Esoteric Botanical Knowledge-scapes of Medieval Iberia

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Abstract

Esoteric texts containing botanical knowledge-scapes provide robust complementary data for paleoethnobotanical analyses. These data fill in the gaps for our interpretations of plant taxa that are often archaeologically invisible and provide more detail about the complex relationships between the people of the past and archaeologically visible plant remains. These texts also contain information that cannot be accessed through archaeology alone, such as the 'qualities' of plants that are determined by celestial bodies within the 'great chain of being' (among other factors). Lastly, such texts provide details on the sources and distribution of plants across the Medieval world (e.g. geographic indicators). Using the *Picatrix*, the Latin translation of an earlier Arabic esoteric text, the *Ghāyat al-Ḥakīm*, it is argued that esoteric texts have multiple applications for archaeological investigations that use paleoethnobotanical analyses.

Introduction

Paleoethnobotanical analyses are often complemented by written source materials such as agricultural and medicinal treatises, account lists and culinary documents (Hallavant and Ruas 2014). Esoteric texts, however, have yet to be considered in archaeological investigations, despite their potential to provide complementary information on past plant use. These texts offer unique perspectives on human-environment relationships and emphasize the notion that the relationships between humans and plants are not always confined to ordinary purposes (e.g. sustenance or building materials). They also confirm the notion that many plant species, like other archaeological remains, cannot be exclusively categorized as 'secular' or 'ritual' (Brück 1999; Chadwick 2012; Morehart and Morell-Hart 2013: 492–496; Morehart et al. 2005; Morell-Hart 2011; Morell-Hart et al. 2019: 542, 548; Reed 2019: 8).

The *Picatrix* is an Iberian medieval treatise on astral magic that contains an esoteric knowledge-scape which broadly reflects the intellectual character

of the Medieval world and also includes a substantial amount of traditional botanical information. Knowledge-scapes are understood in this paper as networks of information that form a cognitive landscape (Appadurai 1996: 33; Shariq 1999: 243). Individuals with esoteric wisdom are connected through their shared knowledge, and this knowledge-scape is built and shaped by the community of esoteric practitioners. The esoteric botanical knowledge-scape in the *Picatrix* informs the reader about the ritual uses and astrologically influenced properties of plants, including the dangers of certain species, e.g. mandrake (*Mandragora sp.*), quasi-medicinal remedies and geographic information on specific plant taxa such as aloewood (*Aquilaria sp.*). Much of this information could not be gleaned through archaeological investigation alone.

This paper discusses how esoteric knowledge-scapes can complement archaeological investigations that use paleoethnobotanical analyses. Furthermore, this paper suggests that esoteric texts like the *Picatrix* can help create more nuanced interpretations of paleoethnobotanical remains recovered from archaeological sites, and can fill in the gaps in our knowledge of plant taxa that are largely absent from the archaeological record due to taphonomic processes, which is a major difficulty in the study of human-plant relationships (Reed et al. 2019: 31; Wright 2010: 42). Esoteric botanical knowledge-scapes could also enrich our interpretations of archaeologically visible taxa by demonstrating possible alternative uses of common plants (e.g. ritual and medicinal aspects of plants regularly classified as economic plants). Some of the most frequently mentioned plant species within the *Picatrix* are used to demonstrate ritual and alternative uses of plants that are visible in the archaeological record such as the commonly-found henbane (*Hyoscamus sp.*) and plants that are rarely recovered archaeologically, such as saffron (*Crocus sativa*).

The esoteric botanical knowledge-scape in the *Picatrix*

The *Picatrix* is the Latin translation of an earlier Arabic text, the *Ghāyat al-Ḥakīm*, written by Maslama al-Qurṭubī (Abū 'l-Qāsim Maslama ibn al-Qāsim Ibrāhīm al-Zayyāt, AD 905/6–964) in Córdoba during the tenth century AD. The original text was first translated into Castilian Spanish under the rule of the Christian king Alfonso X 'the Wise' between AD 1256–1258 (Attrell and Porreca 2019: 3–4). This Castilian Spanish translation was then translated into Latin later in the same century and is known as the *Picatrix*. It is important to note that there are variations between each translation from the *Ghāyat al-Ḥakīm* to the *Picatrix*, and they should not be understood as identical versions of one another. It is also

difficult to be certain that the information within the *Picatrix* consistently comes from al-Qurṭubī or from another source during the translation process (e.g. the Arabic to Spanish translator, or the Spanish to Latin translator in the thirteenth century) or during the ensuing transmission of the Latin manuscripts.

