Anglicus (personal communication Maarten Jansen, 2018). Let's take a closer look at the more detailed discussions of the doctors and their accreditation below:

[f.94v] *[…] Aquitohua yn tiçitl yn itoca Julia[n]o*	it speaks of a doctor named Juliano
yntlacana otiquitac yn iuhqui ytech[ca]	
yn cocoxqui yn quechpozahua	the pain, the illness or mumps
manina maninia moço	[mozomani 'inflamed']
Auh çatepan coniz yn niyaya	and afterwards will drink
yn itoca castillan tlaolli	what is named Castilian maize
Anoço: /.../tcatl poço[n]qui	or *pozonqui* (*atole* of wheat)
Monamictiya	mixed
yn itocan cevata	it is named *cevada*, barley
Auh yticchihuaz ticnechicos	and we will make it, we will collect it
ynquali [f.94r] *tetl yn itoca Sancria*	the good stone named Sangría
ynic nezohuaz yn tonenepil	so that the tongue will bleed
ytech yn iuhqui ypiltzin	like its beloved child
mochiuhtica: yntlalhuatl ynitzintla	it does: the vein that is below
y[n] tonenepil: nimatoco[n]cuis	the tongue: afterwards we will
yn iuhq[ui] Avino	like [wine]
yn itech quiza yn itoca Arosa	it [leaves], it is named [Rosa]
tictecis ticpatzcaz nima[n]to	we will grind it, we will pulverize it
conitis toto[n]qui	it will be drunk warm
ycxitinis yn oca[n] pozahua:	it will destroy the swelling there
yn aquin nitechcan yc patis	we will drink it, it will cure

[f. 94r]	
Auh quitohua yn occen ticitl ytoca gustati	and it speaks of another doctor named Gustati
no toco[n]cuiz y[n] xonacatl ynitocā [ceboll]as	also take onion, named *cebollas*
ticatilis ticnelos castillantestli /.../	we will melt, we will mix it with Castillian masa
yhiygos[216] *yehuatl yn ayamo huaquitict/.../huazas*	also figs which are not dry
niman ticteçis ticnelos	here we will grind it, we will mix it with
ychiucha/.../layotl	milk [chichihualayotl]
niman noncan toconalahuaz/.../quechtlan	here it will slide in [our] neck
ynquechpozahua ycp[a]tz[?]huaz	the swollen throat […]
Anoço yc xitinis yc patis	perhaps it will destroy, it will heal

[f. 94r]	
[Initial] *Quitohua yn occe tiçitl ytoca dioscorites*	it speaks of another doctor named Dioscorides
Auh tococuiz xihuitl yn itoca Rodas	and we will take a herb named Rodas

[216] Read as *higos* "figs."

yhuan coratro[217] *ticnelos vinagre*	and we will mix it [with] vinagre [four times]
yc ticaltis castilla testli	he will bathe himself in Castilian grain/wheat
tocomis ycpolihuis ypoçah[ua]	he will take it to destroy the swelling
[f.95v]	
yniquechtla yn cocoxqui	its neck, it is sick
Anoço o[218]*motlatolcauh*	perhaps the word is ended [i.e. unable to speak]
Ca yc tlatos yniquac oco[219]*nic ynatolli*	then it will speak, it drank *atole*
[Initial] *Quitohua yn occe tiçitl ytoca diascorides*	it speaks of another doctor named Dioscorides
tictatcaq[ui]z	we will hear our father
yn inelhuayo ynahuehuetl	his old root
nima ticteçis	we will grind it here
ticnelos vino	we will mix it [with] wine
Tiquicuicuixitis	we will drink it so that it cures
yn iquechtlan tocotecaz	put in on the inside of the throat [i.e. drink it]
yn o[n]ca pozahua yc xitinis	when it is swollen there, it will go away
[f. 95v]	
[Initial] *Quitohua yn occe tiçitl ytoca Nico/.../*	it speaks of another doctor named Nico[lao]
[t]ococuis yn ixiuhyo ynamacapolin[y]hua	we will take the herbs of the mulberry
vinagre yhua[n] necuictli	vinagre and the fragrance
mochi tinelos tictotonis	we will mix it, we will heat it
yquechtlan toco[n]tecas /.../ quilotisqui	its throat will extend […]
Anoço ycxitinis	or it will destroy it
[Initial] *[Qu]itohua yn occe tiçitl*	its speaks of another doctor
yn itoca giliber[te]	named Giliberte
tococuis yn imanahuil ytlacatl	we will take the protection of him
yhua[n] yperro yn iyomiyo yquaquahue	and the dog, the bone of the horned animal
Anoço ychichicauh yhuan ticcentlalis	or its bile and we will mix it
ca yc xitinis yn iquechtla	it will cure the throat
tocontlalis tocotecasque yn cocoxqui	the throat will settle, the throat will put them to sleep, the illness
yc patis yhuan	when it will be cured and
tococuis huitziloxi[tl]	the throat will take the *huitziloxitl* [balm]
tiquicuicxitis Atl	we will take it [?] the water
yhuan tococuis yn icuitl carnero	and the throat will take the excrements of the sheep
yehuatl ynohuac ticteçisqui	we will grind it
tocontepehuas ynipan yniyayo	the throat will throw
ynocuiltin Auh mamiyacpa	[..]
contecas yniquechtla[n]	its throat will put it to sleep there
cenca quicocos tel ic xitin[i]s	it will be very sick, but it will destroy it
yn o[n]ca[n] pozahua ca yc Patis	it swells up there, by which it will heal
[f. 95r]	
[Initial] *Quitohua yn occe tiçitl yn itoca Juliano*	it says of another doctor named Juliano

[217] Read as *cuatro* "four."
[218] "o" in superscript.
[219] "o" in superscript.

