

e track on the seaward side of the massif separating the Baths of Aphrodite and Fontana Amorosa is today (rely) passable for vehicles. In antiquity, this was probably no more than a trail for pedestrians and pack animals. There are no visible traces of Roman engineering along this route.

r a discussion of travel distances and city-country relations in the Roman period, see Bekker-Nielsen 1939.

he might have expected the route to continue up the slope to cross the ridge. A path from Pambelon to a point on the ridge just south of Mavri Shinia is indicated on sheet 7 of the Kitchener map, and on the 1900 map of Cyprus. However, extensive searches by the author and Niels Hannestad in August 1991 failed to reveal any traces of an ancient route to the ridge.

63. On the Kitchener map, the road is shown leading straight towards a point slightly W of the ruined church, approximately at UTM 385800.
64. Wallace 1984, 344-45.
65. Wallace 1984, 345.
66. Bekker-Nielsen 1994, 181.

# THE ANCHORAGE AT KIONI

John R. Leonard

## Introduction

Study of ancient anchorages on the Akamas peninsula (fig. 1) commenced in 1989, as part of a larger examination of ancient maritime facilities in Cyprus.<sup>1</sup> Preliminary survey of Dhrousha-Kioni (hereafter Kioni), a natural cove in which fragmentary amphorae litter the seabed and an ancient column stands in the shallows, began in the summer of 1991 with follow-up work conducted in 1992 and 1993 (Figs. 2-4).<sup>2</sup> Results of these initial investigations suggest that Kioni was the anchorage on Akamas most frequently used throughout antiquity.

The Akamas promontory (Ακάμας ἄκρα) was a familiar feature of the Cypriot coast in ancient times, frequently described by geographers and other compilers of *periploi*. Ancient sea traffic, in following the island's western coast, had to circumnavigate the barren, rocky shores of the peninsula to reach southern or western harbour towns, such as Nea Paphos, Marion-Arsinoë, Limenia, Soloi, or Melabron.<sup>3</sup> Anchorages on Akamas served as watering stops, where adjacent springs existed, and as refuges from severe winds and weather. In addition, they were probably frequented by local coasters transporting goods and passengers to and from outlying settlements, such as Ayios Kononas, which were often more difficult to reach by land.

The Akamas peninsula may have also had a role in long-distance shipping, as Lucian (*Navig.* 7) seems to suggest in the 2nd century AD in his tale of the *Isis*, a gigantic grain ship returning to Italy from Egypt:

When they left Pharos, [the captain] said, the wind was not very strong, and they sighted Akamas in seven days. Then it blew against them from the west, and they were driven abeam to Sidon.<sup>4</sup>

Grain ships and other large sea-going vessels would not have been able to put into the small coves on Akamas, but may have lain offshore or used the peninsula merely as a landmark in crossing the eastern Mediterranean.

The anchorage of Kioni itself does not appear in any of the ancient sources. An early reference to the site is found in the 1936 guidebook, *Historic Cyprus*, by R. Gunnis, who, in describing the ruinous settlement at Ayios Kononas, reports:

The harbor of this ancient town can still be traced, and several black marble mooring pillars remain *in situ*.<sup>5</sup>

Gunnis' observation of 'several' columns at Kioni is noteworthy, for in 1946 J.S. Last recorded only a single 'pillar ... half-submerged' during the first archaeological survey of the area.<sup>6</sup> The discrepancy between these two accounts suggests that during a ten year period, from 1936 to 1946, an unknown number of ancient columns were removed from the site.<sup>7</sup>

Two later reports also refer to a single column at the site, including J.C. Goodwin's entry on 'Tjioni', in the 1977 edition of *A Toponymy of Cyprus*, and P. Wallace's account of an American archaeological survey of Akamas in 1981-1982.<sup>8</sup>

The 'black marble' (fig. 4) described by Gunnis may be a misnomer, for the one column still standing *in situ* at Kioni, while appearing black from a distance, is actually white marble obscured above the waterline by a coating of dark marine growth.<sup>9</sup> The toponym 'Kioni' (κίονιν, τζιόνιν; arch. κίων), which in modern Greek-Cypriot dialect means 'column', 'statue' and 'white marble', therefore maintains double significance in its application both to the site's distinctive columns and to the white marble material of at least one of the columns.<sup>10</sup>

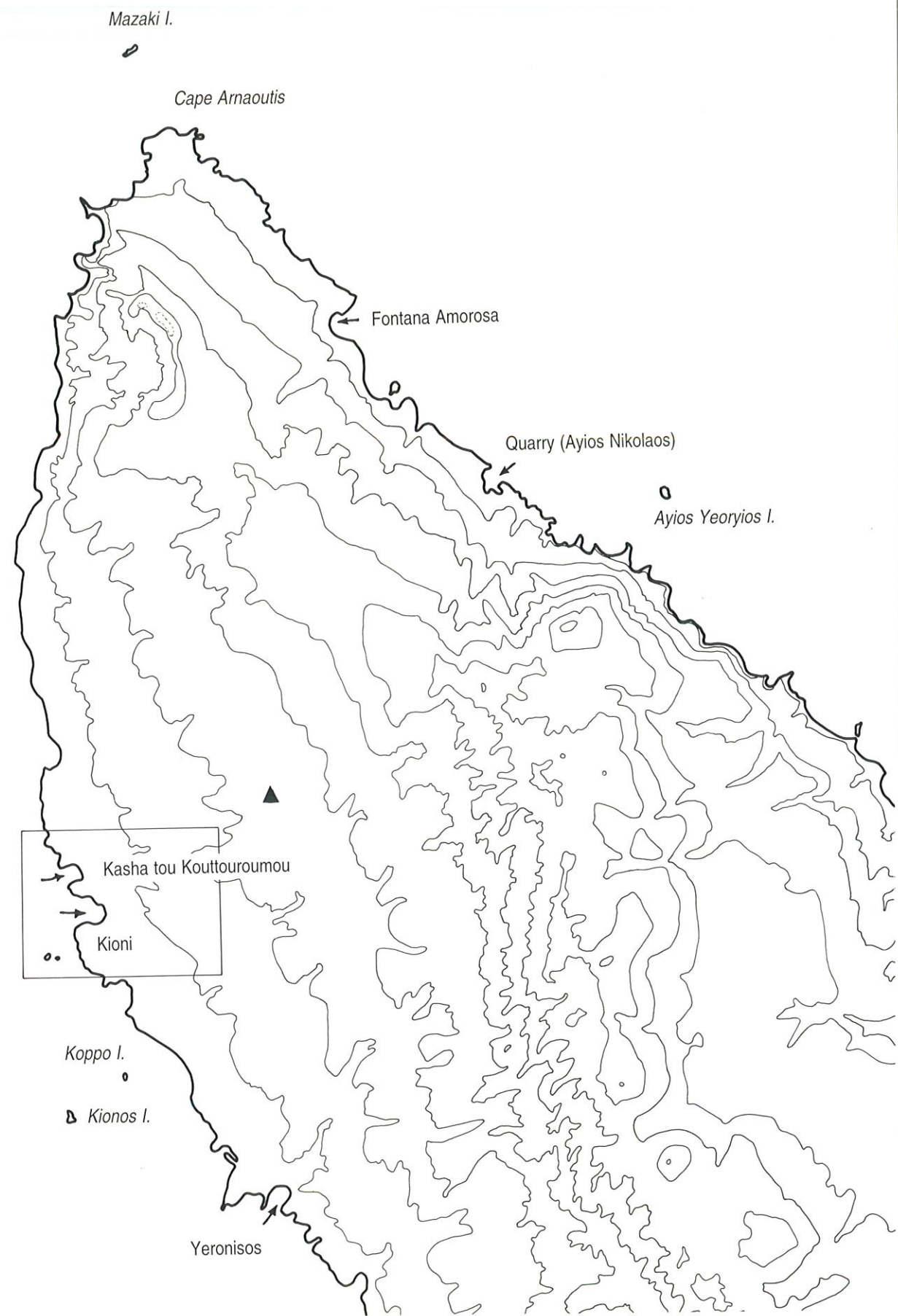
Last's 1946 survey, besides recording the solitary standing column at Kioni, also noted a heavy scatter of sherds and the possible site of a building on rising ground about 200 yards from the shore. In a direct reference to the cove itself, Last observes that despite affording little protection, 'Petra Kionos' apparently served as the area's harbour where small ships could be beached.<sup>11</sup>

