



IDENTIFICATION OF PLANT FIGURES ON STONE STATUES AND SARCOPHAGUSES AND THEIR SYMBOLS: THE HELLENISTIC AND ROMAN PERIODS OF THE EASTERN MEDITERRANEAN BASIN IN THE ISTANBUL ARCHAEOLOGY MUSEUM

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Received: 01/10/2012

Accepted: 30/10/2012

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ABSTRACT

Throughout time, plants have been central to human life; plants have provided humans with food, wood, fuel, cosmetics, medicine, and humans have attributed symbolism to plants, including fertility, power, and purity. The Istanbul Archaeology Museum houses many stone statues and sarcophaguses featuring a variety of figures. Among other things, these figures depict fighting, richness, fertility, peace, gods, and plants. Plants are represented as whole trees, cones, leaves, fruits and flowers. These figures help us to understand both the cultural history of these plants and ancient human relationships with plants. The purpose of this study is to identify the genera and species of the plant figures on the stone statues, reliefs and sarcophaguses from the Hellenistic and Roman periods in the Istanbul Archaeology Museum and to discuss their historical importance. To this end, a list was created to record the inventory number, original location where the remains were found, and the age and historical time period of 47 Roman and Hellenistic statues and sarcophaguses. A total of 24 different types of plants were identified: acanthus leaves, apple, apricot, bay laurel, common grape wine, common fig, a whole eastern plane tree, eggplants, a globe of artichoke, oak leaves and fruits, olive, opium poppy, pear, a cone of umbrella pine, pine leaves and cones, pomegranate, quince, walnut, wheat, strawberry fruit, and date palm leaves, fruit, and stems.

KEYWORDS: Plant figure, Istanbul Archaeology Museum, stone statue, sarcophagus, Hellenistic - Roman period

INTRODUCTION

In Antiquity, plants had a central place in human life, and they were used both in daily life and as symbols of victory, glory, power, peace, wisdom, beauty, pureness, and fertility. Because of their symbolism, ancient people added plant figures to stone statues, gravestones, sarcophaguses and marbles. In the Mediterranean Region, olive and grape plants were particularly important in human life. Olive oil was a part of the Mediterranean food culture, and because of its use in wine, grapes were an indispensable agricultural production. In Hellenistic and Roman times, different grape varieties were grown to produce different types of wine (Pliny the Elder, AD 77-79, in *the Natural History*, 14.4.20-32). Olive was a symbol of peace, glory, wisdom, fertility, pureness, freshness, beauty and health. According to Renfrew and Sanderson (2005), the Bay laurel leaf crown was a symbol of wisdom and glory for Roman athletes and emperors. Oak was the symbol of strength and sturdiness in all religions and mythologies in the Northern Hemisphere (Moltke, 1952).

In Hellenistic and Roman periods, furthermore, apple, pomegranate, and grape figured on table and grave stones were most preferable foods (Thönges-Stingaris, 1965; Pfuhl and Möbius, 1977 and 1979; Karagöz, 1994; Firatlı, 1964). On the other hand Corona Civica (diadem on the head) were composed on mostly oak, bay laurel and olive leaves and fruits (İnan and Rosenbaum, 1966 and 1979).

The Istanbul Archaeology Museum in Turkey houses many stone statues, columns, and sarcophaguses depicting plant figures. The purpose of this study is to identify the genera and species of the plant figures on these stone statues, reliefs and sarcophaguses and to discuss the plants' cultural histories and their roles in human life.

MATERIAL AND METHODS

This study was evaluated plant figures on a total of 47 stone statues, relief and sarcophaguses belonging to the Hellenistic and Roman Periods in the Istanbul Archaeology Museum (Figures 1 and 2).