ca yc mocentlalique yn ixq[ui]chtin y[n] titiçitl	all doctors help people
tococuis yn xihuitl ytoca bexbena xictizi	the throat will take a grass named hierba buena
Amoqatic onca[n] t[ocote]cas	there the throat will put it to sleep
yn ipan yn mococohua yc xitini?	it sickens itself, when it destroys it
yn pozahua yc patis	it will swell up by which it will heal
[f.96v]	
[Initial] *Yhuan quitohua xipā[l] nechico*	and it says, the lip brings together
tococuiz yn ixquich pātzintli xiccenctizin	the throat will take all esteemed medicine
xicpatzcā moquechtla tictecasqui	it wrings your neck, we will bring it to sleep
cequi ticnelos y xitinis	we will mix it some more, it will destroy
yn ocā poçahua	there it swells up
Auh yc patis	by which it will heal
[Initial]	
Quitohuā yn occe tiçitl yn itoca Juli[ano]	it says of another doctor, named Juliano
toconanas yn totolin yn amo tom[a]huac	the throat will take it, the skinny chicken
moteçis oc nimā yçiuhca	another will be crushed here, quick
ticnelosqui vino cenca yniyo	we will mix it [with] wine
Anoço canatiqui[…] ca totoni yas	or it will have a fever
y[n i]quac yncan iuhq[ui]	then
[…]atezcatl mani	[…] give
totoqui yez yn tocōtecas […]	it will be warm, the throat will put it to sleep
moquechtlā Auh nimā timocozqui	your neck, and here we will
ymonenepil ytech yc tipatis	your tongue […] we will cure it

6.3.1 Pedianus Dioscorides

Of the *Maestros de doctores* that are covered in Izcatqui, it has only been possible to recognize two known names, and only one makes sense in the medicinal context: Dioscorides. Pedianus Dioscorides (or Pedianous Dioskouridos) was a Greek born in the Roman Empire in what is now Turkish territory. He probably lived from AD 40 to AD 90 (Osbaldeston, 2000: xx). As a civilian doctor or perhaps as a military physician in the Roman army he travelled throughout the Mediterranean (Dioscorides, 2005: xvi). Under these circumstances he came across many conditions and regional medicinal plants, and experimented with the use of them to discover new ways of curing. This he recorded in his monumental *De Materia Medica* (probably AD 64), which contains no less than a thousand recipes – of which many were unknown at the time – from around 600 plants. He combined these recipes providing instructions on how to collect and produce drugs from animal and mineral origin (Osbaldeston, 2000: xxii). His *De Materia Medica* also included (brief) descriptions of the physical appearance of the plants used, so later readers of his work were able to find them in nature with relative ease. This was one of the reason why his work became so popular in the following two millennia and received the status as 'the ultimate authority on plants and medicine' (Osbaldeston, 2000: xxi). He believed it was essential that any physician was aware of the geographical distribution of plants and the stages of growth, as well as that their medicinal properties empirically attested in the field (Dioscorides, 2005: xiv). Dioscorides' work consists of five books. Book One describes aromatic plants, how to make salves from the oil or gum of plants and herbs, and how to make use of fleshy fruits. Book Two is a recollection of animal products and a variety of herbs and cereals with medicinal characteristics. Book Three discusses several herbs,

seeds, roots, and juices as nutritional or medicinal. Book Four describes poisonous plants and narcotics. Finally, Book Five describes the use of vines, wine, and metallic minerals in medical practice (Osbaldeston, 2000: xxii).

Dioscorides' status as the 'ultimate authority' is reflected in the course his *De Materia Medica* took over the years; that is, the vast geographic and diachronic reach of its copies, translations, and commentaries. Dioscorides was mentioned for the first time in alphabetic Greek writing – following earlier papyri – in the fourth century by physician Oribasius, possibly the first author of an alphabetical Greek version (Dioscorides, 2005: xviii). Most beautifully illustrated are the Greek copies from Constantinople, which include the oldest and most famous surviving book *Vienna Dioscurides* manuscript[220] or *Juliana Anicia Codex* from AD 512 (Dioscorides, 2005: xiv; xviii). A great variety of commentaries and glosses reflecting medical discourses of the time ended up in later texts of *De Materia Medica*. These additions took place right up until the printed books from the Renaissance, contributing to the *De Materia Medica* long and complex trajectory (Dioscorides, 2005: xviii-xx).

In relation to the mentioning of Dioscorides' work in Izcatqui, it is to be expected that it existed in the Spanish language as well. And it did. It appeared in several vernacular languages in print in the sixteenth century: Dutch, Italian, German, and French between 1520 and 1553; and Castilian Spanish in 1555. It was translated into English in the mid-seventeenth century, but was not published until three centuries later in 1934 (Goodyer-Gunther edition, named after its seventeenth century translator and twentieth century editor). There are two modern English editions of Dioscorides' work: one by Tess Anne Osbaldeston (2000) and a new translation by Lily Beck (2005) based on a modern Greek edition in three volumes by Max Wellmann from 1906-1914 (Dioscorides, 2005: xx-xxi). John Scarborough as author of the introduction to Beck's translation criticizes the edition from 2000 – even going as far as to suggest plagiarism – for not contributing anything to its translation and merely changing its lay-out (2005: xx).

6.3.2 Spanish translations and editions of *De Materia Medica*

In Barcelona 1953, César E. Dubler published *La 'Materia Médica' de Dioscórides – Transmisión Medieval y Renacentista*, Vol. 1 *La transmisión medieval y renacentista y la supervivencia en la medicina popular moderna de la 'Materia Médica' de Dioscórides, estudiada particularmente en España y en África del Norte.* This volume was followed by five others; volume six was published in 1959. Dubler provides a historical overview of ancient medicine before introducing Dioscorides and his work translated in Spanish. In addition, Dubler discusses several of the Arab translations of *De Materia Medica* from the ninth century. Some of these found their way to Spain and became the guiding textbook on botany in Muslim teaching centers in the Peninsula (Dubler, 1953: 49-50). Dubler continues by listing several translations in Latin and makes the following statement:

> "[…] [L]as traducciones de las obras árabes al latín hicieron que perdiesen su genuino valor científico, fatal consecuencia de una aguda academización. Hacia fines de la Edad Media, la obra de Dioscórides en latín está totalmente desfigurada y, a pesar de imprimirse ya en el siglo XV la traducción latina medieval del Dioscórides alfabético, está ya no reunía las condiciones ni corrrespondia a las nuevas exigencias de la ciencia y de su nomenclature."
> (Dubler, 1953: 63)

Texts are everchanging as they travel through space and time, and as they are molded according to their contemporaneous situation. However, as *De Materia Medica* was translated into Spanish, it entered a

[220] The Akademische Druck-u. Verlagsanstalt published a facsimile of this edition in 1970. See http://www.adeva.com/faks_detail_bibl.asp?id=103

world which was on the one hand was very far from that first century AD in which it originated; and, on the other hand, was still very much rooted in the (re)writing of Classical Greek and Roman scholars.