Wallace's 1981-82 survey also encountered widespread ceramic evidence for ancient occupation of Kioni:

Hellenistic and Roman pottery is found all about the harbor and extends some distance inland to the east. The site at the harbor must have been connected with the site to the east around the spring and the church of Ayios Kononas...<sup>12</sup>

Sherd scatters on shore, however, constitute only part of the ceramic evidence to be considered at Kioni.





1. Ancient anchorages on the Akamas peninsula.



2. The anchorage at Kioni; on the left, the marble column.

Concreted masses of broken pottery, mostly transport amphorae, are also visible on the seabed within the cove, a characteristic of the site long known to local fishermen and other regular visitors to the anchorage.<sup>13</sup> The previous surveys by Last and Wallace, while noteworthy for their initial recording of Kioni, terminated virtually at the water's edge and therefore provide only a limited view of the anchorage site. For a more complete understanding, the archaeological study of coastal sites must include consideration of the adjacent seabed. In the event that an adjoining anchorage is identified, the ceramic refuse commonly found on the seabed may provide a record of past occupation and use of the coastal site that is significantly different from that denoted solely by sherd scatters on shore.<sup>14</sup>

To determine when and how the anchorage at Kioni was used in antiquity, and to begin to understand more fully the role of this anchorage in local and long-distance shipping, a preliminary survey of the site was initiated by the writer in 1991. This study, undertaken in conjunction with the survey and excavations of the Danish Akamas Project, incorporates, through underwater and terrestrial survey, both the anchorage and its immediate environs.

