

Aegyptus et Pannonia VIII.



Acta Symposií anno 2021

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Aegyptus et Pannonia VIII.

Acta Symposii anno 2021

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CONTENTS

Plants for Health from Ancient Egypt to Present Day” Conference and the HEFS AEC by Hedvig Győry.....	1
Maravelia, Alicia – Faviou, Elsa – Filianos, Markos Medicinal and Pharmaceutical Properties of the Kyphi (and of the Orthodox Holy Chrism): A Microbiological Approach.....	7
Munguía Girón, Francisco José Myth and Facts on Calotropis Procera: an Overview	43
Petrovics, Alica – Ferencz, Andrea – Fehér, Daniella – Blázovics, Anna – Győry, Hedvig Medical Activity in Ancient Egypt: Effectiveness and Magical Aspect.....	63
Sawy, Mona Hassan Ahmed The Edible Plants for Healing in Coptic Documents.....	109
Scheffer, Krisztina “Let every man keep ready at home “ Excerpts from the Possibilities of Curing Cholera during the First Epidemic, 1831	127
Skesters, Andrejs – Kustovs, Dmitrijs – Lece, Anna Impact of Pelargonium Sidoides on Periodontal Inflammation and Improvement of Oral Health.....	143
Sridi, Yasmine “Remedy Preparation” Skills of Egyptian Physicians: Plants Transformations, Vehicles and Galenics	157
Szabó, Katalin “The Wound of the Lung is Healing very Difficult ...” Herbal Experiments for the Treatment of TB and Alleviating its Symptoms	175

Szima, Viktória	
Materia Medica in the 18 th Century. Medicinal Ingredients and Complex Medicines in Historical Hungary.....	187
Szabóné, Erzsébet Révész	
Herbs in Wound Care from Ancient Times to the Present Day	201
Unger, Juliane	
Plants for Healing in Papyrus Brooklyn 47.218.75+.86	223
Urzi, Elena	
“You Cannot Judge a Book by Its Cover”. Considerations on Some Plants in the Pharaonic Medical Literature.....	239
Vadas, Réka	
The Making of antjw-myrrh Ointment in Ancient Egyptian Temples. A (Not So) Practical Guide.....	247
Vámos, Gabriella	
Herbarium and Pop-up Exhibition.....	255
Venice Ibrahim Shehatta Attia	
Some Sedative Plants in Ancient Egypt: Egyptian Blue Lotus, Hemp, Mandrake & Opium Poppy.....	259
Vymazalová, Hana	
The Treatment of Women in Egypt: Ancient and Modern Herbal Approaches.....	299
Webb, Virginia E. S.	
Pomegranates: What a Varied Voyage They Took	311

“Plants for Health from Ancient Egypt to Present Day” Conference and the HEFS AEC

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HEFT AEC president

After the realization of the 2019 mummy conference, the need arose to discuss the new trends, methodologies and achievements in ancient materia medica from a phytotherapeutic point of view and to disseminate the results achieved by our in-depth research. With this conference, we also wanted to explore how many different ways there are to approach ancient plants and medicine, also from historical, cultural, religious, ethnographic and pharmacological points of view, and to compare it with other related fields. We also wanted to draw attention to other areas of research into plants that maintain and improve health. In this way, contemporary and historical treatments were juxtaposed, Egyptian, Hittite, Greek, Roman and later European herbal medicine, to mention only the most important regions studied in these proceedings. The conference was held in two languages, English and Hungarian, but all the articles in the proceedings are English. We hope that this way we can bring these issues to the attention of as many people as possible.

This time we have chosen to discuss the plants used for health problems. A significant proportion of the substances in ancient Egyptian prescriptions are of plant origin. Reviewing and studying their effects and data can also provide new opportunities for the current pharmacopoeia. Our group of doctors thought that there was a lot of new knowledge to be gained in this area worldwide, and that the knowledge of plants is becoming increasingly important, if we only think of the research into pathogens, many of which have adapted to synthetic drugs. We need thus new materials to use to eliminate them, and earlier medical practices may lead to the discovery of new active substances that are important for people today. Knowledge of these active ingredients makes it possible to apply these drugs as new medicines in a consistent quantity and quality. On the other hand, there are also many places where conditions do not allow the use of drugs produced by modern technology, but nature can help patients with its often hidden treasures. In addition to pharmacological research, folk remedies studied by ethnomedicine

and historical medical research play an essential role in getting to know them.

The HEFS AEC partly organizes its activities in cooperation with other organizations – the above-mentioned international workshop of the Nephthys project in 2022 was co-organized by the Hungarian Natural History Museum, while this very conference took place in partnership with the HNM Semmelweis Museum of Medical History, whose members gave several lectures on historical medicine and modern ethnomedicine, and where a special chamber exhibition would have welcomed the participants in honour of the conference, if the COVID had not prevented the organization of a face-to-face meeting. Nevertheless, we were able to offer the possibility of discussions and consultations in special virtual chambers, allowing the exchange of professional experiences.

The HEFS AEC has published these new proceedings, this time in two volumes (*Aegyptus et Pannonia VII-VIII*), containing more than half of the papers presented at the conference: “Plants for Health from Ancient Egypt to Present Day”. As we focused on our main research topic in the Medical Research Group of the HEFC Ancient Egyptian Committee, we wondered what the scientific community thought about the ancient Egyptian use of plants in various fields of human and natural sciences, the continuity of related knowledge, and the implications and possibilities of these ancient practices for people today. We also wanted to present the ideas we had developed and the results we had achieved in the professional field, and to provide an opportunity for specialists to discuss different topics. In terms of the structure of the proceedings, we have returned to the previous method of the series, so that the articles are once again listed in alphabetical order of authors, rather than by subjects

THE HEFS ANCIENT EGYPTIAN COMMITTEE AND THE MEDICAL HISTORY

The HEFS, which has been operating since 1995, carries out several activities in the tradition of its earlier activities: the general programs focus on the last five thousand years, selecting interesting and important topics, while the work of the AEC is mainly directed in three directions. An important objective is (1) the cultural transmission and dissemination of knowledge about ancient Egyptian culture through lectures and public meetings for interested adults, also in the framework of the Hungexpo. We also organise (2) artistic and handicraft activities, workshops accompanied by discussions on various topics with children, launching every year a fine arts competition (drawing/painting), the results of which will be exhibited for the third time in January 2023 in the Deák 17 Children’s and Youth Art Gallery of the Budapest History Museum; and (3) following scientific and scholarly research into the use of ancient objects, human and animal remains – including an international event of the Nephthys Project in 2022 – and medical history, concentrated on phytotherapy and surgery.

As far as our material at the conference is concerned, we present here as a starting point our research focused primarily on the use of plants in surgery, if only because several members of the group are doctors from the Department of Surgical Research and Techniques at the Faculty of Medicine in Semmelweis University, Budapest. The first scientific results of this new direction are published of today's surgical tools and materials. Thus our conference papers focus on the ancient Egyptian surgery from the point of view of the application of plants in these volumes, but research is also being carried out in other areas. Firstly we present research in the direction that is mainly focused on comparative analysis, directed towards the ancestors surgical kit, the plant materials used for wound care and the general knowledge of ancient Egyptian surgeons, with a view to the surgical culture of other peoples and periods or the use of pharmacognostic knowledge. We have also considered it essential to investigate into possible reasons for the use of plants, which may allow us to consider modern phytotherapeutic applications.

Two other areas of our phytotherapy research are also represented in these volumes. The origin and treatment of various diseases throughout the world, and especially in ancient Egypt, is also an interesting topic. In this direction, we have chosen to focus one disease in particular. Diabetes is one of the most widespread diseases of our time, and we have chosen to study its ancient treatment methods. In this case, as in the case of surgery, we have compared several cultures to find out the ancient knowledge and problem-solving methods, and have pointed out herbs that are officially used in the world, or in Hungary.

Another problem of our time, seemingly far removed from the history of medicine, is the conservation and preservation of biodiversity, which is affected not only by climate change and other natural factors, but also by human activity. This phenomenon can be traced back even to ancient Egypt, although the process has accelerated in the last hundred years. One of our topics in this respect is presented here, showing how an ancient curiosity herb has become a plant of large-scale production in the 21st century, and saving this way the species from extinction.

A new direction of the group is the study of the history of Hungarian phytotherapy in partnership with the Semmelweis Museum for Medical History. We have just taken the first steps in this direction, but we can already say that the classical Roman authors, and the ancient Egyptian knowledge they transmitted also played an important role in official medical practice and influenced folk medicine in our country. It seems that the herbaria published in Hungarian language played a key role in this process.

The interweaving of contemporary and historical issues characterizes many of the articles in the volumes. At the same time, mutual influences, shifts of emphasis and reinterpretations within the ancient world, or elements of later historical periods that reach into the past or present, play a prominent role. In this field, it is essential to collect and examine the sources from a new perspective in order to obtain a clearer picture of certain details of the past. Historical, artistic, literary, religious, economic, museological, pharmaceutical, phytotherapeutic, ethnobotanical or even chemical points of view appear in individual articles. It has been proven that the ingredients listed in many of the ancient Egyptian recipes studied so far can still be used as effective medicines today.

This volume contains 16 contributions on the role of drug use in different periods. There are chapters on the reconstruction of some ancient Egyptian remedies, on the ancient method prescribed for the preparation of antjw ointment, or on the preparation and action of kyphi, and pelargonium, traced through biochemical and experimental research; Others are devoted to the materia medica used in Hungary over the centuries, or to the comparison of contemporary Egyptian folk medicine and pharaonic materia medica in the field of gynaecology; another is devoted to studies on the possible identification of magical Egyptian plant names with a dominant connection to the moon, or to the ritual and non-ritual use of some plant substances with religious names in Egypt. Others relate to the popular treatment of diseases such as tuberculosis and cholera in Hungary, or which edible plants have been identified in Coptic medical therapies. Sedative plants are also featured in the current volume, and a plant closely associated with a butterfly is discussed. Another article focuses on the pomegranate, with its many meanings as a symbol of fertility and female power. Yet another focuses on the worldwide surgical use of plants, while others discuss the balance between practical and religious beliefs in the use of medicinal plants. The pop-up exhibition for the conference is briefly introduced, hinting at the museological aspect of medical history.