Every translation has its challenges and for modern researchers many of the plant names, although at times similar, are not directly translatable or intelligible to our modern models of plant nomenclature, i.e. Linnaean taxonomy. Therefore, we have a somewhat imprecise sense of which plant the written source meant to convey to the reader in any given instance. Some plants are certainly more easily identifiable than others as they are pervasive in written sources and in the archaeological record, e.g. olive. An accurate interpretation of Medieval plant names can be further complicated when we consider Medieval translation errors. These errors may have occurred because a translator was unfamiliar with a plant name, in which case they could either try to directly copy the name in its original form, or change the name to what they thought the word intended (Cooley 2019: 106). This is especially complicated when we consider the many plants within the *Picatrix* that are of distant geographic origin or plants that may have been newly introduced to the Iberian Peninsula (Althoff et al. 2019: 25; Ellen 2019: 43, 58). Although there are difficulties with accurately interpreting the plant names found within texts like the *Picatrix*, we should not undervalue the potential of the information they provide (Hernández Bermejo and García Sánchez 1998: 17).

It could be argued that relying on a text that has undergone multiple translations from its original is problematic. However, a substantial degree of the core knowledge endures throughout the series of translations. Therefore, this paper argues that the potential challenges outlined above do not limit the value of using esoteric texts as complementary sources to paleoethnobotanical approaches. There are valuable opportunities to examine variations between translations that indicate how esoteric plant use changed over time, or perhaps how plant use was different between knowledge-scapes (e.g. Islamic and Christian scholars). This raises exciting opportunities for interdisciplinary research involving historians, archaeologists and paleoethnobotanists. Collaborative projects that examine botanical knowledge-scapes using esoteric texts like the *Picatrix* can build robust interpretations of past human-plant relationships and examine how botanical knowledge and traditions have changed through time.

The *Picatrix* was written and shaped by the literate class of society, including magicians, translators and scholars versed in Arabic, Hebrew, Castilian Spanish and Latin. Plant registers found in unconventional texts like the *Picatrix* may allude to a botanical knowledge-scape that was largely hidden from most of Medieval Iberian society. This esoteric botanical knowledge-scape indicates the desires and abilities of the *Picatrix's* author and readership, as well as the needs and desires of their clients. These people represent groups of society whose activities are often challenging to pinpoint and interpret through the archaeological record.

The *Picatrix* provides a lengthy collection of esoteric knowledge and incorporates at least 164 species of plants within its instructions for astral magic rituals. These rituals often involve suffumigation, a ritual process that produces fumes or smoke. Throughout the text, al-Qurṭubī reminds the reader that the knowledge contained within is only for the well-educated magician or user and this knowledge should only be entrusted to those who are worthy and responsible (Attrell and Porreca 2019: 10). The use of frequent warnings suggests that the knowledge held within the book is a direct danger to an unlearned user. These warnings were particularly relevant to several distinctly toxic plants mentioned within the text such as mandrake, datura (*Datura sp.*), wolfsbane (*Aconitum sp.*) and henbane.

Mandrake is a well-known toxic plant that has been used for its poisonous, medicinal and magical qualities since antiquity (Fenwick and Omura 2015; Mion 2017; Pormann and Savage-Smith 2007: 54; Taylor 2009: 236). Its medicinal qualities have been used for urinary and ocular afflictions, nausea and pain management. However, it was mainly used for its narcotic and hallucinogenic qualities by magicians and physicians (Mion 2017; Taylor 2009: 236). In the *Picatrix*, mandrake is predominately used as a component of soporific mixtures (*Picatrix* 3.11.33, 3.11.35, 3.11.118, 3.11.119, 4.7.37). This suggests that the narcotic qualities of mandrake (Feng et al. 2017: 467–468) were known to those involved with using this species. Mandrake is also used in the *Picatrix* for rendering a person mute or deaf (*Picatrix* 3.11.114, 3.11.115), as well as in suffumigations for love (*Picatrix* 3.11.4), for Saturn (*Picatrix* 4.6.2) and for catching birds (*Picatrix* 4.9.6). Although the narcotic qualities of mandrake were clearly recognized, the theoretical framework that explains why mandrake had these effects on living entities is not always overtly acknowledged.

