

BEEKEEPING PRACTICES IN AGATHONISI DURING ANTIQUITY

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Agathonisi being the northernmost island of the Dodecanese complex is located to the NE of Patmos and S of Samos. The morphology of Agathonisi is characterized as hilly with little arable land, a fact that lead to extensive animal husbandry and fishery development. The vegetation consists mainly of chasmofytes, illustrating interesting endemic plant taxa, salvia brushwoods and Mediterranean lentisk shrublands. Arid meadows typical of the Mediterranean landscape occur in the east of the island, while Aegean brushwoods, carob and oak trees in arboraceous formations, sages (*salviae*), thistles, asphodels, calicotomes, sarcopoteriums and bushy wild, olive trees complete the vegetal image of the island.

Strabo refers to the island as Tragia or Tragaia¹ in antiquity due to the vast goat population on it: «τὰ περὶ τὰς Τραγαίας νησίᾳ, υφὸρμούς ἔχοντα λησταίς»² (in the Tragaia surrounding islands, pirates lurked). Agathonisi was enlisted among the Milesian islands, along with Patmos, Arkioi, Leipsoi, Leros, Korseoi and Farmakonisi³ (**Fig. 1**). The Milesian islands seem to have supported garrison forts in the 4th century BC, in

order to safeguard the mercantile maritime networks of the Ionian Metropolis of Miletus⁴.

On the north side of the island, at the site of Kastraki, archaeological excavations have brought to light the fortified establishment of the late 4th - early 3rd century BC, which was inhabited until its abandonment in the second half of the 2nd century AD. The fort is divided into three terraces and is surrounded by strong defensive walls. The first and higher terrace is occupied by a square tower with a rainwater collection cistern in its basement and a cookhouse in front of it. In the middle terrace a sanctuary of Aphrodite and Eastern deities is situated, whilst at the third terrace storage rooms and workshops are on display, the most important being that of murex-processing for purple color production.

Among the important finds, which came to light from the excavation, a great number of clay beehives has been accumulated, a fact that testifies to a systematic and quite profitable occupation of the inhabitants. The apiary is located at the south, protected from the strong winds, slope of the hill. The site is appropriately formed in narrow terraces stretching from the North to the South through a series of retaining walls, in which the clay beehives were either enwalled or piled up. The most typical arrangement that has been discovered consists of parallel long walls each of 0.88m. width, at an interval of 0.88m. respectively, suitable for horizontal beehive type installation. The northern wall is of 2,85m. length and the south of 1,85m (**Fig. 2**). From this area a large number of beehive fragments has been accumulated, whilst from the next higher terrace an almost intact beehive of the horizontal type has been discovered (see below).

Special thanks are due to Dr. Pavlos Triantafyllidis, Director of the Ephorate of Antiquities of Lesbos and of the Agathonisi excavations respectively, for the permission to publish the clay beehives and for his valuable guidance. This study based on previous publications of Dr. P. Triantafyllidis, is enhanced by new excavational data. The present English translation of the text was undertaken by the colleague and friend Konstantinos Sarantidis to whom I am thankful.

1 Στέφ. Βυζ., entry: *Τραγαίαι*, Τριανταφυλλίδης 2006, 178, note, 16.

2 Στράβ. XIV 1.7, 635c. Τριανταφυλλίδης 2006, 177, note, 10.

3 Haussoullier 1902, 125-143· Rehm 1929, 19-25· Ehrhardt 1988, 15-17.

4 Δρελιώση-Ηρακλείδου, Μιχαηλίδου 2006, 38.



Fig. 1 Map with the Milesian islands.

The clay hives discovered in Agathonisi belong to the two known, ancient, wheelmade types; the horizontal tubular and the rarer, vertical, basket formed type. The horizontal hives are in fact a tube, open from both sides, with outcurved –almost horizontal– rims at their endings. Their interior surfaces bear closely stretched systems of horizontal, vertical and transverse grooves which often blend together. The rim diameter varies from 0.24m. to 0.41m. The tubular bodies of the hives, slightly narrower than the rims, have a varying diameter from 0.23 to 0.32m., resulting in an average of 0.28-0.30m. An intact hive of the horizontal tubular type derives also from Kastraki (Fig. 3); that hive has a length of 0.40m, rim diameter 0.31m. Its rims are outcurved horizontal with an irregular outline. The interior surface is covered in full by closely stretched horizontal grooves.

