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CHAPTER 4. Empty Pages in the Biography of Healing Landscapes

The previous chapter showed how the early colonial European accounts of the Caribbean landscapes and peoples are power saturated. The chapter 4 briefly summarizes some of available information on the indigenous co-authorship in medicinal histories and situates this within the broader colonial material and conceptual landscape transformations. The majority of data in this chapter come from a few of written documents, which are to be complemented and contrasted with ethnographic fieldwork and archaeological information.⁶⁶

The medicinal histories of the Caribbean are not to be reduced to the arrival of the first European graduated physicians or the establishment of first medical institutes. The rich pool of knowledge of present-day healers has a long history which is clearly power saturated. The Catholicism and medicinal cultures of 16th century were powerful tools for extending the ideologies (be it religious, political or otherwise) of the Spanish state. This power was, however, often far from being fully implemented in practice in the colonies.⁶⁷

The success of colonization was closely related to the health situation in the colonies. Physicians were inseparable members of crews on voyages crossing the Atlantic Ocean. During his first trip, Columbus brought one or two physicians and an apothecary, one of who was left at La Navidad. During the second journey, physician Chanca arrived and stayed for six years at La Isabela. Few years later, Nicolás de Ovando, the governor of Hispaniola (1501-1509), let build a hospital in Santo Domingo where poor people, Christians, and indigenous peoples could be treated together.⁶⁸

Some hospitals such as the one in Santo Domingo or in Habana relied on labor of enslaved people of local and non-local origins (Gómez 2017; Sáez 1997).⁶⁹ One of the interesting cases is that of Bernarda Álvarez, a *mulata* from Santo Domingo who was accused in Cartagena of poisoning a man; she was punished with four years of exile and two years working in the hospital of San Sebastian (Crespo Vargas 2011). Another case was that of a *mulata* woman from Puerto Rico who worked in a Havana hospital, and was later accused of instructing other women in Habana: her art consisted in giving herbs for wellbeing, in predicting the future and in bringing good fortune in different manners (Crespo Vargas 2011). Inventories of possessions of hospitals and convents reveals endemic but also exotic plants were used to create cures. Together these references indicate that hospitals as well as convents were also loci of medicinal exchanges.

Medicinal cultures of the 16th century Spanish Caribbean were of heterogeneous character, including a plurality of actors of local and non-local origins. Physicians, surgeons and apothecaries coming from overseas were trained in works from Classical Antiquity and the Arabic world. Greek works such as *Dioscorides' Materia médica* (1st century AD), containing more than six hundred medicinal plants and more than two hundred remedies of animal or mineral origin from the Mediterranean, was very popular in Medieval and Renaissance Spain.⁷⁰

Next to institutional physicians, Spanish healers found their way to the Caribbean. Spanish healers could cure and repel all kinds of misfortune, dissipating storms, combating plagues, and even transforming

⁶⁶ The medicinal history of the Cuban island has been briefly described by Górdon y de Acosta (1894) and López Sánchez (1550-1730).

⁶⁷ See on this topic also Foster (1960).

⁶⁸ *De La Instrucción del Gobernador Nicolas de Ovando sobre el gobierno de las Indias*.

⁶⁹ San Nicolás of Santo Domingo, later Yaguana. Cuban hospitals were located in Havana, Trinidad, Sancti Spiritus, Santa Clara, San Juan de los Remedios, Puerto Príncipe, Holguín, Bayamo (San Roque), Santiago de Cuba, Consolación. More studies are needed to assess the role of the brotherhoods and indigenous peoples in these establishments.

⁷⁰ Among the mentioned plants are: *Arnica montana* L., *Atropa belladonna* L., *Cassia fistula* L., *Prunus lauro-cerasus* L., *Ruta graveolens* L., *Zingiber officinale* and many others. Cf. A. Laguna Pedacio, *Dioscorides Anazarbeo acerca de la materia medicinal y de los venenos mortíferos*, Amberes, J. Latio, 1555. Available at <https://www.wdl.org/es/item/10632/>.

things and beings (Tausiet 2010). Although belief in their powers varied, even the most skeptical agreed that some men by the grace of God were able to heal through their devotion, by laying on hands and reciting prayers. In addition, 16th century Spain had many enpsalmers, conjurers of clouds, necromancers, but also priests who warded off illnesses, plagues, and hailstorms by using prayers (Christian 1989). Some of these practitioners are still remembered in Cuban and Dominican rural areas in today (see Part II).

In accordance of teaching of Hippocrates it was believed that as illnesses and as such also their remedies were locally specific. Physicians sent to the Indies were instructed to contact other physicians, *herbolarios*, (explicitly said to be both Spanish and Indigenous) in order to learn their art, to write about medicinal flora and to report their observations to the Crown (Real Cédula de Felipe II, Madrid 11 1570). An example is Lic. Juan Mendéz Nieto, who worked as a physician in Santo Domingo, where he observed the flaws of the medicinal care in the colony but also indigenous practices related to childbearing and childbirth, which he evaluated as more suitable than the Spanish practices (1611).⁷¹ In addition, European physicians of later periods such as Sloane (1707), Chateusalinis (1854) and other doctors from plantations recorded occasionally remedies used by the Afro-Caribbean ancestors. In short, the health care in the colonies relied greatly also on healing specialists of both local and non-local origin.

The profound demographic changes triggered by the colonization of the island implied that non-local healing specialists were faced with landscapes of unknown flora, places and peoples. Before discussing specific ways of how the botanical knowledge was circulated in the colonies, I will present some ideas about how the Caribbean predecessors reshaped the contemporary landscapes in material and conceptual ways. The existing medicinal practices discussed in later part of this dissertation should be seen as developed in close relation to these large scale transformations which co-created meanings of Caribbean places, flora and other landscape features which are today employed in the healing practices.

Indigenous ancestors transforming Caribbean Landscapes

In contrast to what the accounts about the existence of a pristine wilderness might suggest, Caribbean landscapes have been altered for millennia before the European conquest (Pagán-Jiménez 2013; Siegel 2015; Fitzpatrick & Keegan 2007; Siegel et al. 2018; Siegel 2018). In fact, the peopling of the Caribbean went hand in hand with the dispersal of plants⁷², the cultivation of different introduced plants in *conucos*, clearings of the forests (as early as 5400 – 2500 BP Higuera-Gundy et al. 1999), construction of raised fields (agricultural mounds) and irrigation canals (Hofman et al. 2018; Pagán-Jiménez 2013; Rodríguez Ramos & Pagán-Jiménez 2013).⁷³ The human migration to the Caribbean has been accompanied also by practices and worldviews which redefined the meaning of newly encountered places (see Pagán-Jiménez

⁷¹ On the childbirth of Mariana de Bacán from Santo Domingo, who died because of improper treatment during the delivery, causing overheating and later death: “*Y desta manera no paría en aquella tierra megueres de suerte y ponderosa que no la matava la cura y regalo que le azían, y, si algunas escapaban, eran las que, por más no poder, carecían deste regalo y cura, como las negras e yndias y la demás gente pobre que, por no tener con qué abrigar, no moría ny se pasmava persona de todas ellas. Y con ver esto y con ver que las yndias, ansý desta costa como las del Nuevo Reyno Granada, a donde hace poco menos frío que en España, lavan las madres su hijos y se lavan ellas mismas, en acabando de parir, en arroyos de agua frigidíssima, de las cuales asta oy no se á visto alguna dellas pasmada, no podía acabar de persuadir, ansý al vulgo como a sus médicos, que ellos eran homecidas...*” (Mendéz Nieto 1610, p. 209).

⁷² From historical records it is clear that certain species were objects of inter-island exchanges. To illustrate, D’Anghiera describes that people of Hispaniola exchanged with peoples from other surrounding islands, *aroma* trees for other objects they desired such as ceramic plates, *duhos* (wooden seats), and other items produced from materials that were lacking on their own island, (D’Anghiera, *Décadas del Nuevo Mundo*, 1494 - 1526, Libro VII). The pan-regional mobility of pre-colonial Caribbean ancestors were confirmed by archaeological findings from the pre-colonial period (e.g. Hofman & Bright 2010; Hofman & Duivenbode 2011; Hofman et al. 2007; Hofman et al. 2018; Rodríguez Ramos 2007, 2010).

⁷³ Among the plants brought by indigenous peoples to the West Indies are amaranth (*Amaranthus* spp.), peanut (*Arachis hypogaea*), common bean (*Phaseolus* spp.), manioc (*Manihot esculenta*), potato (*Ipomoea batatas*), cotton (*Gossypium* spp.) squash (*Cucurbita maxima*), bottle gourd (*Lagenaria siccerraria*) and tobacco (*Nicotiana tabacum*) (Scarre 1999, p. 78). Beans, maize, pineapple, peanuts are not endemic and required systematic cultivation.

2007) and implied reevaluation of environmental affordances (including those of religious character) for the health.