Having scientific traditions of their own, the composers of the Nahuatl manuscript were not familiar with any of the writings of these scholars overseas. The fragments in Izcatqui that refer to Dioscorides appear to be just snap shots, but they represent a legacy spread over centuries in the Classical, Medieval, and Renaissance periods. It was botanist Andrés de Laguna who translated *De Materia Medica* in 1555 into Castilian Spanish for the first time, basing himself on a Latin version by Ruelle from 1518. The Spanish work was amended by commentaries and personal observations, and as a first edition printed in Antwerp by Juan Latio in 1555. The original by Laguna, unfortunately, no longer exists today (Dubler, 1955: vii; viii). Dubler lists a number of other editions, mainly from Valencia and Salamanca. Matías Gast edited two that were published in Salamanca (1563, 1570). This is the same city in which the edition by Cornelio Bonardo saw the light in 1586. There were also three editions in Valencia by Claudio Mace, Vicente Cabrera, and Herederos de Benito Mace that appeared in 1636, 1677, and 1695 respectively (Dubler, 1955: viii). The latest edition mentioned by Dubler was produced by Domingo Fernández de Arrojo in Madrid in 1733 (Dubler, 1955: viii). The third volume of *La 'Materia Médica' de Dioscórides* by Dubler was published in 1955 and is the first out of the six volumes that includes the Spanish translation by Andrés de Laguna – this edition originates from the Salamanca 1570 edition by Matías Gast and was chosen for its clear and complete character and typical language of sixteenth century Castilian (Dubler, 1955: xviii-xix).

The references to the work of Dioscorides illustrate the interest of the *tlacuiloque* of Izcatqui in a long history of writing from the Old World. In the late sixteenth century, Juan de Cardenas wrote about indigenous medicinal drinks and chocolate in his *Problemas y secretos maravillosos de las Indias.* He explicitly mentions that he is not going to write about Spanish medicinal drinks, and refers the reader to the work by Dioscorides (1988: 140). Cardenas was more interested into the novelties of the New World; just as the *tlacuiloque* were interested in what the Old World had to offer them.

6.4 Indigenous ecology: flora and fauna

The apparent need to study time and most prominently the changing of time in Western Europe was examined by James Carson Webster in a study of the representations of farming activities in medieval times. Many friezes and sculptures throughout the region depicted farmers working in a typical fashion during a specific time of the year. Friezes were divided into twelve parts and each section had a small representation of its zodiac sign, thereby linking months of the year to heavenly influences and agricultural tasks (DelBrugge, 1999: 7). What is central to the flourishing of humanity across the globe is the procurement of food; either by gathering, cultivating, or by a combination of both. Independently of the local calendar system in play, people need to know when and where to find available foodstuff and when is the correct time to sow, plant, and harvest within the growth cycle of each food source in their natural surroundings. Prior to the invention of greenhouses and temperature and precipitation control, these kinds of knowledge were of the utmost importance. As a result, such knowledge structured daily life and its organization in very fundamental ways. In both Mesoamerica and Europe agricultural activities became central features in depictions of the passing and structuring of time. The main iconographical element accompanying the months of most calendars during the European Medieval Ages was an emblematic activity related to what needed to be done in the field.

Agricultural practices are mentioned in Izcatqui, first in relation to the beginning of a time in which darkness was driven away by the arrival of light. Subsequently, agricultural practices feature prominently in Izcatqui's description of the founding of a new order (i.e. a calendar) in place of what was previously a period of chaos.

[folio. 12r]

ayamō tlê quipiayān	They did not have anything yet
ca çāmonēlonecan.	it was mixed up
Ayamotlatecpātli catca.	something has not yet been ordered
imētz tlapōhualiz(tli?) ànoço intlā tecpānaliztli	their month count, or the order

The text continues by explaining that order has returned by the arrival of something indicated by the third person singular (he/she/it) with a face other than that of a devil, so it might be a reference to a Pope, or the calendar in general. This is followed by:

[folio 12r-13v]

Ca in iquic. itech onaçi ixihuitl	together with him, the days arrived there
iac xihu-tl itōcan yèhuātl machiyōtl	the name of the year was signed
oncān pēhua imācēhualtin	there begin its commoners
in iuh quê imīl chiuhque milchīhuani	to cultivate, to harvest
?camoa ēlimiqui ihuān tōca pixcan	its fields, they are 'fieldmakers'

In two instances Izcatqui displays a selection of agricultural products that are often grouped together in a typical *reportorio*. These products are referenced in the part of Izcatqui that discuss the seven planets and over which earthly features they rule. The second group of references is part of the twelve months and provides practically oriented information about what to sow and harvest throughout the year. In the following, I will examine how the vegetables, fruits, and other agricultural products mentioned in Izcatqui compare to the agricultural products mentioned in typical Spanish *reportorios*. There are two reasons for doing so. The first is to find out if the products that are mentioned in Izcatqui are the same or different from those in Spanish *reportorios*; and the second is to find out if these products were present in Mexico in the early colonial period. Thus, my aim here is to ascertain whether or not there are any indications that the content of Izcatqui was designed to accommodate the agricultural products and practices of the New World.

The almanac provides the reader with information on several planets and which metals, stones, animals and vegetation they affect. I have compared two Spanish *reportorios* (namely De Li's edition from 1495 and Salaya's edition from 1542) with Izcatqui. The results are found in Appendix I. It becomes clear that the planets in Izcatqui affect less items/animals/produce than a Spanish almanac. Also, all of the metals and stones which are not regarded as precious or as emeralds, are omitted from the Nahuatl text. Those that are precious and emeralds are translated as *chalchihuitl* or jade, a precious local stone.