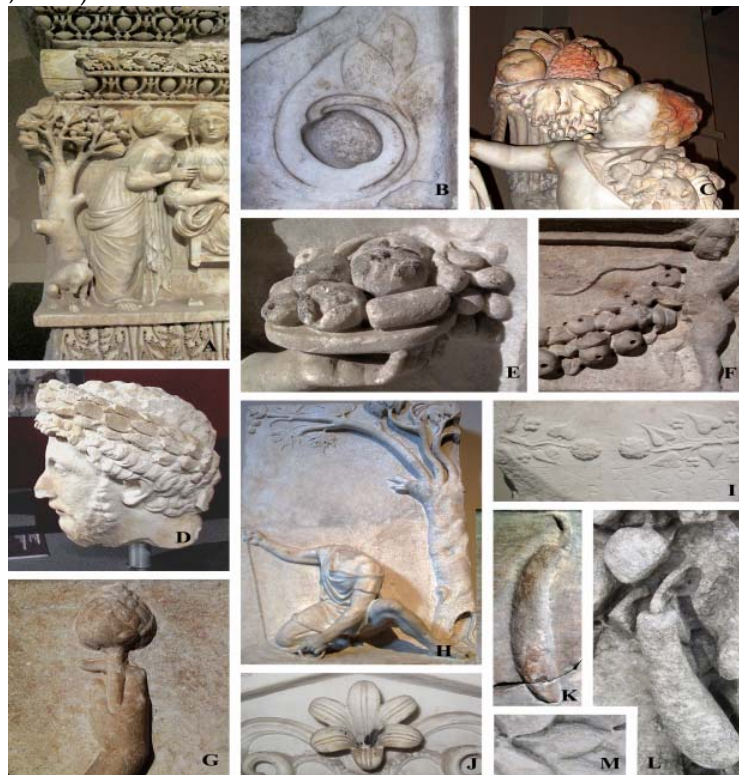


Figure 1. Plant figures on the remains: A) Stone pine tree and acanthus leaves (508T); B) An apple (356-357T); C) Common grape vine, quince, walnut, stone pine cone and leaves, pomegranate, opium poppy, apricot (4410T); D) Bay laurel leaves as a diadem (406T); E) Pear, common fig, date palm, common grape vine, and undefined fruits (345T); F) Common fig fruits (2768T); G) Globe artichoke (1417T); H) Eastern plane tree (1423T); I) Ivy fruiting shoots (2215T); J) Lily flower (372T); K) Eggplant fruits (2214T); L) Eggplant and wild strawberry fruits (513T); M) Wild strawberry fruit (513T)

