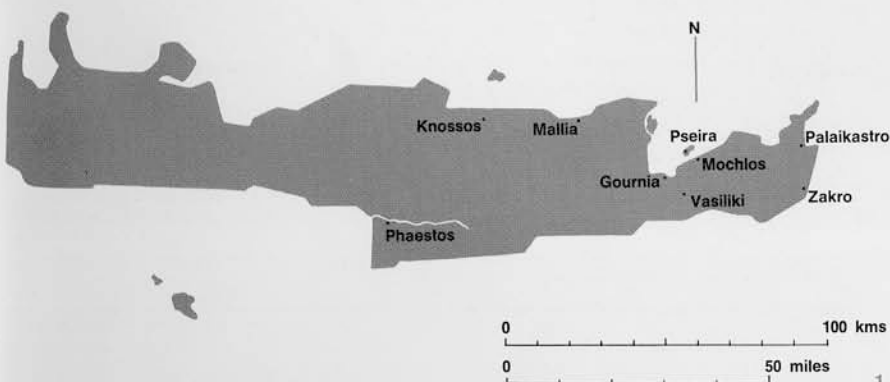


Hara S. Georgiou

Minoan 'Fireboxes' from G o u r n i a

1
Map of Crete locating the site of Gournia on the Gulf of Mirabello in relation to other Minoan settlement sites.

2
View of Gournia, excavated by Harriet Boyd Hawes in 1901, 1903, and 1904.



The year 1900 favorably marked the official birth of Minoan Archaeology. A new field in ancient history, art and culture was about to open. Arthur Evans was beginning his excavations at Knossos; Federico Halbherr and the Italian team were at Phaestos.

A young woman, Miss Harriet Boyd (Smith College 1892) ventured into recently liberated Crete with a friend, Blanche Williams, to seek a potential site for excavation. Following the advice of Arthur Evans, she directed her attention to the area around the isthmus of Hierapetra and the Gulf of Mirabello on the northeastern part of the island. In 1900 she surveyed the area and excavated Kavousi, a very late Bronze Age and early Iron Age site. The excavations at Kavousi provided the material for her Master's thesis (Smith College 1901).

In 1901, 1903 and 1904 Miss Boyd returned to Crete to excavate at Gournia, one of the sites located in the 1900 survey. These excavations were sponsored by the Free Museum of Science and Art, now the University Museum of the University of Pennsylvania. The 1904 field season was the last that she was to spend in Crete. In 1906 Miss Boyd married Charles Hawes, an English anthropologist, and her days of active field work came to an end.

In preparing for the Gournia publication and as an extension of her field work, Harriet Boyd Hawes organized all artifacts from Gournia into an extensive catalogue within an elaborate typological framework. This catalogue, written in a notebook in pencil, has recently come into the possession of the University Museum. Mrs. Hawes lists each object under its general category, adds an illustration or sketch of the object, provides a full description and mentions its location. Objects in the Heraklion Museum are given their inventory number. Objects located in Philadelphia are so designated. This catalogue is a valuable tool for the study of the Gournia artifacts. It is also an interesting historical document and a monument to the thoroughness, the analytical mind and the scholarship of Harriet Boyd Hawes.

The settlement of Gournia is a small urban community with narrow, winding paved streets lined with small modest houses. The largest of these are approximately 5x5 meters at the outside. The most ambitious architectural structure, labelled the "Palace," displays few of the complexities of a site like Knossos and certainly none of the monumentality. The total area covered by the Gournia "Palace" is about 30x40 meters. The artifacts from the houses in the town are also modest and have furnished students of the Minoan period with a complete picture of the paraphernalia of everyday life. Utilitarian pottery abounds at Gournia and is amply illustrated in the Gournia publication.

A collection of utilitarian objects from Gournia is located in the University Museum and constitutes one of the largest groups of Minoan artifacts to be found outside of Cretan museums. It represents a good sampling of Minoan utilitarian wares. The objects include cups, bowls, dishes and other vessels of various sizes and shapes. They are generally unpainted or minimally painted and are more interesting for their form and function than for elements of decoration.

