

Human-nature relationships in the collections of the National Archaeological Museum of Naples: a botanical perspective

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Abstract: The portrayal of plants depicted in works of art in antiquity can provide insights into human–nature relationships. We have identified the botanical species sculpted on marble and stone and depicted on wall paintings, vases, mosaics, and furnishings in the National Archaeological Museum of Naples, which houses the greatest collection of Greco-Roman antiquities in the world. In detail, the main objectives of the present study were to analyse and discuss the symbolic role of some plants more strongly linked to a deity or involved in other aspects of Greco-Roman life and customs. The attention was particularly devoted to their symbolic role in mythology, their use in medical and ritual practices, their artistic meaning in domestic representations and their representation in Nilotic scenes.

Keywords: archaeology, botany, mythology, ritual practices, National Archaeological Museum of Naples.

Introduction

Plants have always played a significant role in the life of humankind. On the one hand, they ensure our food needs and provide raw materials; on the other, they play an important cultural role because of the strong symbolic meaning attached to them. This dual role has meant that plants are often depicted in works of art. Recent attention has focused on plant illustrations in sculptures, vases, paintings and coins

(e.g. Caneva & Bohuny 2003; Eichberger et al. 2007; Caneva 2011; Yilmaz et al. 2013; Caneva et al. 2014). The portrayal of plants in art is decorative, symbolic, or descriptive and can take on various functions according to the purpose of the work itself and the historical period to which it belongs (Franchi & Pacini 2017; Caneva et al. 2020). Many elements suggest that the choice of subject in the decoration of architecture and artifacts was not random or merely ornamental (Kumbaric & Caneva 2014). While many of the plant depictions would be considered merely ornamental today, for people of the past they were intended to show a world where nature was full of significance and to reinforce the widely held belief that life processes were strictly governed by the divine (Caneva et al. 2014). Images are often not entirely realistic, however, and interpretations and identifications of plant taxa based on them should take account of the contemporary cultural context and possible symbolism (Sillasoo 2006). Roman archaeological remains, especially those of the Hellenistic–Alexandrine style (influenced by Greek and Egyptian cultures), contain many details of plants and plant parts that can provide insights into human–nature relationships and are often the most unequivocal tool for assessing the historical presence of botanical taxa in a particular region (Janick 2007; Caneva et al. 2014). Pompeii and Herculaneum represent extraordinary windows into the lives of the ancient Romans. The Bourbon king of Naples, Charles III, promoted the exploration of the Vesuvian towns buried by a thick layer of pyroclastic material which erupted from Mt Vesuvius in 79 AD. The excavations of these sites began in 1738 at Herculaneum and in 1748 at Pompeii. This led to the discovery of a vast amount of ancient artworks, artefacts and buildings. Several rooms of the Royal Palace of Portici (later the Herculaneum Museum) were devoted to the exhibition of archaeological finds from Pompeii and Herculaneum. Charles III oversaw the setting up of a “Farnese Museum” in Naples, transferring from the palaces of Rome and Parma part of the rich collection inherited from his mother Elisabeth Farnese. Under Charles’s son, Ferdinand IV, both the Farnese Collection and the collection of Vesuvian finds were finally exhibited in the same building, constructed at the end of the 16th century. The museum collections were enriched in 1860 by the acquisition of finds from other sites in Campania and southern Italy and from private collections (National Archaeological Museum of Naples, 2018). The National Archaeological Museum of Naples (hereafter MANN) now houses, in an exhibition area of 12,650 m², the greatest collection of Greco-Roman antiquities in the world together with a significant Egyptian collection. The aim of the present study was to identify the plants sculpted on marble and stone and depicted on wall paintings, vases, mosaics and furnishings. On the basis of the species identified, we analyzed and discussed:

- the symbolic role of plants in mythology;
- their use in medical and ritual practices;
- their artistic meaning in domestic representations;
- their representation in Nilotic scenes.

Materials and Methods

The collections of the MANN on display comprise about 15,000 artifacts which, from March 2017 to September 2019, we searched for any kind of plant elements, like fruits, flowers, and leaves sculpted on marble and stone, and depicted on wall paintings, vases, mosaics, and furnishing. Each botanical element was examined and identified in situ or later by enlargement of photographs taken in the museum. To reconstruct the knowledge of the meaning of the ancient symbols of the Roman period we have relied on classical and recent literature to make hypothesis about symbolic meanings portrayed in the artifacts. For the nomenclature the World Flora Online (2021) was followed. Abbreviations of authors' names are standardized according to Brummitt & Powell (1992). All pictures and artifacts are reproduced by courtesy of the MANN.