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The editors of these volumes would like to thank again all the organizations and individuals who made the conference and the publication of these volumes possible, as well as the speakers, the members of the Organizing and Scientific Committees, the secretary of the conference, and the technical assistance, i.e. all those who contributed to the realization of the conference and who have contributed with their knowledge to these volumes. Special thanks are also due to the authors of the papers for their work and cooperation.

We would also like to express our gratitude to all those colleagues and volunteers who have shared their expertise and offered their generosity by providing scientific or linguistic proofreading for these volumes.

Thanks are also due to the active participation of Aquila Design, who coordinated and realized the editing and printing and to our financial supporters, the Hungarian Natural History Museum, the Ibisz Bt. and the Kiss Ferenc a Növényi Biodiverzitásért Alapítvány [Kiss Ferenc Plant Biodiversity Foundation], whose aim is to raise awareness of the natural treasures we have and to try to teach people to use them, rather than abuse them.

POMEGRANATES: WHAT A VARIED VOYAGE THEY TOOK

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ABSTRACT

As a fruit with a suggestive shape and contents, the pomegranate takes on a wide range of meanings. Its appearance in the Ancient World embodies fertility and feminine powers. In Ancient Egypt and the Near East, and in the wider Mediterranean world – influenced by these centres – plastic forms, jewellery, vase and wall painting persistently employ the fruit as the carrier of such meanings. Later it is adopted by the Christian church, and by Islam, and becomes a powerful symbol of world domination, and the membership of the church. However, now I want to concentrate on its use and meaning in Mycenaean and Archaic Greece, the sources of its derivation, and specifically its importance in female jewellery, faience and clay containers, and in the worship of certain goddesses. Finds made at the Heraion of Samos, and the temple of Hera in Southern Italy at Foca del Sele, show that objects in clay and wood, glass and faience, in the shape of the pomegranate were offered to the deity, and at Foca del Sele the Catholic congregation still worships “La Madonna del Granato”. I hope to show how far back such usage goes and from where the influences come.

KEY WORDS: pomegranate, glass, trade, Near East, Samos, Goddess Hera, Punic West, Motya, Huelva

POMEGRANATES IN IRON AGE GREECE AND THEIR BRONZE AGE FORBEARS

The history of the pomegranate as a vase or model in the Ancient World has been well studied¹, while with specific reference to the Greek world there is much of relevance, on pins² and specifically vases.³ What is surprising is the

1 MUTHMAN 1982.

2 JACOBSTAHL 1956; KILIAN-DIRLMEIER 1979.

3 KOUROU 1987; IMMERWAHR 1989.

hiatus between Late Bronze Age finds⁴ and the apparent revival/reappearance of the pomegranate and its symbolic usage in the Early Iron Age. Recent discoveries of plant-remains excavated from land and sea throw new light on its travels and influence, and go some way to filling this gap.

I was inspired to go on this quest by the finding of three glass pomegranate finials⁵ from the excavations in the Sanctuary of Hera on the island of Samos, a powerful and rich trading polis/city in the Archaic Period of Greece, which had widespread links with the whole of the Mediterranean world and beyond, reaching back into the Geometric period.⁶

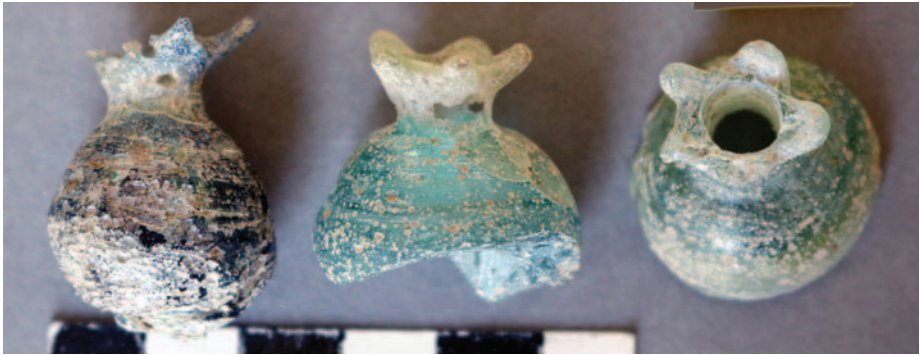


Figure 1. Glass finials in the form of pomegranates from the Samos Heraion. Photograph by the author. Courtesy of the DAI-Athens.

4 WARD 2003; ARTZY 1991, 1995; DEVER 2001; DOTHAN – BEN-SHLOMO 2007; LOPEZ-STRIPLING – BEN SHLOMO 2019.

5 Varia Catatalogue no V 1596 a,b,c. H 3.3 cm, W 2.2 cm at widest part of fruit, H of calyx 1.0 cm. Cylindrical rod used to shape piercing through top of calyx; small holes pierced in the calyx itself for the attachment of ribbons, thread or metal foil, body of pomegranate hollow with glass core-wound like beads. The Fundgruppe of the pomegranates is Find Place no XLIIId, material, which is being published by NIEMEIER (prep.) in Samos Band 21.2. Deposit described as “construction waste to the south-east of the “Rhoikos Altar”, terminus ante quem ca. 570 BC, found together with pottery fragments of the early to late 7th century BC.” The glass varies from ice green, to dark blue in the different examples. More examples have been found in the recent excavations to east of the same area.

6 KILIAN-DIRLMEIER 1985 studied the archaeological finds from four sanctuaries in Greece, dating between 8th and 7th century BC, to track the source of both Greek and foreign dedications: Samos has by far the most diverse and widely distributed sources from outside Greek lands, see pages 235-240, and Fig 20; see also EBBINGHAUS 2006; BUMKE 2007 for discussion of Geometric and Archaic imports to Samos; KYRIELEIS 1993 for general account of the Sanctuary including ivory and wooden models of pomegranates; NIEMEIER (prep), Samos 21/2 for up to date account of these excavations. HENKE 2017 and WEBB 2021 for description of the most recent finds made during excavations in 2010-2013 near the Great (“Rhoikos”) Altar.

They come from the debris of votives incorporated into the construction waste of the monumental “Rhoikos Altar”, where offerings were made to the goddess Hera, and were found together with pottery of the seventh century BC. We already know that pomegranates were closely linked with the worship of Hera,⁷ but quite what objects the glass pomegranates were part of, or associated with, is difficult to establish. They look as though they could be close cousins to much earlier objects found in the Late Bronze Age, which formed finials for rods of ivory and bronze, and the nature of the glass, – transparent greenish ice in colour – suggests a close relationship with similarly coloured beads, which have been found in the Rhodian deposits, and whose source, it is strongly argued, is the Near East.⁸

Real pomegranates and their symbolic representations turn up in a Bronze Age ship wreck, and in sanctuaries, tombs and midden heaps. They appear in both Late Bronze Age and Early Iron Age contexts in the Near East and later on, in the Greek and Punic world. Here I shall be concerned in particular with their role as one of the powerful semantic/symbolic motifs,⁹ which survive through from the end of the international trading nexus which linked the great Palace kingdoms of the Levant, Eastern Mediterranean and Egypt, 1400-1200 B.C., to reappear in the Early Iron Age of the Near East and Greece.

Pomegranates feature as decorative motifs, symbolic models, and actual containers throughout a long span of time in the ancient world, but it was probably not originally native to the Mediterranean area. Originally a native fruit bush in the Middle East (Iran to Afghanistan) with a small fruit 3 to 5 cms across,¹⁰ the pomegranate was hybridised into a small to medium height tree, which bore a much larger fruit size (*Punica granatum* L.),¹¹ which was adopted

7 MUTHMANN 1982; KOUROU 1987; IMMERWAHR 1989; BAUMBACH 2004. – I will describe this in more detail below.

8 Semi-transparent glass beads of so-called hyaline glass, where the colour is affected by iron trace elements, giving the glass an icy, greenish tinge, occur in many burials and sanctuaries in Iron Age Greece. Particularly large numbers found at Knossos (WEBB 1996) and on Rhodes (TRIANTAFYLIDIS 2014). Analytical research on glass beads from Rhodes: for scientific analysis see OIKONOMOU – TRIANTAFYLIDIS 2018, which, however, is hampered by the lack of contemporary material from the Near East.

9 Griffins and Sphinxes are other examples of enduring motifs, which are first adopted in Bronze Age Greece and then reappear in the Iron Age, but in radically different forms.

10 STILL 2006.

11 ZOHARY – HOPF 2012. The Linnean name is of course derived from the Latin name applied by the Romans to the fruit as coming from Punic North Africa. For earlier names I quote from NIGRO – SPANOLI 2018: in Assyrian and Aramaic “rummanu”, in Hebrew “rimmon”, in Arabic “roummana”,

from Mesopotamia into the Near East, and from there to Egypt, as a garden/orchard tree (as well as travelling in the opposite direction to the Eastern world, India and China, where it did not arrive until the Han Dynasty 206 BC - 220 AD).

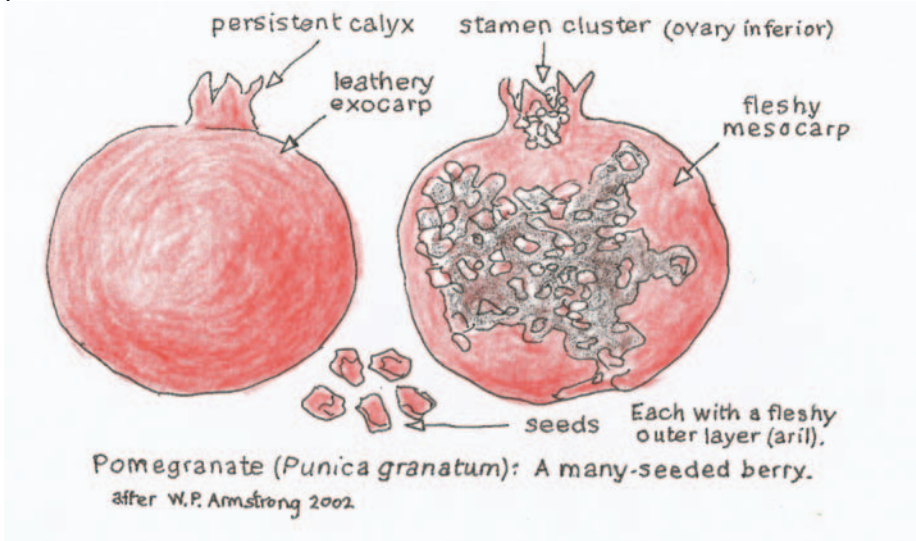


Figure 2. A modern diagram shows the striking characteristics of the fruit. (After W.P. Armstrong 2002)

A modern diagram (Figure 2) shows the striking characteristics of the fruit – which is actually a berry, with thick outer skin, and the persistent calyx, which crowns the fruit with its upstanding and distinctive points (usually six) and which survives as a rigid structure when the fruit matures, while inside the many actual seeds are clothed in and surrounded by a red jelly-like juice to form the “arils”. Both the shape of the fruit, and its contents are strongly suggestive, and the much-quoted Egyptian poem makes this clear:

*“The pomegranate bush raises its voice – tiny, insistent, and shrill: My seeds shine like the teeth of my mistress, the shape of my fruit is round like her breasts. I’m her favourite, I know, sweetest tree in the orchard, looking my best through every season.”*¹²

in Egyptian “*inhmn*” or “*nhmn*”; in Coptic “haraman”. The name used in the Greek speaking world: *πόια*, *πόα*, *rhoa*, perhaps related to “*flowing*” as with “*flowing with juice*” – or is this a mishearing and foreshortening of the “*rummanu*” of Aramaic?