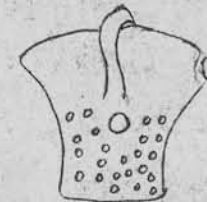
During the summer field season of 1967 I had the good fortune to attend the excavation of Kato Zakro, a major Minoan site discovered in 1961. Dr. N. Platon, the excavator of the site, drew my attention to a group of problematical vessels which were found clustered in a particular portion of the South Wing. This area, located directly south of the central court, was identified by Dr. Platon as a workshop. Among other things, there is an abundance of pottery, including many objects of problematical function. This is not a pottery manufacturing area; therefore, the ceramics found within it must have been associated with an alternate activity. The problem was to identify this activity. In 1968 when I returned to Zakro my curiosity as to the function of these vessels increased. In 1971 and 1972 I began to search for parallels to the Zakro vessels in order to compile a complete catalogue of all such artifacts from all Minoan sites. In the course of this study I found that quite a few were located in the University Museum in Philadelphia, thanks to the foresight of Harriet Boyd Hawes who was able to secure those objects and recognize their value, and thanks to her thorough and invaluable catalogue which led me to them. Because of her efforts I was able to begin my catalogue in the storage area of the Mediterranean section of the Museum.

In Mrs. Hawes' methodical and descriptive notebook and in her publication of Gournia, these problematical vessels are called "fire-boxes" or "braziers." These are two of the many names given by Minoan archaeologists to such objects. The objects themselves fall into a general category of undecorated ceramic vessels which are perforated in specific areas and are sometimes discolored by burning. Furthermore, they are widely distributed among the major Minoan sites, occurring almost exclusively in settlements. They are not found outside of Crete except for a few examples of the simplest type, the capsule, which are found in the Cyclades at Thera and Phylakopi. Both these sites are settlements with strong Minoan affinities. These vessels disappear from the archaeological record at the close of the Late Bronze Age and are therefore unique in time and space as well as in form. Other features besides these are shared by the objects in this category. The complexity of form indicates that they probably had a very specific and specialized function—a function which has never been conclusively identified, possibly because the vessels were never considered as a corpus. The problem at hand was then to attempt to determine the function. In the early literature such vessels were connected with incense burning and the volatilization of aromatics in addition to being called "fire-boxes" and "braziers." None of these functions were ever documented or explained in full.

A brief description of the objects is in order at this point. Those illustrated here are all related but can be ordered into three basic groups which occur contemporaneously during the Late Minoan period in Crete.

1 Excerpt from a notebook of Harriet Boyd Hawes in which all classes of objects from Gournia are catalogued, drawn and described by type. This page illustrates some of the "fire-boxes" from Gournia, many of which are in the University Museum as indicated by the label "Phila." The drawings are fast sketches but thoroughly accurate, the objects being immediately recognizable.

f. Palace B.S. & II, p. 323. fig. 23 -
Lower w. sq. good a shape



✓ II NB
Fire-Boxes

93 Cupb. 55.1 Ill A3
Now in W-room 1887
Very coarse red clay, imperfectly baked; core light color. particles show. Clear signs burning in holes, especially upper row. p.t.o.

Large hole: 24d. under handle Phila 93a like 93 coarse red clay. H to top handle .15.5. Small holes as rest of 12d. Base Dia 77

36 small holes in 3 rows 94 Δ 4 Round box 10 small holes
Cupb. 1.1 Ill. Now in W-r. 1889
1 large hole - perhaps a broken center for box like above

95 ≡ 39 Round fine box - w. rim + 2 small holes
Cupb. 55.1 1888 Ill. For 95a over
projec. on opp. sides rim on one side
Coarse red clay pebbly. 1 large hole, 33 small holes on bottom