Results

In all, 746 depictions of plants or plant parts in the collections displayed in the MANN were selected and analyzed. Among these materials it was possible to identify 47 taxa, representing 41 genera and 32 families of which 34 specimens were identified to species, 10 only to genus and some representations of flowers attributable to the Asteraceae family, plus a large amount of non-identifiable herbs and flowers more or less approximately depicted or too much stylized (Tab. 1). One painting of mushroom was also recorded. The normal chorological spectrum based on the identified species revealed the prevalence of Mediterranean species (44%) followed by Asian (20%) and Eurasian (19%) species. Taxa native to African continent amount to 17%. The most frequently recorded species were *Hedera helix* L. (73 times), *Pinus pinea* L. (72), *Vitis vinifera* L. (59) and *Olea europaea* L. (46).

Discussion

Among the identified specimens some species were detected particularly linked to a deity or strongly connected to religion, myth, customs and other aspects of the life of the Greco-Roman world. These plants and their representations seemed worthy of particular attention, which is why for some of them a more detailed discussion is presented below.

The evergreen species: glory, strength, eternity

Most Mediterranean sclerophyllous woody plants are relatively long-lived and resistant, which no doubt explains why the ancient Greeks and Romans considered these evergreen species symbols of love, strength, and eternity (Blondel 2010). On some items the depicted plants were easily identified; on others, however, where species recognition was dubious or questionable, mythology and literary sources supported botanical identification. This occurred, for example, in the case of the paintings of laurel, myrtle and olive, whose leaves are often almost identical. Laurel (*Laurus nobilis* L.) is always associated with Apollo (Eichberger et al. 2007). According

Tab. 1 Floristic list of the identified taxa.

Taxa	Nr. of depictions
<i>Acanthus mollis</i> L. (Acanthaceae) - Medit.	33
<i>Allium sativum</i> L. (Amaryllidaceae) – Eurasiat.	1
<i>Arbutus unedo</i> L. (Ericaceae) – Medit.	1
<i>Arum italicum</i> L. (Araceae) – Medit.	1
<i>Asparagus officinalis</i> L. (Asparagaceae) – Medit.	1
<i>Asplenium scolopendrium</i> L. (Aspleniaceae) – Eurasiat.	6
<i>Asphodelus</i> sp. (Liliaceae)	1
Asteraceae family	32
<i>Citrus limon</i> (L.) Osbeck (Rutaceae) - Asia	3
<i>Citrus x aurantium</i> L. (Rutaceae) - Asia	3
<i>Convolvus</i> sp. (Convolvulaceae)	10
<i>Crataegus azarolus</i> L. (Rosaceae) - Medit	1
<i>Crataegus monogyna</i> L. (Rosaceae) – Eurasiat.	1
<i>Cupressus sempervirens</i> L. (Cupressaceae) – Eurasiat.	6
<i>Cydonia oblonga</i> Miller (Rosaceae) – Asia	6
<i>Dianthus</i> sp. (Caryophyllaceae)	5
<i>Diospyros lotus</i> L. (Ebenaceae) - Asia	1
<i>Ficus carica</i> L. (Moraceae) – Eurasiat.	12
<i>Fragaria vesca</i> L. (Rosaceae) – Eurasiat.	1
<i>Hedera helix</i> L. (Araliaceae) – Medit.	73
<i>Iris</i> sp. (Iridaceae)	1
<i>Juglans regia</i> L. (Juglandaceae) - Asia	5
<i>Lagenaria siceraria</i> (Molina) Standl. (Cucurbitaceae) - Asia	1
<i>Laurus nobilis</i> L. (Lauraceae) – Medit.	32
<i>Linum</i> sp. (Linaceae)	1
<i>Malus domestica</i> Bork. (Rosaceae) – Eurasiat.	25
<i>Mespilus germanica</i> L. (Rosaceae) – Eurasiat.	3
<i>Myrtus communis</i> L. (Myrtaceae) – Medit.	9
<i>Nelumbo nucifera</i> Gaertn. (Nelumbonaceae) – Afr.	4
<i>Nymphaea lotus</i> L. (Nymphaeaceae) - East Africa and Southeast Asia	1
<i>Olea europaea</i> L. (Oleaceae) – Medit.	46
<i>Papaver somniferum</i> L. (Papaveraceae) – Medit.	8
<i>Persicaria</i> sp. (Polygonaceae) – Afr.	1
<i>Phoenix dactylifera</i> L. (Araceae) – Afr.	40
<i>Pinus pinea</i> L. (Pinaceae) – Medit.	72
<i>Prunus avium</i> L. (Rosaceae) – Eurasiat.	1
<i>Prunus persica</i> (L.) Batsch. (Rosaceae) - Asia	1
<i>Punica granatum</i> L. (Punicaceae) - Asia	21
<i>Pyracantha</i> sp. (Rosaceae)	1
<i>Pyrus communis</i> L. (Rosaceae) – Eurasiat.	11
<i>Quercus</i> sp. (Fagaceae)	28
<i>Quercus ilex</i> L. (Fagaceae) – Medit.	1
<i>Rosa</i> sp. (Rosaceae)	11
<i>Setaria italica</i> (L.) Beauv. (Poaceae) - Medit.	1
<i>Triticum</i> sp. (Poaceae)	24
<i>Vitis vinifera</i> L. (Vitaceae) - Ignota	59
<i>Vossia cuspidata</i> Wall. et Griff. (Poaceae) – Afr.	1
Not identified	139
TOTAL	746