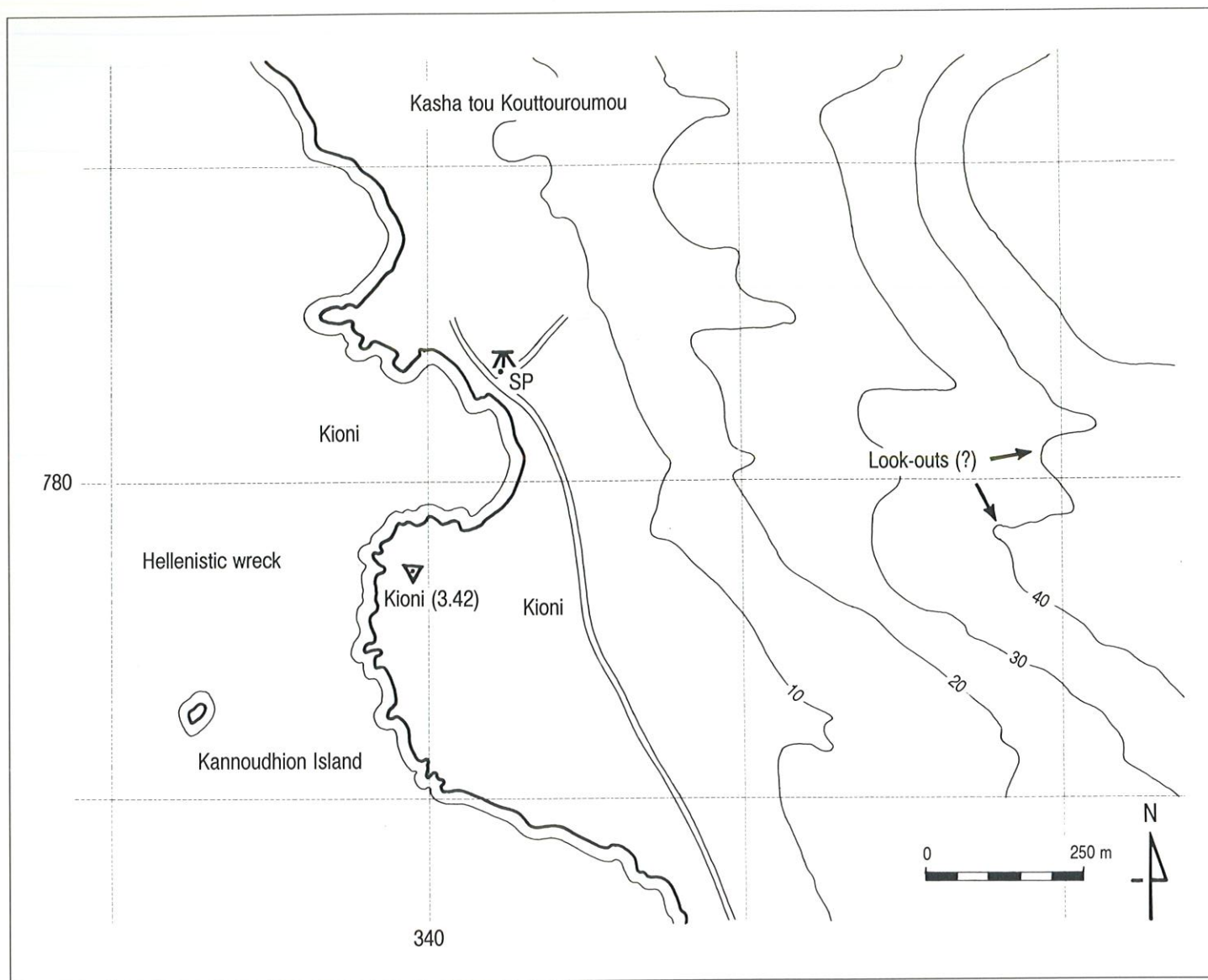
#### Procedure

The survey and mapping of Kioni was conducted over three weeks in late June-early July, 1991, with brief campaigns in August, 1992 and August-September, 1993. Underwater examination of the anchorage and adjacent areas, including the northern bay of Dhrousha-Kasha tou Kouttouroumou (hereafter Kasha tou Kouttouroumou) (fig. 3), was accomplished using snorkel and scuba equipment. Investigators initially swam over designated areas following east-west and north-south search lanes (transects) determined by lines of sight. Subsequently, more intensive examination of the seabed required less formal search patterns to accommodate for narrow gullies, overhanging ridges, and other topographical features of the diverse, underwater terrain.

Terrestrial survey of the site was confined to identification of topographical features, such as seaside architectural remains and possible lookouts for the monitoring of sea traffic (figs. 3, 5). Preliminary dates for these features were determined through associated surface pottery.

For the recording of Kioni's underwater and terrestrial topography, mapping stations were first established on shore using preexisting data points south





3. Map of the Kioni area.

and east of the anchorage (fig. 6). Features on the seabed were then marked with distinct orange buoys and located from shore with a theodolite. These buoys also served as data points for additional underwater mapping with meter tapes and compasses.

In collecting ceramic samples from the concreted seabed, each sample had to be carefully chipped free using a hammer and cold chisel. Frequently, the extensive amount of incrustation required that samples be intentionally broken during removal and later restored in the laboratory for drawing, photography and study.

#### Topography

The coastal plain in the area of Kioni rises gently from the sea toward rolling foothills, culminating in the abrupt central ridge that runs the length of the Akamas Peninsula. The site itself lies on low, relatively level ground, interrupted only by two distinct hillocks pre-

viously mentioned, standing prominently on the furthest eastern perimeter (fig. 3). These hillocks may have served as lookouts for monitoring sea traffic in and around the anchorage. The prospect from their summits encompasses not only the sea and the two bays below, but also much of the adjacent littoral for at least a kilometer north and south of Kioni. Roman sherds atop the hillocks indicate that they were occupied during later antiquity, but the timeless utility of such natural prominences, like that of the anchorage itself, suggests the possibility of more widespread use throughout ancient times. Vegetation growing on the coastal site ranges from the shore's low scrub and clumps of wild thyme to twisted junipers and modest pines nearer the foothills.

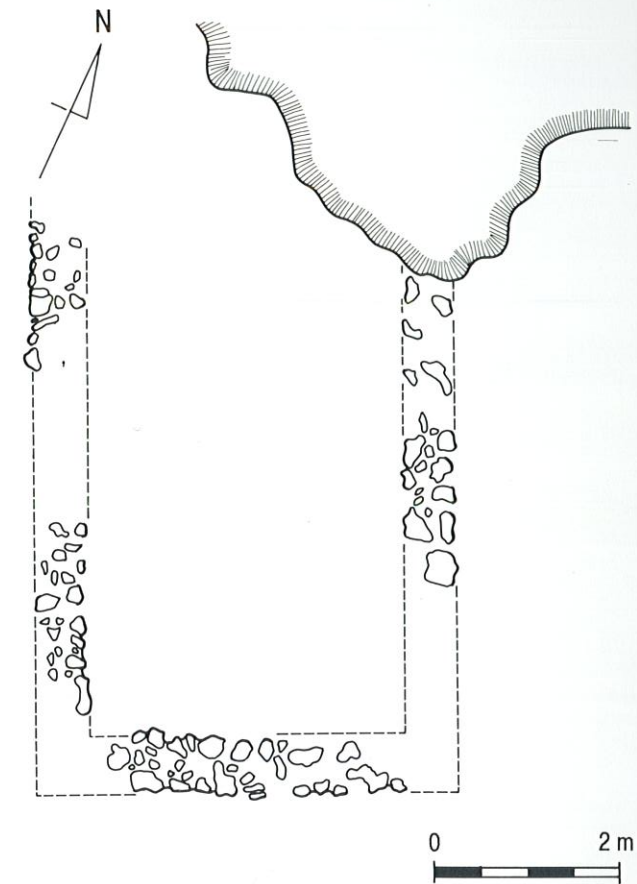
Directly beside the anchorage, on the eastern shore, the poorly preserved foundations of an ancient seaside building lie nearly obscured by vegetation and



4. The marble column still standing in situ.

windblown soil (figs. 5, 6).<sup>15</sup> The walls of this structure, c. 4.50m wide by at least 6.00m long, seem to be constructed of rough, lightly dressed field stones. The use of interstitial material, whether mortar or chinking, cannot be determined without excavation. Surface sherds within and around the foundations belong to reddish-orange and greenish Late Roman wares and grey, sharply ridged Early Christian wares.<sup>16</sup>

Examination of the underwater terrain reveals topography markedly different in the northern and southern areas of the anchorage. The seabed on the north side, and extending westward into open water, is punctuated by protruding bedrock, scattered stones of various size, and rocky pinnacles such as that marked on the site plan by Buoy 6 (fig. 6). An abrupt ridge of bedrock, representing the flooded extremity of the small cape between Kioni and the adjacent bay of Kasha tou Kouttouroumou, runs generally east and west in a series of great jags. Scattered amphora jar-tops (rim, neck and handles or portions thereof) and toes as well as heaps of body sherds, all concreted solidly to the seabed, lie at the foot and on top of this submerged rocky shelf (figs. 6, 7). The sea here ranges in depth