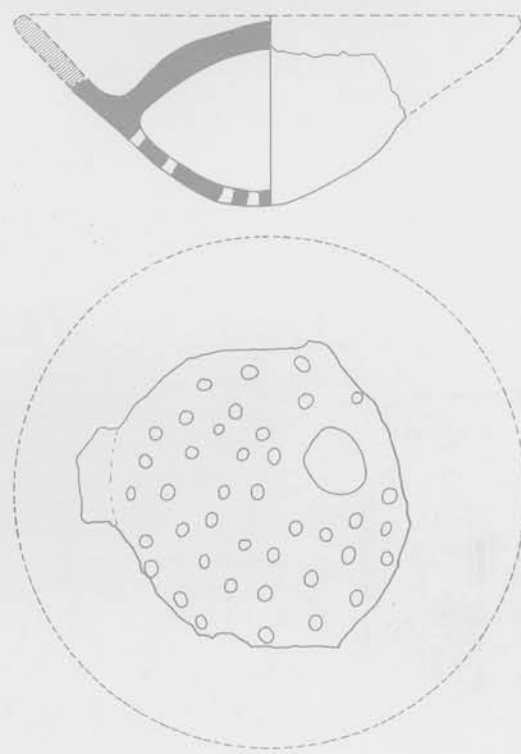
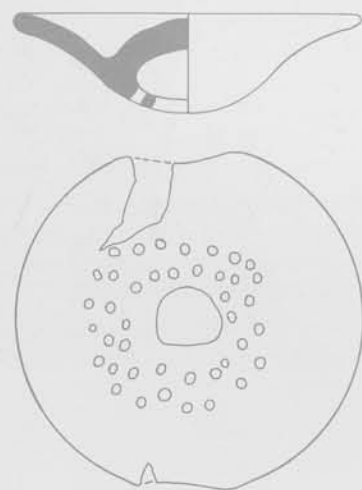
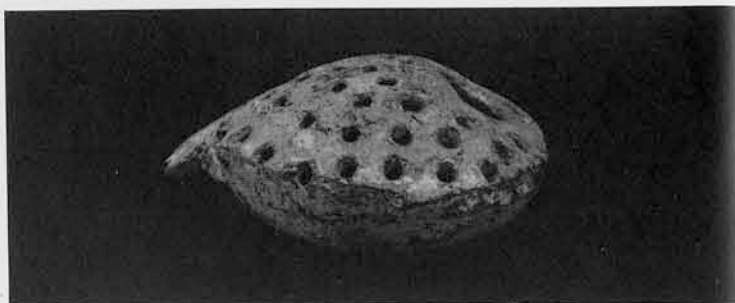
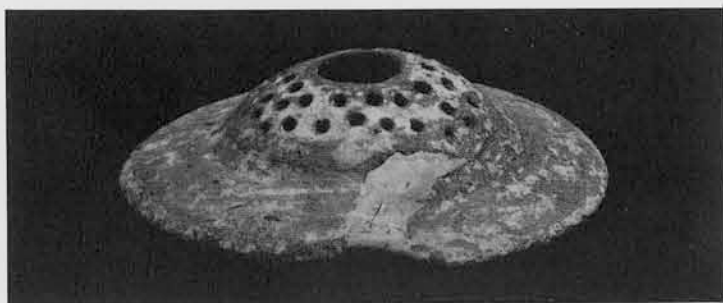
96 ≡ 27 Broken - conc top d. frag. 071 h. 037
Alp. III 4
flat bottom hole .02 d. ^{one side} ~~See comment~~
21 small holes



97 Broken rounded top d. frag. 04 h. 025
1 Round hole bottom d. 017
Similar to last - h. 042 d. 064 h. 025



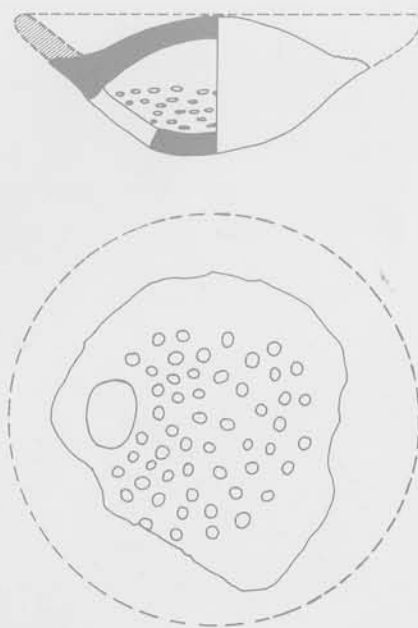
97a-c, 95a 9
95, 96, 97 may have fitted in as covers of a large one for Alp. Tr. wh. fits into round deep pan