to Ovid (Met. I. 450-567), Daphne was an extremely beautiful nymph, daughter of Gaia and the river-god Peneus. Apollo was fascinated by her overly enticing beauty but as Daphne did not return his love the god started pursuing her. When, after reaching the waters of Peneus, she was on the point of being caught, she begged her father to save her. Her prayer was granted and the power of the river deity started transforming his daughter into a lovely laurel tree. The defeated Apollo, embracing the vanishing nymph, declared that this tree would be sacred to him forever and since then the Greeks call the laurel tree *dáfne* (δάφνη). Another myth narrates that Apollo, after his birth on the island of Delos, came to Gaia's oracle and killed the serpent Python, the watcher of the shrine. For this godless act, Apollo exiled himself for nine years. After this time, the Minoan priest Karmanoras purified him with laurel branches (Yiannaki 2008). From these myths, according to Pliny the Elder, these were the reasons which the laurel was also used for the purposes of fumigation and purification from the blood of the enemy (HN XV.135). In addition, the laurel wreath was a symbol of reconciliation, respect, wisdom, honour, glory and fame (Rhizopoulou 2004; Renfrew & Sanderson 2005): both Greek and Roman generals returning triumphant from the battlefield, wore a laurel wreath to announce their victory, and laurel branches were also placed on ships, tents and soldiers' bows (De Cleen & Lejeune 2003). An urgent letter announcing a victory was bound with laurel while the messenger himself carried a laurel staff: such letters were called 'laurelled letters' (*litterae laureatae*) (Ingram 1870; Bell 1982). Pliny (HN XV.135) stated that the laurel was not permitted for "profane" uses, and setting it on fire at altars "for the propitiation of divinities" was strictly forbidden, because "...it is very evident that the laurel protests against such usage by crackling as it does in the fire, thus, in some way, giving expression to its abhorrence of such treatment." It is ascertained (Albani Rocchetti et al. 2021) that woodlands were widespread in Latium in antiquity and that the laurel was an important element occurring in these forests. Here it assumed an important sacred meaning especially in the area of the Antica Lavinium site as well as in the *lucus Loretae* close to the Aventine hill in Rome. Moreover, according to Strabo (Geography V.3.2), from the abundance of this tree in the region took its name the city of Laurentum where the King Latinus hosted Eneas at his arrival in Italy., nowadays the term laureate is used to stand for someone who has been given a very high honor for a specific skill in a subject of study (Cambridge Dictionary, 2019). In the MANN collections, laurel wreaths often adorn the head of Apollo or busts of emperors (Fig. 1).

The myrtle (*Myrtus communis* L.) played an important role in Aphrodite's cult, which took its origin from a Semitic nature cult (Bauman 1986). As it was sacred to the Goddess of love and beauty, Greeks called the myrtle also "sacred bush" for when, according to Ovid (Fasti IV.141-144), Aphrodite was born from the foam of the sea, she hid among the myrtles growing on the shore so that the lascivious eyes of a group of satyrs, would not see her naked. Wine and oil were also obtained from myrtle berries (Columella RR XII.38.1-8; Pliny HN XV.118,123) and from Pliny we also know of their use as a pepper substitute before the latter was known to Romans (HN