12 Turin Papyrus, 12th century BC, translation in FOSTER 1992, 83-84.

The well-known reference in the Song of Songs, in the Hebrew Bible, also emphasizes its link with female fertility,¹³ while other references in the same poem give the pomegranate an important role in the fruitful orchards of the Promised Land.¹⁴ Its popularity as a powerful symbol associated with the Jewish priesthood and on sacred buildings is outside my remit here.

Depictions of pomegranates have been identified as first appearing on a ritual alabaster jar from Uruk ca 3,500 and 3,200 BC.¹⁵ They next appear in tombs at Jericho (Middle Bronze Age IIA, 1950-1900 BC) where both dried up fruit and a wooden box in the shape of the fruit were found.¹⁶ By the 15th century BC, the pomegranate was well established across the Near East as a garden crop.

In Egypt the pomegranate has a very strong presence.¹⁷ It became truly established after Thutmosis III (1475-1425) made several military expeditions to Syria and brought back many exotic fruits, which were displayed in the so-called “Botanical Garden” (a modern sobriquet), which decorated a specific suite of rooms in the Temple of Amun-Re in Karnak,¹⁸ and was inscribed as representing the “*fruits and vegetables which His Majesty has found in the country of Retenu* (North Syria)”. These include the pomegranate, shown as a small tree as well as an exceptionally fruitful bunch of fruit¹⁹ demonstrating the admiration the Egyptians had for its great fertility. There is plentiful evidence of the role the pomegranate played in Egypt in the New Kingdom, in both life and death. In life for food, wine, medicine, dying of cloth, and vermifuge²⁰, modelled as glass or faience vessels, or in silver vase shape²¹, to contain the juice or derivatives of it, see especially an elaborate ivory ointment spoon crowning a leafy spray, combining fruit and small flowers.²² While real fruit and the glass

13 “*Thy lips are like a thread of scarlet, and thy speech is comely: thy temples are like a piece of a pomegranate within thy locks.*” (Song of Songs 4:3).

14 Song of Songs 6.11, 7.12 where the pomegranate tree serves as an opportunity for visits to the fruitful orchards and a symbol of love; in 8.2 wine made from pomegranate is to be offered. I owe these references to my husband.

15 Uruk vase, MUTHMANN 1982.

16 KENYON 1960, 392-393, pl. XVII,4; HOPF 1969,357; NIGRO – SPANOLI 2018, Fig 3b, c.

17 EZZ EL-DIN – EL-KASRAWY 2020.

18 BEAUX 1990; LABOURY 2007.

19 BEAUX 1990, fig.3, fig.6a.

20 Ebers Papyrus no. 50 (16,17) and no. 63 (19,19); Papyrus Med. Berlin 3081, no. 10 (4,7-8); MANNICHE 1989.

21 Silver vase of Tutankhamun’s funerary assemblage, and smaller vessels made of steatite and ivory, see NIGRO – SPAGNOLI 2018, fig 4, b,c,d.

22 Spoon, ca. 1336-1327 B.C. ivory, 7.5 x 1.8 x 20.8 cm, Brooklyn Museum, Charles Edwin Wilbour Fund, 42.411.

and faience vessels in their shape occur in tombs, the fruit themselves also feature in the decoration of tombs, frequently depicted as offerings to the tomb owner – tied in sets, or as trees – shown growing in the tomb owner's ideal garden.²³ But, wide ranging and well-established as these usages and depictions are, this is not my primary area of interest, and I will only refer again to the copies made in Cyprus of the round glass vessels which appear to have originated from Egyptian models.²⁴

What is of importance to my argument, in tracing the path of the pomegranate from the Near East to Greece and the Western Mediterranean, is the appearance of both the fruit itself and the use of pomegranate-shaped symbolic forms in the Syro-Palestine area of the Levant, and in Cyprus.

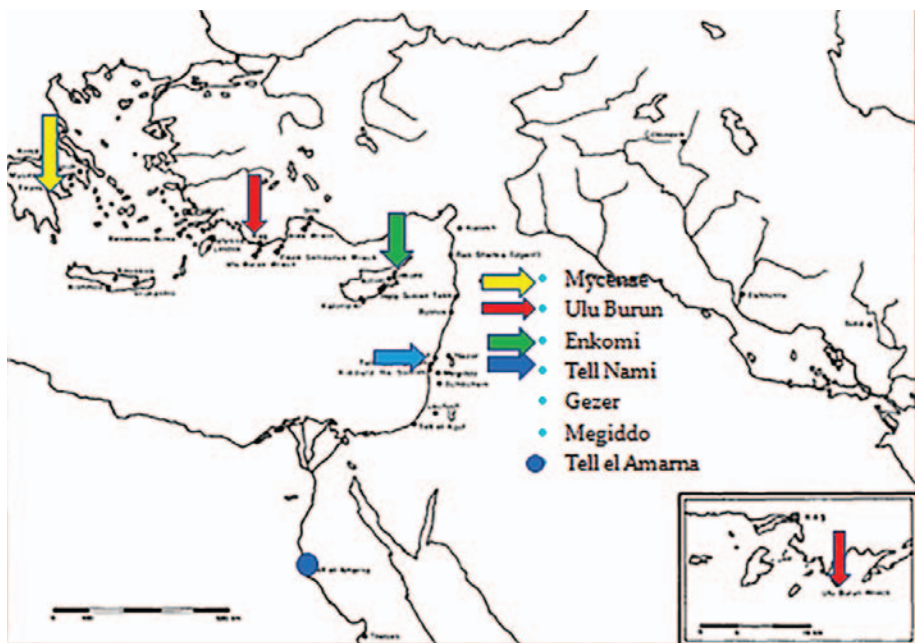


Figure 3. Map of Eastern Mediterranean showing location of Ulu Burun ship wreck and other Bronze Age sites in the Near East and the Aegean. The coloured arrows name the important sites.

A good starting point is the ship-wreck found at Ulu-Burun off the south coast of Turkey, dated to the last quarter of the 14th century BC. (1325–1300 BC). The painstaking excavation of the vessel and its contents by Bass, Pulak and their

23 WILKINSON 1998, fig 67, Tomb of Neferhotep, Theban Tomb 49; fig. 84, Tomb of Meryre, Amarna. References in EZZ EL-DIN – EL KASRAWY 2020 to publications of Nina and Norman de Garis Davies.
24 COSYNS 2017.

team of archaeologists have revealed an immeasurable trove of information.²⁵



Figure 4. Ulu Burun shipwreck. Reconstruction of loaded cargo in ship. Photograph by the author after display in the Bodrum Museum of Underwater Archaeology.

The ship sank off the south-west coast of Lycia, on its way from a Syrian/Canaanite port, or even from Cyprus-Enkomi or Ras-Shamra/Ugarit in Syria, to an assumed destination in the Aegean area. It was carrying a valuable cargo of raw materials – copper ingots (10 metric tons) and tin ingots (one metric ton), raw glass cylindrical ingots, and unworked ivory from elephant and hippopotamus. Alongside these major finds were so-called *Canaanite amphorae* containing valuable mineral and vegetable substances, such as orpiment and arsenic sulphide, used as a strong yellow for colouring,²⁶ and terebinth resin stored in over 130 *Canaanite amphorae*, which may have been intended for the production of perfumes.²⁷ Both these are products of value, and stored in great volume, with great care. The ship also carried fruits and fruit products: figs, and probably olive oil and wine. Pithos KW252 (excavated in difficult conditions in 1986²⁸) contained a large quantity of pomegranate

25 BASS 1986; BASS ET ALII 1989; PULAK 1994.

26 For orpiment see BASS 1986, 278-9.

27 PEACHEY 1995. Another suggestion is that the terebinth resin was accompanying the copper and tin as an additive to aid bronze casting: GOREN 2008.

28 BASS ET ALII 1989, 10.

fragments, both seeds, skin fragments and flower parts,²⁹ plus a wooden diptych,³⁰ a bronze chisel, a bronze razor, and several ballast stones, perhaps the personal possessions of an important member of the crew. Later analysis established that pomegranate remains make up 25% of plant remains from the wreck.³¹ Another indication of the importance of the pomegranate in the Levantine world of the wreck are two ivory pomegranate-shaped finials, KW 4086 and 5156, along with two incised rod/sceptres (one complete), to which they would have been attached.³² Such objects have been found in religious and tomb contexts along the coastal and inland area of the Levant, from Hama, Lachish, Megiddo and further south into Canaanite territory,³³ as well as from Cyprus itself,³⁴ and they are found in both bronze and ivory. The presence of two rods in ivory, alongside a substantial cargo of pomegranate fruit on the Ulu Burun ship wreck strongly suggests their importance in the Near Eastern world, and by transference in the Aegean world, to which they were being transported.³⁵ (An apparently co-existent object is the use of suspended bronze pomegranates on tripod incense burners, and circular stands,³⁶ and similar objects made in baked clay.³⁷ While later these attachments also appear in use

29 WARD 2003.

30 BASS ET ALII 1989: wooden diptych, earliest find of such an object. A single leaf from a second diptych was found in later excavations, see PULAK 1994. Next identifiable examples found in a late 8th century well, during excavations at Nimrud, see MALLOWAN 1954, 98-107, pls. 22-23, 59-11, which were also preserved by being accidentally immersed in water, and which evidenced bees' wax mixed with orpiment – an interesting link with the cargo of orpiment on board the Ulu Burun ship.