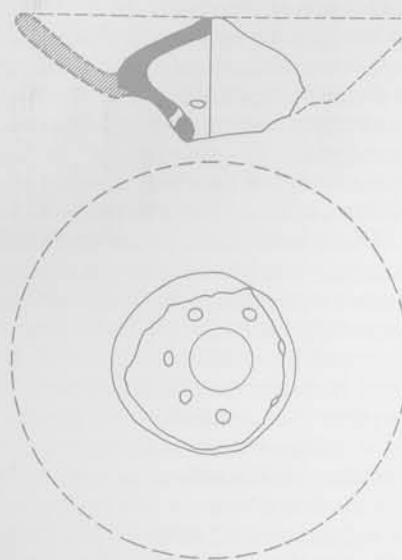
1

2

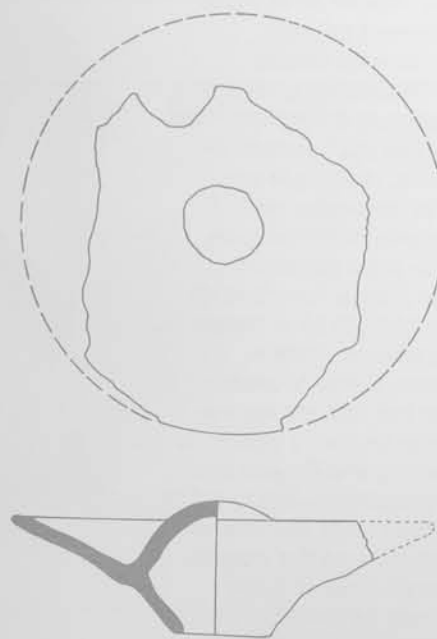
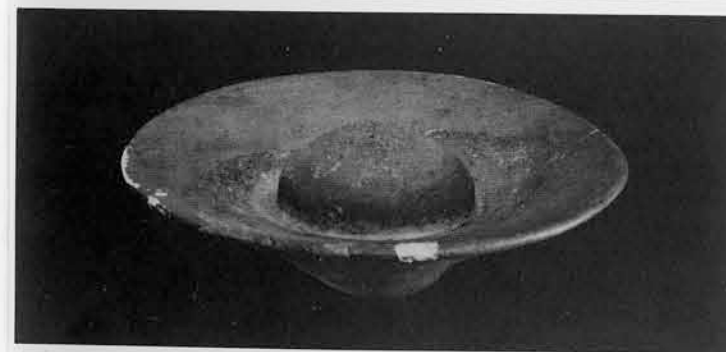
The simplest form is characterized by a small, hollow, spherical capsule, solid on top and perforated underneath. These capsules usually have a wide upward flaring rim which extends from the underside and forms a shallow channel around the upper part. Sometimes a flange is attached to the lower part of the capsule or to the rim. The perforations in the underside are usually small (1 to 2 cm. diameter) and there is frequently a larger hole (3 to 4 cm. diameter) in the center or to one side, made by the insertion of a finger into the wet clay. These vessels are undecorated, usually unslipped and fashioned from coarse, gritty clay.



3

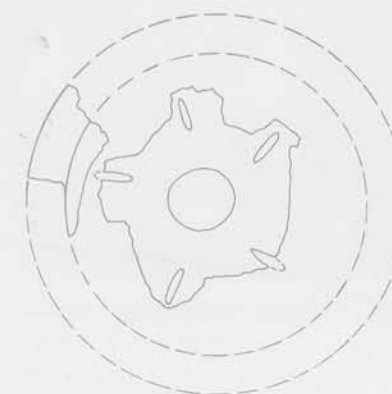


4



5

1-6
The simplest form of Minoan "fire-box." All are fragmentary (#2 drawing shows restoration) but enough remains for us to observe traces of burning in the perforated areas. #5 is unusual in having only a single large hole. The flange attached to the rim of #6 may have facilitated the placement of the vessel on a support.



6

0 5 cm.

The second variety includes vessels which feature the capsule, perforated on the underside, and upward flaring rim already observed in the first group. They are equipped with tripod supports and a large handle which is pressed into and indents the rim. The tripod supports are small, short stubs of clay, usually 3 to 4 cm. long, which are added to the underside of the vessel, and are situated around the periphery of the perforated area. The supports therefore serve the purpose of raising the vessel and allowing for an air space between the ground on which the supports rest and the perforations of the capsule. As with the plain capsules, the vessels which are supported on tripods commonly feature small holes in the underside and a large hole placed centrally or to one side of the lower portion of the capsule. The rim is indented by a substantial handle which is either looped and/or vertical or straight and horizontal. In the case of the Gournia example illustrated here, the handle forms a high loop and is thickest at the point of connection with the rim. This is undoubtedly to prevent the handle from breaking at that spot and to enable it to support the weight of the vessel. The rim indentation which is characteristic only of the vessels under discussion here is problematical in terms of function. It has been commonly explained as a means of protecting the hand from heat. This explanation seems logical. However, the rim indentation might also have served to reinforce the handle.