XV.118). The Greeks attributed a cleansing power to this plant and gave it to their dead. Electra (Euripides *Electra* 323-325) laments the fact that Agamemnon's grave was not adorned with myrtle. In the ancient Olympic Games, myrtle garlands were used as a symbol of beauty, peace, and protection (Rhizopoulou 2004). This plant also symbolizes joy, happiness and victory (Cooper 2012). In addition, a myrtle wreath was regularly worn by generals celebrating an ovation (Pliny HN XV.125). Myrtle was used to simulating the Euodia, the beautiful fragrance of the gods, by planting it in sanctuary gardens or hanging it as garlands in temples (Tanner 2001). Myrtle was also a symbol of love, marriage, and fertility, and the shrub was often used as a bridal wreath. However, in Rome, it was forbidden to place this plant on the altar of the Bona Dea because it encouraged physical pleasure (Bell 1982). Even if surely represented in frescoes myrtle identifications from the depictions is always questionable. Its twigs, leaves, fruits, and probably also some hurriedly sketched flowers are positively identifiable from earthenware artifacts and vases' decorations (Fig. 2). It is also represented in frescoes depicting scenes of Roman worship, where it acquires a beneficial power as shown by the garlands adorning the heads of the Lares, the spirits of the ancestors who watched over the family.

The first representation of the olive tree (*Olea europaea* L.) can be traced back to the famous Phaistos Disc from the Minoan period (1700 BC), probably reproducing a religious ritual. It is found in a mural painting from Minoan Thera (1650 BC) in which a girl with an olive branch on her head is depicted and, again, at Vapheio near Sparta in a tomb dated to 1600 BC (Yiannaki 2008). Not only is its botanical origin uncertain, but also its mythological origin. According to Pindar (Ol. 3.14), it was Heracles who



Fig. 1 Laurel crowns in sculptures. Left to right: seated Apollo (posthumous head after restoration) (inv. 6281); colossal enthroned statue of Augustus (inv. 8089); warrior with child (inv. 5999).



Fig. 2 Representations of myrtle. Left to right: lead-glazed terracotta from House IV (inv. 13315); vases from Magna Graecia collection (inv. 86056- 82113).

brought the olive tree to Olympia from the fabulous land of eternal spring of the Hyperboreans. It is, however, possible that the Romans knew the wild form of the olive i.e. the oleaster, a spiny, bitter fruit-bearing bush growing in the Mediterranean maquis and from which some scholars believe the cultivated olive is derived. According to Ovid (*Met.* XIV 517-526), a shepherd from Apulia was transformed by a group of nymphs he had frightened and obscenely derided into an oleaster, producing unpleasant fruits. The most consolidated and evocative legend about the olive tree is perhaps that linked to the story of the half-man and half-snake King Cecrops and the challenge between Athena and Poseidon for the control of Attica. In order to settle the dispute, the two gods were asked to make a useful gift to the Athenians. According to Apollodorus (*Bibl.* III.14), Poseidon struck a rock on the Acropolis with his trident, creating a salt sea while Athena offered an olive tree. The assembly of the gods judged Athena's gift to be better and stated that she should become the patron of the town which, still then unnamed, was called Athens after the goddess of wisdom (Fig. 3).

The olive tree has always been associated with Athena and sacred to her, thus assuming a strong religious connotation which is confirmed by the laws and customs for the protection of this plant, which have been handed down until recently (Chevalier & Gheerbrant 1974). The goddess Athena was the first to be crowned with an olive wreath and since then the prize for the winners of the Panathenaic games consisted of an amphora filled with oil surmounted by an olive branch. The wrestlers anointed their bodies with oil and this took on not only a practical function but also a sacred one. Notably, the winners of the Olympic Games were crowned with an olive wreath. The use of the olive as a symbol of peace and reconciliation is largely in line with the symbolism of the goddess Athena, to whom the tree was dedicated (Chevalier & Gheerbrant 1974).

The identification of olive is not always easy in paintings and other manufactures exhibited in the MANN but on a silver cup found at Pompeii, part of the silver hoard from the House of Menander, leafy olive twigs bearing fruit are sculpted in high relief, realistic enough to be a botanical model (Fig. 4).



Fig. 3 Challenge between Athena and Poseidon for the control of Attica (inv. 25837).

Dionysus and his plants

Dionysus was the god of wine, festivities and madness, and the species most associated with this deity was the grapevine (*Vitis vinifera* L.). This plant which is leafless during winter and seems dead but in spring comes back to life with all nature was undoubtedly associated with the ideas of life and death, rebirth, and regeneration (Savo et al. 2016). This could be the reason why all the countless different versions of the myth of Dionysus share the fact that, after being killed and chopped into pieces by the Titans, he was brought back into life (Nonnus Dionysiaca VI 169-180). Other plants, like ivy (*Hedera helix* L.), pine (*Pinus* spp.) and oak (*Quercus* spp.), are found in connection with Dionysiac rites in addition to the grapevine. Ivy was used to making the wreaths with which Dionysiac worshippers crowned their heads (Leinieks 1996). Being an evergreen species, this plant played an important role: the main festivals of Dionysus were in winter and springtime when vines are leafless while ivy leaves were available, and it was with ivy twigs that the god's statues and wine jugs were adorned (Rühfel 1984; Simon 1998). In Greek mythology Zeus entrusted the infant Dionysus to the care of the Nysiad nymphs with the assistance of the old satyr-god Silenus such that, when his angry stepmother Hera hunted for the child, the Nysiad Kisseis (the lady of ivy) screened the crib with ivy leaves (Ovid Fasti III.769-770). Silenus himself is always represented crowned with ivy. According to Eichberger et al. (2007) and Kumbaric & Caneva (2014), most of the ivy represented could be ascribed to *Hedera helix* L. subsp. *poetarum* Nyman, a subspecies occurring, albeit rarely, in Italy, Greece, Turkey, Cyprus and the Near East, and used for making poets' wreaths. This hypothesis can be supported by the largest fruits and leaf shape of some of the ivy crowns represented in the MANN (Fig. 5).