31 WARD 2003.

32 See WARD 2003, Fig 2. Also, PULAK 1994, Fig.10 where one of the finials KW 5156 is identified as an opium poppy.

33 WARD 2003, Table 1 lists the following: Hama, ivory rod with fruit finial, Riis 1948, 173, fig.217; Lachish, two ivory rods with fruit, TUFNELL ET ALII 1940, 62; Tell Nami bronze rods, and tripods with pomegranates in Tombs from Area O (ARTZY 1991, 1995). The final publication will be under the aegis of the Shelby White and Leon Levy Program.

34 While from Cyprus, formerly from the Cesnola Collection, ivory finials in form of pomegranates (KARAGEORGHIS ET ALII 2000, no 110) imply the existence of other examples in the Cypriot cultural area. See now ARIE 2019 on the form of the flowering bud of the pomegranate and an up to date catalogue and discussion. WARD 2003 lists examples from Enkomi, Ayios Iakovos and Kition, all of 14th to 13th century BC.

35 WARD 2003, table 1. Here she argues for the elite nature of the cargo, including the very substantial presence of the pomegranates.

36 From Cyprus: CATLING 1964, pl. 32; From Southern Levant coast: Tell en Nami: ARTZY 1991. From Northern Syria: Ras Shamra/Ugarit bronze incense burner stand: NIGRO – SPANOLI 2018, Fig 5b.

37 LOPEZ-STRIPLING – BEN-SHLOMO 2019.

on the fringes of the High Priest and described in the Bible as decorating the Temple of Solomon itself.)

A related class of objects from Cyprus and the Levant world, which privilege the pomegranate exist in glass³⁸ in the form of hollow tubes, probably for kohl³⁹ or for perfumed oil, core-formed and trail decorated, which mimic the Egyptian kohl tube's form of a column-shaped bottle crowned by a palm leaf capital, but replaces the top with a simplified pomegranate, thus, demonstrating the overwhelming significance of that fruit in the Near Eastern sphere.



Figure 5a. Tubular bottle crowned with pomegranate opening, glass, Arpera, Cyprus, upper part only. b) Scale drawing of complete bottle. Both images courtesy of Peter Cosyns.

38 Glass tubes with pomegranate finials described as “slender tubular bottles crowned with a pomegranate”: five examples listed in COSYNS 2017, 17, with the most complete example fig 1. from Arpera, Cyprus. The list is as follows in alphabetical order: *Akanthou*: HARDEN 1981, note 15, COSYNS 2017, 94, no 1; *Arpera*: HARDEN 1981 36, note 14, COSYNS 2017 no 2, fig 1; *Hala Sultan Tekke*, Tomb VI: BAILEY 1976, HARDEN 1981, no 12, 36, COSYNS 2017, no 44; *Hala Sultan Tekke*, Area 6, ÅSTRÖM ET ALII 1983, 66, fig. 262, COSYNS 2017, no 48; *Maroni*: HARDEN 1981 no 12a, pl.1, COSYNS 2017, no 89; HARDEN 1981, note 16 adds another example, from an *unknown context*, now in the Haaretz Museum, no. 40358. HARDEN 1981, 36 adds another four examples from Israel (Palestine) near Tel Aviv, and the Hebron area. Thus, confirming the close cultural links between the Southern Levant and Cyprus.

39 HARDEN 1981, note 14 mentions the finding of a glass “kohl” stick associated with the Arpera example. The handle only survives and of course this could be used to apply perfumed oil just as well.

Parallel to the appearance of the pomegranate form used as a crowning element, we can now place the core-formed and trail-decorated pomegranate vessels (jar/bottle), which are found predominantly in Cyprus, and which, it is now agreed, are indicative of a Cypriot-based glass industry, which was in operation between 15th and 13th centuries BC, and which must be linked with the production of the glass tubular bottles or kohl tubes.⁴⁰



Figure 6. Glass vessel in form of a pomegranate from Enkomi, BM 1897.0401.1052. Reproduced under Creative Commons Agreement 6g.

As Peter Cosyns comments, the form of the calyx of these bottles, with six or seven pointed petals, set on a short neck contrasts markedly with the longer necks and rounded points of the Egyptian examples, confirming the distinct difference visible in the much rougher and thicker core-wound glass, which the Cypriot examples exhibit.

Another form, in which pomegranates have very strong presence in the Near East is as elements in *kernoi*⁴¹ – ring-shaped ceramic vessels, on the upper surface of which are positioned a variety of small containers in the form of symbolic animals and fruits, including models of pomegranates, to assist in the liquid/fruit offerings.

The purpose of these objects is still disputed, but it is clear that they were used to make ritual offering of liquids, or specific food stuff, either in a sanctuary context or in funerary ceremonies. In the Late Bronze Age and Early Iron Age these are widespread in Cyprus⁴² as well as in Southern Palestine,

40 COSYNS 2017; IMMERWAHR 1989.

41 Kernoi origin of term of Athenaeus, *Deipnosophistae*, XI.478. The most distinctive part of the description is “the clay vessel having many little cups stuck on it,” quoted by KLETTER 2015; BIGNASCA 2000 passim. Add DOTHAN – BEN-SHLOMO 2007; LOPEZ-STRIPLING – BEN SHLOMO 2019.

42 BIGNASCA 2000 is an exhaustive and well-documented study of the whole archaeological history of the kernos. He lists kernoi, which feature pomegranates, and of these 10 come from Cyprus. For example, from Cyprus Ring vase, in Mycenaean painted style, with 2 hollow, wide mouthed

in the land of the Canaanites.⁴³ And three new examples are from Tell Afis in north-western Syria, which have close similarities with similar objects from Cyprus (though without pomegranates),⁴⁴ and join the other distribution area in the Amuq Plain.⁴⁵ What is fascinating/strange is that an almost identical object has been found in the Greek sanctuary of Hera on Samos, dated to the last quarter of the seventh century/early years of the sixth century BC.⁴⁶ I shall discuss this further below. And it is of interest that some of the earliest Bronze Age kernoi from Cyprus are of Mycenaean design.



Figure 7. Kernos in terracotta from Megiddo, Stratum VI. After NIGRO – SPAGNOLI 2018, Figure 6g.

However, notwithstanding the apparent popularity of such objects in the Near East, and the fact that the Ulu Burun ship's cargo (late 14th century – 1300 BC) included both fruit and ivory rods, we do not so far have corresponding finds from the Aegean itself, although kernoi *sui generis* do occur in the Bronze Age. Certain Late Bronze Age kernoi from Cyprus appear to be of Mycenaean origin (See note 41 below). Immerwahr and Ward identify gold beads, a silver

vases, their sides vertically indented and painted on the swelling sides in between, suggestive of pomegranates: Maroni, Nicosia Museum LH IIIb, 1300-1230 BC, BIGNASCA 2000, C20; while in the succeeding period, Protogeometric Cypriot, 1100-1050 BC there are at least four examples with pomegranates: C22 {?}, C28, C30, C30a, and C37 and in Archaic Geometric four more 11th-10th c. BC: C40, C41, C42, C43.

43 BIGNASCA 2000, map 3 shows distribution of finds in Iron Age I, 1200-1000 BC in Cyprus and in Southern Palestine in the land of the Canaanites.

44 MINUNNO 2016. Add BIGNASCA 2000 for finds in Amuq plain.

45 BIGNASCA 2000, map 2 shows the distribution of find sites in the Levant and the Aegean.

46 VIERNEISEL 1961, pl. 24-32, pomegranate pl. 32,6; BIGNASCA 2000, E43 pl. 28, 71, 138.

pin, and a gold fruit-shaped pendant from 15th century BC Mycenaean contexts, but it seems likely that these were inspired by Cretan minor arts, where the pomegranate can already be identified in the 18th century BC,⁴⁷ and it is not until we find a terracotta vessel from Athens, in a tomb dated to late 14th century BC,⁴⁸ which apparently mimics the glass aryballoi found in Cyprus⁴⁹ that we can actually establish a direct relationship between Mycenaean Greece, the Near East and the pomegranate. But this interesting piece in terracotta apparently has no parallels. However, the fact that kernoi (without pomegranates) can also be found in Middle and Late Bronze Age sites in the Aegean, confirms the trading links in other goods, which were strong between the areas of Cyprus, Southern Palestine, the Amuq Plain in Northern Syria and the Aegean.⁵⁰

The plentiful evidence of the very rich presence of the pomegranate in the Late Bronze Age and Early Iron Age in the Near East does not appear in a corresponding way in Mycenaean Greece, although in the later Iron Age of Greece, it appears as a powerful symbol. Here I would like to refer to Immerwahr, who recognised that there is a lacuna in the evidence for the pomegranate in the Dark Age of Greece, and that it is probably in the Southern Levant that the pomegranate had a continued existence, or, as she puts it, “wintered over”. I would agree that though it made some appearances, it was never firmly established in the Bronze Age, and that its reappearance in the Early Iron Age was due to fresh importation of recognisable objects, decorative motifs and the fruit itself.