Historical sources have left us only fragmentary references to indigenous worldviews, their views of surrounding landscapes and their healing system(s). Modern investigations of indigenous worldviews in the Greater Antilles have until now strongly relied on origin narratives recorded by Friar Ramon Pané. Although Pané's account is a valuable primary source of information, it has considerable limitations as to its documentation of ideas about healing landscapes. First, the main goal of Pané's work was dictated by the assignment to establish whether indigenous peoples had a religion or not. As a result, he produced a sketch of a complex worldview summarized in a few pages. In addition, the author faced various obstacles when writing his account; there were his own linguistic limitations, which made it difficult to interpret what his interlocutors told him in what most likely was a poetic idiom, full of metaphors and symbolic expressions. As Pané writes, the indigenous peoples of Española had their "*antique songs through which they are governed, like the moros through the script*" (2011 [ca. 1498], p. 94). Secondly, some information was likely to be filtered out by this foreign priest on purpose, because of misunderstandings and other flaws of intercultural communication. Lastly, the fact that the text has only been preserved in later translations complicates its precise reconstruction and comprehension.

However limited, some passages of this text give us first impressions about indigenous ideas about human-nature relatedness, values of certain landscape features and beliefs regarding the illness. Some narratives address situations in which the boundaries between the divine and nature could be crossed and so illustrate their relationality. The sea originated from the remains of Gaigaiel (Arrom's Yayael), the child of the divine being Gaigai (Arrom's Yaya). These boundaries are also crossed in references to turtle-women who came forward from a swelling of Demian Caracaracol, children-like-beings turned into frogs-like-animals, or human-like-beings turned into guanin.⁷⁴

Certain sites, such as caves, are said to be places of origin of primordial or divine beings, for example the sun and the moon. The sun and moon are said to have enjoyed great respect. About one of the caves in Hispaniola Pané writes: "*they hold the cave (where the sun and moon came out) in a great esteem, and they paint it all over in their own way, without any human figure, with many leaves and similar things. And in said cave there were two cimini made of stone, half an arm big with the hands tied, and they looked as if they were seating; and they had them in great esteem; and when there was drought they say that they went to visit the cave, and it rained at once. And of said cimini one is called Boinaiol and the other Maroia*" (Pané 2011 [ca. 1498], p. 92). Besides caverns, the category of religiously significant places included sites related to the agency of specific *zemís* (divinities and culture heroes), places where the dead depart, or the house of cimiche where offerings were brought.⁷⁵ Pané mentioned all of these only vaguely.⁷⁶

The indigenous perceptions landscape as animated seems to articulated also through various *zemís* who were said to be represented by, are identical with or control some of the environmental forces like rain, winds or storms, as well as plants: "*there are some zemís that speak, which are shaped like big turnip with the leaves lying on the ground, and as long as those of the caper; their leaves are generally shaped like the*

⁷⁴ Note that Fernández de Oviedo mentions that the hobo tree was used as a source of drinking water in situations when the water was scarce. This information is stated to have been learned from indigenous people. The baths with the tree bark were noted as very healthy and relaxing, especially for tired legs (Fernández de Oviedo 1535/2000).

⁷⁵ In Whitehead's translation (2011) keeps the variation of certain words such as cimini, cimiche as mentioned in the original. Arrom (1974) transcribed this word as zemi, this term is also more widespread in the Caribbean literature. In Lokono *semi* means shaman.

⁷⁶ According to Oviedo (1535/1851) the images of *zemís* were deposited in the houses and dark places that were reserved for prayer. In addition, some *zemís* are said to depart to places near the village or a lagoon. Zemi Guamorete after his house was burned down went to a place that is a bowshot distant from the village. Similarly, zemí Opieyelguobirán escaped after the Spanish came and went to a lagoon. From the text it is difficult, however, to discern whether these places had any symbolic or sacred meaning. These places could just be referred to because they were loci of the narrative.

elm leaf; and other have three tips, and they say that these make the yucca produce” (Pané 2011 [ca. 1498], p. 111). Pané’s multiple references to the plants *digo*, *güeyo*, *sacon*, *guayaba*, *guanaba/guabasa/mamey* might indicate both their cultural importance and even ritual significance (e.g. guava as one of forms in which ancestors could manifest).

These are only snippets of the pre-colonial worldview, but when his account is read in relation to present-day Arawakan speaking groups from the mainland, we notice that different components of the landscape are likely to be perceived as animated by different divine and spiritual beings (also potentially both beneficial and dangerous), or might be associated with past events, religious history or sociopolitical systems (Santos-Granero 1998, see chapter 3).

Pané mentions illnesses only a few times. Firstly, when he narrates about a man from primordial times, named Guayahona, who was living in a cavern that he left to search for a herb called *digo* to wash himself. He convinced all women to go with him to search for *digo*, and searching this he arrived at Matinínó.⁷⁷ This led to a transformation of children into small animals resembling frogs, left at the water stream. Guayahona was full of boils that called by Friar “*French disease*”, that he wanted to cure by bathing in a pool.⁷⁸ A woman called Guabonito puts him into a secluded place (*guanara*), and then, remaining there, he recovered from the boils. Upon his recovery, he changed his name.

Illness is mentioned in the context of the origin of women. When bathing, (primordial) men saw women descend from trees, but when they went to grasp them, the women fled as (if they were) eels. Because they could not catch them they called a Caracaracol, a man with coarse hands, hands which could hold the women tight. Said Caracaracoli is a disease, like scabies, that makes the body very coarse.

The Caracaracoli personage comes back at another occasion, as one of four identical children (twins). Here again Caracaracoli is said to be scabious: this can refer to the same person/carrier or embodiment of the disease. This person caused a flood that was the origin of the sea and received from Bayamaco, the grandfather who made cassava for bread, a *guanguayo*, which was full of cohoba (identified as *Anadenanthera peregrina*, see Pagán Jimenez & Carlson 2014), a ritual plant to communicate with the other world.⁷⁹ Caracaracol’s swelling grew, his brother opened it with an ax, and from the swelling, a turtle (turtle-women), emerge. Afterwards, two brothers construct their house and raise the turtle. This part could be interpreted as an indication that the person representing the illnesses is the one who has a destructive power leading to a creation (flood-sea). Another message of this narrative could be that the illness encounters remedy, which leads to a transformation, a new life.⁸⁰ The moral of the second part could be that the personage who has a power to deal with the divine beings, receives (by accident) the plant which enables him to communicate with the divine world in order to diagnose and to cure illnesses.

Friar Pané described also one of the curing sessions. After a patient purged himself he was visited by the *behique* (religious specialist) to consume plants (*güeyo*), to sing a song and to drink juice.⁸¹ The *behique* cured the patient by sucking out the pathogenic object and spitting it away. Depending on what the object was, the *behique* established a diagnosis. The illness was generally considered to be caused by something

⁷⁷ Matinino possibly is Martinique, where according to Vespucci there were women like in Lesbos, which were dangerous to man, luring Spanish into their caves.

⁷⁸ Citing work of Harper et al. (2008), the translator notes these boils should not be identified with syphilis as the syphilis spirochete did not exist in this time, being a result of contact between New World disease, and the precursor of syphilis in Europe. For archeological evidence of trepanation disease in the Caribbean see Crespo-Torres (2013).

⁷⁹ In Peter Martyr D’Anghiera’s translation of Pané, not cohoba but tobacco is thrown at Caracaracol.

⁸⁰ This account could also be read in the light of Rochefort’s (1666) notes on curing syphilis, and works from Goeje (1928), and Penard on indigenous peoples of Guayanas. Gullick summarizes that a patient suffering from pyans (probably syphilis) had to eat part of the Lamantin or Caret, the consumption of which produced blisters, which were later pierced with burnt reeds and water from the Baliefier tree or by the juice of *Genipa Americana* or by scarification with agouti teeth.

⁸¹ This plant, described as a plant used frequently for purging, was identified by Arrom 2000 as *Mourera fluviatilis*. De Goeje’s name for the herb was “*abona-gita-hti*”.

that a *zemí* had put in the body of the patient because he/she was neglecting the *zemí*. If the object is a stone, it might be used later during childbirth, and so it was preserved in the same conditions as the *zemí*'s image. On ceremonial days offerings were presented to *zemís*.

Another historical account about healing practices of the indigenous peoples of the Caribbean is from Dominica, provided by Father Breton nearly two hundred years later.⁸² Breton (1665) writes that the Kalinago in Dominica believed illnesses to have been caused by *Mapoya* (which he translated as “devil” or “evil”), and sorcerers (from the mainland). Deities could be beneficial by indicating to the healer which plants he should apply helping to cure but could also send illnesses to men.⁸³ The healer/priest (*boyáicou*, *niboyeiri*, *bóye*) were intermediaries who communicated with the invisible realm in times of need, droughts, and illness or before going to war.⁸⁴ In the case of an illness, an offering is prepared and deposited in the ground near the *bohío*, where the healer, chanting, blows tobacco smoke up to make the god descend, after which the deity is to be seated and to be offered a meal and drink. Sometimes the illness materializes in an object such as a stone, arrowheads, a spine of a fish (*Rajiformes* sp.), which the healer would remove by sucking it out. As a reward, he would receive a *calloúcouli*, highly valued precious metal (see for translation Breton 1665). Preventive medicine included relics (e.g. light colored green stone as a remedy for kidney stone or an element to help in childbirth), and plants for protection.⁸⁵

Both descriptions find some parallels in the South American context. Several themes illustrate this point. First, the role of religious specialist (*behique*, *bóye*) in establishing the diagnosis and remedy through their ability to connect with the invisible world (by plant-induced altered state of consciousness, e.g. *ñopo*). Furthermore, the illness can take concrete form as an object in the patient's body, which can be removed by a religious specialist (De Goeje 1943; Beyer 2009; Århem 1996). There is coincidence in the beliefs that the illness is due to an imbalance in the divine/spirit world, to consuming infected food, or to the acts of a malevolent shaman. Indigenous peoples on the mainland use the same therapeutic techniques: blowing tobacco smoke, ritual purging, taking baths, accompanied by singing and reciting prayers, charms, and making offerings.