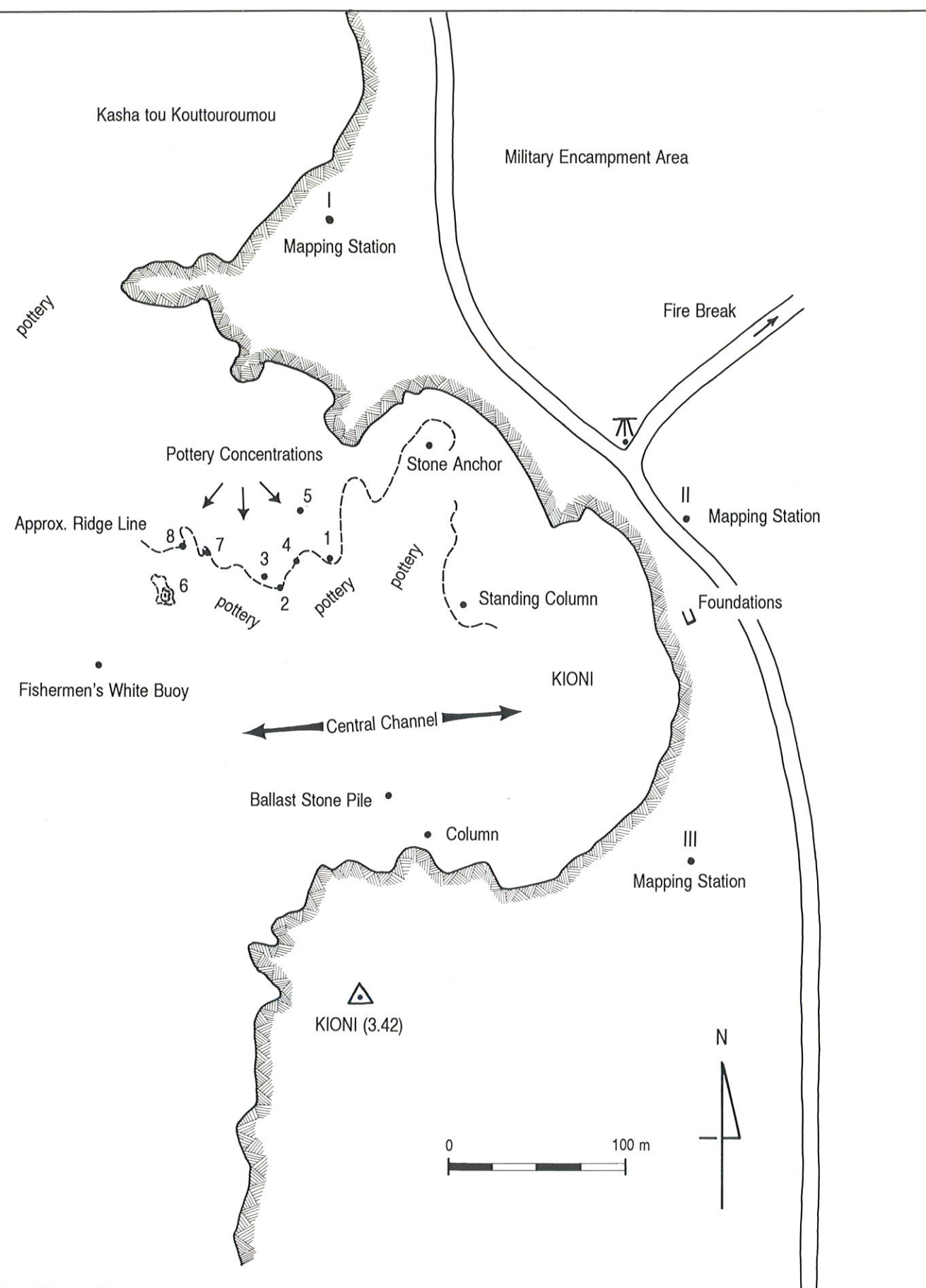
5. Foundations of undated structure on the shore.

from about 2.50m (max.) on top of the ridge to about 5.20m (max.) at the base, while the pinnacle at Buoy 6 rises to a peak about 2.60m below the sea's surface.<sup>17</sup>

The seabed on the south side of the anchorage, however, consists largely of featureless sand, with very few stones and no protruding bedrock. Depths within this barren, natural channel reach about 7m. Occasional sherds do appear on the sandy sea floor, but, in general, pottery is much less evident than in the north. The majority of sherds that can be seen on this side of the anchorage lie scattered along the submerged, rocky perimeter of the southern shore. A distinct mound of stones noticeably similar in size (avg. diam.: 0.30m) may represent discarded ballast material dumped into the southern shallows at some indeterminable point in time (fig. 6).<sup>18</sup>

The disparity of the seabed within the cove attests to how the anchorage was used in antiquity, for ships would probably have attempted to moor within the deep southern channel, steering as much as possible away from the dangerous snags and rocky shelf on the north. The predominant western and southern winds would have remained a constant concern, however,





6. Plan of the surveyed area.

threatening to propel motorless craft into the troublesome northern shallows. The remarkable accumulation of pottery in the northern area, while in part the result of surging sea and local currents, may also represent the spilled cargoes of ancient ships blown onto the northern rocks.

Architectural features within the anchorage include the distinctive column standing in the east, where another flooded shelf of shore rock extends into the shallows, and the apparently displaced column lying at a southwest-northeast orientation near the southern shore (fig. 6). The eastern column (fig. 4), fixed in a socket carved in the bedrock, consists of a single unfluted drum with a weathered dowel hole (0.07m in diameter x 0.07m deep) visible in its upper end. The drum itself stands 1.00m high x 0.37m in diameter, and serves as a convenient indicator of daily sea level changes in the anchorage. Depths at the column fluctuate from about 0.50m to about 0.20m, thereby never leaving completely exposed the sea worn foot of the drum. Petrological analysis reveals the column's material to be imported 'pale grey marble with isotropic granular fabric; no banding or other fabric elements appear in the [hand] sample'.<sup>19</sup>

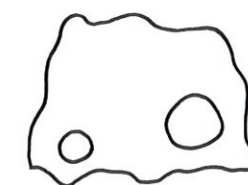
An empty round socket, cut into the bedrock 0.39m to the north of the standing column, was apparently intended to support a second column. This socket is also 0.37m in diameter and extends 0.50m deep, with a shallow bed of accumulated sand at the bottom. Whether two columns once stood side by side, or whether the empty socket represents an earlier column predating the remaining one, or even a column never installed, remains open to question.<sup>20</sup>

The southern column lies in about 1.10m of water, propped at an angle against the submerged lip of the southern shore. This column, like the eastern one, has no flutes, but is longer (1.50m) and more attenuated (0.24m diam.). Its material is also distinct, being 'medium-dark, purple-grey in colour, with medium-grained, isotropic granular fabric; no banding or other fabric elements appear in the [hand] sample'.<sup>21</sup> The upper end of the shaft appears broken, while the lower, preserved end is partially obscured by sand and sea growth. No dowel hole is visible in the column's lower end. The downward, southwest-northeast position of this displaced column suggests that formerly the shaft stood upright atop the flooded shelf above, like its preserved neighbour across the channel. However, no socket or broken stump has yet been found on the worn bedrock shelf.