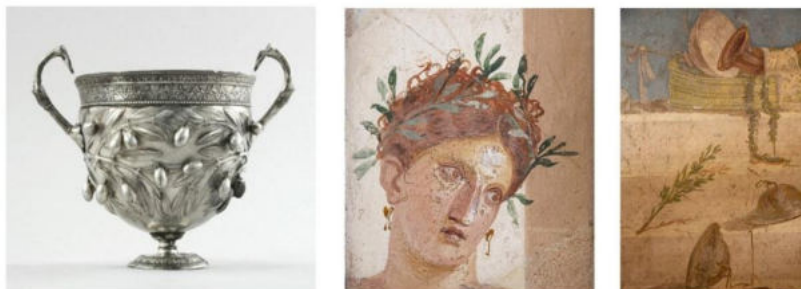


Fig. 4 Left to right: Cantharus decorated with olive leaves and fruits. House of Menander (inv. 25514); olive twigs encircling a girl's head (Akte or Peliade) (inv. 9094); olive branch in a painting from the House of Julia Felix (inv. 8795).

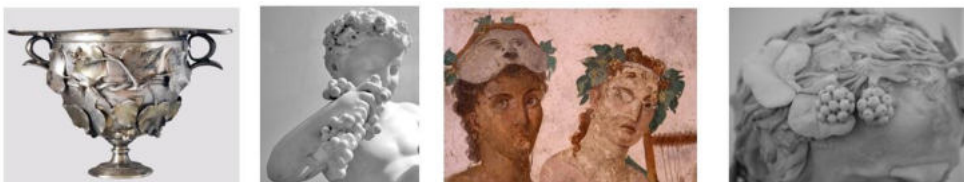


Fig. 5 Representations of ivy: (left to right) silver cup from Herculaneum (inv. 25379); detail from Satyrus with child Dionysus (inv. 6022); couple with masks (inv. 9079); Head of Silenus (inv. 6333).

Due to the fact that ivy sticks firmly to trees or walls, in antiquity this plant symbolized eternal life, loyalty, devotion and undying desire (De Cleen & Lejeune 2003). A long rod called *thyrsos* (θύρσος) by Greeks and *ferula* by Romans (Fig. 6), when wrapped with ivy and vine leaves and tipped by a cluster of crowded ivy leaves in the shape of a pine cone, unequivocally becomes the symbol of Dionysus (Kalke 1985; Thornton 2018). As can also be seen from representations from other archaeological finds, not from the MANN, this is a case in which the botanical species can be identified with reasonable certainty: the stem shape and the arrangement of the inflorescences point to *Ferula*, a plant genus belonging to the Apiaceae.



Fig. 6 Left to right: detail from a relief with seated Dionysus holding the thyrsus (inv. 6728); detail from a crater with depictions of Dionysus and his court (inv. 6778).



Fig. 7 Clockwise from left: detail from the basso-relief so-called “Dionysus drunk among the Satyrs and Maenads” (inv.6684); detail from the sarcophagus so-called “Drunk Heracles in the procession of Dionysus” (inv.6776); detail from the “Festoon with masks and pine branches”, from the House of Scientists (inv. 9901).

In representations of Dionysus also oaks and pines very often appear. The oaks depicted in the scenes connected to the god of wine have a characteristic outline with well-pronounced lobes. Also from the shape of acorns it may be safely assumed that they are deciduous species such as common oak (*Quercus robur* L.), sessile oak (*Q. petraea* (Matt.) Liebl.) or downy oak (*Q. pubescens* Willd.) although we cannot go any further in identifying at species level. As for the pine (Fig. 7), due to the size of the needles and pine cones it is more than conceivable that the stone pine (*Pinus pinea* L.), rather than the Aleppo pine (*P. halepensis* Mill.), is generally represented.