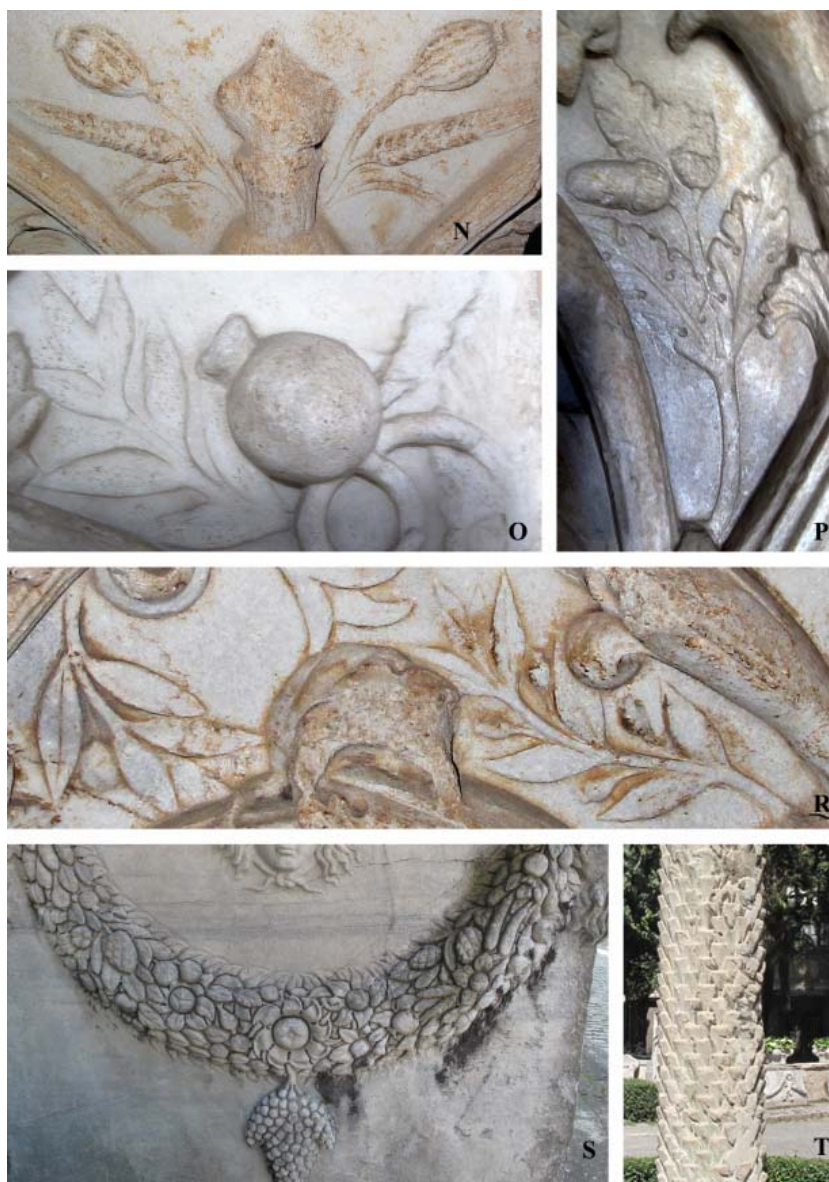


Figure 2. Plant figures on the remains: N) Opium poppy and wheat (356-357T); O) Pomegranate fruit and leaves (356-357T); P) Oak fruiting shoot (356-357T); R) Olive leaves and fruits on the left, and common myrtle leaves and berries on the right (356-357T); S) A rich garland including some eggplant, pomegranate, pine cone, pear, common grape vine, bay laurel leaves, and stylized leaves and flowers undefined (513T); T) A date palm stem (342T)

Because of having many remains such as sarcophaguses, stone statues and relief from these periods and the museum, where is the largest Archaeology Museum of Turkey, is a good representative of these times. A list of the studied historical remains is provided in Table 1. This list provides the inventory number, original location where the remains were found, and age and historical time period for each of the remains. Photographs were taken of all plant figures. Identification of the plants was performed using related references, the ISTO Herbarium specimens and fresh leaves and fruits.

IDENTIFICATION RESULTS

Our study unambiguously identified 24 different plant figures (Table 1). The most common plant figures are common grape vine (*Vitis vinifera* L.), oak (*Quercus* L.), olive (*Olea europea* L.), bay laurel (*Laurus nobilis* L.), and acanthus (*Acanthus* L.).

Descriptions of all plant figures identified, inventory numbers, original locations, names, periods and types of remains are provided in Table 1.

All of these plants currently grow in the Mediterranean basin.

Table 1. Figures of plants identified on historical remains exhibited in the Istanbul Archaeology Museum, including the inventory numbers, age and historical time period, and original location where the remains were found.

No	Period	Century	Find place	The name of the remains	Inventory Number	Identified genera and species and types of figures
1	Hellenistic	Last quarter of 4th cent. BC	Sidon (Sayda, Lebanon)	Alexander Sarcophagus	370 T	<i>Vitis vinifera</i> shoots with leaves and tendrils
2	Hellenistic	End of 4th cent. BC	Sidon (Sayda, Lebanon)	Sarcophagus	371 T	<i>Vitis vinifera</i> shoots with fruits, leaves and tendrils; <i>Lilium</i> flower; <i>Acanthus</i> leaves
3	Hellenistic	End of 4th cent. BC	Sidon (Sayda, Lebanon)	Sarcophagus	372 T	<i>Vitis vinifera</i> shoots with fruits, leaves and tendrils; <i>Lilium</i> flower; <i>Acanthus</i> leaves
4	Hellenistic	End of 4th cent. BC	Sidon (Sayda, Lebanon)	Sarcophagus	373 T	<i>Vitis vinifera</i> shoots with fruits, leaves and tendrils; <i>Lilium</i> flower; <i>Acanthus</i> leaves
5	Hellenistic	3rd cent. BC	Kyzikos	Base of Grave of Meniscos	2215 T	<i>Hedera helix</i> shoots with fruit and leaves
6	Hellenistic	2nd-3rd cent. BC	Kyme	Altar with garlands	282 T	<i>Vitis vinifera</i> grape fruit; <i>Pinus</i> cone; <i>Quercus</i> acorn with cupule; <i>Malus</i> fruit; <i>Papaver somniferum</i> fruit; <i>Punica granatum</i> fruit; <i>Olea europea</i> fruiting shoots with leaves; <i>Lilium</i> flower; <i>Prunus armeniaca</i> fruit.
7	Hellenistic	First half of 2nd cent. BC	Pergamon (Bergama)	Supports of an offering table	356-357 T	<i>Quercus</i> fruiting shoots with leaves; <i>Malus</i> fruiting shoots with leaves; <i>Punica granatum</i> fruits and leaves; <i>Vitis vinifera</i> fruits and leaves; <i>Olea europea</i> fruiting shoots with leaves; <i>Myrtus communis</i> fruiting shoots with leaves; <i>Pinus</i> cone and leaves; <i>Papaver somniferum</i> fruits; <i>Triticum</i> ; <i>Acanthus</i> leaves; two unidentified flowers.
8	Hellenistic	2nd cent. BC	Tralles (Aydn)	High Relief	1423 T	<i>Platanus orientalis</i> tree with leaves, fruits and cavity
9	Hellenistic	2nd cent. BC	Byzantion (Beyazıt, İstanbul)	Gravestone of Hekatodoros' Son, a scholar athlete	4206 T	<i>Phoenix dactylifera</i> leaf
10	Hellenistic	2nd and 1st cent. BC	Kuruçeşme, İstanbul	Altar with garlands	4446 T	<i>Vitis vinifera</i> fruits
11	Late Hellenistic	1st cent. BC	Çiftehavuzlar, İstanbul	Relief in the style of a sarcophagus facade	3980 T	<i>Laurus nobilis</i> leaves as a garland; <i>Phoenix dactylifera</i> leaf
12	Roman	1st cent. BC-1st cent. AD	Ömerbeyli, Germencik, Aydın (Tralles)	Statue of Emperor Nero	506 T	<i>Punica granatum</i> fruit; <i>Vitis vinifera</i> fruit; <i>Malus</i> fruit
13	Roman	1st-2.cent. AD	Prusias ad Hypium (Bursa)	Grave stele of Nympe and Prepouse	767 T	<i>Laurus nobilis</i> leaves as a garland
14	Roman	180-92 AD	Nicomedia (İznit)	Statue of Emperor Commodus	4866 T	<i>Olea europea</i> twigs with leaves and fruits in diadem/wreath.
15	Roman	117-138 AD	Girit (Hierapytha)	Statue of Emperor Hadrianus	50 T	<i>Laurus nobilis</i> leaves as a diadem
16	Roman	First half of 2nd cent. AD	Tripoli (Trablusşam, Syria)	Sarcophagus; symposium scene	345 T	<i>Vitis vinifera</i> fruit; <i>Ficus carica</i> fruit; <i>Pyrus communis</i> fruit, <i>Phoenix dactylifera</i> fruit.
17	Roman	First half of 2nd cent. A.D.	Thessalonica (Selanik)	Sarcophagus of Phaedra and Hippolyte	125 T	<i>Vitis vinifera</i> fruit; <i>Quercus</i> leaves; <i>Ficus carica</i> fruit.
18	Roman	First half of 2nd cent. AD	İassos	Sarcophagus with garlands	513 T	<i>Laurus nobilis</i> leaves; <i>Quercus</i> leaves and fruits; <i>Vitis vinifera</i> shoot with fruit and leaves; <i>Papaver somniferum</i> fruit; <i>Pinus</i> cone; <i>Malus</i> fruit; <i>Punica granatum</i> fruit; <i>Ficus carica</i> fruit; <i>Pyrus communis</i> fruit; <i>Solanum melongena</i> fruit; <i>Fragaria vesca</i> fruit