6.5 Typical Mesoamerican 'ingredients' in Izcatqui

One research question of this study that concerns the methods of translation of the *tlacuiloque* of Izcatqui is: how was an original source text deconstructed and reconstructed for the desired readership of Izcatqui? Part of this question can be answered through an analysis of terms that were left out of the original text and substituted or added to the target text. Below, I will contextualize those terms that would have had a certain familiarity and significance to an indigenous reader.

6.5.1 Jade [chalchihuitl]

All of the seven planets rule over one or more types of metal and none of these metals recurs in Izcatqui. Two planets (Sun and Jupiter) rule over gold, precious stone, or emeralds – these do have a representative in Izcatqui, *chalchihuitl*, or precious green stone. According to the dictionary by Frances Karttunen, this signifies turquoise; the GDN, however, translates *chalchihuitl* as jade and gives *teoxihuitl* or *xiuhtomolli* as turquoise. In reality, only jade is really a green stone, and turquoise a more green-blue one. Taking the color into consideration, *chalchihuitl*, in my opinion, is more likely to be translated as jade. Nonetheless, both jade and turquoise are considered symbolically as "precious stones" in Mesoamerica and both stones are found in many archaeological excavations throughout Mesoamerica and throughout history. Jade mosaics, masks, body adornments, vessels etc. are found in the early Formative Olmec period (2000-1200 BC), in the grand capital Monte Albán of the Zapotec area (jade pectoral in the shape of a mask dated 150 BC-AD 100, to the Classic Maya (e.g., the famous jade mask at the tomb of Lord Pakal of Palenque) and well into the contact period of Nahua Central Mexico (McEwan et al., 2006: 14-16; Taube, 2005: 23). Jade is also an iconographic element that shows up frequently in Mixtec and Central Mexican codices. Mixtec Codex Bodley, renamed as Codex Ñuu Tnoo – Ndisi Nuu and recounts the genealogy of the rulers of Ñuu Tnoo (Tilantongo) and Ndisis Nuu (Tlaxiaco) in the Mixteca Alta, state of Oaxaca. This colorful, illustrated work of art was probably painted in Ñuu Tnoo, a few years prior to 1521 (Jansen & Pérez Jiménez, 2005: 30). The codex commences with the first ruler, Lord 4 Alligator Eagle of Blood, and continues to his descendent, Lord 4 Deer, who was living at the time of the conquest and to the last ruler of Tlaxiaco, Malinalli or Lord 8 Grass, who was sacrificed by Aztec warriors ten years prior to the Spanish arrival in the area (Jansen & Pérez Jiménez, 2005: 36). In this codex, the iconographic element for "jade," "preciousness," or "jewel" is a recurrent motif and appears no less than on 25 of its 40 pages. The motif displays an element comprised of concentric circles embellished with pearl like dots in a green color (i.e. the color of jade); in this case it is part of the name of Lord 13 Eagle, "Precious Jaguar" (Jansen & Pérez Jiménez, 2005: 58). In the same codex, the element reappears again as an object of conquest: the Jewel Stone of Ash River. Jansen & Pérez Jiménez (2005: 63) explained that the Jewel Stone of Ash River was "a precious object associated with the West, the realm of the descending Sun and Venus." We can not be sure of the effects of the word *chalchihuitl* to a Nahua reader, however, it must have conveyed the preciousness and power of what a gem would have conveyed to the reader of a Spanish almanac.

6.5.2 Cochineal [nocheztli]

"Blood of the cactus" or *nocheztli*, is a beautiful denomination in Nahuatl for the cochineal insect that feeds on cacti. The English word cochineal is derived from the Spanish *cochinilla,* which in itself comes from the word *coccum* proposed by Pliny's *Natural History* to describe another insect known for its pigment (Cardon, 2007: 619). Tiny bugs, no bigger than 1 cm, feed on a variety of host plants in large parts of Asia, Africa, Europe, and America. These bugs are often used for the production of a red pigment, and as a result of this practice the nine American species are divided between domesticated and wild cochineal (*ibid*.: 619-620). Before the arrival of the Spanish in the American continent there were two centers where cochineal were known to be abundant: Mexico and the Peruvian Andes (*ibid*.: 621). Providing the best living conditions for the cochineal insect requires hard labor and good time management. According to the ethnographic descriptions on this process by Donkin (1977), young cacti pads are cut from adult plants and buried deeply after which they grow out to be strong cacti after a period ranging somewhere between 18 months and three years. After having grown to a considerable size and strength mother cochineal are placed in between the pads of the cactus. A number of fields take part in a rotating system in which cacti are maintained to keep a certain height; dead pads are removed, and exhausted plants are allowed to rest two or three years. Within this time frame of keeping the plants

sustainable for housing the cochineal insects, farmers prepare the coming of the rainy season by cutting off and keeping dry those pads which are covered in pregnant females. As soon as the next generation has hatched, they are placed on racks in the fresh air. After the rainy season the insects that carry eggs are selected and grouped together in small baskets of around 10 to 25 expecting cochineal insects. These baskets are then placed in between pads of the cactus plant and the young insects that have hatched crawl out of the basket and spread themselves over the plant. The remaining mother insects are collected and produce what is considered to be a qualitative superior variety of the colorant (Donkin, 1977: 622). Overall, it is possible to collect insects on two or three occasions within one year.

That the harvest and production of cochineal (mainly concentrated in the Mixtec region in the state of Oaxaca) was a viable economical business in Mexico was soon discovered by the Spanish as is reflected by (early) colonial writing. The Florentine Codex by Fray Bernardo de Sahagún describes *nocheztli* as the "blood of the prickly pear," so specifically mentioning the fruit of the nopal or *tuna* in Spanish in contrast to describing the pads of the cactus (see folio 216). The cochineal insects in the Codex are described as "worms" or *gusanos* attached to the pads and depicted as such (see Figure 62). These worms are said to be of very colored blood, but the Codex does not go beyond the description of the redness of the blood, failing to describe the labor involved in the production of the red pigment. What it does indicate is that the trade in cochineal was already taking off: it was even transported to China and Turkey and was a valued commodity throughout most parts of the world (folio 217).