Twigs bearing needles of these trees were often used to make the garlands worn by Dionysus' worshippers (Euripides *Bacchae* 701-702). Like all evergreens, pines symbolize immortality and victory (Cirlot 1985) and consequently pine cones were also seen as a gift from the Gods and a symbol of fertility (Chevalier & Gheerbrant 1974). In Greece the pine was sacred to Poseidon and in Roman times the winners of the Isthmian Games held in the proximity of a wood southeast of Corinth were crowned with pine wreaths (Plutarch *Timoleon* 26.2).

Medicinal and psychotropic plants

The opium poppy: for medicinal and recreational uses

It may be assumed that in antiquity many plant species, in addition to their role as a foodstuff, could have been a source of medicinal, poisonous, or psychotropic substances. This did not go unnoticed in the ancient Mediterranean world (Day 2013). One of the best-known medicinal and psychoactive species at that time was doubtless the opium poppy *Papaver somniferum* L. (Chovanec et al. 2012) which, also at that time, was grown for its tasty seeds used as a condiment or as a source of oil (Jashemski et al. 2002; Megaloudi 2006) and as a source of opium which is obtained from the latex released by the plants after gashing their unripe capsules (Zohary et al. 2012). According to Dimbleby (1967), Pickersgill (2005), and Zohary et al. (2012), *Papaver somniferum* was domesticated in the western Mediterranean region in Neolithic times. Although some authors consider this species derived from *Papaver setigerum* DC., it is very likely that they are congeneric species and that *P. somniferum* was domesticated due to the presence of morphine, codeine and thebaine, almost absent in the capsule of *P. setigerum* (La Valva et al. 1985). Poppy latex has been traditionally used for pain relief providing the prototypic analgesic morphine (Russo & Hohmann 2013; Grauso et al. 2021). Pliny (HN XX.199), in one of the passages in which he deals with the poppy, uses the term opium, describes the harvesting methods, and explains that it is used as a sleeping pill in the form of tablets obtained from the dried latex, or by using chopped seeds in the milk. Both Pliny (HN XX.202) and Dioscorides (IV.65) mention meconium, a mixture obtained from leaves and capsules of poppy: both consider it less effective than latex, evidently drawing from a common source. However, the medicinal use of opium in ancient cultures could never be separated from its "recreational" use. The use of opium for religious and magic ceremonies also appears to have been important (Sabatowski et al. 2004). The symbolic meaning that the ancients attached to the

poppy is of special interest. The opium poppy is a typical weed found in grass crops, which explains its relationship with fertility deities. Indeed, several scholars consider that abundance and fertility are symbolically represented by the presence in the hands of statues of gods of the poppy capsule, alone or combined with ears of wheat, or as garlands consisting of poppies combined with cereals (Kritikos & Papadaki 1967; Wagner 1984). The goddess Demeter in particular was connected with this plant, and she was frequently depicted with stemmed grains of barley or wheat and opium poppy capsules in her hands or headdresses (Merlin 2003). According to a Greek myth, Demeter was so exhausted looking for her lost daughter Persephone that she was neglecting her food. During her wanderings in search of Persephone, she stayed in Eleusis as the guest of old Keleos who asked her to heal his child Triptolemus. Demeter answered the prayer and, about to enter Keleos' house, plucked a tender, sleep-inducing, poppy from the ground. As she picked it, she is said, unthinkingly, to have tasted it and thus, unwittingly, brought her long fast to an end (Ovid Fasti IV.531-534). According to another myth, Mecon was a young man loved by the goddess who, on his death, changed him into an opium poppy. (D. Serv. Georg. I.212). In the MANN collections, the association between fertility, abundance, and the opium poppy is well represented in garlands, and mosaics, as well as in the Mosaic of the House of the Faun and on the famous Blue Vase where it is depicted together with other fruits, cereals, the grapevine, etc. (Fig. 8).

Old Silenus: a clue to the Eleusinian mysteries?

A small painting from the House of Meleager is worthy of attention: what is the old Silenus carrying in his right hand while he is observing the struggle between Eros and Pan (Fig. 9)? Here we propose a hypothesis that, if not likely, is undoubtedly evocative. In our opinion, Silenus is holding an ear of cereal (barley, wheat, or rye) infested by *Claviceps purpurea* (Fr.) Tul., a parasitic fungus, that grows on the ears of some cereals. The hornlike structures clearly visible in the terminal part of the object carried by Silenus are, in our view, attributable to the characteristic sclerotia that this fungus produces in the ears of infected plants.