19	Roman	2nd cent. AD	Ayvalik, Balıkesir	Head of Emperor Marcus Aurelius	406 T	<i>Laurus nobilis</i> leaves as a diadem
20	Roman	2nd cent. AD	Phrygia Region	Door shaped grave stele	2214 T	<i>Solanum melongena</i> fruit; <i>Punica granatum</i> fruit; <i>Pinus</i> cone.
21	Roman	2nd cent. AD	Tripoli (Trablusşam)	Sarcophagus with garlands	2247 T	<i>Vitis vinifera</i> leaves, and fruit; <i>Acanthus</i> leaves
22	Roman	2nd cent. AD	Ephesos (Efe-İzmir)	Sarcophagus with relief	2768 T	<i>Vitis vinifera</i> fruit; <i>Ficus carica</i> fruit; <i>Cydonia oblonga</i> fruit; <i>Quercus</i> acorns with cupules; <i>Papaver somniferum</i> fruit.
23	Roman	2nd cent. AD	Sidon (Sayda, Lebanon)	Sarcophagus with garland	417 T	<i>Laurus nobilis</i> leaves (as a garland)
24	Roman	2nd cent. AD	Sidon (Sayda, Lebanon)	Sarcophagus with garland	1177 T	<i>Laurus nobilis</i> leaves (as a garland) 2 different unidentified flowers.
25	Roman	2nd cent. AD	Beirut (Beyrut, Lebanon)	Sarcophagus of Gymnasiarch Gerostratos	1417 T	<i>Cynara scolymus</i> fruit; <i>Pinus pinea</i> cone; <i>Juglans regia</i> ; an unidentified fruit.
26	Roman	2nd cent. AD	Tripolis (Tripoli)	Statue Of a Man	96 T	<i>Pinus</i> leaves and cones; <i>Triticum</i> ; <i>Vitis vinifera</i> fruits and leaves; an unidentified flower.
27	Roman	2nd cent. AD	Prusias ad Hypium (Üskübü, Bolu)	Statue of Tyche	4410 T	<i>Vitis vinifera</i> fruits and leaves; <i>Pinus pinea</i> cone; <i>Papaver somniferum</i> fruit, <i>Malus</i> fruit; <i>Punica granatum</i> fruit; <i>Olea europea</i> fruiting shoots with leaves; <i>Juglans regia</i> fruit; <i>Prunus armeniaca</i> fruit; <i>Cydonia oblonga</i> fruit; <i>Quercus</i> acorn with cupules
28	Roman	2nd cent. AD	Kyzikos (Belkıs, Erdek)	Grave stele	5368 T	<i>Vitis vinifera</i>
29	Roman	2nd cent. AD	Tralles (Aydın)	Grave stele of Mentor the Gladiator	761 -762 T	<i>Phoenix dactylifera</i> leaf; <i>Laurus nobilis</i> leaves as a garland
30	Roman	2nd cent. AD	-?	Statue of Tykhe	99.13 T	<i>Vitis vinifera</i>
31	Roman	2nd cent. A.D.	Sidon (Sayda, Lebanon)	Sarcophagus fragment with Psyche	3301 T	<i>Laurus nobilis</i> leaves (as a garland); <i>Phoenix dactylifera</i> leaf
32	Roman	2nd cent. A.D.	Selenkia, Silifke, Mersin	Altar	4516 T	<i>Vitis vinifera</i> fruiting shoots with tendril
33	Roman	2nd cent. A.D.	Kyzikos (Belkıs, Erdek)	Grave stele of provocator Eupreses	2209 T	<i>Phoenix dactylifera</i> leaf
34	Roman	Second half of 2nd cent. AD	Nicomedia (İzmit)	Head of Emperor Diocletianus	4864 T	<i>Quercus</i> leaves as a diadem
35	Roman	2nd cent. A.D.?	West Anatolia	Sarcophagus with garlands	317 T	<i>Vitis vinifera</i> fruit, leaves
36	Roman	2nd cent. AD	Thessalonica (Selanik)	Sarcophagus with Dionisiac scenes	366 T	<i>Vitis vinifera</i> plant with fruit and tendrils
37	Roman	2nd cent. A.D.	Sultanselim/İstanbul	Sarcophagus with garlands	4476 T	<i>Vitis vinifera</i> fruit, leaves; <i>Laurus nobilis</i> leaves; <i>Hedera helix</i> shoots with fruit and leaves; <i>Quercus</i> leaves.
38	Roman	2nd cent. AD	İstanbul/ Alemddar	Mosaic Panel; Eros and Putto	4607 T	<i>Hedera helix</i>
40	Roman	2nd cent. AD	Aphrodisias (Geyre, Aydın)	Decorated Piliar	2272 T	<i>Acanthus</i> leaves
41		End of 2nd cent. AD	Tripoli (Trablusşam, Syria)	Sarcophagus with a depiction of Phaedra-Hyppolite	508 T	<i>Pinus pinea</i> tree with cones; <i>Vitis vinifera</i> fruit; <i>Quercus</i> leaves and fruits; <i>Acanthus</i> leaves
42	Roman	End of 2nd - beginning of 3rd cent. AD	Tripoli (Trablusşam, Syria)	Sarcophagus of Demetrios Thagnagoris and Agathoclinos	510 T	<i>Vitis vinifera</i> whole plants and vintage; unidentified fruits
43	Roman	2nd half of 3rd	Ambararası	Sidamara sar-	1179 T	<i>Acanthus</i> leaves; <i>Vitis vinifera</i> leaves and