Figure 62. Cochineal as depicted in Book XI of the Florentine Codex [1540-1589], Fray Bernardino de Sahagún, folio 216.

6.5.3 Maize, beans, chili and squash

These three main food stocks are as much part of Mexican culture as is the Virgen de Guadelupe – maize, beans (or *frijoles*), and squash constitute an essential part of an average Mexican daily diet and products related to these food types are sold in many of the food stalls that color the streets of Mexico. All three products have a long history of feeding Mexico's population and indeed the world would never had known them were it not for its domestication many thousands of years ago by its prehistoric population. As small mobile bands of people were moving into the area from North America around 10,600 years ago, hunting and plant gathering were essential for survival (Zizumbo-Villarreal & Colunga-García Marín, 2010: 814). Due to ecological changes caused by shifting weather conditions, a diverse range of grasses appeared in the Balsas-Jalisco region. Evidence points towards this particular region as the origin of species used for domesticated maize and beans as well (*ibid.*: 815-817). As far as is known, the *Cucurbita pepo* squash is the oldest plant to have been domesticated in Mesoamerica (almost 10,000 years ago) (Piperno & Flannery, 2001: 2101). As for maize, scholars are in agreement

that maize is derived from the teosinte plant, a grass native to the Balsas-Jalisco region (*ibid.*: 2101; Zizumbo-Villarreal & Colunga-García Marín, 2010: 817), and recent research has indicated that the oldest C-14 date of maize grains found in the Balsas-Jalisco region are around 9,000 years old (Zizumbo-Villarreal & Colunga-GarcíaMarín, 2010: 817). The article by Zizumbo-Villarreal & Colunga-García Marín suggests that the domestication of plants commenced in the Balsas-Jalisco region, and they reconstruct hypothesized routes along which they reached other areas for which other remains of domesticated maize are dated (*ibid*.: 818-819). Note how the tortilla – the main product made of maize in Mexico and well beyond – also recurs in Izcatqui.

Folio 88r is somewhat hard to decipher as the right margin of the folio has been damaged. However, it is not hard to discern the word *tlaxcalli* (tortilla) in its text: […] *yn q[ui]quaz tlaxcalli yn iquaz c[…]coxocatl*. Domestication of these plants eventually developed into a system in which maize, beans, and squash were sown together, as they nutritionally complement each other within a single diet and also create perfect growing conditions for one another (Zizumbo-Villarreal & Colunga-García Marín, 2010: 822). The bean plants use the stem of the maize plant for support and grow around it towards the sun; squash is sown in between the maize plants (personal communication Raul Macuil Martínez 2014). Together these three plants were involved in a system of clearing land with fire, followed by sowing these crops. The resulting plot of land is called a *milpa*, a Nahuatl word composed of *milli* 'cultivated land, field' and *–pa*, 'indicating movement toward or from a point' so literally it translates as 'to the field' (Karttunen, 1983: 147, 182). Maintaining these agricultural fields requires that the land is cleared of rocks and weeds, and it has been suggested that *milpas* producing these three crops were developed around 4,500 years ago (Zizumbo-Villarreal & Colunga-GarcíaMarín, 2010: 822). *Milpas* are known from archaeological sites, occupying the beneficial flanks of hills and mountains, and make up a considerable portion of Mexico's current landscape. Milpas are typically small patches of land up to 3 or 4 hectares and are crucial in supporting local families in rural areas.

In Izcatqui, the seeds of maize and beans are placed under the rule of the planet Jupiter, together with the seeds of chili, another typical Mesoamerican product. Chili, from Nahuatl *chilli* 'chili pepper' (Karttunen, 1983: 52), has been linked to two possible places of origin in Mexico in recent research by Kraig Kraft and co-researchers (2014). This conclusions are based on data from archaeology, ecology, linguistics, and genetics. Chili in this case is the *Capsicum annuum* L., which is the species that is used most frequently throughout the world and is one of five domesticated species (Kraft et al., 2014). The oldest remains of *Capsicum annuum* were found in the states of Puebla and Tamaulipas together with remains of maize and squash. Although it is not clear that these thousand years old specimens were cultivated or domesticated, it does indicate that chili was part of a diet that included domesticated maize and squash (*ibid.*: 2-3). Chili, maize, and beans in Izcatqui are replacing seeds of wheat, barley, chickpea, and rice, all products unfamiliar to the New World. These were, however, great food staples in Europe and it appears that they were classified as such to whoever translated the Spanish text into Nahuatl and were thus replaced by seeds of products that were important food staples in Mesoamerica.

Calabash or squash appears also in Spanish *reportorios* and as such its appearance in Izcatqui does not try to replace one less familiar Castilian product with a Mesoamerican one. In fact, the *reportorios* itself speaks of a 'Castilian calabash.' However, in a Spanish edition of a *reportorio* it is just mentioned as being one of the seeds under the influence of the moon, as are the seeds of cucumber and melons. This contrast with what is written in Izcatqui:

[folio 26r]	
yhua Ayotli yn xicalli Anoço tecomatl	and vessel of calabash, or *tecomatl*
centlamātli Ayotli caxtilla	the one Castilian calabash
no yq[ua]c ytzmolinis	then will sprout out
Auh motocas pepinos yhua calabazas	and cucumber and calabash will be sown

This fragment shows two things, one maybe more telling than the other, but nonetheless present. First of all, Izcatqui describes a drinking or storage bowl made of a calabash or gourd – named *tecomatl* in Nahuatl (the same word is used to describe an earthenware vessel). Second, it starts with a description of this calabash, emphasizing this specific plant over cucumber and leaving out melons all together. The above is not just a copy of a short selection of seeds, but a reminder of the utility and abundant use in Mesoamerica of the calabash as food and container.