Aforementioned references indicate some aspects of indigenous worldviews underpinning medicinal cultures of indigenous peoples of Greater Antilles in the time of European conquest. In general, it is assumed that these beliefs did not survive the genocide and the centuries of transculturation. Before addressing the circulation of the medicinal knowledge among the historically marginalized ancestors it is important to acknowledge that meaning of landscape within the healing practices is closely related to the large scale landscape transformations that has been triggered by the European conquest.

West African ancestors shaping Caribbean landscapes

The post-conquest physical human imprints in the landscape have often been discussed in terms of the ‘Columbian exchange’ (Crosby 1972), a model that has focused on the staples of American and European crops. The botanical legacy of captured West Africans brought to the Caribbean has often been neglected (see Voeks & Rashford 2013). The lack of acknowledgement of the West Central African botanical legacy

⁸² With respect to the historical link between peoples of Greater and Lesser Antilles it is interesting to note that according to Breton the Carib pantheon consisted of a God and lower deities, some of whom had (a lot of) children. One of them was *Arahuaco*, another came from another nation.

⁸³ Breton described that some lizards and birds (called *Loumacachítina*) belonged to “the gods of the *buyei*”. *Mabuya* is until now a type of skink of shiny color in Lesser Antilles (personal communication with Katerina Jacobson, Angus Martin 2017) and for Haiti (personal conversation Sony Jean 2017).

⁸⁴ *Bóye* means firefly. During my fieldwork I learned that in the Greater Antilles fireflies or *cucuyos* are believed to be deceased persons.

⁸⁵ One such a plant was *taya*, mixed with *achiote*, as a protection against enemies, another one was a small gourd that was filled with birds' remains (*caicouchi*, *Mansfenix*) worn around the neck to protect or gain force.

in the Caribbean seems to be prompted by a consideration of the constraints created by the brutal forms of imprisonment, transportation and conditions in slavery. For these captives, opportunities to bring plants were indeed severely constrained, but they could still retain some of their botanical knowledge, healing skills, and religious convictions in their memory. Without doubt, a lot of traditional skills and knowledge did not cross the Atlantic and has been lost together with millions of lives. However, recent studies (e.g. Voeks & Rashford 2013; Carney 2003; Van Andel et al. 2015) have shed light on some of the African contributions to the botanical traditions of the Caribbean. The African legacy was identified in the cultivation of several specific crops, in agricultural systems, in handicrafts, as well as in ritual and healing plant use in the Americas.⁸⁶ African ancestors transformed the Caribbean landscape physically through their work on field, cattle ranches or gardens for own consumption.

The economic changes accompanied by the cultivation of mono-crops (such as sugar, tobacco), cattle farming, timber extraction or the later introduction of mechanized agriculture has carved into appearance of the Caribbean landscapes until nowadays. Castilla-Beltrán et al. (2018) analyzed paleobotanical record of some of these long term environmental changes in the Dominican Cibao valley.⁸⁷

As the majority of the current population of the Greater Antilles descends from forced laborers or voluntary migrants, a key question for this dissertation is how those who migrated to or were brought by force from elsewhere treated illnesses in the new environments. First, some of the plants might be the same or at least resembling the known families and share some of the features of plants from their homelands. Some of the plants floated across the Atlantic independently of human agency and others are believed to have a shared origin that goes back to the time before the continental separation (Carney 2003; Voeks & Rashford 2013). Other plants were quite rapidly incorporated into the local flora as a part of peaceful trade or wars, conquest, and colonization. After the first years of European colonization of the Greater Antilles, American plants such as corn and manioc were planted in Africa, became rapidly integrated in the diet throughout the West African coast and were supplies of the slave ships (McCann 2001). This process facilitated recognition of these crops by later waves of captives over the years.

Enslaved people were likely to recognize certain families and genera that were valued in Africa for medicinal properties (Carney & Voeks 2003; Vossen et al. 2014). Carney (2003) identified 125 plants used by Afro-Americans that have analogous uses in the Circum-Caribbean region and tropical West Africa, including 95 species that were present in Africa prior to the Transatlantic Slave Trade. The African botanical legacy in the Caribbean concerns the dietary staple foods, including (but not limited to) *guineos*, yams, plantains, coffee, palm oil, but also medicinal plants, for instance cundeamor (*Momordica charantia*) or cañafístola (*Cassia fistula*). Some of the plants used in rituals, such as coconuts and ajonjolí (*Sesamum indicum*) have also been related to the African continent.⁸⁸ Other plants were introduced later but became

⁸⁶ One of the extraordinary examples that Voeks gives is the case of a Brazilian enslaved man who after buying himself out of slavery went to Dahomey from where he started to ship palm oil and kola nuts to Bahia in Brazil. The kola nuts were planted and employed in religious ceremonies (Carney & Voeks 2003). *Cola acuminata* is present also in the Greater and Lesser Antilles (Acevedo-Rodríguez & Strong 2012). According to Quiras-Moran (2009), kola nut has known medicinal use and religious use in Cuba. It is administered a.o. for cardiac problems, digestive problems, migraine, and depressions. In the religious realm it belongs to the *orishas* (spirits) Odua and Orunmila and is used for amulets and rituals dedicated to them.

⁸⁷ Some of these findings matches and should be further related to the specific historical development of these locations as known from historical records (see e.g. history of La Jaiba in the next chapter).

⁸⁸ Captives landing in the Caribbean would recognize many plants, such as *Raphia Taedigera*, bottle gourd, and genera such as *Acacia*, *Dacryodes*, *Dorstenia*, *Euphorbia* spp., *Quassia*, *Strychnos*, *Rauwolfia* spp. (Brent Berlin 1992 as cited in Carney 2002). New crops of African origin that were introduced included: coffee, palm oil (*Elaeis guineensis*), African rice (*Oryza glaberrima*), yams (*Dioscorea cayensis*), cow (black-eyed-) peas eyed] peas (*Vigna unguiculata*), melegueta peppers (*Aframomum melegueta*), sorrel/roselle (*Hibiscus sabdariffa*), okra (*Abelmoschus esculentus*), sorghum (*Sorghum bicolor*), and the Bambara groundnut (*Vigna subterranea*) (Carney, 2003). Also medicinal plants of African origin are now growing in the Caribbean. These include Guinea corn, yellow yams, ackees, *Phyllanthus amarus*, *Leonotis nepetifolia*, *Corchorus* spp. and *Cola acuminata* (Carney 2003; Sherindan, 1972). Ritual use was registered for the following plants of African origin: *Newbouldia laevis*, *Kalanchoe integra*, *Lagenaria siceraria* (Molina), *Cyperus Rotundus*, *Pennisetum Purpureum*, *Cola acuminata*, *Aframomum malegueta*.

an inseparable part of the foodways and lifeways of enslaved peoples in the newly emerging American societies.⁸⁹

Tropical forests in Africa and the Americas differ substantially, however. People who survived the journey across the Atlantic Ocean also had to figure out how to use unknown plant species in foreign environments. Newcomers were looking for plants that were similar to African families, but they also practiced a heuristic method to discover new plant cures (Vossen et al. 2014).

African captives were severely restricted in ways they could take with them any medicinal plants or images of their deities. However, the rich repertoire of meanings attributed to the various landscape features in present-day Afro-Cuban religions as earlier discussed by for example Cabrera (1954) testifies how African ancestors were capable of finding the divine and remedies also in these new landscapes. Various colonial sources such as records of Cartagena trials (Gómez 2017; Vargas 2011), physician's accounts Sloane (1707), Chateausalins (1854), as well as other European accounts elsewhere in Caribbean (e.g. Merian, Stedeman, or Dalhberg in Suriname, Snelders 2012; Alexander's observation in Grenada, Thompson in Jamaica in Schiebinger 2009), offer us some insights into the ancestral medicinal practices derived from African continent or the health situation in the colonies (e.g. for the Dutch Caribbean see Oostindie 2013).