		cent. A.D.	Konya	cophagus		fruit; <i>Quercus</i> trees; <i>Laurus nobilis</i> leaves; Phoenix dactylifera leaf?; unidentified fruits
44	Late Roman	2nd - 3rd cent. AD	Aksaray/İstanbul	Column	342 T	<i>Phoenix dactylifera</i> stem
45	Roman	2nd - 3rd cent. AD	West Anatolia	Grave stele of Nympheros	574 T	<i>Phoenix dactylifera</i> leaf
46	Roman	3rd cent. AD	Sidon (Sayda, Lebanon)	Sarcophagus with garlands	1178 T	<i>Quercus</i> acorns with cupules and leaves; <i>Laurus nobilis</i> leaves (as a garland)
47	Late Roman	4th cent. AD	İstanbul	Fragment of the sarcophagus Konstantin the Great	806 T	<i>Vitis vinifera</i> vintage

SYMBOLS AND/OR CULTIVATION OF THE PLANTS IDENTIFIED

Acanthus L.: In Mediterranean countries, *Acanthus* was considered to symbolize life, immortality, the horns of lunar crescent, and the veneration of the arts (Cooper, 1987). It is therefore one of the most common plant figures. *Acanthus* was also used as an ornamental plant and was common in gardens during Roman times (Stackelberg, 2009).