6.5.4 Chayote

Chayote (see Figure 63) is the cultivated species of *Sechium edule* (Jacq.) Schwarz and is a vegetable from the cucumber family that has been cultivated long before the Spanish arrival in Mexico (Lira Saade, 1996: 7). Although it is now grown in many parts of the world (the Americas, Asia, Southern Europe), linguistic evidence and pre-colonial depictions on pottery point to a Mexican origin that often carries a variant of the Nahuatl *chayote* as its name (*ibid.*: 7). From thereon it was introduced by indigenous peoples to Central America, by the Spanish to South America in the seventeenth and eighteenth centuries, and eventually to Europe, Africa, Asia, Australia, and North America (*ibid*.: 38). Most cultivated and wild species grow in areas at an altitude between roughly 500 and 1500 meters, although there are some that thrive at very low altitudes of 20 meters and some that thrive up to 2100 meters (*ibid*.: 24-25). As for Mexico, in the years 1991 and 1993 chayote was produced in a variety of states, stretching from Baja California to Central Mexico – with most of the production being concentrated in the more central states (see Figure 64). Nowadays, Mexico comes in as the second largest export of chayote after Costa Rica (*ibid*.: 39).

Figure 63. Chayote in the state of Sinaloa, Mexico.

From: http://www.fps.org.mx/divulgacion/index.php?option=com_content&view=article&id=722:el-chayote-atractiva-fuente-de-divisas-para-sinaloa&catid=37:sinaloa-produce&Itemid=373
(consulted May 27th 2014)

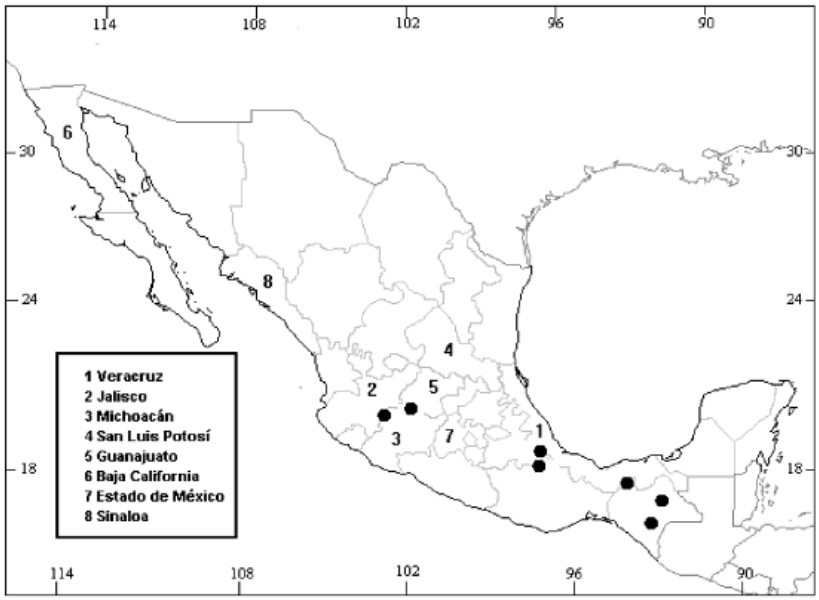

Figure 64. Main production centers of chayote in Mexico. From Lira Saade (1996: 40).

6.6 Agricultural cycle in a year

Folio 47 to folio 54 is a translated section that describes the twelve months of the year according to a fixed order. Its description holds the following information:

- The amount of days and night within the month
- The amount of hours of the day and night
- Agricultural activities to be carried out
- Characterization of the month as either beneficial or destructive to people's health
- Some instructions on how to improve one's health

Provided below is a translation of the months of January as an illustration of the type of information provided for each month.

[f. 47v]	
¶ *Nicâ tiami Repr.torio*	Here ends the Reportorio
NICAN OMPEHVAINHAINDARIO.	here begins the calendar
IN HRTIA pohualiztli	the count
[Initial] *In metztli Enero.*	the month of January
quipia cenpohualli onmatlactli once ylhuitl	it holds 31 days
âuh yn yohualli cenpohualli onmatlactli	and 30 nights
yntlasan chicuey horas auh	the day holds eight hours
yntlayohua caxtolli. Oncehora	and it is dark for 16 hours
[...]auc ypan metztli Enero	then in the month of January
yn ochi [f. 47r]*cahuac yn ixquich quahuitl*	all trees are strong
monequi ticcentlacuicuilis	it is necessary that we will take care of
yn yehuatl ynohuetz	so they do not fall [over]
yn ixiuh ye monequi ycuac maquis	in this time of year, appear/come out

yn ixquich xochicualcuahuitl	all fruit trees
ca cenca cualcan no ycuac mahuiliz	it is a good time of year to spread
yn xocomecatl	the grape
no yhuan ynixq[ui]ch cuahuitl	and all trees
ynic mochi ytzmoliniz	will grow
ca yquac pehua mitlatzmolini	then everything will sprout anew
no ycuac huel motoca	then [is the time] to sow the seeds of
yn quilxinachtli yn lechocas	*quilitl* [herb in general] and lettuce
no ycuac ypan enero:cualcan	and when in the month of January: a good place
yeca cuali ynieliz amo cocolizyo	it is a good state of being, it is not among illness
ycuac moneq neçobalos yn tomac	[illness] will not spread to our hand
yhuan tocxi ynizquican huelneço	and our feet and appear everywhere
yhuan huel ipan p[...]tli mizqui	take medicine in order not to die
yn tlacamo huelic yn tlaq[ua]lli nima patli mizqui	if the food is not good, here medicine, it will die
no huel netemalos nicchicahuaz ynic pantiz	also, bathe yourself, it will strengthen
Tonacayohuan	our body
yn iq[ua]c hohontlaqualoc	
Amo nequi nimā timoquetzaz	you do not have to kneel
ynic amo moyolmoyahuaz	to not drift away with your thoughts
quitosnequi ynicamo telmoyahuaz	that is, you will not be disgusted
ocmoqui tatlia	
Etss.	Etc.