Claviceps purpurea is known by the common name of ergot and has the characteristic of possessing, strongly hallucinogenic properties (ergotism). Since it is resistant to high temperatures, intoxications are also possible by eating rye bread made with flour contaminated by crushed fragments of this fungus. The hallucinogenic properties of this fungus, especially those due to lysergic acid, were investigated by the Swiss chemist Albert Hofmann who managed to synthesize it under the name of LSD in 1938. It should be noted that hallucinogenic alkaloids are soluble in water unlike those that cause other symptoms. The Eleusinian Mysteries were rites celebrated every year in the city of Eleusis in which the myth of Demeter and her daughter Persephone was represented: participants were given a drink called kykeion made of water (or wine), mint, and barley or, according to some sources, unspecified rye flakes. Although these rites were shrouded in total mystery, due to the oath of secrecy imposed on the participants, many scholars have come to

the conclusion that the mystical visions peculiar to this ritual experience were the effects of this drink, and these visions were probably induced precisely by the presence of the ergot dissolved in it (Wasson et al. 1978). On the other hand, the early relationship between humans and psychoactive plants, often within a highly ritualized ceremonial context, has been repeatedly proposed over time (e.g. Wohlberg 1990; Schultes et al. 2002; Merlin 2003).



Fig. 8 Pods of the opium poppy. Clockwise from left: detail from the so-called “Festoon with theatrical masks, leaves, and fruits” from the House of the Faun (inv. 9994); detail from the Blue Vase (inv.13521); in a bas-relief (inv.2614).



Fig. 9 Fresco from the House of Meleager (inv. 9124). *Claviceps purpurea* horns on a cereal spike held by Silenus facing the struggle between Eros and Pan.

Still life paintings

Xénia, from the Greek word ξένος (stranger, foreigner), is the ancient denomination of the gifts to the guest in general or more specifically of the food offered to the guests in the rooms made available to them by the lord of the house. Vitruvius (De Architectura VI.7.4) tells us that the artists of ancient Greece used the term Xénia to refer to the decorative food paintings (close to modern still life), adorning the rooms assigned by the master of the house to his guests. The paintings of the Xénia were thus closely connected with the custom of hospitality, generosity, and courtesy reserved for those who were far from home or associates of the host. In the MANN many Xénia are shown in the still-life painting collection. In these depictions, besides live or (and) dead animals (e.g. chickens, birds, rabbits), also glass bowls and baskets filled with assorted fresh and dried fruits and rarely also mushrooms are represented. The fruits depicted comprise grapes, dates, pears, apples, pomegranates, figs and peaches. With regard to peaches, it is worth noting that the first representation of this fruit in the Roman era probably dates back to a wall painting from the House of the Stags in Herculaneum (Fig. 10). This fruit tree is listed by Pliny among the exotics recently imported into Italy. He says: “The persica (peach) ... is shown by its very name to be an exotic fruit even in Asia Minor and in Greece, and to have been introduced from Persia” (HN XV.44).

The wild form of the peach tree (*Prunus persica* (L.) Batsch) occurs from China to the mountains of Tibet, and the first domesticated forms were found, in the same area, in about 2000 BC (Zheng et al. 2014). From this region, the peaches reached Persia and, probably brought by Alexander the Great, were later introduced into Greece. The Romans are thought to have known this plant only around the first century AD (Sadori et al. 2009), but even if its cultivation was quickly established all over the Mediterranean basin, only Pliny (HN XV 44-45) and occasionally Columella (RR V.10.20; IX.4.3) mention this fruit tree in their writings. In Naples, following the discovery of a palaeo-seafloor in the port of Neapolis, spanning about 700 years, between the 2nd century BC and the 5th century AD, thus intersecting the entire Roman Imperial Age, numerous peach stones have recently been identified (Allevato et al. 2016). In ancient Campania, peach stones were found also in Pompeii in both urban and rural contexts (Ciaraldi 2000; Robinson 2002; Murphy et al. 2013). Unlike peaches, figs are the most commonly depicted fruits in the wall paintings housed in the MANN. In the Xénia both fresh and dried figs are found. The origin of this tree may be traced back to a region of Asia Minor called Caria, hence the name *Ficus carica* L. The first traces of its cultivation date back to a period between the Neolithic and the Early Bronze Age (Zohary et al. 2012). The cultivation of the fig in the Mediterranean basin has always been associated with that of the olive tree and the vine. Since antiquity, it has been an important plant food resource due to the fruits which, also in ancient times, were consumed fresh or dried. At the time, according to Pliny (HN XV.69-70), many different growing regions and varieties were known, including one called the Herculaneum fig. Some of these types were at the same time both late and early, as they bear two crops in the year, one white and the other black,

ripening at harvest-time and vintage respectively (HN XV.71). Based on these indications, the discovery of dried figs in Pompeii and Herculaneum contributed to postponing the presumed date of the 79 AD eruption of Vesuvius from August to October 24th (Stefani 2006). A type of dried fig painted in one of these frescoes is worthy of attention: the figs are arranged in the same way they are prepared today in many areas of southern Italy. In the still life fresco there can easily be recognized two such dried fruits split into two, spread out, pressed together, and looking like a loaf of bread (Fig. 11).