Artifactual evidence recorded in the cove includes a small, probably post-ancient stone anchor (0.60m x 0.45m x c. 0.22m), lying in the northern shallows at a depth of 1.50m (figs. 6, 8). The anchor's position near shore, at a point where the submerged ridge tapers off, suggests that it was dragged into the shallows, perhaps



7. Amphora jar-tops. (Photo: M. Little)



8. Stone anchor (undated). 1:20.

as a souvenir, before being abandoned. The dearth of ancient anchors at Kioni, in contrast to the abundance of pottery, should probably be attributed to the continued use of the anchorage by local fishermen and others, who over the years have scoured the seabed for convenient souvenirs.<sup>22</sup> The recovery of lost anchors in antiquity, however, must also be considered, for the cove's relatively shallow depth would not have posed a great deterrent to free diving salvors.<sup>23</sup>

Pottery on the seabed, in addition to that already





9. Amphora jar-top B1-1.



10. Amphora toe B3-33.

mentioned in the north and south, is evident as well in the cove's eastern shallows. Isolated sherds are visible primarily in the area of the standing column, for in the southeast the barren floor of the sandy channel continues shoreward rising promptly to meet the beach.

Outside the cove, single sherds continue to be visible on the seabed, particularly around the small cape between Kioni and Kasha tou Kouttourioumou. This northern, neighbouring bay was also an anchorage in ancient times, though its smaller size, shallower depths, and greater exposure to the wind suggest only occasional use under the best (or worst) of conditions. The seabed is rocky within the cove and amphora jar tops, handles, and body sherds are readily apparent. The majority of sherds underwater at Kasha tou Kouttourioumou are found along the northern perimeter of the anchorage. This pattern of distribution, like that at Kioni, seems due for the most part to local currents and surge along the seabed.

Kannoudhion Island, on the opposite side of Kioni, lies approximately 300m offshore to the southwest (fig. 3). The sea is shallow (c. 2m) between the island and the headland, but beside Kannoudhion the seabed drops off suddenly to a depth of more than 15m. Snorkel surveying around the island has revealed no sherds, although closer examination using scuba

equipment may prove more informative. Pottery is visible, however, in the shallow channel northeast of Kannoudhion, where a discrete concentration of Rhodian amphorae and large open vessels seems indicative of an ill-fated Hellenistic ship that once attempted a passage between the island and the coast (fig. 3).<sup>24</sup>

#### Ceramic evidence

Forty-seven ceramic samples were removed from the sea during the preliminary survey, including one sample (NB-41) from the adjacent cove at Kasha tou Kouttourioumou. (They are all described in the catalogue below pp. 151ff. together with drawings fig. 26ff. unless otherwise noted). In selecting samples, an effort was made to collect at least one example of each different type of vessel visible on the seabed. Nevertheless, two more amphorae of different shapes were later observed underwater after sampling had been concluded. The sampling during this survey, therefore, cannot be considered exhaustive.

Catalogue numbers contained herein reflect the particular areas of the site from which ceramic samples were collected. 'B1-1', for example, denotes the area of Buoy 1 (followed by the individual sample number), while 'CC-30' and 'NB-41' represent samples from the cove's deep channel and the adjacent northern bay of



11-12. Amphora jar-tops B1-3 (left) and B1-5 (right).

Kasha tou Kouttourioumou, respectively. All the buoys (Arabic numerals, fig. 6) represent distinct concentrations of pottery, with the exceptions of Buoys 4 and 6, which mark natural features on the seabed.<sup>25</sup> Ceramic samples were collected either directly beside the buoys' moorings or within a 5m radius of these underwater data points.<sup>26</sup>

#### Cypro-Archaic & Cypro-Classical Periods

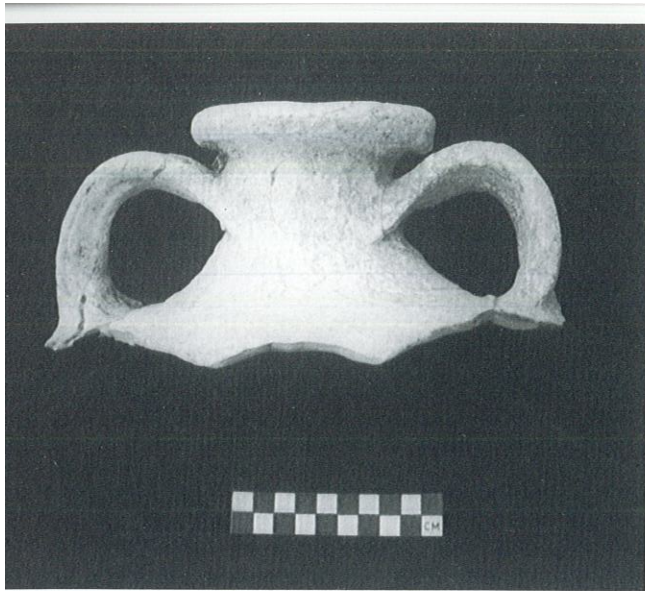
Among the earliest pottery at Kioni is the vertical loop-handle (B7/8-44) of a Levantine 'basket' amphora, datable to the Cypro-Archaic (750/725-475 BC) or Cypro-Classical (475-325 BC) period. Sagona's classification of these 'basket' amphorae ('Type 13') includes five sub-types, distinguished primarily by the shape of their bodies.<sup>27</sup> Handle B7/8-44, on which merely a portion of the jar's curved shoulder is preserved, can only be attributed generally to this type and may belong to any one of the four sub-types 13a-13d. Jars of the fifth group (13e) have a different shape, with flat shoulders and short, thick handles. Types 13a and 13b are the most common in Cyprus, including thirty-three Type 13a amphorae from Salamis, dated to the beginning of the Cypro-Archaic I period.<sup>28</sup> Sagona suggests a date of 725-700 BC for amphorae of Type 13a, though subsequently in his discussion he also proposes a broader, later range of 700-600 BC for their circulation.<sup>29</sup> Type 13b amphorae have been found at Kition, Marion and Salamis, and date from Cypro-Archaic I (750/725-600 BC) to Cypro-Classical II (400-325 BC).<sup>30</sup> Five examples of Types 13c and 13d are known on the island, four from Vouni and one from Amathus, dating (with one possible exception) to the Cypro-Classical I

period (475-400 BC).<sup>31</sup> Sample B7/8-44 is the only remnant of a Levantine 'basket' amphora observed at Kioni.