The third group of vessels is related to the first two by form and represents some variance in the basic capsule shape which is the diagnostic feature of all three groups. In the third group, the upper part of the capsule and the encircling rim are retained but the lower part of the vessel is a high columnar foot with a solid base. The foot is pierced around the circumference by several rows of small holes and one larger hole directly under the handle. The handle is invariably looped and vertical and indents the rim.

The three groups are not only linked by similar morphological traits but also share an important feature relating to function. Traces of secondary exposure to fire appear on all the vessels in the very same specific areas. The term secondary is stressed because the burning affects the surface of the clay and is not caused by the initial firing in the kiln. The fact that the burning occurs in specific and limited areas of the vessels indicates that the exposure to fire was probably intentional and related to their use rather than attributable to chance burning such as a theoretical conflagration.

The burning occurs around the perforated areas of the vessels. The holes and the interiors of the capsules are darkened and smoked. The traces of burning never extend to the rim or the interior of the rim channel. The top of the capsule is never burnt as extensively. In rare cases the top can be slightly darkened by continued exposure of the vessel to heat but this is extremely unusual. In the case of vessels of the first and third groups,

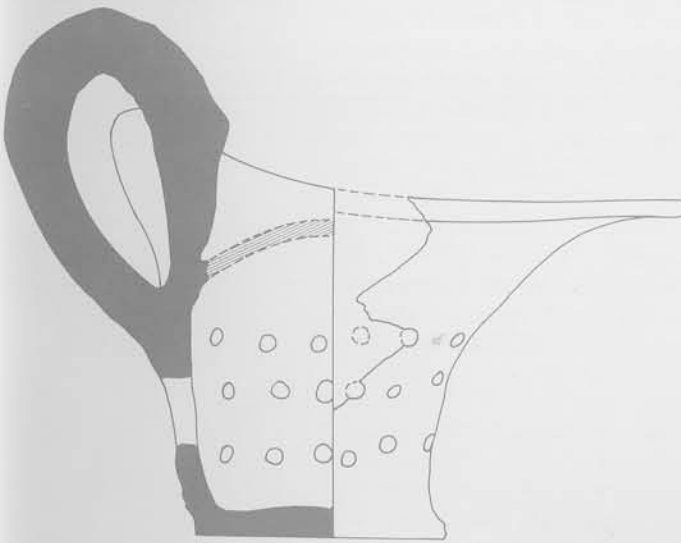
no traces of carbonized matter were found within the capsules. One vessel from Mallia corresponding to our second group was found in a fragmented state in association with aromatic fruits such as juniper berries. The description of this vessel is unfortunately vague and the berries may not have been inside the capsule.

Vessels of the third group are so constructed as to enable charcoal or another fuel to be placed within the foot. The fuel could have been introduced through the larger hole beneath the handle and it could have been contained within the foot which has a solid base. The smaller perforations around the foot could have allowed for air circulation which would have been necessary to keep fuel burning. However, some other form of heating might have been employed, such as the placement of the entire vessel in another which contained the fuel. The vessels in the first group were probably supported by a stand or a vat and placed over a heat source, as were those of the second group with tripod supports.