When trying to envision how the African ancestors have redefined the Caribbean landscape it is clear that we should need to get a better grasp on the role of cultural memory as a flexible process of emplacement, individual role of healers but also of ancestral institutions such as brotherhoods (fraternities). The latter are generally acknowledged to be an important preservation mechanism of West African ancestral belief systems and medicinal cultures in the Caribbean. Brotherhoods were organizations, which had an important role in attending to the sick, providing funeral services, and dealing with the inheritance of members of the brotherhood. One of the historical accounts that provide some details about the brotherhoods in Santo Domingo is the work of Alcocer in 1650. His account indicates that these brotherhoods were organized according to the regional origins, others were composed of peoples of distinct colonial categories, and might be also means for preservation of own worldviews.⁹⁰ Similarly, also Cuban brotherhoods (*cofradías* or *cabildos de naciones*) show how the process of transculturation went beyond genetic exchanges.⁹¹ Cuban brotherhoods suggests not only the constitution of a shared religious tradition among freed peoples of color, but also indicates that the kaleidoscope of fragmented societies was organized around established models of "colonizer institution", which were consequently reinterpreted in a creative

⁸⁹ The history of certain crops reveals how the introduction of new crops into foodways met with resistance. This was the case when the British brought breadfruit (*Artocarpus communis*) from Tahiti in 1792. The enslaved people refused initially to eat it, and preferred crops that they were more familiar with, such as corn, yams, plantains and manioc. Among the plants associated with the period of slavery, which became a symbol of resistance, is *Poinciana pulcherrima* (Cuban term: Guacamaya, Dominican name: Macata), used by enslaved women to abort offspring and end the life of enemies (Schiebinger 2009).

⁹⁰ The brotherhood of San Juan de Bautista was organized by people of West African origin who were born on the island (*negros criollos*) but many of Spaniards cooperated with the brotherhood. This Saint John brotherhood existed until the beginning of the 19th century. Biafaras and Mandingas were members of (poor but very devoted) brotherhood of Señora de la Candelaria with own chapel, celebrated the Virgen every year with processions. The popularity of saints and existence of brotherhood like the one of San Miguel protecting Santo Domingo from smallpox is also related to specific historical smallpox epidemics. Zapes had brotherhood dedicated to Santa María Magdalena and Aradas were organized as brotherhood having as patron Saints Cosmas and Damian. Among present-day Dominican healers Saints like Cosmas and Damian, are patrons of physicians, and represent Divine twins in Dominican 21 Division. A similar parallel could have been drawn by people shipped from current Benin, where Ewe-Fon-Gbe and Yoruba ancestors also today twins have a special place in local pantheon. As such details of religious expression of this brotherhood of that time in Santo Domingo are unknown, parallels between past and today's identification remains points of speculation but also possible points of nexus and creative reinterpretations of Catholic symbolism according to own religious system.

⁹¹ One of the first registered brotherhoods, Señora de los Remedios in Havana (1598), was organized by a group of Temne (Zapes) (Guanche 2011). In addition, we find also brotherhood of Santísimo Sacramento and Animas del Purgatorio in Santiago and in Bayamo (Alonso Enríquez de Armendáriz 1620 in Portuondo Zúñiga 2012a). Brotherhoods from the second half of the 17 century, such as Divino Paraclito and Espíritu Santo, were organized along the colonial categories like "*morenos libres*", and those of Candelaria, Nuestra Señora de Consolación, San Francisco, and Santa Catalina were composed of "*pardos libres*". Another brotherhoods further to be studied are Santísimo Sacramento and Ánimas del Purgatorio in Santiago and in Bayamo.

manner according to individual religious and other cultural practices in relation to the surrounding landscapes.

European ancestors reshaping Caribbean landscapes

Like African ancestors also European predecessors have left profound imprints in the Caribbean landscapes. As the colonial expeditions into the West Indies were driven by the quest for gold and spices, it is not surprising that the colonial accounts described the Caribbean flora and fauna in terms of their economic potential. Following Columbus, different authors, such as Martyr D'Anghiera, López de Gómara and Fernández de Oviedo, praise the lands for their fertility and flora.

The latter, Gonzalo Fernández de Oviedo y Valdés (1478-1557) collected information about endemic plant use, for alimentation or practical utilitarian use (Fernández de Oviedo 2002 [1535-1557]).⁹² He provides us with a valuable insights on the cultivation and preparation of native plants like *yucca*, *ajes*, *batatas*, *yautía*, *maní* and *maíz*, as well as the knowledge transfer to other groups.⁹³ The information on medicinal properties of plants (*guyacan*, *palo santo*, *manzanillos*, *perebenuc*, *yaruma*, *hobo*) provided by Fernández de Oviedo is informative but rather limited. In the case of guayacán he clarified that it was used to treat syphilis, and that it is consumed through infusion.⁹⁴

The exact identification of the plants as described by the above-mentioned authors in order to assess the indigenous contribution in the local medicinal cultures is complicated by the great diversity of the medicinal plants, their uses, and the change of names over time as well as the fragmented and limited character of the historical information in general.

As for material landscape modifications, the Europeans also introduced medicinal plants to the Caribbean. Early chronicles did not only register the plants used by indigenous peoples but also newly introduced plants (Echagoian, 1568; Fernández de Oviedo 2002 [1535-1557]).⁹⁵ Popular Old World herbs used in the Americas included: rue, rosemary, pennyroyal, sweet marjoram, mallow, artemisa, and vervain (Foster 1953).⁹⁶ Some of the local species were associated with those known from Europe. Fernández de Oviedo lists many plants that were similar to plants from Spain but were already present in Hispaniola before the arrival of the Christians and many of them receive european names, a fact that can lead to confusion (Fernández de Oviedo 1535/2002, Lib. XI: II).⁹⁷

The exotic species of sugar cane and ginger, along with endemic woods such as *brazil*, *bálsamo*, *cañafístola*, *guayacán* and also tobacco, soon became an integral export commodity, as did cowhides (López de Gómara 2002 [1552]). Some of Caribbean remedies like Villasante's balsam became popular trade items in European markets. Also *guayacán* as its Latin name suggest *Lignum vitae* or Wood of Life gained wide spread popularity as a marvelous remedy in Europe. In spite of the initial disapproval of

⁹² For more on the life of the author and his work consult e.g. Gerbi (1978) or Myers (2007). There are several editions of Oviedo's work. The first edition of the first part was published in 1535, the second and third part successively in 1544 and 1549. Here I use the version transcribed by the Royal Academy and published in 1851, referenced as Oviedo 1535/1851, and the excerpts about his description of flora as republished by Deive in 2002, which is referenced as 1535/2002.

⁹³ For more about the introduction and cultivation of the crops important for the Dominican colonial economy see Del Río Moreno (2012).

⁹⁴ Oviedo mentions also other herbs for sore (*llaga*): perebenuc, used to wash, and another one called curiá. Another medicinal plant of interest might be hicacos, which is described as purgative, or goaconax (árbol se hace bálsamo), which is useful for *humores frios e pasiones que de frialdad proceden* (Oviedo 1535/2002).

⁹⁵ Among the introduced plants were grapes, wheat, *palms*, *cañafístola*, *fruit trees (especially citruses)*, *vegetables (aubergine, cabbage, radish, lettuce, onion, parsley, carrots, turnips and cucumbers, beans, celery, zabiras, coriander cucumbers)*.

⁹⁶ European medicinal plants brought to the Caribbean included remedies against witchcraft and evil eye: *Allium sativum L.*, *Centaurea ornate Willd.*, *Cynodon dactylon L.*, *Genista hystrix*, *Laurus nobilis*, *Lavandula pedunculata*, *Magudaris panacifolia*, *Olea europea*, *Ononis spinosa L.*, *Peucedanum officinale L.*, *Rosmarinus* (González et al. 2011)

⁹⁷ Among these are listed: *chicoria*, *cerrajas rostrum porcinum*, *berdolaga*, *berbena*, *hierbamora*, *llantén*, *pan y quesillo (biusa pastoris)*, *altamisa*, *escudre (nenífar)*, *albahaca (azimum gariophiolatum)*, *lengua cerval (scoloprendia)*, *culantrillo de pozo (capillus Veneris)*, *poleo montesino*, *persicaria (herva maculata)*, *salvia (lilifagus)*, *girasol (helitropia)*. Also *malvas*, *mastruerzo* and *culantro*, the latter two just have different leaves than the Spanish variants.

tobacco, tobacco quickly gained popularity amongst Spaniards and the enslaved peoples from Africa and their descendants, and it soon became an important trade item in Europe. Its medicinal properties were acknowledged as beneficial much later (Las Casas *History of Indies*, Ch: XIV; Monardes 1580).

Next to the clear extractionist focus of many of first European account of the Caribbean landscapes these texts reveals some of beliefs of that period. Fernández de Oviedo's history displays Catholic interpretation of the environment, beliefs about enchanted places, the doctrine of signatures and humoral links to geographical locations. Fernández de Oviedo believed that the Caribbean landscapes were the results of God's creation, and that the medicinal plants encountered there are divine. When describing medicinal plants, he sees them as a gift to the faithful and the infidels from Jesus Christ as the pious protector/curer of human illnesses. In different parts of Oviedo's work the author expresses his gratitude to God, as the true doctor of our health, life, and souls. The doctrine of signatures was an important aspect of medicinal cultures, based on the idea that God had provided a natural cure for every illness, and marked the cures by giving them an appearance resembling the infected organ (e.g. the eyebright plant serves for eye ailments).