LINKS WITH THE SEARCH FOR SILVER

But now the gap between the 14th century terracotta vessel from Athens and Geometric Greek models of pomegranates⁵¹, can be partially filled in. The rich site of Lefkandi on Euboea provides clear evidence of the return of the pomegranate in the form of exotic imported vessels dated to ca 900 BC. It has recently been argued that the site of Lefkandi⁵² owed its riches to the visiting Phoenicians, en route in their search for silver in the northern area of

47 Phaistos: IMMERWAHR 1989 and LEVI 1976; Knossos: EVANS 1921 in WARD 2003, table 1.

48 IMMERWAHR 1989, 397, fig. 1, Agora vase P 27028, Tomb XXVI.

49 IMMERWAHR 1989, pl. 71c; COSYNS 2015.

50 BIGNASCA 2000, map 2, and Catalogue.

51 IMMERWAHR 1984 Fig.4, Pomegranate models decorated with Geometric designs, to be suspended as fruit.

52 Lefkandi is situated on the south-western coast of the island of Euboea, and has oversight/control of the inner shipping channel, which passes up this western side, to avoid the dangerous eastern coast. It was first discovered in 1964, and has been excavated by both British and Greek archaeologists. It has yielded evidence of especially rich burials dating from the early Iron Age, between 1050 BC and 675 BC.

the Aegean,⁵³ although this of course contradicts completely the Hellenocentric view of the brave Euboean traders sallying forth to the East for fine bronzes, fabrics and faience.⁵⁴ Here we could point to another connection with silver, when about a century later, in about 800 BC, the actual pomegranate appears in the form of seeds carried with the Phoenician cargoes to the far west when they sailed to Southern Spain, and established a settlement there at Huelva to capitalise on the metal resources of the region, in particular silver. (See further below). At Lefkandi, in two separate and richly equipped tombs, two faience bottles in the form of pomegranate were found alongside other faience containers, most intended for some precious contents, and buried as offerings/gifts for the dead. From Tomb 59 in the Toumba cemetery,⁵⁵ a faience pomegranate vessel was found alongside a number of imported objects, and a *plethora of pyxides* (small clay containers) dated to Late Protogeometric/Sub Protogeometric I, ca 900 BC. This pomegranate shaped vase is almost plain, only decorated with a row of downward hanging triangles at the neck, but its shape leaves no doubt of its identity. By contrast, the second example, featured by Immerwahr,⁵⁶ is much more elaborately decorated and altogether an impressive piece of faience workmanship.



Figure 8. Faience vase in form of pomegranate, Lefkandi, Toumba T.42, no 20. After official site of Lefkandi excavations.

53 SHERRATT 2019.

54 COLDSTREAM 1968; BOUROGIANNIS 2018; POPHAM 1994/2004.

55 Faience pomegranate vase CALLIGAS – SACKETT 1988, fig 9g, LPG/SPG1 Tomb 59 together with N-Syrian bronze bowl, and other faience objects.

56 Faience pomegranate vase, more elaborate example, POPHAM ET ALII 1982, 243-5, pl. 31, d: Lefkandi, Toumba, T. 42, no 20; IMMERWAHR 1984, pl. 71d.

So far, so good, but these two pieces are not *the swallows which make a summer* and they do not generate any followers, although they have clear stylistic links with the earlier Bronze Age glass bottles, made in Cyprus, and proclaim a connection with these much earlier pieces. How the form survived is not yet evidenced. Though faience is so readily associated with Egypt, and so many of the objects found in these rich burials seem to be echoes of Egyptian forms, it was the opinion of both Peltenburg and Brovarski that the majority of the objects found at Lefkandi made of faience are Egyptianizing products of a centre in the Levant,⁵⁷ and attention was drawn to the faience products found in Megiddo.⁵⁸

The history of the pomegranate's use as a decorative motif, apart from its appearance on kernoi, and on saucer-shaped dishes, is well established in the Near East. They appear as hanging pendants on many Late Bronze Age objects such as the tripod supports which appear in LCIII, with examples from Ras Shamra-Ugarit or Amathus in Cyprus,⁵⁹ and this usage continues into the Iron Age, on bronze rods and tripod stands from Tel Nami⁶⁰ (Figure 9a.), and its next appearance in Iron Age Greece is, in fact, as hanging pendants on the fine gold earrings found in the "Rich Lady's Grave" from Athens, dated to ca. 850 BC.⁶¹

The earrings display a combination of oriental techniques and Greek patterning. Also, in this rich burial were several glass beads, in particular one impressive core-wound example, and a necklace of faience disc beads, all confirming that trade links with the East were penetrating the Greek world. But the indication of real assimilation only appears perhaps another century later, with Late Geometric terracotta vessels and models in the form of pomegranates, found in both mainland Greece and Ionia. (See below) What was happening in the wider Mediterranean world which could explain both the gaps, and the final arrival and initial introduction of the fruit itself to the Aegean world?

57 Comments by PELTENBURG – BROVARSKI on probable Eastern origin apud POPHAM ET ALII 1982, 245.

58 See WEBB 1996 for discussion of the faience crouching lion vessels from Megiddo and their Cretan copies in both faience and clay, in COLDSTREAM – CATLING 1996, 606-607, fig.180, pls. 298-3; PELTENBURG 2002.

59 CATLING 1964, Cyprus nos 23, 24, 25, pl. 31, with rings for missing pendants; nos 27- 29 with pendant pomegranate attached, no 30 Ras Shamra-Ugarit, pl. 32; and see NIGRO – SPANOLI 2018 Fig. 5 for photo.

60 Tell Nami: ARTZY 1990, 1992 for tripod incense stand with pendant pomegranates, and rods with pomegranate finials see also WARD 2003, fig. 3.

61 SMITHSON 1968, 122-123, no 77, pls. 30, 32.



Figure 9a. Bronze rods and tripod incense stand with pomegranate pendants, Tell en Nami. Photograph from Israel Museum on-line public access site. b. Bronze Rods from Tell Nami. 7965 (29.8×23.4 cm).

EVIDENCE FROM HUELVA, IN SOUTHERN SPAIN

We should turn now to the recent evidence from early Phoenician sites in the Western Mediterranean. No longer is it necessary to have the Phoenicians, or their fellow traders the Cypriots, painstakingly establishing spring board settlements, such as Kition/Kart Hadasht in Cyprus, and then moving on in stages to first establish Carthage, before tackling the far West, where great resources of precious metals lay waiting to be discovered. The recent evidence from the excavations at Huelva, at the mouths of the Tinto and Odiel rivers, proves that the eastern traders were already there by the end of the ninth century.⁶² Settlement refuse debris dated at its earliest to ca 800 BC, has been closely analysed for evidence of the fruit and vegetable crops, which the settlers would have depended on, and which they would, in the absence of such plant species in Spain, have brought with them. This analysis of carpological remains, has yielded the most fascinating and incontrovertible results. Two urban plots in the city centre of modern Huelva have yielded evidence of the earliest archaeological levels in the Iberian Peninsula, which correspond with

62 NIGRO – SPANOLI 2018; PEREZ-JORDA ET ALII 2017; MORICCA 2021.

the so-called colonization period,⁶³ and included abundant materials of Phoenician, Greek and Sardinian cultural nature alongside local products. Amongst this evidence were found the seeds of *Prunus dulcis* (almond), *Punica granatum* (pomegranate) and *Cucumis melo* (melon) which were non-native to the Western Mediterranean and arrived in already domesticated form in the Huelva area.⁶⁴

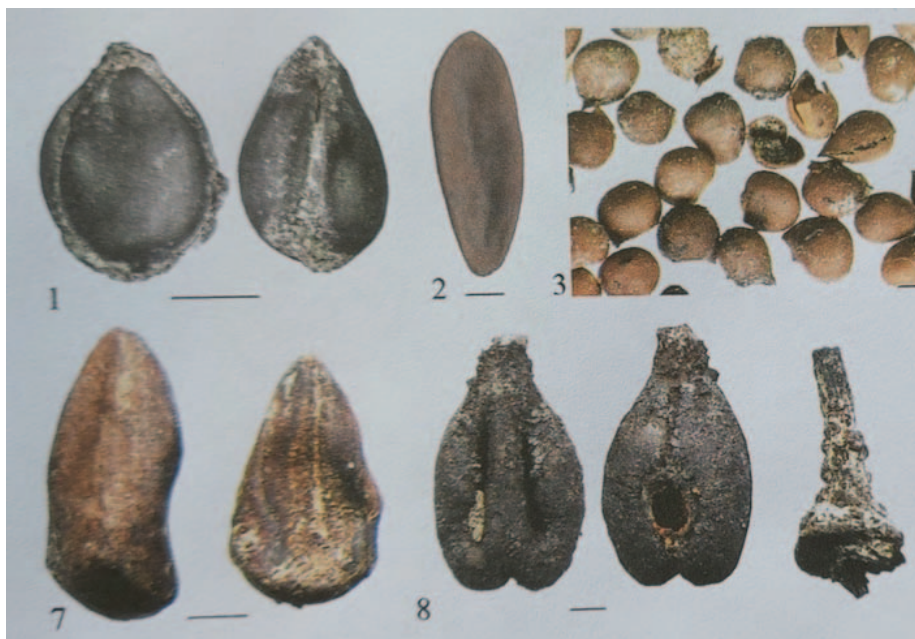


Figure 10a. Carpological remains from Huelva, Spain, including pomegranate seeds, PEREZ-JORDA ET ALII, 2017, fig. 3, no 7. 1. *Panicum miliaceum*, 2. *Cucumis melo*, 3. *Ficus carica*, 7. *Punica granatum*, 8. *Vitis vinifera*, 9 *Papaver somniferum*. Image courtesy of Guillem Perez-Jorda. Scale bars -1mm.

So, we now can be confident that by around 800 BC, traders from the Eastern Mediterranean had already penetrated to the far west, and that they brought with them new forms of crops and fruits. What the exact relationship was between Phoenicians, Greeks and Sardinians will provide fruitful material for discussion and dispute in the future. Suffice it to say that we have strong links established here between the Levant, Greece, Sardinia and Iberia.