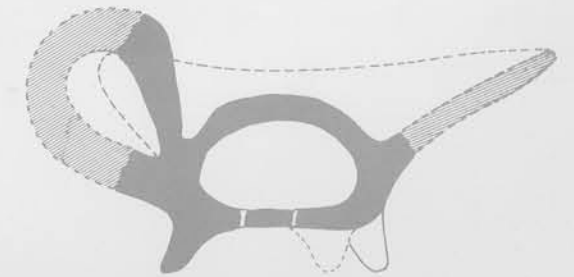
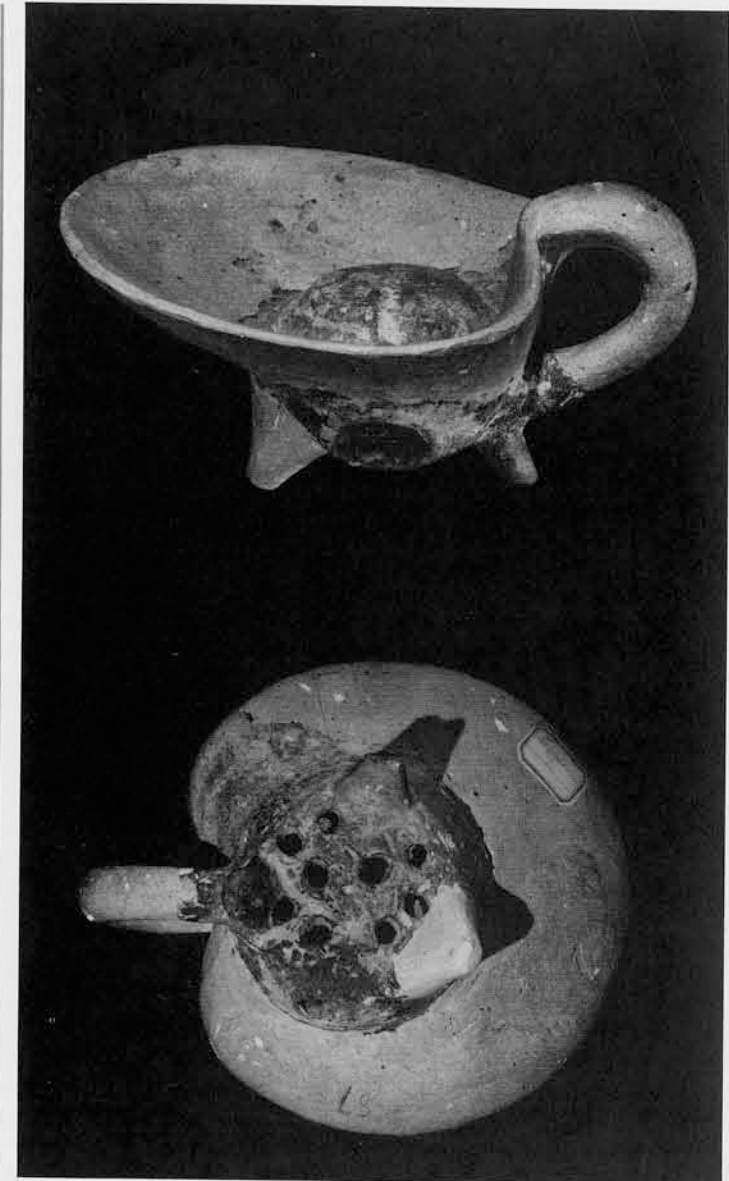
The function of artifacts found in archaeological context is usually problematical, the most important clues being provided by the form of the object and traces of use or wear. In the case of these Minoan vessels, no record was ever made of anything organic found in the same context except for the interesting case of the aromatic berries from Mallia. Provenance within a site might also provide some insight into function as might the general character of the site.

The vessels from Gournia illustrated here find their parallels at numerous Minoan sites. A total of 71 are known of the first group. Eight of these come from Gournia. Only 22 and 12 of the second and third groups respectively are known to exist. One of the second and two of the third group were found at Gournia. Almost all of these vessels were found in a settlement context.

The three groups are so closely related through form that they might represent a chronological development or a regional difference. The former suggestion must be ruled out because all three groups are contemporary, ranging in context from Middle Minoan III to the earlier part of the Late Minoan period. Regional differences as well as slight variances in use are a possibility. Whereas the first and second groups have a fairly widespread distribution, the third group is known to have existed at only three sites in Crete—Zakro, Palaikastro and Gournia. Zakro is usually classified as a "palace" site but has strong evidence for the local production of luxury goods, in particular stone vessels. Gournia and Palaikastro are related through their architecture; each is a small urban community in which trade and manufacturing played an important role. As the vessels under consideration occur in all three of these sites in some quantity, they may be linked to an activity common to those sites. The vessels themselves tell us that this activity somehow involved heating.



1 This "fire-box" of the third group is one of two found at Gournia; the other is in the Heraklion Museum, Crete.



2 "Fire-box" of the second group with tripod support and loop handle.