Month of March

[f. 48r]

[Initial] *In metztli março*	the month of March
quipia çenpohualli omatlactli omce ylhuitl	holds 31 days
Auh yehuatl Cenpohualli omatlactli yohualli	and 30 nights
ytlaca quipia horas matlactli omome	the day holds 12 hours
Auh yohualli matlactli horas	and the night ten [two are thus missing]
yn iquac: ipan metztli Março	when it is in the month of March
yquac monequi yelimicohuaz	it is necessary to plow
mohuilmitlazqu[e] yn çacatl	in straight lines [from here to there] the grass
yn ce[n]cā huihuitzo	the great *mazorcas* [roots of grass will pop up after plowing]
yn iuhqui huel intech monequi ytlalchiuhque	it is necessary for us to make [prepare] the land
ynic cencā qualcan qualtiyaz	it will be ready early during the day
totonic yn tlali	[as otherwise it is] very hot on the land
ynic no huelamatiz	so we will know it
mochihuaz yn ixquich xochiqual qualhuitl	they will ‘do’ [work with] all fruit trees
@yq[uac] ynpā metztli Martios qualcan	when in the month of March, it is a good place
yehica yqualli yn iyeliz	it has a good state of being
çan itechpa ytlacauhtica	we have to pray or ask
ynin tonacayo cocoliztli	to keep our body from an illness
quimaca yehica çenca çoçotlahua yntonacayo	because our body will faint
yn iquac ypan metztli y [f.49v]	when it is this month
yn ayac monequi ytech açiz yn ixqua	for the illness not to arrive at our head

Anoço quima toca tinemiz	[...] we will live
ynic amo çoz yn itzontecon	so the head will not bleed
amono aca ytech açiz	nor will it arrive with anyone
yn inacaz ynic amo quicococ	to its body so it will not be ill
can oc ye cencā timotemaz	we will bathe ourselves plenty
yn iquac timaltiz	when we will bathe
ayac yq[ua]c quiximaz yn itentzon	we will no longer shave its hair
yhuan amono ac[a] moçohuaz yn imac yn icxi	it will not spread to its hand and its foot
@yq[ua]c cenca mococohua totzontecon	when our head is very sick
yhuan tonacaz	and our ear

Knowing the structure and content of the discussions of the twelve months, I will now focus on the agricultural treatise within each of the discussions. For the sake of completeness, January and March will be included in the overview below:

January:

[f.47v] *[...]auc ypan metztli Enero*	then in the month of January
yn ochi [f. 47r]*cahuac yn ixquich quahuitl*	all trees are strong
monequi ticcentlacuicuilis	it is necessary that we will take care of
yn yehuatl ynohuetz	so they do not fall [over]
yn ixiuh ye monequi ycuac maquis	in this time of year, appear/come out
yn ixquich xochicualcuahuitl	all fruit trees
ca cenca cualcan no ycuac mahuiliz	it is a good time of year to spread
yn xocomecatl	the grape
no yhuan ynixq[ui]ch cuahuitl	and all trees
ynic mochi ytzmoliniz	will grow
ca yquac pehua mitlatzmolini	then everything will sprout anew
no ycuac huel motoca	then [is the time] to sow the seeds of
yn quilxinachtli yn lechocas	*quilitl* [herb in general] and lettuce

February:

[f.47r]	
[Initial] *In metztli febrero*	the month of February
quipia Ce[n]pohualli ochicuey ylhu[itl]	holds 28 days
Auhui yohualli quipi[a]	and the night holds
[f.48v]	
Cenpohualli omatlactli ocē:	31
Auh ytlaca quipia matlactli horas	and daytime holds 10 hours
yohualtica Cenpohualli onahui horas	at night there are 24 hours
yn ipani yn m[e]tztli :febrero:	in the month of February
yquac monequi mocentlacuicuiliz	it is necessary to take
yn xocomecatl yhuā yn ixquich: xochiqualquahuitl	the fruit rope of all fruit trees
no yquac maq[ui]z yn xocomecatl	then it will escape the fruit rope
no yquac motocaz yn Castillanayotl	then it will sow Castilian items

yhuan pepinas	and cucumbers
[in] yn iquac yn ipan metztli huelniquaniz	when in the month, I will eat good
Anoço yq[ua]c mahaquiz y[n] naxxanJas	may they rise, the oranges
yhuan limones yhuan limas yhuan çidras	lemons, limes, citrons, cidres
yhuan Ravanos	and radices
yxquich maquiz in quahuitl	all trees will need
yhuan yquac quauhçaloloz[221] *[…]*	to be grafted

March:

[f.48r] *yn iquac: ipan metztli Março*	when it is in the month of March
yquac monequi yelimicohuaz	it is necessary to plow
mohuilmitlazqu[e] yn çacatl	in straight lines [from here to there] the grass
yn ce[n]cā huihuitzo	the great *mazorcas* [roots of grass will pop up after plowing]
yn iuhqui huel intech monequi ytlalchiuhque	it is necessary for us to make [prepare] the land
ynic cencā qualcan qualtiyaz	it will be ready early during the day
totonic yn tlali	[as otherwise it is] very hot on the land
ynic no huelamatiz	so we will know it
mochihuaz yn ixquich xochiqual qualhuitl	they will 'do' [work with] all fruit trees

April:

[f.49v] *yn ipan metztli aprilis*	in the month of April
no yq[ua]c huel ipā maquiya	we take care of
yn occequi xochiqualquahuitl	some fruit trees
Auh yn tlacate yn mohuilohuā oncan	everyone is going there
nipan tiquimanaz	there we will spread it
yn ytepitoton moxinachhuan yezque	our small seeds will be
yhuā yn [o]c cequime yn yolime ynemitiloni	refined things are around
Auh [i]n iquac yn ipan metztli Aprilis	when in the month of April
Ayac [f.49r] *Ayac hueliquac mocaltiz*	it is no longer possible to build oneself a house
ytlacopehualtiz	to build a part of a house
yn ical Amo chicahuac yez	its house will not be strong
çan itlacahuiz xitiniz	it will just collapse
Amo no huel mopixoz yntla quilxinachtli	also we will not take the *quilitl* seed
yeyca amo no huel mochihuaz […]	because we are not able to

[221] *Quauhçaloa* is a combination of *quauh* 'tree' and *çaloa* 'to glue.' Here we see the verb as passive (*-lo*) and in the future tense (*-z*). There are several methods for grafting trees, all of which are carried out for the purpose of strengthening a tree or a plant (in this case fruit trees). A branch is cut off slantwise from a young tree (up to one year old) and placed in the slant incision of an older and stronger tree of the same kind, and is held in place by wax and a piece of string. Eventually, the new branch grows into the trunk permanently. By doing so, the selected preferred branches that are to carry fruit are able to absorb more water and nutrients from the new trunk as their original smaller and weaker one could have – a process of selecting the best characteristics possible.The best time of year for grafting is early spring.