Levantine imports of different shape include six Canaanite amphorae, B3-9 and B7-21 through B7-25. Five of these amphorae (B3-9, B7-21, B7-22, B7-23, B7-24) may belong to Sagona's Type 7c, which is more common in Cyprus than the similar but shorter variety, Type 7d.<sup>32</sup> Type 7c amphorae have been found at Salamis and date to the Cypro-Archaic II period (600-475 BC).<sup>33</sup> Type 7d amphorae, examples of which come from excavations at Marion and Salamis, date to the Cypro-Archaic II and Cypro-Classical I periods.<sup>34</sup> The sixth amphora (B7-25), while generally similar to the other five, has a shoulder diameter greater than 0.23m. This amphora, therefore, belongs to Sagona's 'wide' Types 7a or 7b, ranging in date from Cypro-Archaic I through Cypro-Classical I and Cypro-Archaic II through Cypro-Classical I, respectively.<sup>35</sup> The handles, rims and shoulders of at least three additional Canaanite amphorae were noted in the anchorage in the area of Buoys 7 and 8.

B8-27, B8-28 and B7/8-43 also may be dated to the Cypro-Archaic period. These horizontal handles appear to belong to local storage amphorae of the period having tall cylindrical necks and tapering, rounded bodies with flat bases. Amphorae of this shape are numerous in Cyprus, such as the White Painted IV and Black-on-Red II(IV) examples from Alassa-Kampos (Cypro-Archaic I) and a Plain White V example from the Ayios Theodoros necropolis, Larnaka District (Cypro-Archaic II).<sup>36</sup> B8-27, B8-28 and B7/8-43 were the only trace of these Archaic amphorae visible in the anchorage.





13. Gallic (?) amphora jar-top, B1-6.



14. Base of a Gallic (?) amphora, B1-45.

#### Hellenistic Period

Rhodian amphorae of the Hellenistic period are represented by two jar tops (B1-1, B1-2; fig. 9) and six (B3-33 through B3-38; fig. 10). The jar-tops are closely paralleled by an amphora from Ktima, dated c. 150 BC, and two amphorae from the Middle Stoa in Athenian Agora, dated 185 BC ( $\pm 5$  years) and 184  $\pm 5$  years).<sup>37</sup> The toes were found scattered among the jar tops, in the area of Buoys 1, 2 and 3, and may belong to them. The distinctive remains of at least thirty of the similar Rhodian amphorae litter the seabed around Buoys 1, 2 and 3, including toes, single handles and nearly complete jar tops (fig. 7). This relatively homogeneous scatter of amphorae is suggestive of a spilled cargo, rather than anchorage refuse that accumulated over time. The subtle changes in shape and form in Rhodian amphorae of the late 3rd and early 2nd centuries BC, however, are difficult to distinguish without extensive samples for comparison. Further excavation and study must be conducted at Kioni before the Hellenistic shipwreck in the cove can be confirmed.<sup>38</sup>

#### Roman Period

The anchorage during Roman and Early Byzantine times is attested by samples of six different ceramic vessels, ranging in date between the 1st or 2nd century AD and the 7th century AD. B5-13 is an amphora with a high cylindrical neck, flaring mouth and rounded handles that also appear round in profile. A similar amphora of smaller size from the Athenian Agora (P 6) may be an early version of this jar, dated to the

1st century BC.<sup>39</sup> Robinson, in his discussion of this diminutive storage amphora, refers to similar jars of greater dimension from the Agora that have the same fabric, neck and handles, and date to the 1st or 2nd century AD.<sup>40</sup> Of these later, larger amphorae, one (P 14265) is notably similar to amphora B5-13 from Kioni.<sup>41</sup> A broad ring-base (B5-14), found on the seabed beside B5-13, may belong to the amphora, for it is similar to the base of the small Athenian storage jar P 11876.<sup>42</sup> Furthermore, the base's scale and (slightly darker) fabric seem comparable to those of B5-13. Only one other example of this form was discovered in the anchorage, consisting of a similar neck and rim concreted to the rim of B5-13.