Within the Medieval world the natures, or qualities, of plants and other entities needed to be properly understood to achieve the desires of medical or magical practitioners. These natures were philosophically situated within a hierarchical model, often referred to as the 'great chain of being', an ideological framework that stems from Platonism (Hanegraaff 2013: 74). This model connects the notion of 'correspondences' to causality, and suggests that the components of the universe affect each other in hidden or occult ways (Hanegraaff 2013: 124). The *Picatrix* divides these natures into simple and composite forms:

> The simple natures are hotness, coldness, wetness, and dryness; the first composite natures are the hot, the cold, the wet, and the dry; the second composite natures are hot and dry, hot and wet, cold and dry, cold and wet; the third composite natures are the elements themselves, namely, fire, air, water, earth; and the fourth composite natures are the seasons of the year, namely spring, winter, summer, and autumn; and the fifth composite natures are the four humors, namely blood, yellow bile, phlegm, and black bile; and the sixth composite natures are tinctures, oils, roots, seeds, and such things (*Picatrix* 2.8.2).

Within this framework, each plant possesses its own qualities that correspond to these natures and one must understand them to achieve a desired result. This information is not always directly communicated to the reader, which suggests that it is expected to be inherently understood as part of the essential intellectual background. Within the Medieval era, simply being literate would safeguard this knowledge to a certain extent but the frequent use of warnings by the author also indicates that this knowledge-scape could be a direct danger to an insufficiently trained user and only wise individuals could be successful in using this knowledge (Attrell and Porreca 2019: 10).

It would have been important for the magical user of the *Picatrix* to know about the disposition of plants to be effective at performing 'sympathetic magic'. This form of magic operates through the understanding that every component within the universe is intimately connected. These connections were based on Plotinus' conception of 'sympathy' (Hanegraaff 2013: 5). The sympathetic and antipathetic qualities of plants are also employed for quasi-medicinal purposes (e.g. sleep-inducing mixtures) and this knowledge of botanical dispositions was understood and used by physicians (Kieckhefer 2014: 122; Pormann and Savage-Smith 2007: 144–148; Saif 2011: 616).

Within the *Picatrix* and the broader intellectual corpus of the Medieval era, plants (and other beings) were directly associated with planets and other astral bodies (Attrell and Porreca 2019: 8, 13; Hanegraaff 2013: 124–125; Kieckhefer 2014: 131; Saif 2011). It was therefore necessary to be aware of this knowledge and to believe that these practices would in fact work to achieve success in astral magic rituals (Attrell and Porreca 2019: 9–10; Ellen 2019: 50).

Although mandrake was widely known in the Medieval world, remains of mandrake are extremely rare in archaeological contexts. However, henbane has been recovered in several archaeological sites (Fahmy 2001; Fenwick and Omura 2015; Pérez-Jordà et al. 2017). In the *Picatrix*, henbane is frequently used with mandrake as it possesses similar narcotic qualities. It is largely used for soporific mixtures to induce sleep but is also used for suffumigation as a component in a mixture to ruin "the senses and thoughts" (*Picatrix* 3.11.56) and for "gathering mice" (*Picatrix* 4.9.3).