63 GONZALEZ DE CANALES ET ALII 2006; GARCIA FERNANDEZ ET ALII 2015.

64 PEREZ-JORDA ET ALII 2017, fig. 3, table 1.

EVIDENCE FROM MOTYA, IN WESTERN SICILY

Another important site which chronicles the activities of the Phoenicians in the Western Mediterranean is Motya, a small island lying off the west coast of Sicily, founded as a trading station and colonial settlement by the Phoenicians. Originally excavated by Joseph Whitaker in the 1920's the island was found to be a very rich source of archaeological material,⁶⁵ because it was abandoned in antiquity after its siege and conquest by Dionysius of Syracuse in 398/397 BC, and never resettled after that traumatic event. Here again there is evidence from recent excavations of remains which clearly signal the presence of pomegranates.⁶⁶

a) Seeds present in sampled soil from Building C8, which the excavators have identified as the earliest warehouse erected by the Phoenicians when they first settled in Motya at the beginning of the eighth century BC.⁶⁷

b) Pit F. 1112 (originally P.1112) yielded evidence of *Punica granatum* in the form of six exocarp fragments (burnt rind) which, according to the excavators, is an indication of a significant presence, since the seeds are generally eaten and the exocarp fragments deteriorate easily (Figure 10b). This deposit is dated to 7th-6th century BC, and the exocarp fragments come from "filling layer IV, ascribed to the mid-7th century BC",⁶⁸ and their existence is yet more evidence of the introduction of the pomegranate into the Western Mediterranean, primarily as a food plant.

c) But a third find is solid confirmation of the importance of the pomegranate in cultic use – a complete model/vessel in form of a pomegranate, found inside a mono-cellular building identified as a Temple of Astarte. The find spot is dated to Motya IVB, Phase 8, 750-675 BC.⁶⁹ Its contents were analysed and yielded either pomegranate juice or blood! Its confident, rounded form and open mouth have a number of parallels with finds from the Levant.

d) A final find spot from Motya, in one of a pair of wells,⁷⁰ reused for the deposit of discarded votives, shows the association of the fruit with chthonic ceremonies in honour of Baal-Astarte, with seeds of pomegranate mixed with a range of offerings. But these deposits date to the 5th century BC, and thus, lie outside our remit, though they show the continuing importance of the pomegranate in a religious setting. In Sicily "the wave of cultural Hellenisation"⁷¹ in the 5th century caused the divine couple of Baal-Astarte to become assimilated

65 WHITAKER 1921.

66 MORICCA 2021.

67 NIGRO – SPAGNOLI 2018, 61.

68 Morrica's personal communication, Jan 11th, 2022.

69 NIGRO – SPAGNOLI 2018, 64-65, fig.13.

70 NIGRO – SPAGNOLI 2018, 65, note 119.

71 AMPOLO 2012,5; NIGRO – SPAGNOLI 2018, 65.

into Poseidon–Demeter. So that in Sicily, and Carthaginian sites in modern Tunisia, like Kerouane, Astarte is worshipped in the form of Demeter, and is shown holding a pomegranate, while in Southern Italy, where Greek settlement had always prevailed, Hera holds sway, and we see this in the worship of Hera at Foca del Sele, Paestum, and the persistence of the association of the pomegranate with the mother goddess – now the Virgin Mary – in the cult of the Madonna del Granato, established in the same area.⁷² Sicily acts as a

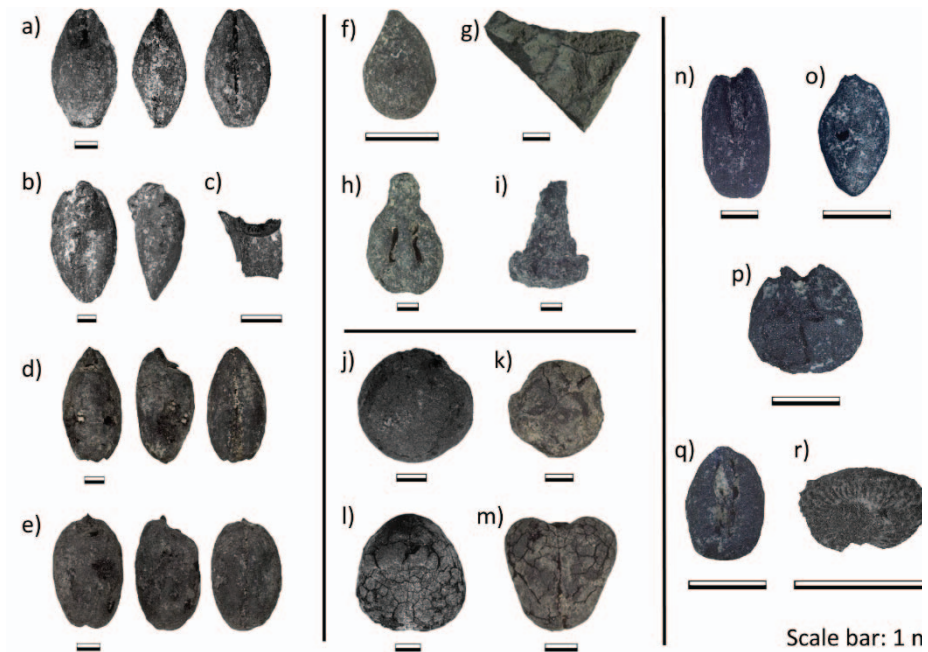


Figure 10b. Selected carpological remains from from pit F.1112, Motya, Sicily, including burnt rind of pomegranate fruit. MORICCA 2021, fig.3. a *Triticum turgidum* ssp. *dicoccon*, b *Triticum aestivum/durum*, c *Hordeum vulgare* (hulled); d *Hordeum vulgare* (hulled and sprouted); e *Hordeum vulgare* (rachis node); f *Pisum sativum*; g *Lens culinaris*; h *Vicia/Lathyrus*; i *Vicia ervilia*; j *Vitis vinifera* (seed); k *Vitis vinifera* (pedicel); l *Ficus carica*; **m *Punica granatum***; n *Lolium temulentum*; o *Phalaris* cf. *minor*; p *Briza maxima*; q *Sherardia arvensis*; r *Silene vulgaris*. Scale bars=1 mm. Image courtesy of Claudia Moricca.

72 MUTHMANN 1982; BAUMBACH 2004, 117, fig 5.21; PONTRADOLFO – ROUVERET 1992: terracotta statuette H 51.6 cm of seated goddess(?) holding pomegranate in her right hand, from Paestum-Posidonia; La Madonna del Granato: BAUMBACH 2004, 146, fig. 57.1; painted tombs at Paestum: PONTRADOLFO – ROUVERET 1992, 35,38.

hinge point half way between the Eastern and Western Mediterranean. No doubt the cultural beliefs that attached to the fruit would have travelled with it.

THE ESTABLISHMENT OF THE POMEGRANATE IN IRON AGE GREECE

That the Greeks adopted it as a fruit plant, and also as an object with strong cultural beliefs, is clear from the associations with the goddesses concerned with fertility, and death (or rather the promise of life after death) as Aphrodite, Demeter and Persephone,⁷³ even Athena, and especially Hera.⁷⁴ After its appearance as imported faience vessels at Lefkandi (ca 900 BC) of clearly Levantine/alien type, and the gold pendants on the earrings from Athens (ca 850 BC), which show a combination of Eastern technique and Geometric design, it is not until the eighth century (between 800-700 BC) that the pomegranate reappears in force in Greece, and makes a strong statement in the form of models intended for dedication, decorated in the Geometric style of the period. These are found in a large number of sites in Greece, in both tombs and sanctuaries. Immerwahr points out that the majority of these are models, intended to be hung upside down, with a hole pierced in the stalk underneath,⁷⁵ and not vases/containers, and this appears to imply that they were mimicking the actual growth of the fruit on the tree.⁷⁶ However, alongside these separately modelled fruit-like forms, the idea of using the pendant pomegranate as decorative pendants for jewellery, either on pins, or hanging from earrings, is also adopted from the East, and becomes part of the new repertoire for jewellery in bronze and later, the more precious metal, gold.⁷⁷

Of course, we must link this revival of interest to the new wave of Orientalising influences coming into Greece from the Levant, whether carried by Phoenician traders, or being brought back by native Greek shipments. The volume of contacts between Greece and the Levant possibly began with the arrival of the first Phoenician traders (the jury is still fiercely out on this) probably starting as far back as 1000 BC. But it should be considered as spasmodic and uncertain until the contacts between Greece and the Levant are firmly

73 MUTHMANN 1982 *passim*; Homeric Hymn to Demeter, see SUTER 2002 for separation of the two goddesses.

74 BAUMBACH 2004 analyses the cult of Hera at important shrines in the Peloponnese, Ionia, and Western Greece, and documents the different usages and appearances of the pomegranate, linking them to cult practices.

75 IMMERWAHR 1986. She was able to list over 50 examples.

76 CHARITONIDES 1960 distinguished four regional classes: Attic, Corinthian, Argive and Cycladic; KOUROU 1987 adds Samian, Cretan and a handmade class linked to Argive and Attic types.

77 KILIAN-DIRLMEIER 1979, 35, and see HAMPE – SIMON 1981, 199, fig. 29: bronze pendants in the form of pomegranates from Thessaly 8th century BC, which clearly reproduce the oriental form of the pomegranate flower, see ivory forms: ARIE 2021.

established on both sides.⁷⁸ But we can note that the (re)establishment of the pomegranate in Iron Age Greece appears firmly in the eighth century when the Late Geometric style dominates, and when the influence of the flood of imports from the Levant had not yet impinged on the visual arts of Greece. The earliest type of clay pomegranate models come from Attika and are decorated in Geometric style: indeed, a find from the Late Geometric period could be linked with the production of silver coming from Thorikos⁷⁹ (the settlement and cemetery associated with the silver mines at Laurion in South East Attika). But these model pomegranates are made and dedicated in many other centres in Greece, often in association with the goddess Hera.⁸⁰



Figure 11a, b. Pomegranate models in Geometric style from Temple of Hera at Tiryns. DAI-ATH –Tiryns, 1190, 1068A (Photos by Hermann Wagner). Reproduced by permission of the German Archaeological Institute, Athens.

The impact of the arrival of the pomegranate in the eighth century was clearly very strong and it quickly became widespread as a symbolic object, most often a model and not a vase. The establishment of groves of trees, even if they had originally been imported as fruit, would seem to be implied by this wide spread popularity.

THE SANCTUARY OF HERA ON SAMOS

The finds from one exceptionally rich sanctuary site, the Sanctuary dedicated to the Goddess Hera on the island of Samos, are particularly striking. Here there are clear signs of the important role that the pomegranate played in many aspects of the worship of the goddess. Naturalistic models of

78 UNBABIN 1947; COLDSTREAM 1968,

79 IMMERWAHR 1986, fig. 4 illustrates a clay pomegranate vessel, which comes from Thorikos Deposit 77, dated by COLDSTREAM 1968, 44-45 to Late Geometric IIa, 735-720 BC.

80 Tiryns from the sanctuary of Hera: BAUMBACH 2004, fig. 3.38.

pomegranates dating back to Late Geometric period in the eighth century were dedicated in large numbers (Figure 12a), followed by less naturalistic models in the seventh century (Figure 12c).⁸¹ Another form found was a realistic model of several fruit growing from one stem (Figure 12b) also of the 7th c. BC.