Except from the intact hive discovery, to the predilection of vertical tubular type hives advocates the fact that from the total sum of the hive fragments, no bases have been so far identified. Instead of bases, in the openings, there were, commonly, fitted clay perforated lids, or lids constructed by perishable materials such as wood, raw clay or even flat stones. The horizontal type of hives, enabling the beekeeper to work on both sides, offers a thorough inspection of the bee-flock and a safe honeycomb removal without jeopardizing the remainder. What is more, the adjustment of extension rings on both sides of the hive can increase production. Parallels for the horizontal tubular hive type, which is widespread in the Aegean region, in clay or wood have also been



Fig. 2 Parallel walls for installation of horizontal beehives south of the fortified area.



Fig. 3 Type of horizontal beehive open from both sides.



Fig. 4 Type of horizontal beehive of a ceramic deposit from an underground, deep cooling cave. Late 4th – second half of the 3rd century B.C.

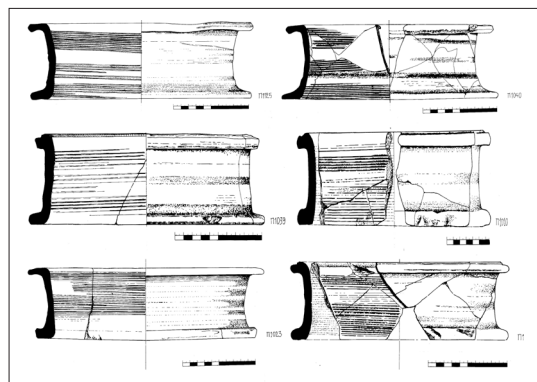


Fig. 5 Clay extension rings with two outcurved horizontal rims.

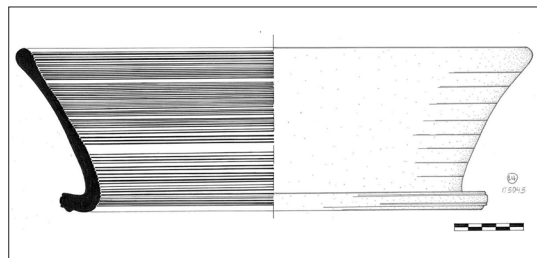


Fig. 6 Clay extension ring in the form of a truncated cone. This type is very rare in Agathonisi.

found in Spain, dated to the 3rd-2nd century BC.

As for the dating of the beehives from Agathonisi, another important discovery at Kastraki attests to it. Among the finds of a ceramic deposit of the late 4th – second half of the 3rd century BC, from an underground, deep, cooling cave, many beehive fragments were accumulated. These fragments, which are associated with the early phase of activity in the fort, belong to the horizontal type. Their clay is clean and denser, their grooves are spaced more widely and their bodies are thicker (**Fig. 4**). The rims are commonly horizontal, flat on the upper surface, displaying a sharp angle, at the inner surface of the transition to the body. Five types have been pointed out, regarding the horizontal hive type, dating from the late 3rd century BC to the 1st century AD, without illustrating any remarkable evolution in the vessel shape⁵. In an inner part of a horizontal hive, traces of propolis, the so called «κηρός άπυρος»⁶ are still visible, while pine pollen grains are preserved.

Extension rings also belong to the equipment of horizontal type hives. These rings, which are used to increase production, share many common features with the horizontal hives, thus identifying them in fragmentary form, proves to be a very difficult task. Two types of honey chambers are known from Agathonisi. The first and most common, is the open ring with outcurved rims on both edges (**Fig. 5**), while the second and rarer, preserved only in an almost intact example – helpful, indeed, for the further identification of other fragments- has a shape in the form of a truncated cone forming an outcurved horizontal rim on only one edge (**Fig. 6**)⁷.

Vertical type beehives, all fragmentarily preserved, are scarce in Agathonisi, as elsewhere. These vessels feature banded or rounded horizontal rims, a downward steep body and have diameters that range from 0.29m. to 0.33m. (**Fig. 7**). Some of them have horizontal handles. The cause for their rare occurrence may possibly be the perishable material of their construction⁸.

5 Τριανταφυλλίδης 2014, 470, tables 153, 154.