Previous suggestions on their function have ranged from lids to incense burners to braziers. They were not likely to have been used as braziers or heating units as they are too small to function efficiently in that capacity and are not built to contain sufficient fuel. Arguments in favor of the "brazier" or "incense-burner" function usually include placement of the fuel in the area of the rim channel. As the rim channel is never discolored, this explanation can be discarded. Other explanations would have the coals placed in the inside of the capsules and the capsules themselves functioning with the perforated side up and resting on their rims. This is unlikely because when inverted in this fashion, the capsule can sometimes be higher in profile than the rim causing the vessel to be unstable. Furthermore, the forms of the second and third groups indicate in themselves that the perforations belong underneath because of the manner of support. Yet another theory would place the coals inside the capsules, the larger holes being plugged to prevent such coals from escaping. This may be the case for the third group but not for the first two. Aside from the impracticality of inserting coals through small holes, no plugs have ever been found.

The possibility that these vessels might have been incense burners must still be considered. However, this is unlikely because of the location of the perforations. Most incense burners in all cultures allow smoke and fumes to escape through holes in the top of an object and not through the underside. Other types of Minoan vessels conclusively identified as incense burners also share this characteristic and are different in form from the vessels considered here.

The term "fire-box" used by Harriet Boyd Hawes and many other scholars suggests a connection with heat and a containing area. The term is essentially non-descriptive when it comes to function. "Fire-box" becomes "boîte à feu" in French and appears in the earliest literature concerning such vessels, in particular in the Gournia and Palaikastro publications. The term seems to have retained its popularity. New ideas on function for these vessels were not forthcoming until the recent finds at Kato Zakro were uncovered.

This analysis has suggested that the vessels of all three groups were used in connection with a heat source from below. Their most characteristic feature is the capsule construction which is the center of the vessels but which probably contained nothing. Its purpose may have been to create a space between the heat source and the rim channel, thereby protecting the upper part of the vessel and whatever was contained in the rim channel from direct contact with the heat source.

The clues provided by the form of the vessels indicate that something must have been placed in the rim channel which could have been slowly and gently heated from below. The capacity of the rim channels is not very great; therefore something of small volume is indicated. The fact that all the vessels are made of clay is also significant. Clay is a good insulator of heat and would therefore be appropriate material for an object intended to provide controlled heat.

In searching for possible functions, the excavator of Zakro mentioned the possibility of the vessels being used in the production of aromatics. The predilection of Near Eastern peoples for aromatics and perfumes is well known from their writings.

The Linear B tablets from the Greek mainland and Knossos, which are read as an archaic form of the Greek language, provide almost contemporary documents for the manufacture and use of aromatic products. Several tablets mention unguents and perfumes made with an olive oil base to which flower petals and spices were added by specialists called "unguent boilers."

In antiquity, perfumes were made entirely from natural ingredients unlike modern perfumes which can include chemicals and alcohol. Vegetable oils, animal fats and waxes combined with resins, flower petals and roots and spices were common. Until quite recently these were the basic ingredients of all perfumes and ointments. The most efficient way of combining these in the absence of modern methods is by slow heating over an indirect heat source or a hot water bath. The vehicle for the scents, whether it be oil or animal fat, is melted and the flowers or spices are introduced and allowed to steep until all scents are absorbed. The heat cannot be too intense or the substances will burn and not combine properly. Vessels which provide for heat control are essential to this industry.

The vessels illustrated here conform to the requirements of aromatics manufacture by nature of their form, indications of use and predominant occurrence in settlement areas. They could have been used for such a purpose at the Minoan sites where they were found. Other possible functions cannot be excluded but more information is needed and future excavations may provide additional clues. If these vessels were intended for making and mixing aromatic substances, they were used perforated side down. Heat from an outside source would penetrate through the perforations and enter the capsule where it could circulate. Various ingredients could have been placed on the wide rim, in a fashion analogous to the palette of an artist, and mixed on the surface of the capsule as desired, the mixed product then running into the channel. The reason why the top of the capsule has such a peculiar convex form may be that a convex surface will provide a greater area for working and a larger area of heat than a flat surface.

The fact that such vessels occur at Gournia in some quantity is not surprising considering the character of the site which Mrs. Hawes perceived as a manufacturing town. The preservation of such relatively unaesthetic, peculiar and therefore neglected objects from excavations is essential if we are to understand the nature of sites and cultures. The greatest contribution made by Harriet Boyd Hawes has probably been her successful attempt to preserve such artifacts by cataloguing them with care and by providing records of all aspects of her site for future investigators •

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Credits

Photographs: p. 7, H. B. Hawes; pp. 10-12, William Clough. Drawings by the author.