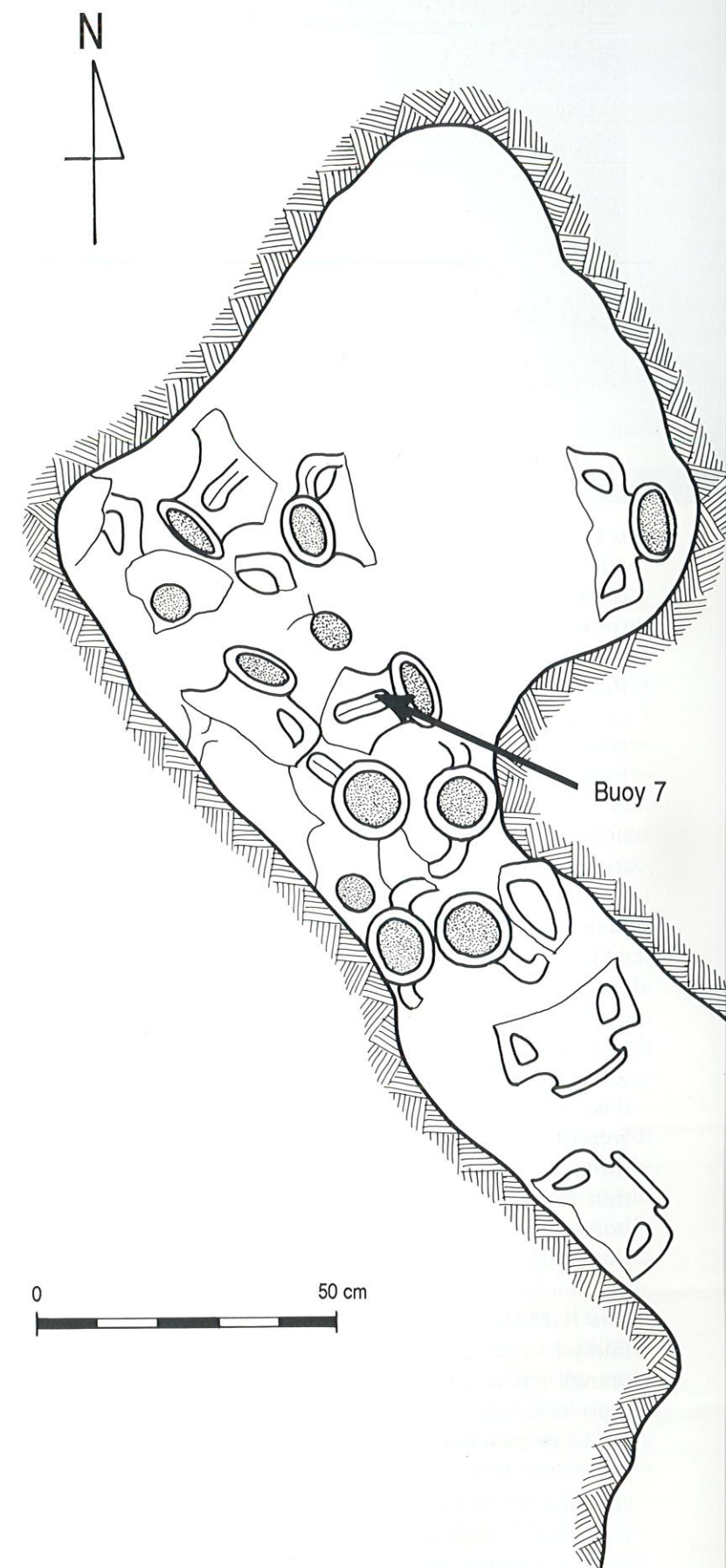
Amphorae B1-3 through B1-8 and B1-42 date from the 1st century AD to the 3rd or 4th century AD and may have originated either in Mauretania Caesariensis or southern Gaul. Both areas produced jars of this general type (small, flat-bottomed, with low necks, rectilinear or rounded rims and short strap handles semi-circular in profile) and examples of these related forms cannot easily be distinguished.<sup>43</sup> The seven samples from Kioni, however, while appearing very similar in shape, do appear to have distinct clays. Three of the amphorae (B1-3, B1-5, B1-8; figs. 11-12) have reddish clays indicative of the reddish, dark clay of the North African jars, while the clays of B1-6 (fig. 13), B1-7 and B1-42 exhibit a browner, lighter colour more characteristic of the Gallic jars.<sup>44</sup> Jar-top B1-4, with its light reddish clay, is more ambiguous, but is assigned here to the North African variety.



15 (above). A concentration of amphora fragments near buoy 7 indicate a possible Roman wreck in this location. (Photo: Mark Little)

Of the two bases recovered (B3-40, B1-45; fig. 14), the first may be North African and the second Gallic.<sup>45</sup> Although the chronology of this amphora type also remains problematic, Will has proposed a *floruit* in the 2nd century AD for the North African variety, while its full range extends from the 1st through late 3rd centuries.<sup>46</sup> The Gallic jars also appear in the 1st century and continue into the 4th century at sites including Ostia.<sup>47</sup> Geographical distribution of the two varieties is widespread, with North African jars having been recorded at sites between Britain and Alexandria and Gallic jars appearing throughout the eastern Mediterranean.<sup>48</sup> Three more examples of the general type were also observed on the seabed at Kioni.

16 (right). Plan of the area around buoy 7 (arrow indicates position of buoy)







17-18. Tops from two pinched-handle transport amphorae, B7/8-16, B7/8-18.

The most common type of container in the cove is the 'pinched-handle' amphora, dating from the 1st to 4th centuries AD (figs. 17-18).<sup>49</sup> The characteristic feature of this jar type is its sharply angled handles with longitudinal central grooves and pinched corners (fig. 19).<sup>50</sup> Although only four jar-tops (B7/8-16 through B7/8-19) (figs. 17-18), and two toes (B7/8-46, B7/8-47) were collected, the fragmentary remains of at least forty more similar amphorae were recorded on the seabed perhaps indicating another (later) shipwreck within the confines of the anchorage (figs. 15-16). All the jars at Kioni have large handles similar in scale to their necks, unlike the diminutive, ill-proportioned handles occasionally seen on jars in Nea Paphos.<sup>51</sup> The clays are also uniform in their light reddish-brown to reddish-yellow colour (5YR 6/4-6/6) and small red, white and grey grits.

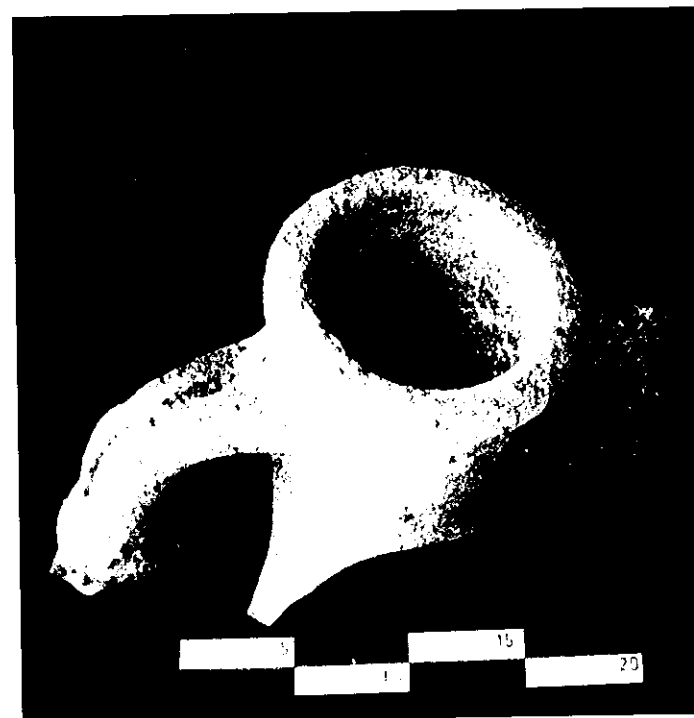
A variety of fabrics have been reported previously in the eastern Mediterranean for these amphorae, including *three at Anemurium*: 1) medium-grained, gritty with red and dark grits, fine silver mica and silica flakes, full of small white lime particles; orange in colour with matt yellowish-white slip; 2) same clay (fired differently?), dark red with purplish tinge and thin red wash also with slight purplish tinge; 3) soft, porous, off-white, with very slight yellowish-green tinge, full of white lime particles and dark grits;<sup>52</sup> *two at the Athenian Agora*: 1) coarse reddish with white slip; 2) soft reddish with grits and white slip;<sup>53</sup> *one at Atlit*: finely levigated grey;<sup>54</sup> *three at Berenice*: 1) gritty bright orange-red with a little mica; 2) very micaceous orange with occasional white grits; 3) buff with occasional white grits;<sup>55</sup> *two at Nea Paphos*: 1) hard pinkish-red, brownish at surface, with occasional brownish inclusions; 2) yellowish-buff, slightly sandy and softer than first;<sup>56</sup> and *two in the Palaipaphos area*: 1) red to light red with a few grey, yellow and large white par-