Apple (*Malus* Tourn. ex L.): Although wild forms of apple (*Malus sylvestris*) existed during the Neolithic and Bronze Ages, apple (*Malus domestica* Borkh) was cultivated much later during the Greek and Roman periods than olive, grape wine, fig, date palm, and pomegranate (Zohary and Hopf, 2001). The apple, which is one of the most important plants in human life, was cultivated by the Romans and then transported throughout Europe, where it was naturalized (Janick, 2005).

Apricot (*Prunus armeniaca* L.): The apricot was domesticated in China and later distributed to Iran, Armenia, and the Eastern Mediterranean (Clements, 2005)

Bay laurel (*Laurus nobilis* L.): Bay laurel, cultivated throughout the Mediterranean basin, was one of the most important symbolic plants for the Greeks and Romans. Bay leaf crowns were symbols of wisdom and glory for athletes and emperors. Zohary (1982) noted that this tree was particularly esteemed by the ancient Greeks, whose heroes were adorned with laurel garlands. Bay laurel leaves are evergreen and have a pleasant spicy fragrance. Elmes (1826) and Moltke (1952) (based on Pliny) suggested that these features may explain why Greeks and Romans used bay laurel leaves to adorn the

brows of their priests, poets, and heroes, including the victors in the Pythian and Olympian Games. Similarly, bay laurel was a mark of distinction for certain high offices and political functions. In addition, Elmes (1826) noted the use of laurel as a kind of ancient medal.

Common fig (*Ficus carica* L.): Fig is a classical fruit in the Mediterranean basin, as indicated by its identification at Neolithic sites (Janick, 2005), and it is associated with the beginning of horticulture in the region (Zohary & Spiegel 1975). Moreover, according to Zohary and Hopf (2001), figs from southern Turkey and the Aegean belt could represent the ancestral wild stock from which early fig domesticants were derived.

Common grape vine (*Vitis vinifera* L.): The grape vine was one of the most important food plants in the early Bronze Age because it provided fresh fruit, wine and dried food. It was most likely domesticated in the Levant. Later, viticulture became widespread in the Mediterranean region, and thousands of distinct clones were cultivated. These cultivars provided fruits differing in size, shape, color and sweetness Zohary et al. (2012). Two types of fruit figures, long fruits and small rounded fruits, were identified in this study.

Date Palm (*Phoenix dactylifera* L.): Moldenke (1952) stated that part of the Levant was known to the Greeks and Romans by the name "Phoenicia", which means "land of palms", and in classic days, the date palm symbolized richness, procreation, victory, and light. The date palm was most likely the first domesticated tree in the Old World, although the distribution of wild forms of the date palm is unknown. In the 3rd century BC, date palm fruit was well known in Mesopotamia (Clements, 2005).

Eastern plane (*Platanus orientalis* L.): This species is very common in humid environments and near rivers, and its range extends from Southeast Europe to Asia Minor. It has been cultivated since early times across much of this region. Because the plant has a wide crown that provides good shade, plane trees were highly valued by the Greeks and Romans (Moldenke, 1952). The figure identified on the stone shows a resting man in the shade of an eastern plane tree. According to Pliny (NH 12.3), the plane tree was the first tree to be procured from a different climate purely for the provision of shade.

Eggplant (*Solanum melongena* L.): Eggplant was domesticated in Indo-Burma and has been familiar since ancient times. It was described in India in 3rd century B.C (Daunay and Janick, 2007). Eggplant was unknown by the ancient Greeks and Romans, and it was carried out of the Mediterranean basin by the Arabs in the 7th or 8th century (Sekara et al., 2007; Daunay and Janick, 2007). In this study, two eggplant figures were identified: one from the 2nd century Roman Period and one from Phrygian times. This result shows that the fruit of the eggplant, figured within a garland in the Roman period and on a gravestone from Phrygian times, was known by both the Romans and Phrygians.

Globe Artichoke (*Cynara scolymus* L.): It is native to the Mediterranean region and most likely spread during the Roman period (Renfrew and Sanderson 2005).

Ivy (*Hedera helix* L.): Ivy was a well-known plant in antiquity (Smith, 1890; Moltke, 1952); it was used as an ornamental plant, trailing up statues and trees in Roman gardens (Stackelberg, 2009). According to Theophrastus (371- 287 BC, in Enquiry into Plants, IV.1), "when Alexander came back from an expedition, was crowned with ivy, himself and his army". According to Pliny (NH 14.144), although it injured trees, destroyed tombs, and hosted snakes, ivy was also revered and used to decorate the wands of the gods and the helmets and shields of worshippers during solemn festivals in Thrace.