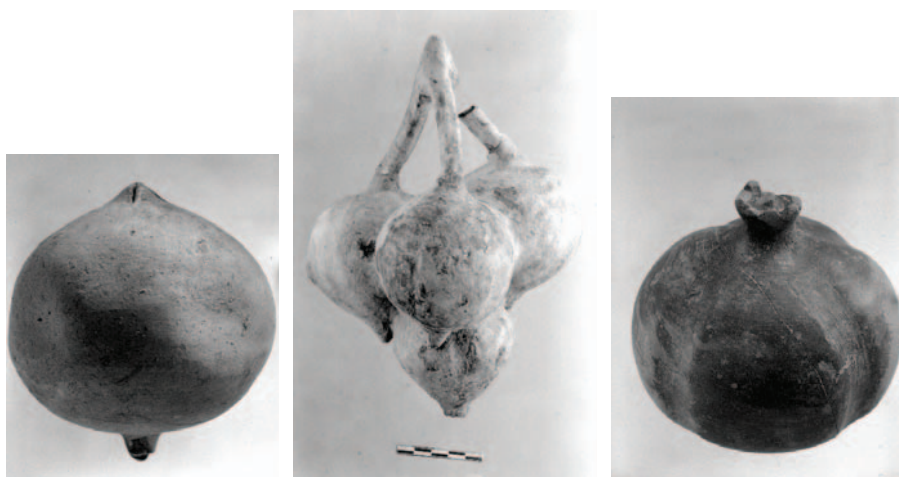


Figure 12 a, c. Naturalistic models of pomegranate fruit from the Samos Heraion, DAI-ATH-Samos 2977, 2978 (Photos by Eva-Maria Czakó); Figure 12b. Bunch of hanging fruit, indicating that the pomegranate grew as a tree in the Sanctuary, or nearby. DAI-ATH-Samos 2346 (Photo by Hermann Wagner). All terracotta. Reproduced by permission of the German Archaeological Institute, Athens.

Alongside these offerings made to the goddess are found large numbers of the actual seeds of pomegranate fruit, which must indicate that the real fruit were also offered to the goddess, since these parts of the fruit are the most persistent in the ground.⁸² A puzzling result of Kučan's research is that the seeds apparently come in two different shapes, and may belong to two different species of pomegranate tree: the European, and the Near Eastern? This is an intriguing development, as it implies that there was a relatively local tree bearing fruit, which was grown alongside the fruit type, which had been imported from the East, but this doesn't negate the fact that the pomegranate had arrived as a new import during the course of the eighth century in Late Geometric times.

81 EILMANN 1933, 140-141, pl. 4; WALTER 1957, 43, pls 60-61; WALTER 1959, 14, pl. 22, material from Brunnen F dated to between 730-670 BC; VIERNEISEL 1961, pl 34,2; KOPCKE 1968, 92, 94-7; FURTWAENGLER 1980, 173, pl. 52,2.

82 KUČAN 1995. Similarly, in Huelva and Motya, as seen earlier.

Beside the evidence of naturalistic models of pomegranates and actual fruit being offered as gifts in the sanctuary, the fruit appears to have featured in jewellery worn by worshippers,⁸³ although no actual finds of such jewellery have been found, possibly implying that they were made of some perishable material.⁸⁴ A whole sequence of charming torsos and statuettes of female worshippers in terracotta are painted with necklaces, from which pomegranates (and possibly other fruit – like poppy seed heads) hang.⁸⁵ (Figures 13a-d)

Was it their intention to assist fertility, when the figurines, which must have served as proxy for the women dedicating them, were given to the goddess – we may assume – at the annual festival celebrating the Sacred Marriage between Hera and Zeus?⁸⁶ This event is visualised in a fine wooden plaque where the existence of an eagle between the two figures confirms that this does represent the marriage between Zeus and Hera.⁸⁷ And from two other sanctuaries of Hera, we have a pair of identical lead fibula plaque apparently depicting the same event. On the Argive Heraion example,⁸⁸ which is better preserved, the woman/goddess appears to hold both a distaff/spindle in her right hand and a rod crowned with a pomegranate in the other, while on the Perachora piece,⁸⁹ though not so clearly preserved, the woman holds at least one pomegranate shaped globe in front of her. Smaller models of

83 BAUMBACH 2004 notes the reference in Athenaeus to the poet Duris (*ap. Athen.*, XII, 525 F), about women wearing jewellery when worshipping the goddess, but the quotation in fact concerns the over indulgence in luxurious apparel of the men of Samos, wearing white robes down to the ground with heavy bracelets, and golden grasshoppers in their hair which was worn long and brushed back.

84 It has already been noted that finds of jewellery in the sanctuary are very scarce, apart from rather humble finds of faience disc beads, and associated wound glass beads, both of Near Eastern origin.

85 JAROSCH 1994, nos 1127, 1128, 573, 664, 1027, 1028, 672, 946. BAUMBACH 2004, fig.6.37 and 6.44. Similar usage seen at other sanctuaries of Hera: Argive Heraion, bronze pendant in form of pomegranate, late 8th to 7th centuries BC, BAUMBACH 2004, 93 Note 218; Tiryns figurines wearing a single pomegranate: BAUMBACH 2004, fig. 3.36 and 67,71 but they are later in date, second half of the 6th or early 5th century BC.

86 See note 108 below on ancient sources on the Sacred Marriage.

87 OHLY 1953, 80-88, where the author suggests that this rectangular plaque probably formed a panel for furniture: a marriage bed, or a throne; BAUMBACH 2004, fig 6.27. An earlier terracotta plaque from the Heraion shows a more explicit version of the same event: OHLY 1941, pl. 35, no 392, where a naked, frontal female is grasped by a male figure.

88 ALEXANDRIS 1964, 525-530; STRØM 1998, 65-67; BAUMBACH 2004, 87, fig 4.32.

89 Perachora: PAYNE 1940, 186, pl.85,1; BAUMBACH 2004, fig 2.42.

pomegranates in ivory and bone⁹⁰ (Figure 14), and in glass (see Figure 1) were dedicated in the Sanctuary, as finials for some important objects.⁹¹



Figure 13. Figurines of women wearing necklaces with pendant fruit, probably pomegranates, or poppy seed heads, terracotta. All from the Samos Heraion. Figures 13a, b, after BAUMBACH fig. 6, 44-45. Figure 13c. Late Geometric figurine DAI-ATH-Samos 6066 (Photographer Gösta Hellner) Figure 13d. No. 5748. Reproduced by permission of the German Archaeological Institute, Athens.

These last finds were found in Hans Walter's excavations to the east of the monumental Altar of Hera in 1963-1964,⁹² and we now have a further number from the new excavations in an area alongside these original excavations.⁹³

90 KYRIELEIS 1993, 139, fig. 7.7.

91 See note 1 above, and fig 1.

92 To be published by WEBB in NIEMEIER PREP.: Samos 21/2.

93 HENKE 2017a; WEBB 2021.



Figure 14. Models of pomegranates and poppy heads in ivory (E 119, E 113, E 106, R 108). DAI-ATH- 6059 (Photographer Gösta Hellner). Reproduced by permission of the German Archaeological Institute, Athens.

It is here that a recent study⁹⁴ gives us the final clue to the link between these partially preserved relics in Greek sanctuaries and the rods with pomegranate (and sometimes poppy-head) finials in ivory and bronze from Late Bronze Age and Early Iron Age Cyprus and the Levant. We can now with confidence suggest that both the smaller ivory and bone pieces and the glass pomegranates could well be part of similar objects: spindles, which when equipped with a pomegranate or poppy-capsule as a heading, represent a suitable offering to Hera – a symbol of the female role, of fertility and abundance, and of the power of the goddess in guaranteeing these to women.

Apart from these appearances of the pomegranate in the Sanctuary of Hera on Samos, as both real fruit consumed, modelled fruit, and as glass,

ivory and bone finials/headings, there is finally, the *piece de resistance*, a richly decorated *kernos*,⁹⁵ dated to the earliest years of the sixth century (Figure 15), which mimics in many of its features, the kernoi which we looked at earlier from Late Bronze and Early Iron Age Levant and Cyprus.

Like the example from Megiddo,⁹⁶ which is dated to the 12th-11th centuries BC (See Figure 7), the Samos piece features a bull's head, and

94 ARIE 2019.

95 Found in Bothros M11, with about 260 vases and votive objects of great value: WALTER – VIERNEISEL 1959; VIERNEISEL 1961; MUTHMANN 1982; BIGNASCA 2000, E43*; BAUMBACH 2004, figures 6.14 and 6.15.

96 Megiddo example Stratum VI (12th -11th century BC) has eight attachments: a cup, where two turtle doves are drinking, two pomegranates, two jars and the head of a bull with pierced mouth, from where the liquid contained in the ring-vessel could be offered up as a libation. BIGNASCA 2000, 060, pl. 7, see also 058.

a pomegranate (possibly two), together with an assortment of lucky and powerful symbols, and its general design and appearance also appears very similar to this and other kernoi dating from several hundred years before. The kernos form was already in use in the Heraion, as a number of earlier examples demonstrate. The earliest of these probably dates to the first half of the 8th century BC, but only has one crudely shaped vessel⁹⁷ with open mouth surviving a form, which can be paralleled with other early Greek examples. The next one survives intact with seven identical jugs, decorated in conventional pottery style, and facing round in a circle on top of the hollow ring. (This doesn't seem to refer to Eastern prototypes).⁹⁸ And another in Basle is assigned by Bignasca to Samos with open mouthed cups and a ram's head, and dated to 700-650 BC.⁹⁹ Of latest date are three other examples from the Heraion, which survive only as the ring itself, without the additional "little cups", and are dated to



Figure 15. Kernos in terracotta, K DAI-ATH-Samos 5284 (Photographer Gösta Hellner). Reproduced by permission of the German Archaeological Institute, Athens.

97 BIGNASCA 2000, E33, pl.27.

98 BIGNASCA 2000, E 32, pl 27: a complete example with 7 small jugs, dated 750-725 BC.; VIERNEISEL 1961, 25-59, pl. 34,2; WALTER 1968; WALTER 1990.