Despite the fact that henbane has been recovered from several archaeological sites, it can be challenging to interpret the depositional context as it is also known as a ruderal weed (Conolly 1994; Fenwick and Omura 2015). Often, this results in the interpretation of henbane remains as part of the environmental background of an archaeological site. When recovered from a distinctive ritual context, such as a burial or a hearth feature, however, the classification of henbane as a ruderal weed is often dismissed. Fenwick and Omura's (2015) study from Kaman-Kalehöyük in central Turkey, for example, recovered charred henbane seeds within a hearth feature and this was interpreted as a potential past event of henbane fumigation at the site. This is in contrast with evidence from the *Picatrix*, where henbane seeds are mostly used as a component of drink mixtures. Such mixtures directly acknowledge the narcotic and toxic effects of henbane and other toxic plants by noting these drinks will put people to sleep, and the author urges caution not to give too much (*Picatrix* 3.11.117, 3.11.118, 3.11.120, 4.7.37). There are, however, three examples where henbane parts are added to a fire. Two concern ritual suffumigation of celestial bodies Venus and Mercury (*Picatrix* 4.6.6, 4.6.7) and use the flowers and stalks of henbane alongside several other plant and animal components before being formed into tablets. Ritual suffumigation is used in the *Picatrix* to attract "the spirits of the planets" to ensure success in ritual practices (*Picatrix* 4.6.1). The third example also involves making a tablet but is used to attract mice. This entry directs the user as follows:

> Take the sap of white grape leaves, squill sap, borax, henbane, and red Indian calamine. The borax and calamine must be powdered and mixed with the aforementioned juices. From these, make tablets the size of a chickpea, and let them dry in the shade. When you wish [to] gather mice, place one of these tablets upon the coals of a fire. When the mice perceive the smoke, all will assemble there. Do with them what you wish (*Picatrix* 4.9.3).

From these examples we can see that there were a variety of uses for this common ruderal weed. It is also clear that its narcotic qualities were well known. The henbane seeds identified in central Turkey would have very likely produced a psychoactive or sleep-inducing effect on the person who deposited the seeds into the fire and on the surrounding audience if the fumes from the burning seeds were inhaled.

Psychoactive and toxic plant species are frequently used for suffumigation in the *Picatrix*. The aromatic qualities and potential psychoactive effects appear to have been of substantial value to those procuring plant products for ritual practices. Within the *Picatrix* these ingredients include, but are not limited to, datura, hemlock (*Conium maculatum*), mandrake, opium poppy (*Papaver somniferum*), saffron, wormwood (*Artemesia sp.*), myrrh (*Commiphora myrrha*), balsam (*Balanites aegyptiaca*), nutmeg (*Myristica fragrans*), cannabis (*Cannabis sp.*) and plane tree resin (*Platanus orientalis*). Plant-based ingredients are not used exclusively for this purpose, as animal (e.g. brain) and mineral components (e.g. orpiment) are also frequently found in suffumigation recipes. As evidenced in the examples above, these recipes typically result in the creation of tablets or pills that can be directly deposited into a censer or brazier when the user wants to proceed with a suffumigation ritual.

Within archaeological research, many of the plants recorded in the *Picatrix* are interpreted with regard to their status as economic plant taxa, e.g. opium poppy (Alonso 2008; Hallavant and Ruas 2014; Pérez-Jordà et al. 2017; Rodríguez-Ariza and Montes Moya 2005). However, it is also important to consider the social and ritual aspects of plants that are typically categorized as economic species. These aspects of plants are important to consider but are challenging to interpret through the archaeological record when botanical remains are not recovered in a mortuary or explicitly ritual context (Reed et al. 2019).

Radish (*Raphnus sativus*) is one example of a plant species that is typically interpreted in regard to its primary use as a food source. However, radishes

are among the more common ingredients used to heal animal bites in the *Picatrix*, alongside purslane (*Portulaca oleracea*), hazelnuts (*Corylus avellana*), wormwood and almonds (*Amygdalus communis*). Typically applied as an ointment, radishes can be used for medicinal purposes as a 'simple' or as a compound mixture. Well-crushed radishes, for example, can be applied topically to reduce the pain from a deaf adder's bite (*Picatrix* 4.7.34). The concern with animal bites and stings is mirrored by other Medieval texts such as Ibn Waḥshīyah's *Book of Poisons* (Pormann and Savage-Smith 2007: 54), and the *Picatrix* contains five remedies for these injuries. From this example, we can see how plants commonly interpreted as food items are also used for medicinal purposes. Medicinal practices like the radish ointment are nearly impossible to interpret clearly from archaeological contexts. Furthermore, when economic plant taxa are encountered in archaeological sites, they are almost exclusively examined in regard to their primary uses.