May:

[f.50v] *yn iquac ypan metztli*	when in the month
yquac monequi yn ichcame ximalozque	it is necessary to shave the sheep
yehica Amo yectli yn iyeliz Ca cocolizço	its state of being is not good, its among illness
occēcan yn cacal yn ichcame	[in] all [lit: other things] houses of sheep

June:

[f.50v] *Auh yn iq[ua]c monequi quauhcaloloz*	and then it is necessary to be grafted
yehuatl yehuatl [sic] *yn toca Peraies* [f.50r]	that which is named pear
Anoço membrillos Anoço toraznos mançanos	or quince, or apples
yhuan yn ipan metztli yquac monequi	and when in this month, it is necessary
huelipan tictocaz yn caxtillā tlaoli	it is time that we will sow Castilian maize [read: wheat]
yhuan colles yhuan Rauanos yhuan lechocas	and cabbages, and radices, and lettuce
no yquac ypan Junio	and when in June
ytla ycan ypan canapa yaz nequiz	he will prepare its land in some part
yn hueca yquac hopehuaz[222] [sic]	begin far away

July:

[f.51v]	
yn ipan yn metztli	in the month
yq[ua]c monequi tictocaz yquilxinachtli	then it is necessary that we will sow the
seed of *quilitl*	
coles lechocas Rauanos	cabbages, lettuce, radices

August:

[f.51r]	
yquac tictocaz yquauhxinachtli	then we will so the [wood?] seeds
yn aJus yhuā Avast yhuan cevollas trigos	of garlic and onions, wheats
yn occequi xinachtli	and some more seeds

September:

No information on agriculture.

[222] While reading the text together, Raul Macuil Martínez explained to me that this translation should be taken as a piece of advice – a *consejo* – to prepare the land (*milpa*) starting at the far end and working your way towards the patch closest to home.

October:

[f.52r]

yn ipan yn metztli yq[ua]c	in the month then
monequi ticcencuicuiz	it is necessary that we will get ready
Ticcennechicoz	we will have to collect something
yn omochiuh yn ixquich yn xochiqualli	it is necessary for all fruit trees
yn granadas y[n] membrillas y[n] mançanas	granades, quinces, apples
yn beras yn yerexquich yn xohiquali	pears and all the fruit
yn itech mochihua yn itlaquillo	it is necessary for us to chalk [them]
yq[ua]c mocentequiz	when we will cut one
ynic moquaz	in order to eat it

November:

[f.53v]

monequiz tihuahuaquiz	it will be necessary that we will dry/diminish/shrink it
ça yehuatl ynohuetz yn ixiuhyo	and also the herbs will fall
yn ixquich quahuitl	[of] all trees
yq[ua]c ticaquiz	then we will understand/hear it
ycidxa yhuan [f.53r] *naxayas yn limones*	cider, and oranges, the lemons
yhua limas	and limes

December:

yn ixquich xochiqualquahuitl no chicahuac	all strong fruit trees
monequi ticcentlacuicuilizque	it is necessary that we will collect them
yehuatl ynopehuaz	also herbs [*ixiuhyo*] will begin
yn iquitzmolinitz yn ixiuhyo	to sprout

From the Nahuatl text in comparison to the Spanish reportorio, we can conclude that the advice on agricultural activities throughout the twelve months is not so different from the Spanish almanac. This seems to suggest that the aim was not so much to use the almanac in a practical sense, but, rather, to relate to agriculture in a general sense – and more so, to agriculture as it was referred to in a well-known text from another part of the world.

6.7 Concluding remarks

Izcatqui showcases that there was a Nahua interest in alternative ways of explaining illness and curing them. The text represents sixteenth century theory on the influence of celestial bodies on the human body, not only as a cause for sickness but also as instrumental in deciding on the right time to carry out certain healing practices. The Nahuatl text goes beyond the image of the Zodiac Man and two Vein Men that were traditionally part of a *reportorio*. In fact, even a first century AD encyclopedic work, a masterpiece of centuries of efforts of translation itself, found its way into the Nahuatl text. The Spanish

translation of Dioscorides' work originates from the mid-sixteenth century. From Juan de Cardenas' remark in his *Problemas y secretos maravillosos de las Indias,* Dioscorides was a name that (at least a certain group of) people were acquainted with in colonial Mexico in the sixteenth century. Although Izcatqui was produced in the eighteenth century, its content was probably produced much earlier and to my understanding it is the only document in an indigenous language that refers to Dioscorides. Perhaps the *tlacuiloque* of Izcatqui were already familiar with the Spanish translation of Dioscorides' work. If not, this was to them a first exercise in selecting whatever they saw fit to include in the Nahuatl manuscript. They decided not to write about the person of Dioscorides, his life, and his writing in general. Instead, they selected certain recipes from his work. If we consider ms 3523-2 as a whole, therefore, it very much resembles the Mayan corpus of the Chilam Balam books that also include translated interpretations of a *reportorio*. These books too are a combination of content from a Spanish almanac and medicinal information that goes beyond the *reportorio* – recipes from either local or New World origin.

The fragments on agriculture illustrate that the *tlacuiloque* probably did not have using the manuscript in everyday life on the field. Thus, I believe that this text is a prime example of an interest in 'the other.' This interest was not so much in describing the differences between the local and far-away, but in describing how people somewhere else in the world deal and dealt with issues that we all face, including, for instance, planning agricultural activities. The substitutions of certain animals, plants etc. with Nahuatl alternatives grounded in local ecology would trigger a Nahua reader to recognize the general intent of the Spanish source text.