Lily (*Lilium* L.): Lily was symbol of innocence, virginity, purity (Moldenke, 1952), and beauty, and it was often a symbol of fertility and fruitfulness (Zohary 1982). Therefore, white li-

lies adorned the capitals of columns in many ancient civilizations. *Lilium candidum* (Madonna lily) was used as a cut flower in 2nd century BC (van Tuyl et al., 2011). The most valued and prized of all flowers were the Rosa (*Rosa* ssp), Lily, (*Lilium candidum*, *L. martagon*), and violet (*Viola* sp.) (Stackelberg, 2009).

Myrtle (*Myrtus communis* L.): It was considered by the Greeks to be a symbol of love and immortality, and it was used to crown priests, heroes, and generals (Moltke, 1982). According to Pliny (NH 14.104), myrtle was a unique plant, providing oil, wine, and myrtle-berries, which were used in myrtle sausage and to flavor other foods. In addition, a myrtle wreath was regularly worn by generals celebrating an ovation (Pliny, NH 15.125). In the ancient Olympic Games, myrtle garlands were used as a symbol of beauty, euthanasia, love, peace and protection (Rhizopoulou 2009).

Oak (*Quercus* L.): Moltke (1952) stated that the oak tree was the symbol of strength and sturdiness in all religions and mythologies in the northern hemisphere. Our observations also show pervasive figures of oak leaves and acorns throughout time and across locations. Ancient kings presented themselves as the personification of gods by wearing crowns of oak leaves to symbolize the gods they represented as kings on Earth (Kendall, 2002). According to Pliny (NH 16.3-7), acorn-bearing oak wreaths were used as emblems of military valor and later as an emblem of emperor clemency.

Olive (*Olea europea* L.): For centuries, the olive tree has been a symbol of peace, glory, wisdom, fertility, pureness, freshness, beauty, and health. Brides wore crowns of olive in the ancient times (Elmes, 1826; Moltke, 1952; Janick, 2005), and according to Pliny (NH 15.4-17), victorious athletes at Olympia were crowned with olive wreaths in Roman times. According to Janick (2005), olive oil was the first great industrial crop, and it was used in medicine, cooking and illumination. Isager and Skydsgaard (1995) stated that this species was cultivated in Greece since at least the time of the palace cultures of the Bronze Age. The domestication of olives occurred during the Chalcolithic period in Israel and Jordan (Zohary et al. 2012), and it was subsequently transported to the west Mediterra-

nean basin by the Greeks and Phoenicians. In Roman times, olive growing was common in the Old World (Pearman G, 2005). Bottema and Woldring (1990) stated that olive has a long history in southwest Turkey and found the highest amounts of olive pollen during Roman times. Wild forms of olives are distributed throughout the Mediterranean Basin today, and many varieties are cultivated there.

Opium poppy (*Papaver somniferum* L.): According to Pickersgill (2005), this species was domesticated in the western Mediterranean region. Writing in the third century BC, Theophrastus describes how the unripe fruit is scratched to yield the opium-producing sap. The narcotic and medicinal properties of latex, which are obtained from unripe fruit capsules by gashing, were familiar to ancient Greeks. Moreover, the Greeks and Romans added opium seeds to flour used to make bread (Candolle 1884).

Pear (*Pyrus communis* L.): Pear was cultivated in Central Asia, and several grafted pear varieties were grown by Greeks (Clements 2005). Isager and Skydsgaard (1995) stated that apple, fig and pear were often used as dried fruits and were stored for long periods of time by the Ancient Greeks.

Pine (*Pinus* L.): Five pine species common throughout the Mediterranean region.

Pomegranate (*Punica granatum* L.): Pomegranate was a symbol of both fertility (Moltke, 1952) and the indissolubility of marriage in Greek mythology. It was also used for various purposes, ranging from perfumes to birth control (Seeram et al. 2006). Pomegranate is native to Turkey and Iran and was domesticated there 5000 years ago in the Bronze Age (Zohary and Spiegel-Roy, 1975).

Quince (*Cydonia oblonga* Mill.): The Latin name of quince, *Cydonia*, is derived from the name of a Greek city on the Island of Crete; however, Cydone is now called Canea (Stearn 1985). Quince was most likely native to eastern Turkey, Caucasia, northern Afghanistan and India. This plant was domesticated in the Near East approximately 5000-2000 B.C. Because it has attractive white blossoms and golden-colored fruit, this plant was considered to be a

gift from the gods. This plant was also used for food and medicine (Brunn, 1963).

