

# EXCHANGE IN PERIOD IV AT AYIA IRINI ON KEA

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In the earliest identifiable phase of the Middle Bronze Age (MBA), prior to the foundation of Ayia Irini IV, fine ceramic wares, aside from Minoan imports at Lerna and several other coastal Peloponnesian sites,<sup>2</sup> do not seem to have traveled in quantity outside of their respective regions.

It has previously been argued that Ayia Irini IV was founded as a commercial settlement, for the express purpose of transshipping goods among the Helladic, Cycladic, and Minoan regions.<sup>3</sup> The foundation of Ayia Irini IV and its subsequent trade activity coincides with the first comprehensive linking of the Helladic, Cycladic, and Minoan exchange networks.

## KEIAN WARES FOUND ABROAD

The picture of trade discernible at Ayia Irini IV is one of imbalance. With the exception of Kolonna VIII and IX on Aegina,<sup>4</sup> there is only limited evidence for ceramic exports from Ayia Irini. Presumably Keian ceramics at Kolonna went directly over the sea from Ayia Irini.

Lerna has produced one Keian red Burnished goblet and one small undecorated yellow-slipped barrel jar<sup>5</sup> that seems to be Keian, although the lack of decoration on this shape has no parallel at Ayia Irini.<sup>6</sup> Ceramics from Ayia Irini most likely arrived at Lerna by one of three routes: via Phylakopi on Melos, via Kolonna, or directly. En route to Lerna, Keian ceramics may have shared cargo space with Lerna's Cycladic White Ware.<sup>7</sup> If Cycladic White, whether it originated on Melos or on Thera, was shipped from

Phylakopi, the Keian products may first have traveled to Phylakopi and been shipped from there to Lerna. Or Cycladic White may have passed through Ayia Irini and from there to Lerna, with or without passing through Kolonna. Since there are no other indications of connections between Ayia Irini and Lerna at this time, the Keian ceramics might well have reached Lerna via Kolonna, where a significant amount of Lerna's ceramics originated.<sup>8</sup> On Aegina there seems to be little pottery from the Cyclades except that from Ayia Irini and some Cycladic White Ware,<sup>9</sup> which again could well have arrived there together.

Four likely imports from Ayia Irini have been identified at Phylakopi,<sup>10</sup> and two at Paroikia on Paros.<sup>11</sup> These items probably traveled via an intra-Cycladic system.

In Central Greece at Mitrou Jeremy Rutter has identified the rim of a Keian Yellow-slipped barrel jar.<sup>12</sup> Rutter has also identified Keian Yellow-slipped ware including at least one barrel jar at Male Mesi near Tanagra, recovered during the Skourta Plain Survey.<sup>13</sup> See below for likely routes between Ayia Irini and central Greece.

At Kiapha Thiti in Attica several items have been identified as Keian.<sup>14</sup> Also in Attica, at the Athenian Agora there are three Keian Yellow-slipped items: a small barrel jar, a deep basin and a jar of uncertain shape.<sup>15</sup> These probably traveled from Ayia Irini either via Kolonna or via Laurion, where the people of Ayia Irini are known to have obtained ore.<sup>16</sup> Apart

<sup>1</sup> I wish to thank the Organizing Committee for the opportunity to participate in this workshop and for all their generosity and kind assistance. I also thank John C. Overbeck, my husband and mentor. His willingness to discuss ideas concerning the Aegean Bronze Age is matched only by his encyclopedic knowledge of the same.

<sup>2</sup> RUTTER and ZERNER 1984, 77.

<sup>3</sup> OVERBECK and CREGO, forthcoming.

<sup>4</sup> See OVERBECK, this volume.

<sup>5</sup> BUCK 1964, shape C1.

<sup>6</sup> OVERBECK 1982, 41.

<sup>7</sup> For Cycladic White at Lerna see ZERNER 1993, 42 ("Melian White Matt Painted").

<sup>8</sup> ZERNER 1993, 48–50.

<sup>9</sup> KILIAN-DIRLMEIER 1997, T. 4–13.

<sup>10</sup> OVERBECK 1982, 39 and n. 13.

<sup>11</sup> OVERBECK 1989b, items 61, 109.

<sup>12</sup> Jeremy Rutter (pers. comm.). I warmly thank Aleydis Van de Moortel, Eleni Zahou, and Jeremy Rutter for allowing me to use this unpublished information.

<sup>13</sup> Jeremy Rutter (pers. comm.). I am very grateful to him and to Mark Munn for permission to mention these finds.

<sup>14</sup> MARAN 1992, items 375, 552, 900 and most of fabric C7 (see pp. 177–8). I am grateful to Joseph Maran for making me aware of these finds.