Many paleoethnobotanical analyses focus on the dietary and agricultural traditions of past populations (e.g. Alonso 2005, 2008; Bakels 2005; Moffett 2006; Pearsall 1983, 2015: 30; Peña-Chocarro et al. 2005; Pérez-Jordà et al. 2017; Rodríguez-Ariza and Montes Moya 2005). However, we can see from the knowledge-scape in the *Picatrix* that plants served multiple functions for the people of Medieval Iberia. Archaeological interpretations of botanical residues from almond, apple (*Malus sp.*), asparagus (*Asparagus officinalis*), basil (*Ocimum basilicum*), blackberry (*Rubus fruticosus*), cabbage (*Brassica sp.*), chickpea (*Cicer sp.*), cucumber (*Cucumis sativus*), date (*Phoenix dactylifera*), fig (*Ficus carica*), grapes (*Vitis vinifera*), hazelnut (*Corylus avellana*), olive (*Olea sp.*), pomegranate (*Punica granatum*), saffron, sesame (*Sesamum indicum/orientale*), watermelon (*Citrullus vulgaris*) and wheat (*Triticum sp.*) are typically interpreted for their role in diet and nutrition (Alonso 2005; Deforce et al. 2019), although many of these food plants have alternate, medicinal and ritual uses.

Luxury food items, such as saffron have been the focus of more thorough investigation in regard to their social aspects (Yildirim et al. 2020). Archaeologically, saffron is very challenging to recover due to its fragility, and it is very rarely discovered in the macrobotanical and pollen records (Deforce et al. 2019: 440). Saffron is used in the *Picatrix* to cause scorpions to flee (*Picatrix* 2.6.1, 4.8.11), in soporific mixtures (*Picatrix* 3.11.118) and in several suffumigation recipes (*Picatrix* 3.7.16, 3.7.27, 3.7.28, 3.7.33, 4.2.7, 4.7.61). The healing properties of saffron are well documented, and specific applications include its use as an aid

for difficult childbirth (Pormann and Savage-Smith 2007: 152), as a remedy for heart palpitations and to restore one's vitality (Yildirim et al. 2020: 27). Similar to other plants in the *Picatrix*, saffron can also be toxic in doses from 10 to 20 grams (Yildirim et al. 2020: 28). This toxic quality of saffron is attested in the *Picatrix*, in an instruction for "inducing copious laughter" (*Picatrix* 4.7.50). This description notes that if powdered saffron is given in a drink, "at once they will catch a pernicious laughter that will ultimately kill them" (*Picatrix* 4.7.50). With this example we can see that although the utility of saffron is commonly associated with food, its toxicity was also well known. By examining alternate uses of plants that are typically interpreted as food items in the *Picatrix*, we can gain a deeper perspective on the complex relationships between the people of the Medieval Iberian Peninsula and those plants that are archaeologically invisible.

The hidden knowledge-scape of botanical information within the *Picatrix* also reflects the complex intercultural dynamics of knowledge transfer in the Medieval period. The expansive trading networks that reached Medieval Iberia are represented in the *Picatrix* through the mention of several plant taxa with explicit details about their places of origin. These mentions demonstrate a synthesis of ancient and contemporary sources (tenth to thirteenth centuries AD) with a broad geographic range that included traditions from India, Persia, Babylon, Nabatea and the Mediterranean (Attrell and Porreca 2019: 1).