Umbrella pine, stone pine (*Pinus pinea* L.): *Pinus pinea* is native in most Mediterranean countries and has been cultivated for ornamental purposes, shade and the provision of edible seeds for 6000 years (Mutke et al. 2012). For several thousand years, the seeds of the stone pine have been an important ingredient and gourmet food. Therefore, stone pine was already widely grown in the time of the Roman Empire (Pearman 2005; Mutke et al. 2012).

Walnut (*Juglans regia* L.): Both the Greeks and Romans regarded walnut as a symbol of fecundity, and the nuts were scattered about at weddings (Moldenke 1952) According to Pliny (NH 15-24.86), walnut was also used for dyeing wool and hair. It is estimated that walnut was domesticated in northeast Turkey, the Caucasus, and northern Iran. It was widely cultivated in the Roman Period (Pearman, 2005). Bottema (2000) stated that walnut pollen, wood and nutshells were found in the early Holocene in Western Europe. However, Kutluk and Aytuğ (2001) identified walnut fruit as early as Pliocene-Quaternary in Anatolia.

Wheat (*Triticum* L.): Throughout time, wheat has been the most important food plant in human life. Nesbitt (2005) stated that the earliest domestication of wheat goes back 9500 to 9200 years to Neolithic sites in Syria, Jordan, and Southeast Turkey. Zohary et al. (2012) also stated that wheat has been the primary agricultural element in the Old World from Neolithic times to the present.

Wild strawberry (*Fragaria vesca* L.): De Candolle (1884) stated that the Greeks and Romans did not cultivate strawberry; however, Pliny mentioned that ground strawberries (NH 15.98) may have been one of the few wild plants used as food in Italy (NH 21.86). Although a lack of ancient references make the cultivation history of strawberry unclear (Darrow 1996), wild strawberry has a long history going back to the Romans and perhaps even the Greeks. According to Grant and Kitzinger (1998), strawberry was cultivated in the 5th century A.D., but wild strawberry has been growing in Roman gardens since 200 BC.

DISCUSSION AND CONCLUSION

Plants, with their woods, seeds, fruits and leaves, are strong contributors to human history. Humans showed the importance of plants in their lives by figuring them on a variety of items, such as stone statues, sarcophaguses, walls, and doors. Hellenistic and Roman people were also figured on these items, along with the plants that were important in their lives. In this study, 24 different plant figures were unambiguously identified on the 47 (11 from the Hellenistic period and 36 from the Roman period) stone statues and sarcophaguses housed at the Istanbul Archaeology Museum. A total of 16 different plant figures were identified in the remains from the Hellenistic period. These are acanthus, apple, apricot, bay laurel, common grape vine, common fig, common myrtle, ivy, lily, oak, olive, opium poppy, pine cone, plane tree, pomegranate, and wheat. A total of 20 different plant figures were identified from Roman period remains.

Figures of common myrtle, lily, plane tree, and wheat were identified only from the Hellenistic period, whereas common fig, pear, eggplants, quince, artichoke, walnut and wild strawberry were only identified from the Roman period.

The most common plants were grape and olive. These two plants were widely cultivated during Hellenistic and Roman times. Pliny the Elder (AD 77–79) in *Natural History* (HN 14.29.150) stated that wine and oil are two excellent liquids that are especially agreeable to the

human body. Grape was an essential agricultural crop used to make wine. People in the Hellenistic and Roman periods tried to grow many different types of grapes to produce the best wine. Olive oil has persisted in the Mediterranean food culture throughout time.

One of the questionable plants was eggplant. Although eggplant was unfamiliar to the ancient Greeks and Romans and was carried out Mediterranean basin by the Arabs in the 7th and 8th centuries (Sekara et al., 2007; Daunay and Janick, 2007), our study revealed that this plant was known from the 2nd century AD (Roman Period) in the Iassos and Phrygia regions. The transportation of this plant is still unclear from India to the Mediterranean area just before or during 2nd century. Maybe historians might focus on the Great Alexander's expedition to India to understand the transportation of this plant.

Another question related to the cultivation of wild strawberry in Roman times. Although there are several ideas on cultivation date of this plant, our results support Darrow's (1966) suggestion that it was familiar to the Romans by approximately the 2nd century AD.

The plant figures that were observed on stone statues and sarcophaguses could also provide information about the flora representative of the places where they were built. For example, date palm figures were found on the statues from North Africa, while oaks, figs, laurel, and olive were the primarily depicted on the statues from the Mediterranean Region of Turkey.

ACKNOWLEDGEMENTS

This study was performed with the permission of the Directorate of Istanbul Archaeology Museums. We thank the director, Zeynep Kızıltan, for her kind permission.

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