European belief about enchanted places is displayed in his story about a Spanish visit to a mysterious lake in the mountains of Jaragua. During the reign of Nicolas de Ovando a Spanish crew accompanied by indigenous people went to the lake, which appears to be an enchanted place.⁹⁸ At last, the Hippocrates' humoral theory about how the environment had an impact on human health has been preserved in his evaluation of the medication of *guayacán* that was considered to be specific to the climate of these islands and patients in the Iberian Peninsula were warned to protect themselves from airs (*aires* or bad spirits).⁹⁹

The idea about a close link between the complexion of human bodies and those of plants, and the different effects of the application of remedies at various geographical locations is evident in later European writings as well, when Breton (1665) writes that Kalinago people of Dominica cured their syphilis easily and without danger because the temperature of the air was "even", and because the powerful remedies were considered to be growing in "*the Torrid Zone*". Some believed that Caribbean remedies that were taken to France lost their potency. Others believed that the cure for syphilis in Spain was only possible with the *guayacán* because the illness itself originated in the Caribbean. Also, Sir Hans Sloane, a physician living in Jamaica in 1680s, discussed a fever that every newcomer got before being accustomed to the climate and constitution of the air in Jamaica but also acknowledged that this illness occurred all over the remote Eastern parts of the world.

The European colonization implied also desacralization and resacralization of Caribbean landscapes. The indigenous religions were demonized in the same rhetoric as Christian beliefs had been demonized in the Roman imperium and traditional non-Christian beliefs were often considered witchcraft and persecuted as such in Europe at the very same period that the Europeans invaded the Americas.¹⁰⁰ In the Americas,

⁹⁸ Oviedo writes: "Y estubo mirando este lago tanto espacio quanto se podrían decir tres credos. Dice Pedro de Lumbreras que eran tanto el ruido y estruendo que oía. Que él estaba muy espantado, e que le parecía que no era aquel estruendo de voces humanas, ni sabía entender qué animales o fieras pudiesen hacer aquel horrible sonido. En fin, que, como estaba solo (los otros españoles y indígenas no quisieron subir) y espantado, se tornó sin ver otra cosa." (Oviedo 1851 in Deive 2002, pp. 63-64)

⁹⁹ Hippocrates, the father of Western medicine, applying inductive reasoning, expressed in his work *Airs, Waters, and Places* (± 400 BC) his firm conviction that there was a relation between the geographical location and one's character and health. Hippocrates opposed the idea that illnesses were caused by divine intervention that could be cured through appealing to the deities. Instead, he argued that illness is a result of humoral imbalances. He distinguished four humors: blood, phlegm, black, and yellow bile, each of which had its own complexion (characteristics). An illness was diagnosed by determining the complexion of the illness, and its cause. The cure consisted of restoring the balance in the body by changing the diet, the humoral imbalance of the body, or the environment. Physicians following Hippocratic teaching believed in deterministic relations between seasons, waters, prevailing winds, physical geography, the soil of a place and the humoral balance, which all together influenced medical centers such as Sevilla, Salamanca, and Alcalá de Henares during the Renaissance. Spanish healers were said to heal with their breath, saliva or even touch, thanks to their natural complexion, because of a balance of the four humors (Castañega 1529).

¹⁰⁰ The conquest of the Caribbean took place a few years after the publication of the main manual for the persecution of witches (Cohn 1975). The *Malleus Maleficarum* (Hammer of the Witches), written by Dominican monks, was published as a handbook for witch-hunters and inquisitors in 1487, five years before Columbus's first voyage. As Jansen and Perez (2017) noted, some of the 16th century famous persecutors of Mexican

like in Europe, non-Christian sacred sites (e.g. see on a Dominican cavern Morales in D'Anghiera 2002 [1494-1526]) were portrayed such as and believed to be haunted by the devil.

Catholic orthodoxy and Counter-Reformation zeal in Spain during the 16th and 17th centuries did not favor a renaissance of influences from classical “paganism”, nor of other non-Catholic religious expressions (Godwin 2002, p. 17). However, purifying medicinal cultures completely from non-Catholic associations was not a realistic option for different reasons. How ineffective the official policy was in practice is clear from the records of trials in Cartagena in the 17th century (Crespo Vargas 2011; Moret 2017). There were many persecuted people of Spanish, West Central African, and Caribbean origin (including indigenous, *criollos* and people of mixed descent) who displayed knowledge and beliefs that were quite different from orthodox Catholicism. The lack of Catholic religious instruction or supervision further enhanced the diversity of medicinal cultures in the Caribbean, which, combined with ideas and practices of indigenous and African origin, led to new religious expressions.

The human tendency to draw parallels between concepts and observations was somewhat obscured in the religious realm of the colonial Caribbean by the justification of colonization and slavery, which created an overemphasis on ‘otherness’, and so further enlarged the existing differences between beliefs regarding man’s position in the creation of the world.

The theoretical dualism expressed in binary oppositions of natural/supernatural and nature/culture should not be indiscriminately projected onto encounters of different worldviews in the Caribbean where this dichotomy was not present. Catholic interpretations of the environment and its importance for health in this period did not separate men from nature. In one mode of interpretation of Roman Catholicism, people were seen as a part of the divine creation, acknowledging that even lower levels of created species are blessed and precious. Francis of Assisi and Thomas Aquinas both preached about the manifestation of God’s grace in nature and their teachings are influential until today (particularly with respect to ecological degradation). Saint Francis (called the ‘Saint of ecology’ by pope John Paul II) stressed humanity’s kinship with animals, stars, and plants. As is well known, he referred to Brother Sun, Sister Moon, Sister Water, Brother Fire, Mother Earth and Sister Death, also addressed a wolf as Brother Wolf, and sought to reach God through asceticism in caverns. Secondly, there was a tendency to structure the beings created in the universe hierarchically, with humans dominating over the rest, arguing that God had created humanity uniquely in His image (*imago Dei*).

Both Catholic interpretations did not separate man and nature. This is not to say that all people were seen as equal. Some people were considered to be the head and others to be arms and feet of the body that as a whole was the divine creation.¹⁰¹ Based on this hierarchy and out-group bias, slavery was justified. Again, we see that economic gain trumped religious morals about loving your neighbors as yourself.

The various interpretations of the Holy Scriptures should be seen in conjunction with various degrees of inclusiveness of some Catholic theologians toward pre-Christian beliefs, which also varied according to the period. As Saint Augustine declared: *‘It is the same with sacred forests as with Gentiles, one does not exterminate the Gentiles but one converts them, changes them; in the same way one does not cut down*

indigenous beliefs were active in the Spanish inquisition just prior to their arrival in Mexico. Although the Spanish witch hunting was said to have mainly been preoccupied with the expulsion of Jews and repression of *conversos* and Protestants, there are different cases such as the Basque witch trials of the 16th and 17th century where many of people were accused of witchcraft. This was largely based on misconceptions about folk beliefs, healing practices, and celebrations of the solstices in a local cave (Caro Baroja 2003).

¹⁰¹ Santos Granero argues that the Franciscans in Peru imposed their religious symbols (cross, churches) on the sacred indigenous places in order to demonstrate their power (2004, p. 109). This does not apply to all regions across the centuries. Similarly, Jansen et al. (2008) writes that the position of a chapel on top of the precolonial pyramid need not be understood as a military victory over one religion over the other, but rather should be viewed as a cultural synergy, which implied profound respect. They also points to the approach of contemporary German Capuchin monks, active in part of the Mixtec region, Mexico, who valorizes and incorporates pre-colonial sanctuaries as sacred sites from the conviction that God has manifested Himself in all cultures, also in pre-colonial America.

sacred groves; it is better to consecrate them to Jesus Christ' (Belmont 1992). Saint Augustine's teachings demonstrated that it was often easier to fuse non-Catholic views with teachings about God's grace in nature than to eradicate previously held beliefs. One strategy to convert was to incorporate the old ("pagan") into the new (Christian) belief system. The legacy of this process is visible today in many important European traditions such as Easter, Christmas, and other Catholic Saint Days. The fusion of different religious traditions is displayed in the Spanish Marian cult which venerates a Virgin of the Moon (Los Pedroches, Córdoba), Virgin of the Sun (Adamuz y Montoro in Córdoba); Virgin of the Star (in Espiel Córdoba), and many others. It should be considered that at the time of conquest of Americas, Catholic sacred landscapes were composed of sacred places like Eden, the Holy Land, the Jordán River, and the Mount Calvary, but also of sacred shrines that were not officially consecrated. Spanish landscapes counted numerous local sacred natural sites such as the previously mentioned caves, trees (Our Lady of Salceda, Our Lady of Madroñal), and water sources (e.g. Our Lady of Grace, Our Lady of the Baths, Our Lady of the Holy Spring).