99 BIGNASCA 2000, E 36, pl.27.

between 600-570, and show that the form was still in popular use in the Sanctuary.¹⁰⁰ None of these, as far as we can tell, were equipped with pomegranates, but in the case of the last three examples, this is not possible to know one way or the other. The explanation for the similarities between the elaborate example (E43) and Eastern prototypes must lie with the fact that Samos had well established trading links with the Near East,¹⁰¹ and an intense interest in Eastern objects.¹⁰² But exactly how the identical features reappear on the special kernos, modelled apparently in imitation of much earlier objects, is puzzling.

However, we know that the kernos form persisted in the Near East,¹⁰³ and we have a number of kernoi fragments made in local ceramic from the Samian sanctuary, as described above, which show that in the worship of Hera on Samos the kernos form was already in active use in the eighth century.¹⁰⁴ The pomegranate itself probably arrived at about the same time in the eighth century, and after its first appearance in the Heraion as terracotta models, and jewellery attachments, it was finally adapted to serve as two hollow containers on the elaborate kernos (E43), and to take its place amongst other symbols of fertility, especially the frog (actually a toad),¹⁰⁵ and the bull's head with horns.¹⁰⁶ What is of concern to us here is the reappearance of the pomegranate as a symbol of fertility and fruitfulness, of both humans, animals and crops, and the range of objects on the kernos must cover many aspects of these, as did the pouring of the contents over sacrificial objects or the altar itself.

100 BIGNASCA 2000, E66, E67, E68 all excavated in 1965; КОПЧЕ 1968, fig 29, and pl.108.

101 EBBINGHAUS 2006; KILIAN-DIRLMEIER 1985

102 KYRIELEIS 2009, 139-143 argues for the larger and more valuable offerings to the goddess originating from the rulers of foreign powers; while BUMKE 2007 suggests that Egyptian priests were responsible for the dedications of the very fine 22nd Dynasty Egyptian bronzes. Bignasca mentions the finding of the trapezoidal horse frontlet, decorated with three naked goddesses, and inscribed in Aramaic for Hazael of Basan and dated to the ninth century, but it is now suggested that it would have arrived much later, sixth century? From Eretria an elaborate horse blinker with a similar inscription, and another, uninscribed, both of which can be paralleled in the Heraion B 119.

103 BIGNASCA 2000 lists numerous examples from the Levant which are dated to Iron Age II, his Nos 0100-0205 between 10th c. to 7th c. BC, though without pomegranate additions (as far as can be ascertained from the fragmentary nature of the finds.).

104 As listed above: Geometric examples: BIGNASCA 2000, E32 with a simple succession of juglets dated 750/625 BC; E33 second half of 8th century; E34 to 730/670 BC. From the Archaic period: E43- E44, E66-69 dated to between 625/600-570 BC.

105 Frogs associated with the damp conditions in the Heraion Sanctuary, and with fertility, appear also in other materials.

106 A persistent feature of the kernoi listed by BIGNASCA from Bronze Age to Iron Age in the Near East.

It was believed that Hera was born on Samos, under a Lygos tree (*Vitex agnus castus*),¹⁰⁷ which grew in the sanctuary, so her right to be worshipped in the sanctuary was prime. Our ideas of Hera are rather distorted by stories of her behaviour. The goddess who is depicted in Homer as a jealous wife, is more accurately represented as the scheming seductress, who borrows Aphrodite's magic belt to overpower her husband Zeus with the snares of love.¹⁰⁸ Hera was the goddess who could, by her divine power, renew her virginity every year (in preparation for her annual Marriage to Zeus), and a wooden carving from the Heraion must show the Sacred Marriage,¹⁰⁹ the *Hieros Gamos*, which was imagined as taking place annually between herself and Zeus. It was celebrated on Samos, where ancient sources confirm its name and certain of the ritual acts.¹¹⁰ An interesting comparison is with the site of Olympia, where it was initially Hera who was the dominant deity, and who was the sole deity in the archaic period to be honoured with the construction of a fine temple to house her cult image.¹¹¹ On Samos, she was always the most important deity, and Zeus has no presence in the sanctuary, except as her spouse.

We must imagine her as a goddess whose sway over humans and animals is linked to fertility and reproduction. The use of the pomegranate

107 A bush or small tree, known also as *chaste berry*, which was considered to have anaphrodisiac qualities. The stump of a tree trunk, found buried in the earlier altars of Hera, was originally identified by the excavators as being a similar tree, but has now been proved to be a *Juniper*, see NIEMEIER – MANIATOS 2010.

108 Homer, *Iliad*, XIV, 154-360.

109 BAUMBACH 2004, fig. 6.27; OHLY 1953, 80-88. An earlier terracotta plaque from the Heraion shows a more violent version of the same event, OHLY 1941, pl 33, no 392. And from two other sanctuaries of Hera, we have identical lead plaques showing another version of the event, from Perachora and from Argive Heraion, illustrated by BAUMBACH 2004, fig. 2.42 (Perachora), and fig. 4.32 (Argive Heraion).

110 BAUMBACH 2004, 159 usefully refers to later sources on the ceremonies which took place in honour of Hera: "Varro states the statue was draped with bridal robes as *The annual rites of Hera are celebrated in the form of a marriage* thus the festival sought to imitate marriage rites between Hera and Zeus (ap. Lactant. *Div. Inst.* I 17.8.) Augustine notes that the sacred marriage between Hera and Zeus was thought to have taken place on Samos (August. *De civ.* D.VI 7). This festival was apparently called the Heraia. The goddess' birthplace is also involved in the festival where cult members wound lygos branches around the wandering cult statue of the goddess, and around themselves, (a festival) called the Tonaia."

111 At Olympia in 5th century BC, Zeus was honoured with a richly ornamented temple built in limestone with marble pediments and metopes. Previously the ancient temple of Hera (ca 600 BC) was shared with Zeus, and it continued to have its important status as the place where the women athlete-winners at the games of Hera would erect their statues, and the winners' wreaths were kept. In Samos, the main cult was focussed exclusively on the goddess Hera.

demonstrates this most clearly. Its reintroduction as an important tree which bore exotic fruit must have taken place at some point in the middle of the eighth century BC, as it appears in many different Geometric Greek pottery fabrics as decorated models (very often associated with the worship of Hera), while in Samos itself it is more clearly adopted as realistic models to gladden the heart of the goddess. Unfortunately we will never know the exact history of this reintroduction (unless genetic traces can be followed), but we can hazard a guess that it was being brought in from the Near East amongst the richly laden cargoes, which would have included such objects as the elaborate horse harness of King Hazael, from North Syria,¹¹² and bronze griffin headed tripods from Assyria and Urartu,¹¹³ bronze gods with dogs from Babylonia¹¹⁴ and ivory thrones inlaid with glass from North Syria and Cyprus,¹¹⁵ and (recently identified) two glass phiale, whose importance, it is argued, is linked to the worship of female deities,¹¹⁶ and finally, of course, the glass pomegranate finials – all intended to gladden the heart of the goddess, and bring her patronage and protection to the givers. Some of these magnificent objects did not reach the Heraion until the seventh century BC, so that the parallel with the Ulu-Burun ship as the bearer of the pomegranate does not quite stand up. But there were forces at work in the eighth century BC, when the pomegranate already appeared as well-understood Geometric models, of which we are still ignorant, just as the appearance of the kernos in the late seventh century (625-600 BC) with pomegranate and bull's head attachments cannot really be explained, unless its parallels with earlier kernoi are not entirely fortuitous, and are due to the import of Near Eastern models, which have not survived. Our glass pomegranate finials also have strong parallels with object types found in much earlier Near Eastern contexts, though in this case they have evolved and demonstrate a different glass technology. An enlightening discussion is by Thomas Keily of the afterlife of bronze wheeled tripods, typical of Late Bronze Age Cyprus, where the persistence of the form into the Early Iron Age gives an idea of the processes at work in the Near East, after the collapse of the rich

112 NIEMEIER 2014, 296, no 165.

113 JANTZEN 1955; GEHRIG 2004; VIGLAKI – SOPHIANOU 2014, 275, no 145.

114 KILIAN-DIRLMEIER 1985; KYRIELEIS 1993.

115 FREYER-SCHAUENBERG 1964. From Samos, identical to a Phoenician ivory furniture plaque from Nimrud, and glass inlays recently identified in the votive debris from the altar site, WEBB (unpublished), which would have been the decorative additions to such objects: these are miniature cobalt blue glass rectangles, inlaid with a white rosette, see READE 2021 for examples from Nimrud, now in the British Museum collection, analysed and shown to originate from North Syria/Phoenician workshops.

116 HENKE 2017b.

Late Bronze Age kingdoms.¹¹⁷ We must be open to the idea of the possible persistence of a greater number of forms than we know of, although the actual evidence is lacking.

Added to this is the role that Samos herself was playing from the eighth century BC onwards. The idea that somehow the Heraion was passively sitting there, receiving gifts being brought by aliens from far away, needs to be challenged, and Niemeier argues forcibly for the outgoing activities of the Samians already in this period: "In the second half of the eighth to the seventh century BC, Samos developed into a maritime trading centre with wide ranging connections from Egypt, and the Near East, to Spain. It is probable that by 750 BC she had set up trade colonies at Kelenderis and Nagidos in Rough Cilicia, which brought them straight to the border of the Assyrian area of interest and facilitated their access to Cyprus and Northern Syria".¹¹⁸ This would nicely explain the presence of North Syrian ivories, bronze griffin cauldrons, and Babylonian bronze statuettes (Figure 16).



Figure 16. Map showing the geographical areas from which votive offerings to the Heraion in Samos came. After Kilian-Dirlmeier 1989, fig. 20, with added colour.

If Samian merchants were already active in the Near East by the middle of the eighth century, then this provides a solid parallel with the pomegranate's journey, five hundred years before, when it accompanied the Canaanite and Mycenaean merchants on board the ship which sank at Ulu-Burun in around 1300 BC. If it was the Phoenicians who had originally introduced the pomegranate to the Western Mediterranean in the tenth/ninth century, it seems likely that it was Greek traders themselves who were implicated in its further introduction in the eighth century into the Greek world and the Aegean.

¹¹⁷ KIELY 2014, 28, no 2.

¹¹⁸ NIEMEIER 2014, 265-6.

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