6 Chouliara - Raïos 1989, 166-167, note, 10, 17· Χουλιάρá-Ράιου 2000, 89· Harissis et al, 2009, 4.

7 This type is extremely scarce in Agathonisi; not a single parallel is illustrated in the relevant bibliography that I am aware of.

8 Ακτσελή 2000, 32-40, mainly 35· Agora XXXIII, 127-128· Lüdorf 1998-1999, 51-52· Crane 1999, 203-204, table 24. 1A· Harissis et al. 2009, 60-61, fig. 52.

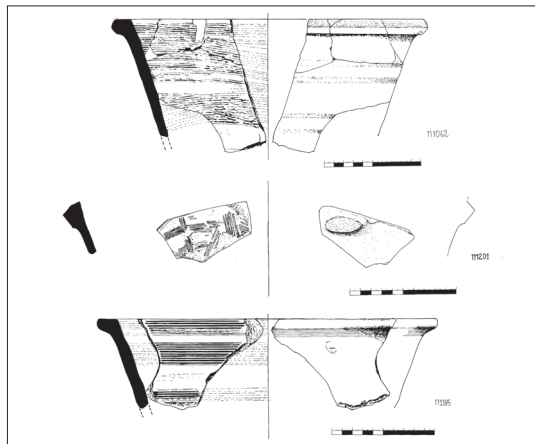


Fig. 7 Vertical clay beehives.



Fig. 8 Perforated clay beehive lid.

Both hive types were commonly covered by perforated clay lids⁹. The holes served the bee movement in and out of the hive and possibly the attachment of the lid to the hive. However, such examples from Kastraki are extremely scarce (Fig. 8). Therefore, the use of lids from perishable materials or flat stones cannot be excluded¹⁰.

In Agathonisi, also, came to light two very interesting, inscribed fragments of horizontal hives. One of them bears the incised, fragmentary inscription ΨΕΛΙ and possibly an O after that, yielding probably the word ΚΥΨΕΛΙΟΝ (hive). The second fragment dated to the late 2nd to 1st century BC, bears in a single line, the inscription ΨΑΛΙΑ ΔΗ which we reconstitute as ΚΥΨΑΛΙΑ ΔΗΜΟΣΙΑ (public hive). As it becomes evident, this important information probably indicates the public ownership of the apiary¹¹.

Laboratory analysis of the hives' clay, compared with the analysis of clay masses (kiln byproducts) from the site, associates the production of the hives with a local workshop. With the activity of this local workshop can possibly be associated a seal imprint, depicting a rather stylized bee head in the inside part

of a hive, dated in the late Hellenistic period. In the inside part of this hive, the typical horizontal grooves are present¹².

As it becomes clear, the large amount of hives discovered in Kastraki testifies to the systematic and constant occupation of the inhabitants with beekeeping, dating back to the fort's erection in the late 4th century BC until its abandonment. Before that period or after that and during the Byzantine command of the island there is a lack of evidence regarding beekeeping. In modern Agathonisi beekeeping has been abandoned, and the inhabitants are mainly engaged with farming or fishing activities.

In conclusion, it can be articulated that in ancient times, along with purple color production and textile trade, beekeeping also constituted a lucrative practice of the Ionian Metropolis, Miletus, which could have traded honey and other bee products in various centers of the Mediterranean. With the exception of Attica, the island honey was regarded as the best, the most outstanding being that of Kalymnos, as Strabo mentions (X.5,19) in *Geographica*: «ἅπαν μὲν οὖν τὸ νησιωτικὸν μέλι ὡς ἐπὶ τὸ πολὺ ἀστεῖον ἐστὶ καὶ ἐνάμυλλον τῷ Ἀττικῷ τὸ δ' ἐνταῖσδε ταῖς νήσοις διαφερόντως». Future research mainly outside the fort, at the site of the ancient apiary, may yield more and crucial information about its installation and function.

9 For flat, clay hive lids, see. Lüdorf 1998-1999, 66-67, 121, Typus A, nos BD 1-3 Jones, Graham, Sackett 1973, 393, nos 151-153, Taf. 75: Ακτσελή, as above (note, 18), 37, fig. 7.

10 Crane 1999, 195, fig. 22,3e, Μαυροφρύδης 2007, 135-145. Μαυροφρύδης (in print).

11 Τριανταφυλλίδης 2014, 472-473, tables 155, 156.

12 Τριανταφυλλίδης 2014, table 156.

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