<sup>15</sup> IMMERWAHR 1971, items 320–2.

from the possibility that some Cycladic exports reached the Argolid without first passing through Ayia Irini, it would appear that Cycladic connections with the mainland did not as a rule bypass Ayia Irini.<sup>17</sup>

All told, this is a very small body of export for a site that received as much pottery from outside as Ayia Irini in period IV. However, due to the apparent complexity of Aegean Bronze Age patterns of exchange we should not necessarily expect to find a strictly reciprocal scenario at Ayia Irini.

#### IMPORTS AT KEA

Many imported ceramic wares are noted at Ayia Irini: Gray Minyan, Middle Helladic (MH) matt-painted (Aeginetan or otherwise), Cycladic White, a small amount of Melian slipped and burnished, Pink-Orange Ware, true Minoan wares, and Minoanizing wares including Lustrous Decorated.<sup>18</sup> Of these the Cycladic White and Melian wares probably traveled to Kea via an intra-Cycladic system. In addition to the ceramics, ore from Laurion was processed at Ayia Irini, probably as early as IVa, the first phase of occupation in the MBA.<sup>19</sup>

Gray Minyan of the Mature Phase appears initially at about the same time as the foundation of Ayia Irini IV, where there is abundant Mature Gray Minyan, both "True" Minyan and a variety of non-standard fabrics, all made on the wheel, far more than seems reasonable for local needs. No earlier Minyan has been identified in the Cyclades, but Mature Minyan becomes popular at Phylakopi,<sup>20</sup> small amounts occur at Paroikia<sup>21</sup> and at Mikre Vigla on Naxos,<sup>22</sup> and fragments are visible on the surface at Akroterion Ourion on Tinos.<sup>23</sup> Likely routes for Minyan to travel from its probable central Greek homeland to Ayia Irini<sup>24</sup> are: by sea via the Gulf of Euboea, with or without a stop at Laurion, which is plausible in light of the Laurion ore processing at Ayia Irini; or to the northern side of the Corinthian Gulf, across the waters of the gulf to the isthmus, across the isthmus, and across the water with or

without a stop at Kolonna. The most straightforward route is via the Euboean Gulf but, in view of Ayia Irini's close connections with Kolonna,<sup>25</sup> the alternative is also likely. All else being equal, if the pottery did not pass through intermediary hands, and it may have, it would have been desirable to minimize loading and unloading of boats and awkward overland journeys, but we cannot know all the factors involved in choosing a route for a particular journey, and both routes may well have been in use. Whatever route Gray Minyan took to Kea, it seems very likely that Ayia Irini acted as a regional distribution center for that ware to other locations in the Cyclades.

Ayia Irini's nonstandard Gray Minyan, that is, other than "True" Minyan, includes some with "a soft brownish biscuit with a gray slip . . . or it may have any one of several core effects – a pink core or pink and gray layering being very common".<sup>26</sup> Some of this matches some Minyan at Eutresis<sup>27</sup> and at Thebes,<sup>28</sup> suggesting a homeland in the same general region as that of True Gray Minyan. Some Minyan at Phylakopi<sup>29</sup> and some at Paroikia (item 117) also matches some of the nonstandard Minyan at Ayia Irini, and both may have been supplied via Ayia Irini.

Turning to MH matt-painted, barrel jars dominate at Ayia Irini in phase IVa, but throughout the period, along with mostly coarser, larger vessels, there are small amounts of fine matt-painted. Any Aeginetan matt-painted presumably traveled directly from Kolonna.

MH matt-painted fine wares, apart from one or two fragments at Paroikia,<sup>30</sup> do not seem to have traveled beyond Kea to other locations in the Cyclades. These wares may be regarded as parallel to Cycladic White Ware, and it is possible that the popularity of Cycladic White on its home turf kept the competing wares from ever gaining a foothold in the Cyclades beyond Ayia Irini.

The earliest known barrel jars predate the foundation of Ayia Irini IV. The earliest examples at Phylakopi<sup>31</sup> and at Kolonna,<sup>32</sup> which probably were pro-

<sup>16</sup> GALE and STOS-GALE 1984, 258 and fig. 2.

<sup>17</sup> See also MARAN 1992, 212.

<sup>18</sup> OVERBECK 1989a, 8–12. All general statements in this paper concerning the pottery at Ayia Irini in period IV derive from this passage.

<sup>19</sup> OVERBECK 1989a, group BD.

<sup>20</sup> DAWKINS and DROOP 1910–1911, 16–7.

<sup>21</sup> OVERBECK 1989b, items 113–24.

<sup>22</sup> BARBER and HADJIANASTASIOU 1989, items 448–51.