One such exotic trade species is aloewood. It is the most frequently mentioned plant species in the *Picatrix* and it is most often used in suffumigation. The *Picatrix* also includes a specific description of aloewood's geographic origin. This description notes that aloewood is only found in an area of India where there are three islands: Cabria, Camer and Azanif (*Picatrix* 3.3.27). Bakhouche et al. (2003: 192) argue that Camer and Azanif refer to Khmer (Cambodia) and Annam (a region of central Vietnam) respectively. The detailed description of where aloewood can be best procured suggests the extreme breadth of trade and items known to the people of Medieval Iberia. Other examples of plant taxa with geographical descriptions include wolfsbane from Armenia (*Picatrix* 4.7.33), balsam from Egypt (*Picatrix* 4.7.53) and costus from India (*Picatrix* 4.7.60). These examples also reflect plant taxa likely acquired for use in Medieval Iberia or were perhaps simply familiar to those people who were learned in botanical knowledge but unable to acquire them. Generally, it is likely that many of the plants in the *Picatrix* were available to the individuals who sought them, as the Iberian Peninsula saw extensive

trade, including plants that originated from India and lands further East during this period (Constable 1994; Curta 2013: 322, 329; Fenton 2016: 120; Hernández Bermejo and García Sánchez 1998: 16; López and Raymond 2001).

Conclusion

From the examples above, it is argued that esoteric texts like the *Picatrix* can have valuable applications to archaeological interpretations of human-plant relationships. As a rich source of information, the *Picatrix* can be used to create more nuanced interpretations of visible paleoethnobotanical remains and provide complementary information where such botanical residues do not survive in the archaeological record. People of the past had complex perceptions of and relationships with the surrounding flora. Robust interpretations of archaeological materials should take this understanding into account.

Esoteric botanical knowledge-scapes can also help to interpret how people in the past were interacting with plants that are archaeologically invisible. Many plants are misrepresented in paleoethnobotanical datasets because of taphonomic processes (Miksicek 1987: 221; Morehart and Morell-Hart 2013: 486; Pearsall 2015: 35; Pennington and Weber 2004: 16; van der Veen 2007; Wright 2010: 42). Within the Iberian Peninsula, most paleoethnobotanical analyses involve macrobotanical residues recovered as carbonized or waterlogged specimens (Peña-Chocarro and Pérez-Jordà 2019: 379; Pérez-Jordà et al. 2017). These specimens are visible in the archaeological record because of their relatively good preservation. However, these remains are still not fully representative of the past plant assemblage. Without an event of charring, deposition into an anaerobic environment, mineralization, desiccation or freezing macrobotanical remains are prone to decay (Hastorf 1999: 56; Moffett 2006; Wright 2010: 44).

The plant register recorded in the *Picatrix* can give paleoethnobotanists some idea of what species could be expected, or missing, in the archaeological record. This is particularly important when considering medicinal practices that may not be archaeologically visible as they were applied to afflicted people who survived or because the plants that were processed for medicinal applications did not result in the preservation of macrobotanical remains. The *Picatrix* is only one such text that can provide archaeologists with complementary information on past human-plant relationships, and other magical treatises and medical texts, such as leechbooks, could prove beneficial (e.g., the *Leechbook of Bald* and the *Lacnunga*) (Kieckhefer 2014: 64–66). Certainly the effectiveness of the approach

suggested in this paper can be increased by consulting multiple esoteric texts (e.g. *Kitab al-Asrar* and *Papyri Graecae Magicae*) (Hanegraaff et al. 2005: 21, 60).

The *Picatrix* and other texts containing esoteric botanical knowledge-scapes offer opportunities for paleoethnobotanical data to be investigated for ritual, symbolic and quasi-medicinal uses of plants. These uses are rarely interpreted in archaeological investigations outside of distinctive ritual contexts, e.g. burials (Brück 1999; Peña-Chocarro et al. 2005), or in rare circumstances that have preserved unique residues (Pérez-Arantegui et al. 2011). Although it is widely acknowledged that plants were used beyond sustenance, shelter and other banal purposes, in practice, the interpretation of the ritual aspects of plants is not as pervasive (Reed et al. 2019) and often a taxon is assigned to a single category only. Unconventional source texts like the *Picatrix* confirm the notion that many plant species cannot be exclusively categorized as secular or ritual. This paper has suggested that by using the plant registers found in esoteric texts, archaeologists can compare both the physical and the textual records to create more nuanced interpretations of past human-plant relationships and can access esoteric botanical knowledge-scapes.

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