Columella (RR XII.15.5) mentions similar dried figs, giving detailed instructions for their preparation. He recommends picking out the richer figs and letting them dry out in the sun. When they are well dried and softened by the warmth, the author recommends arranging them by pairs and reducing them to various shapes. Interestingly, one such shape that Columella mentions is precisely that of a loaf of bread. In Campania, as previously said, this custom in preparing dried figs still survives.

House of the Faun: botanical elements in the Nile mosaics

Nilotic scenes can be defined as images of the Nile and the river's banks showing flora and fauna together with man-made structures and human activities (Versluys 2002). These themes were frequent on mosaic pavements, wall paintings, wall and floor mosaics, reliefs and miscellaneous objects (Hachlili 1998). In the MANN exhibitions there are Nilotic frescoes from the Temple of Isis and in the Landscape Paintings collection. We analyze here the plants depicted in the mosaics from the House of the Faun. The mosaic threshold band depicting a Nilotic scene associated with the Alexander Mosaic is most obviously a topographical reference to Egypt, but at the same time, it can also be read as a reminder of Alexander's conquest of this land (Christensen 2006). The most faithfully represented plant in the Nilotic scenes is undoubtedly the Egyptian lotus (*Nelumbo nucifera* Gaertn.). This species is depicted



Fig. 10 Wall painting of peaches. Herculaneum, House of the Stags (inv. 8645).



Fig. 11 Fresco with dried figs and dates. Herculaneum, House of the Stags (inv. 8645).

ted with its typical umbrella-shaped leaves together with some of its emerging erect stems topped with flowers or capsules. The lotus is an aquatic species, native to East Africa and Southeast Asia and is one of the dominant aquatic macrophytes in the River Nile system of Egypt (Zahran 2009). This plant was extensively stylized in Egyptian art and, together with papyrus, was the symbol of the union of Upper and Lower Egypt (Dumont 2009; Kandeler & Ullrich 2009). In the lower part of the mosaic, the two floating leaves on which a frog is resting could hypothetically belong to *Nymphaea lotus* L., one of the most important plants in ancient Egyptian art, ritual, food, and medicine introduced into Egypt from India, probably during the Persian period (Whitehouse 1979). The mosaic also displays some floating mats of grass-like plants which, in our opinion, could be ascribed to *Vossia cuspidata* (Roxb.) Griff, a fixed floating grass very common in the Nile flora (Zahran 2009) belonging to the Poaceae.

Other plant species occur in the Nilotic mosaics but are almost impossible to identify definitively. We can only point out a poorly identifiable carnation (*Dianthus* sp.), and a few more plants weakly resembling a non-identifiable *Persicaria* species, some of which (*P. senegalensis* (Meisn.) Soják, *P. lanigera* (R. Br.) Soják.) are found very frequently along the shores of the Nile (Zahran 2009) (Fig. 12).

The date palm (*Phoenix dactylifera* L.) is also a typical floristic element of the Egyptian riverine landscape and is very often depicted in Nilotic representations (Fig. 13).



Fig. 12 Details from the Nile mosaics in the House of the Faun. From left to right: *Nelumbo nucifera*; *Dianthus* sp.; *Persicaria* sp.; *Vossia cuspidata* (inv. 9990).



Fig. 13 Nilotic landscape with *Phoenix dactylifera* (inv. 1.10).

Conclusion

Analysis of the botanical elements among the archaeological finds yields insights into the deep relationship between humans and nature in ancient times. Beyond their merely artistic representations, the richness of botanical elements and their high recurrence highlight the great attention paid by the ancients to nature and the ways in which it was perceived. Indeed, alongside their aesthetic value, plants often take on a deep cultural significance that helps us better understand their symbolic meaning in the Roman art of the Hellenistic–Alexandrine style. Very often plant depictions are in relationship to deities and with the related mythology. The role of plants as medicinal and psychotropic was also highlighted, with a focus on opium poppy, the discovery of a depiction of an ear of cereal (barley, wheat, or rye) infested by *Claviceps purpurea* is worthy of attention. Finally, the Nilotic flora was analysed through its representation in the mosaics.

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