<sup>23</sup> SCHOLES 1956, 13; John C. Overbeck (pers. comm.).

<sup>24</sup> See also OVERBECK 1982, 44–5.

<sup>25</sup> See OVERBECK, this volume.

<sup>26</sup> OVERBECK 1989a, 11.

<sup>27</sup> GOLDMAN 1931, 135.

<sup>28</sup> DIMAKOPOULOU and KONSOLA 1975, 66.

<sup>29</sup> DAWKINS and DROOP 1910–1911, 16–7.

<sup>30</sup> OVERBECK 1989b, items 185, 186.

<sup>31</sup> ATKINSON *et al.* 1904, 96, 99, pls. VII.1, VIII.4; BARBER 1974, items 65, 183, MM145, MM158.

<sup>32</sup> SIEDENTOPF 1991, items 1–3, fig. 1.



Fig. 1

duced at their respective sites, do not consistently display as a regular package of features the ledge-lip design of: ledge lip, string-holes, and a flange encircling the inner lip (Fig. 1). Although personal inspection at the National Archaeological Museum in Athens revealed string-holes and flanges on two from Phylakopi,<sup>33</sup> two others lack the flange,<sup>34</sup> and two more lack both flange and string-holes.<sup>35</sup> Siedentopf reports that among early barrel jars at Kolonna, string-holes are rare.<sup>36</sup>

The barrel jar is an awkward shape to move over long distances, yet clearly these jars were shipped, with 16 MH matt-painted barrel jars identified at Ayia Irini. The shape was popular there: over 200 *local* examples have been found, some small and fine, the majority large (Fig. 2). Although the ceramics at Ayia Irini are for the most part very fragmentary, barrel jars in all wares with large portions of the rim preserved regularly display the ledge-lip design.

It seems fussy and unnecessary to make as standard features string-holes and a flange for securing a lid in place on these jars unless the jars were to serve as shipping containers, even if they were expected to function that way only once: on the journey to their intended destination. In a storeroom a ceramic or stone lid, even if not tied down, would be too heavy for rodents to dislodge. Sixteen of Paroikia's 19 barrel jars, not closely datable but all apparently of local production,<sup>37</sup> preserve the rim, but only one (153) has a flange and definite string-holes.<sup>38</sup> If these were all made on Paros for local use, it makes sense that they lack the flanges and string-holes so necessary for barrel jars intended to be shipped abroad with contents.

It does not seem reasonable to suppose that large ceramic vessels were transported empty over long distances in the MBA. Carol Zerner has independently observed that some of the larger Aeginetan vessels found at Lerna "may have been used to transport goods, or even to transport smaller vessels".<sup>39</sup> It is here proposed that the MH barrel jars found at Ayia Irini were manufactured incorporating the ledge-lip

PHASE	IVa	IVa/b	IVb	IVb/c	IVc*
Local Small	15	14	23	14	7 (2 reliable)
Local Large	32	27	55	13	26 (4 reliable)
MH M-P All Large	6	3	2	2	3 (not reliable)
Pink-Orange		1 (small); 1 (size not determinable)			
Melian					1 large (reliable)

\* Only two small and five large barrel jars in Phase IVc are from reliably IVc strata; all others are from find groups containing unusually large amounts of earlier material, most of it dating to Phase IVb.

Fig. 2 Barrel jars at Ayia Irini IV

<sup>33</sup> ATKINSON *et al.* 1904, pls. VII.1, VIII.4 (NM inv. nos. 5842, 5827).

<sup>34</sup> BARBER 1974, MM145, MM158.

<sup>35</sup> BARBER 1974, items 65, 183.

<sup>36</sup> SIEDENTOPF 1991, 14.

<sup>37</sup> OVERBECK 1989b, items 82, 83, 143–59.

<sup>38</sup> JOHN C. OVERBECK, unpublished notes.

<sup>39</sup> ZERNER 1993, n. 62.

PHASE	IVa	IVa/b	IVb	IVb/c	IVc*
Barrel Jars	38	30	57	15	29 (5 reliable)
Gray Minyan as a % of All Wares	19.4%	10.2%	12.2%	12.7%	7.9%

\* Only five large barrel jars from Phase IVc are from reliably IVc strata; all others are from find groups containing unusually large amounts of earlier material, most of it dating to Phase IVb.

Fig. 3 Large barrel jars in all wares and Gray Minyan at Ayia Irini IV

design with shipping in mind as one of their primary purposes, whatever other uses may have been envisioned for them: even a barrel jar exported for its own sake rather than for its contents would have been designed to serve as a shipping container on its export voyage.