In his study entitled *Local Religions in 16th Century Spain*, Christian (1989) examined particularities of this two-level Catholicism in reports based on a questionnaire sent on orders of King Philip II to villages and towns of Nueva Castilia in 1575 -1580. Local expressions of Catholic beliefs are typified by particular sacred places, images, relics, locally chosen patron saints, individual ceremonies, a unique calendar built on the settlement's own sacred history. Sacred places were often related to or reinterpreted as places of the manifestation of Saints, and they were often created as consequences of vows after natural disasters such as hail, floods, droughts, pestilences, and insect infestation. Many of the hierophanies shared a similar script of returning miraculously to the site of their first appearance (Christian 1989, p. 76). This phenomenon also displays similarities with the manifestation of the Virgin in the Caribbean (Virgen of Charity in Cuba, Virgen de las Mercedes in Hispaniola), whose reappearance has been earlier interpreted as a remainder of indigenous worldviews (Tricando 1997).¹⁰²

The success of the Spanish spiritual conquest was being constantly proved by different Marian manifestations. The famous manifestation of Virgen Altagracia at Santo Cerro, was an obvious institutional power display. Preceding the appearance of Virgen of Charity from El Cobre, the Virgen Altagracia from Higüey caused several miracles. Like the Virgen of Charity the Virgen Altagracia manifested herself in an orange tree and disappeared when it was ordered that her statue should be sent to Santo Domingo (Alcocer 1650, p. 48). The manifestation of Virgins and Saints have led to creating new holy places, relics and objects that were in physical contact with divine forces. The great esteem for such objects was also manifest in the belief in their power to protect and cure. The cross at Santo Cerro was dismantled until the last nozzle because its wood had miraculous effects for devotees. This fits into the general religious tradition of that period, in which relics and holy images were taken out in processions in Santo Domingo to invoke divine favor in times of pestilence/plague, droughts, hunger, or in public works at the turn of the 16th to the 17th century (Alcocer 1650, pp. 43-44, p. 50). It was also believed that the dust of the cross could alleviate a fever if taken with a liquid.¹⁰³

Plants that were symbolic representations of the associated Saints or miracles were important elements of European healing landscapes. To illustrate, Verbena, a sacred plant from the Monte del Calvario (Golgotha), which cured Jesus Christ, is an important ritual plant currently in Spain. Until today, Spaniards gather branches of palms, olive trees, laurel, and rosemary that are blessed on Palm Sunday, and then placed

¹⁰² The link between the Cuban patronal Virgen and indigenous inhabitants was discussed earlier e.g. by Portuondo Zuñiga (2008), Oliver (2009), Peña et al. (2014) but see also work of Corbea Calzado (1996).

¹⁰³ For more traditions from this period in Cuba see also Lampe (2001).

on windowsills to protect people's homes. The date palm (*Phoenix dactylifera*), given its ability of quick regeneration, stands as a symbol of the resurrecting soul after death. There were many other sacred plants, like Rosa de Jericó, olive, pines and others that stand as symbols for the divine (clover for the Trinity, lily for the Virgin, palm for victory, olive or pine for the Holy Spirit). In 16th century Spain, many of these plants and other objects were used in protecting against evil, or in curing the evil eye, against bewitchment, and other ailments (see Foster 1956).¹⁰⁴ The plants were connected to different beliefs, like those with the inner force, had to be activated by prayer or by uttering secret sentences. Finally, plants collected on the day of Saint John were deemed to be extra powerful (Foster 1956).

The early modern Spanish landscapes were full of dangerous and enchanted places, which often included demonized pre-Christian sacred sites and therefore expressed a fear for divine punishment (Tausiet 2014). Witches, devils, spirits and beasts such as sirenas, zitirons, hydras, pheonix, arpiás, or dragons, along with mysterious anthropomorphic plants like mandrake, magical trees such as the *Árbol del Bien y del Mal* and *Árbol del Conocimiento de la Vida* from the Book of Genesis (see *Sanitatis Ortus, Garden of Health* 1491, Langham 1597) add to the richness of symbolism of European landscapes.

When discussing Spanish ontologies related to the environment, it is important to include the Canarian influences. The Canary Islands were an intermediary place in the exchange of plants, animals and peoples between both sides of the Atlantic Ocean. Like in the Caribbean, the Canarian healing landscapes were profoundly altered by the Christianization of the indigenous (Guanche) population. The Virgen de la Candelaria had initially a shrine in the Cave of Achbinico, which was considered already sacred before the religious conquest. Also the figure of Nuestra Señora del Pino, who revealed herself in a miraculous huge pine tree, surrounded by three dragon trees (*Draco Palma canariensis*), and led to the discovery of a healing spring, suggests a synergy of European and Guanche beliefs.

The combination of a place where the Virgin has manifested herself and the belief in healing effects of a visit to this place is not unique. On the contrary, Catholic sacred places in Spain were often shrines for healing since the early medieval period (Christian 1989). Their curative powers were derived from the Saints' manifestations that had taken place there, connected to the miraculous powers of images, relics, and ex-votos. Among the sacred Catholic shrines that were frequently visited for healing in 16th century Spain were those dedicated to the Virgin Mary, Saint Anne, and other Saints, which are utilized in curing specific illnesses.¹⁰⁵ In addition, in Galiaca healing could take place at crossroads (Foster 1953). Spanish healing places are part of the broader European medicinal cultures where multiple sites, varying from Asclepius' temples in Greece to the Cave of Lourdes in France, and the springs of Bath in England have been popular healing places for centuries. The manifestation of divine powers in such places led to pilgrimages in search of cures for body and mind.

The Spanish fathers, physicians or healers could find analogies about the divine power of nature and its healing aspects in their own worldviews. The constant emphasis on difference in order to be able to justify the enslavement and colonization blinded and silenced possible similarities. In some cases, especially in the context of general poor health care in the colonies the newcomers were more dependent on those knowledgeable of the local flora.

¹⁰⁴ González (2011) registered as plant remedies against witches and the evil eye: *Allium sativum* L., *Centaurea ornate* Willd. *Cynodon dactylon* L., *Genista hystris*, *Laurus nobilis*, *Lavandula pedunculata*, *Magadaris panacifolia*, *Olea europea*, *Ononis spinosa* L., *Peucedanum officinale* L., *Rosmarinus*.

¹⁰⁵ The most popular were Saint Lucy and Saint Christopher for curing eyes (based on hagiography), Saint Matthew for throat ailments, Saint Babiles for hernias, and Saint Martin for fevers (Christian 1989, pp. 93-94). Also based on miracles related to their biography, San Ramón Nonato is often consulted for birth, and San Cosme and San Damian are seen as the patrons of physicians. This specialization in curing of ailments was present also centuries later, when people seeking cures for the throat prayed to San Blas, for ailments of the breasts to Santa Agueda, for toothache to Santa Apolonia, and for the plague to San Roque (Foster 1956).

The multidirectional circulation of the medicinal knowledge in the Greater Antilles

The dynamics of exchanges of green medicine are unclear but the general context is marked by conquest, colonial violence and slavery. Some historical references suggest that indigenous peoples did not share their knowledge with the colonizers on purpose as a means of resistance. Antonio de Villasante, when asking to obtain a license for exporting *bálsamo* from Hispaniola to Europe, explained that he obtained this recipe from his indigenous wife, cacique Leonora (Alonso de Zuazo 1518 in Deive 2002). He emphasized the uniqueness of this knowledge because in general indigenous people concealed this knowledge as a way to resist the Spaniards.¹⁰⁶

Although the early colonial exchanges meant in practice often a one-sided exploitation of the indigenous intellectual property also the indigenous population seems to have also incorporated some plants that were introduced from across the Atlantic Ocean. Chanca claimed to have seen in La Isabela: “a root of ginger which an indian was wearing around his neck” (Chanca 2002 [1494]). Although it is unclear if Chanca confused ginger with some other, endemic plant (e.g. arrowroot, *Maranta arundinacea*), it is possible that ginger was already brought to the island during the first Columbian voyage in 1492 and shortly after became incorporated into the local flora. At least, by 1570 ginger was planted for commercial use in various fields (López de Velasco 2002 [1571]), and later indigenous peoples planted and used ginger (see the chapter 4). In present-day Kalinago communities on Dominica the ginger plant (as well as other plants from the zingiberacea family) is cultivated as a spice and as a cure for stomach aches, and its leaves are used as a charm during ritual baths and also to repel misfortune from canoes (Hodge 1957).

The botanical exchanges among the colonized strata of the populations are poorly documented and also not very well studied. Deive (2002) mentions the case of a healer of African descent from Santiago de Caballeros, Hispaniola, dating to the 1550s, who seemed to have obtained some medicinal knowledge from indigenous healers and was said to have practiced *san*, which is translated as *indigenous witchcraft*. Such transfer of botanical knowledge likely varied according to particular circumstances and was probably as diverse as the multiethnic societies during the colonial period. The pioneering study of Gómez (2017) of trial records from Cartagena (1613-1721) revealed that Afro-Caribbean healing experts used plants that were native as well as plants that were exotic to the Caribbean.¹⁰⁷

If current healing practices are to be considered heritage of a long history of exchanges of botanical knowledge and worldviews, the ritual context of plant use reveals that many new world plants have been integrated into religious realms that were brought from oversea. Studies from Suriname explain that more than four hundred species, many of which were native to Suriname, are used in rituals, bathing, and potions among the Maroons (Van Andel 2013). Similarly, Cabrera (1954/1993) and Quiros-Moran (2009) recorded such native plant use among devotees of Regla de Ocha and Palo Monte. Moreno Rodríguez’ study (1995) on plant use in Crossed Spiritism (based on the teaching of Kardec influenced by Regla de Ocha) illustrates how spiritual expressions from different origins are complementing each other within the medicinal tradition in East Cuba.