The foundation of Ayia Irini IV coincides roughly with the initial appearance of Mature Minyan and MH matt-painted fine wares. The impressive number of large barrel jars at the site, and indeed of barrel jars in all sizes, leads one to ask whether the increased volume of goods moving regularly over distances, in which it is here argued that Ayia Irini IV played an important part, may have necessitated a degree of standardization in the design of the barrel jar at this time, so that for the first time the ledge lip, flange, and string-holes became standard features.

There was large-scale shipment of Gray Minyan to Ayia Irini, both for use on that site and probably for distribution to further points. The frequency of Minyan at Ayia Irini correlates with that of large barrel jars in all wares at the same site (Fig. 3). Later in period IV barrel jars in all wares are phased out, and there is a concurrent and significant drop in imports of Gray Minyan. Elsewhere barrel jars continue.<sup>40</sup>

Minyan is a luxury item and must be shipped well-packed to ensure its safe arrival. It seems likely that any fine ceramic wares or other commodities traveling together with a barrel jar would have been shipped as one package. This does not imply that the two wares, Minyan and MH matt-painted, were produced at the same location, merely that they may have been shipped together to their destination: a barrel jar packed with smaller, finer Gray Minyan vessels. Certainly woven baskets would be lighter

than ceramic barrel jars, but they lack the rigidity that may have been felt necessary for this use. Sawdust, straw, or some other cushioning material could have been used within the jars to keep both contents and container from breaking in transit.

Very few Keian barrel jars have been identified outside Kea. If the people of Ayia Irini IV were traveling abroad at least part of the time as their own agents in trade, rather than exclusively operating an emporium at Ayia Irini, and if they *were* using the barrel jar as a shipping container, the scarcity of Keian barrel jars outside Ayia Irini might have resulted from a regular practice of reusing their own shipping containers.

Barrel jars were diminishing in number already by the end of phase IVb, and by the end of IVc, when virtually a quarter of all pottery at the site was Minoan, there were few if any at Ayia Irini (Fig. 4). It should not be mere coincidence that the phasing out of barrel jars at Ayia Irini in period IV comes about at the same time as Ayia Irini's increasing integration into another, different trade network, a Minoan or Minoan-oriented network. The conditions and nature of exchange probably would have been different, and barrel jars may no longer have functioned as shipping containers. What may have replaced the barrel jar as a shipping container is not yet clear.<sup>41</sup>

Ayia Irini IV has quite a bit of Minoan and Minoanizing pottery, increasing in quantity as the period progresses. Due to the close relationship between Ayia Irini and Kolonna in this period, it is reasonable to ask whether some of this pottery may have reached Ayia Irini via Kolonna, which itself has a substantial amount<sup>42</sup> and which clearly was a major center for trade. Phylakopi, on the Western String

<sup>40</sup> See CASKEY 1955, 28, pl. 12b for a barrel jar dated to a late phase of Lerna V. See also SIEDENTOPF 1991, item 96.<sup>41</sup> I am grateful to Jeremy Rutter and Peter Warren for

pointing out to me the need to look further into this question.

<sup>42</sup> HILLER 1993, 197–9.

PHASE	IVa	IVa/b	IVb	IVb/c	IVc*
All Local Wares	62.0%	59.8%	61.7%	46.6%	54.3%
Gray Minyan	19.4%	10.2%	12.2%	12.7%	7.9%
MH M-P	3.0%	3.0%	3.0%	3.6%	3.1%
Minoan and Minoanizing*	7.5%	20.0%	14.0%	26.0%	24.0%
Cyc. White	5.8%	4.4%	5.9%	6.9%	7.0%
Pink-Orange	2.2%	0.8%	1.3%	0.4%	0.8%
Other	0.1%	1.8%	1.9%	3.8%	2.9%

\* "Minoanizing" here describes ceramic imports that imitate true Minoan pottery, both stylistically and technically. This category does not include any items that are merely influenced by Minoan but easily recognized as something different.

Fig. 4 Wares at Ayia Irini Period IV

Route, probably received even more Minoan ceramic imports than Ayia Irini at this time,<sup>43</sup> which leads one to suspect that Ayia Irini may have been supplied by both routes, with any proportion supplied via Kolonna likely declining over the duration of period IV as Ayia Irini became more Minoanized.

Further study may reveal Ayia Irini in phase IVc

as a distribution center for Minoan and Minoanizing wares to part of the mainland, just as earlier in period IV the site seems to have acted as a distribution center for Minyan to other locations in the Cyclades.

In sum, while Kolonna in this period was a major nexus of trade, Ayia Irini acted as a smaller pivot linking the Helladic, Cycladic, and Minoan systems.

<sup>43</sup> ATKINSON *et al.* 1904, 148–51.

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