¹⁰⁶ *Relación acerca del Bálsamo de la Española que hace Antonio de Villasante*, as published by Deive in his *Antología* (2002). From Oviedo we know that some said that he learned this from his wife, others that he learned it from an Italian doctor, Codro, who later passed away in Tierra Firme. See also the study by Mira Caballos (2000), who discusses the bálsamo fever.

¹⁰⁷ His overview of plants used by Black Caribbean ritual specialists included the following plants: anamú, ariajua, buevera, cañoco, capitana, carara, carcoma, cayaya, de Santa María, escobilla, grango, guano, limpiadientes, orejom, pantaila, pullón, rodo de alacrán, rompesera, tuatua, achiote (*Bixa Orellana*), basil (*Ocimum basilicum*), bejuco (*Mikania guaco*), bottle gourds (*Lagenaria siceraria* or *Agenaria vulgaris*), caraña (*Bursera graveolens*), chamomile (*Asteraceae*), culantrillo (*Adiantum canillus-veneris*), guamo (*Inga Feullei*), guayacán (*Guaiacu spp.*), lulos (*Solanum quitoense*), palm hearts (*Euterpe oleracea*), palo de fraile (*Couepia poliantra*), pringamosa (*Urtica dioica*), tobacco (*Nicotiana tabacum*) (Gómez 2017).

Comparative studies confirm that ethnobotanical knowledge is time and space contingent as well as a reflection of different sociocultural histories. Moret's (2013) study of Cuban ethnobotany demonstrated that people living in what historically were sugar regions preserved the knowledge of African plants more than that of Mediterranean species, and that the reverse was the case for the tobacco regions which were occupied more often by Iberic and Canarian migrants. It is also evident that, even if there were significant differences, the inhabitants were knowledgeable of species of both Mediterranean and African origin. Similarly, cross-cultural comparisons of the Maroons and Trio of Suriname point out that while the Maroons use less medicinal plants than the Trio, the Maroons did develop a robust utilitarian knowledge of native plants (Hoffman 2013). The transculturation of medicinal cultures is not just a matter of learning about the properties of the flora but also depends on broader conceptual transformations related to the demographic changes of the colonial period.

Contrary to the general assumption about the rapid ethnocide of indigenous ancestors, Dominican and Cuban indigenous healers continued to exercise their skills in the period after the *encomienda* system. Deive (2002) discusses a case of Puerto Plata in the Dominican Republic, a town that had around 150 inhabitants of mixed origin (including *mestizos* and *mulattoes*), where healers from European, indigenous, and African origin were present. One of them, *cacica* Leonora Torres, wife of Torquemada, was accused of poisoning a local philander. Supposedly, she reunited in her house with another indigenous woman called Inés Estrada in the morning or during siestas in order to practice "witchcraft". Inés had previously been accused of having poisoned her husband and her lover with herbs. Depicted as an indecent lustful woman (in terms reminiscent of Martyr D'Anghiera's account), she was said to enchant various lovers. According to Maria de Velasco, one of the neighbors complained that all *cacicas* or indigenous women of this country knew the "*herbs to harm or to cure.*" Another indigenous female healer, and again wife of a Spaniard, who lived in Santiago de Caballeros, specialized in "*concoctions and potions*".

The *Medicinal History* written by Nicolás Monardes (1580) is one of works that appropriated some of the knowledge of the indigenous peoples from Mexico and Peru, and in lesser detail also from Greater Antilles. Monardes relates how in the 1580s a great amount of guayacán from Española and palo santo (considered to be a variety of the former) from Puerto Rico was transported to Europe to cure syphilis.¹⁰⁸ From Santo Domingo and Puerto Rico cañafístola was brought (said to be better than those brought from Italy, which were known from the work of *Dioscorides' De Materia Medica*), good to be used as purgative, evacuating cholera and flegma from the veins and intestines, purifying the blood, as remedy against rheuma and high fevers. From Cuban indigenous peoples the Spaniards learned about the medicinal properties of *bitumen*, which was used by natives for "cold illnesses".

Also in Cuba healers of indigenous background exercised their function longer than assumed. In 1609, Mariana Nava received the official authorization to provide medical services in Santiago de Cuba (Górdon y de Acosta 1894; Ortiz 1959). The case of Ms. Nava is not unique. Another person of indigenous descent (*mestizo*) graduated from the medical academy of Cuba in 1760 (Górdon y de Acosta 1894). The name Mariana Nava also appears in a Cartagena lawsuit, when a black healer Francisco Mandinga from Cuba stood trial there in 1664. He was said to have cured María Navas (said to be an indigenous woman from Cuba), who suffered from abdominal ailments by prescribing a purge made from *pullon* and honey (Gómez

¹⁰⁸ Monardes, N. 1580. *Primera, y segunda y tercera partes de la Historia medicinal de las cosas que se traen de nuestras Indias Occidentales*, Sevilla. This account also explains how syphilis had been introduced to Europe and adds some – according to its author – common but incorrect opinions about the origin of this disease (melancholism and bad diet which were burning the blood, the influence of Saturn or Mars) and that the remedy not only works for mal de buas but also for all illnesses caused by cold humors and hydropesia. Monardes also mentions the complexion of the plants. For example, tobacco should be warm and dry and is used for headache. In contrast to the account of Villasante, guayacán is said to have been discovered thanks to an indigenous doctor who gave it to a Spaniard after he had been infected with syphilis from an indigenous woman.

2017). It is a matter of further investigation whether this was the same person and not just a coincidence of names, and then what the possible link may have been with the indigenous woman who received her title to cure much earlier, and how she got to Cartagena.

In the Greater Antilles only few accounts reflect upon the medicinal practices of the enslaved strata of population. Some of the early botanical knowledge transfer among the enslaved strata was discussed for example by Fernández de Oviedo (see part e.g. corn, *ñame*, palm, *perebecenuc*). From the historical sources available it would seem that occasionally the people of African descent learned some of the indigenous medicinal skills. Analogies with surrounding islands provide us with more details on the exchange among the colonized and enslaved inhabitants.

Sloane's recompilation of the botanical and medicinal knowledge of Jamaican people (1707) also indicates exchanges between enslaved peoples of West African and New World origins. The enslaved people of New World origin are described as composed of indigenous people that were not native to Jamaica but came from different parts. Some came from Florida or Musquitos, and others were Spanish slaves that had been captured by the English.¹⁰⁹ They are described as very good hunters, fishers, and fowlers, but useless for work in the field or other menial tasks usually done by slaves. Besides some details of their lifeways, Sloane (1707) mentions the use of common remedies such as bleeding, purging, blistering, cupping, and scarification among the indigenous peoples in Jamaica. Similarly, among the enslaved peoples of African origin the cupping with calabashes, the bandaging with a mixture of clay and water over parts of the body, were popular cures.¹¹⁰

Enslaved peoples of African origin were said to use very few decoctions of herbs, distillations, and infusions and powdered herbs.¹¹¹ Other remedies mentioned were baths prepared from the decoction of bay-leaves, wild sage, after which people make a bundle from these plants and sprinkle them with water. The same source adds that both enslaved and indigenous peoples bathe themselves as much as they can. The data from the Cartagena trials (Gómez 2017) adds more on common therapeutic methods such as cupping, cutting, massages, potions, prayers, and application of power objects among ritual specialists of African origin. Gómez (2017) concluded that the results of these methods resembled each other at an experiential level despite differences in origin and in explanation of the relationship between human health and the natural world.

Sloane (1707) calls some of the cures effective and others less so; mostly he considered those based on other (i.e. non-Christian) belief systems ineffective. This evaluation seems to be based on his conviction that those Others did not even have a religion.¹¹² Later he adds that some of the cures might come from "the Indians", as they were used for the same diseases in Mexico and Brazil, referring to authors such as Piso, Marcgrave, Hernández, and Ximénes.¹¹³

¹⁰⁹ The Musquitos could refer Mosquito County of Florida but also to the coast of Nicaragua. Sloane also refer to Mosquito when speaking about the King Jeremy who came to Duke of Albemarle, Governor of Jamaica to seek his help in their fights against Pirates and Spaniards. On this occasion Mosquitos are said indigenous peoples near the Provinces of Nicaragua, Honduras and Costa Rica (Sloane 1707).

¹¹⁰ Cupping consisted of applying heated calabashes on an affected place of the body. When the calabashes were pulled off, the place was cut and the calabashes cupped again.

¹¹¹ "For instance, in a Clap, they grind the roots of Fingrigo and lime tree, between two stones, and stir them into lime juice till it be pretty thick, and so make the patient take it evening and morning for some time. This is the same method of preparing medicines, with what in the East Indies is practiced, for I have seen many simples for them, and all, or most, are to be ground on a stone with some simple liquor, and so given the patient" (Sloane 1707, p. 54).

¹¹² In this respect, he says: "The Indians and Negros have no manner of Religion by what I could observe of them. This true they have several ceremonies, as dances, playing but these for the most part are so far from being acts of adoration of a God, that they are for the most part mixt with a great deal of Bawdry and Lewdness."

¹¹³ Willem Piso and Georg Marcgraf of *Historia Naturalis Brasiliae* published in 1648. For the most recent work on this work see project *BRASILIAE* of Dr. Françoze on <https://www.universiteitleiden.nl/en/staffmembers/mariana-de-campos-francozo#tab-1>. Francisco Hernández was a physician of Philip II and author of *Historia natural de Nueva España*, important work including some insights from Nahuatl medicine on Mexican remedies, flora and fauna. Francisco Ximénes from Huatepec edited Hernández' work and added his own notes and experiences.

As the indigenous people considered by Sloane (1707) included persons who were not native to Jamaica or were already Spanish enslaved subjects, this situation suggests a great diversity of healing practices and botanical knowledge coming together and being exchanged. The properties of some of the herbs were learned from indigenous experts of the mainland via European accounts. In relation to this, Sloane suggests that Jamaican colonizers knew how to use a herb called *contra yerba* for the treatment of wounds caused by poisoned arrows, because it was revealed by indigenous people from Guyana to the Spaniards who wounded an indigenous man with a poisonous arrow to find out what herbs they would use to cure it (Sloane 1707).

Likewise, Sloane testifies how Europeans learned many healing practices from enslaved peoples. African captives had the advantage of recognizing some of the tropical diseases and flora. Just one example: the properties of the leaves of the balsam/goaconax tree were taught to Europeans by a man of West African origin who used these herbs to cure himself. A large group of plants used by Afro-Caribbean practitioners was recorded in 17th century documents that show both endemic and exotic plant species.¹¹⁴ Although these medicinal skills were recorded rather by accident, more in-depth studies like the one by Schiebinger (2017) reveal some of the secrets of the enslaved population in the context of colonial struggles in the West Indies. One of her examples illustrates that what it is registered as European appropriation of slaves' cure for yaws might indirectly transmit an indigenous remedy.

The knowledge of the enslaved persons of West African origin is by no means to be explained *only* as learned or adopted from indigenous peoples. Enslaved people avidly collected, cultivated, and tested medicines to find effective cures to their problems in new environments. The records of the Cartagena trials show that different healing specialists managed to bring their expertise as well as their views and practices across the Atlantic Ocean and re-established them in the Americas (Gómez 2017; Vargas 2011).¹¹⁵ Gómez sketches some of the perspectives of the forced migrants in new societal and environmental contexts. One of the trials discussed was that of Antonio Congo, originally from West Central Africa (possibly of the Congo nation), resident of Cartagena, who confessed to having engaged with the spirits of the indigenous people during healing practices. He testified that his *bohío* (hut) was built on the burial place of an ancient indigenous community and for that reason he commemorated their spirits by sharing his food and the payments of his patients in the hope that they would favor his healing practices (AHN Inquisición, L. 1023, Fol. 482r in Gómez 2017). This is a fascinating illustration of how forced migrants perceived the newly inhabited landscapes.

Although several later works such as that of Chateusalins (1854) sheds some light on the life, illness and remedies of the enslaved population in Cuba during the first half of the 19th century, the majority of their knowledge as well as their history remained undocumented. Chateusalins' account (1854) deserves further analysis. It reveals practices like *cachexy* or the consumption of clay, which has been observed among enslaved populations in other Caribbean contexts (Kiple 2002). Chateusalins explained this consumption as a consequence of malnutrition, which was rooted in grief because of the enslavement, harsh treatment and homesickness of the former captives. Descriptions like this provide insights not only into the

¹¹⁴ Plants used in the healing practices in 17th century by the black Caribbean ritual specialists were: Anamú, Ariajua, buevera, Cañoco, Capitana, Carara, Carcoma, Cayaya, De Santa María, Escobilla, Grango, Guano, Limpiadientes, Orejom, Pantalilla, Pullon, Rodo de Alacran, Rompesera, Tuatua, Achiote (Bixa Orellana), Basil (Ocimum basilicum), Bejuco (Mikania guaco), Bottle gourds (Lagenaria siceraria or Agenaria vulgaris), Caraña (Bursera graveolens), Chamomile (Asteraceae), Culantrillo (Adiantum canillus-veneris), Guamo (Inga Feullei), Guayacán (Guaiacu sp/), Lulos (Solanum quitoense), Palm hearts (Euterpe oleracea), Palo de Fraile (Couepia poliandra), Pringamosa (Urtica dioica), Tobacco (Nicotiana tabacum) (Gómez 2017).

¹¹⁵ To mention just a few names: among the healers who were persecuted in Hispaniola in the 17th century were Jusepa Ruiz, Paula de Equiliz, Bernarda Alvaréz, Ana María de Robles, Luisa Dominguez, and Ana Jiménez. Prosecuted Cuban healers included: Luisa Sanchez, Antonio García, Mariana de la Peña, Catalina de Molina, Teodora de Salcedo, María de Tapia, Catalina González, Tomasa de los Reyes, and Ana Ramírez (Gómez 2017; Vargas 2011).

medicinal knowledge but also into the coping mechanisms of the captives at the peak of the sugar revolution in Cuba.

It would be beyond the scope of this study to review all available resources regarding the medicinal history of both islands. However, when examining some of these sources again the multidirectional character of the ethnic mobility and of the knowledge exchange called my attention. With regard to indigenous and Afro-Caribbean interactions, the locales of the exchange of botanical knowledge should be considered in a more flexible manner. With regard to Afro-Caribbean ritual specialists it is clear that these were sometimes more mobile than generally assumed. Healer Luisa Sánchez, identified as a *mulata*, is said to have travelled around the city of Bayamo in the 1620s. Paula de Eguiluz moved from Santo Domingo to Puerto Rico, from there to Havana, and later to las Minas del Cobre before going to Cartagena. In another of the Cartagena trials, a healer of African origin, Alonso Venero, born in east Cuba (Villa del Vaqueres), testified in the court at Cartagena in 1686 that he learned his healing practices from people in the countryside and from a Spaniard from Jamaica (Gómez 2017).¹¹⁶ Also some indigenous individuals and healers are likely to be in some occasions more socially and geographically mobile. At last, colonial hospitals, convents, mines or cattle ranches created settings for learning and observing each other's medicinal skills in the colonial society. To know more about how character of the contemporary healing practices was created we need to first also understand the demographic history of the region and particularities of the local development.



Figure 4 The Cuban Healer by Landaluze (1881).¹¹⁷

¹¹⁶ According to the trial report this healer had a reputation of being able to control the movements of snakes, to tame bulls with his words and to cure people from numb stomachs with *tuatua*. In his testimonies he told the Inquisitors about his encounters with Maroons and dead ancestors (Gómez 2017).

¹¹⁷ Fig. 4 and Fig.5 are images by Spanish painter Victor Patricio Landaluze y Uriarte (1830 -1899) who illustrated *Tipos y Costumbres de la Isla de Cuba* (1881), edited by Miguel de Villas, with introduction by Antonio Bachiller y Morales. This work was influenced by *Costumbrismo*, a literary style combining the Romanticism and artistic realism of the end of 18th and 19th century.



Figure 5 The Cuban midwife by Landaluze (1881).

Concluding remarks

“For a colonized people the most essential value, because the most concrete, is first and foremost the land, the land which will bring them bread and, above all dignity” (Fanon 2014 [1961, p. 34]); this quote from the Caribbean classic, reminds us how colonialism has alienated the colonized and the colonizer from the land, constructing it as commodity, point of violence and enslavement. Even though the natural environment and its relation to the body were central to the justification of oppression and colonial exploitation, the land remained a means for survival through subsistence, being a green pharmacy and an agent or mediator in medicine and in the healing process both for the colonized and the colonizer. We have seen that the medicinal history of both regions under study was marked by broader profound conceptual and material transformations, which were triggered by the European arrival in the Caribbean.

From historical sources, it is clear that the role of indigenous healers lasted longer than generally assumed and that they received recognition and had contacts and engagement with other healing specialists. The contribution of healers from across the Atlantic Ocean and even from the American mainland should equally be considered. The healing specialists of non-local origin quickly were forced to become acquainted with the properties of the plants in the new surroundings, as these were often the only available remedies available. Their study of the plants, based on recognizing similarities with the flora they knew from their own country and further on a trial and error method, likely integrated occasionally also information received from the original inhabitants. Although the indigenous people have been said to keep medicinal properties of some plants in secret, the dynamics of the changing colonial society, the coexistence of different strata of population in the same spaces must have led to knowledge transfer. Overall, however,

our knowledge about the indigenous medicinal contribution is handicapped by the limited and fragmentary nature of the historical sources, which are only to be (even if only partially) remediated by more systematic and interdisciplinary studies of this topic. The demographic history of both regions summarized in the next chapter approximates us further the context of this medicinal transfer.