ticles; 2) yellowish-red to reddish-yellow with red, white, black, a few yellow and orange, and 'light-reflecting' particles.<sup>57</sup>

A number of possible production centres and remarks on the relatedness of particular fabrics have also been published, though only Anemurium, where a kiln was recently discovered, has yielded definitive evidence for the production of the type.<sup>58</sup> Of the three fabrics recorded at Anemurium, the first two were produced in the local kilns, while the third seems to have been imported.<sup>59</sup> Hayes has proposed a local origin for the two clays at Nea Paphos<sup>60</sup> and asserts that the jars in Athens (and those at Berenice, which have similar fabrics)<sup>61</sup> are from a different source.<sup>62</sup> The grey jar found in the sea near Atlit, according to Zemer, may have been produced in North Africa.<sup>63</sup> Lund notes a correspondence between the surface sherds from the Palaipaphos area and those of one of the fabrics at Anemurium, as well as those from Berenice and Nea Paphos.<sup>64</sup> This last comparison is advanced by Lund despite Hayes' earlier assertion of disparate fabrics in Nea Paphos and Athens.<sup>65</sup> In summary, three sources appear in the literature for pinched-handle amphorae:

- 1) Anemurium (confirmed)
- 2) Nea Paphos
- 3) North Africa

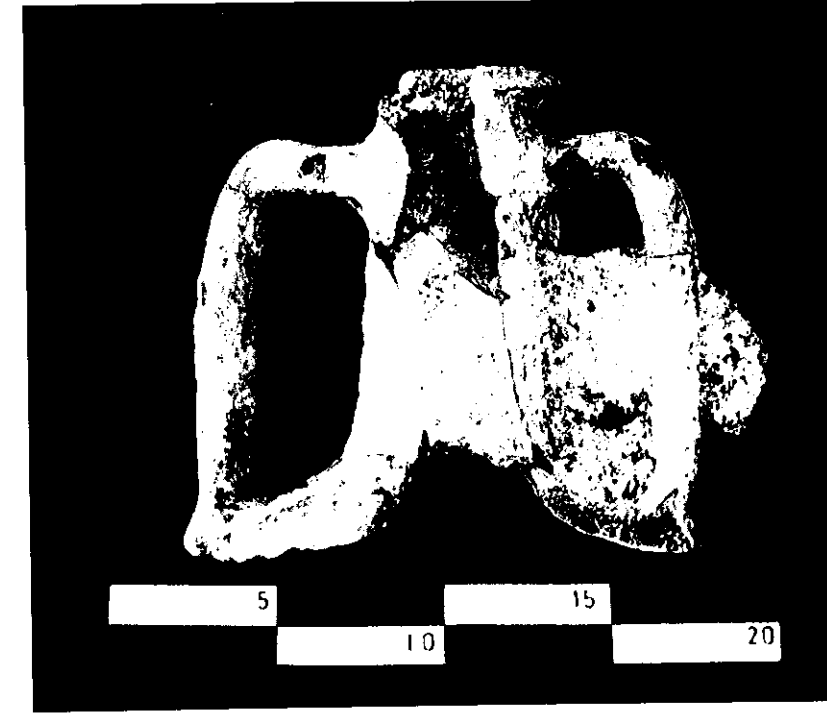
The reddish jars in Athens may have been local products, but with so little representation among the excavated finds they seem more likely to have been imported from a different source, perhaps Anemurium.<sup>66</sup> The two reddish fabrics at Berenice (which are similar to those at Athens, according to Hayes) may also be from Anemurium, judging from their similar fabric descriptions. Jars of the third (imported) fabric



19. Another view of B7/8-18.

found at Anemurium (soft, porous, off-white) and of the (imported) third fabric at Berenice (buff) both appear from their descriptions to be related to Hayes' second fabric from Nea Paphos — perhaps jars of these clays were imports from Cyprus.<sup>67</sup> Other sporadic examples of pinched-handle amphorae, known from Kourion,<sup>68</sup> Ayia Irini<sup>69</sup> and Ayios Philon<sup>70</sup> in Cyprus, and from Ostia,<sup>71</sup> Pompeii,<sup>72</sup> Samos,<sup>73</sup> Bodrum,<sup>74</sup> Yassi Ada,<sup>75</sup> Alanya<sup>76</sup> and Didyma<sup>77</sup> must await further study and more complete publication of their clays before their origins and relations may also be considered. For the present, however, Williams notes that one jar in Alanya can be traced to Anemurium, while a fragmentary toe at Didyma may also be an import from that site, based upon the published description of its fabric.<sup>78</sup> Pinched handle amphorae, then, seem to have been shipped in various directions from Anemurium and a number of those sporadic examples mentioned above may have come from the Anemurium kilns.<sup>79</sup>

The jars from Kioni must also be factored into this intricate array of relationships and possible sources. Their light reddish-brown to reddish-yellow clay (5YR 6/4-6/6) appears similar to the second, browner clay in the Palaipaphos area and the second and (especially) third clay at Berenice, although the samples from Kioni do not contain mica. The fabrics reported by Hayes from Nea Paphos seem to be unrelated to those in the Kioni anchorage, while the examples in Athens do appear similar from their published descriptions. The pinched-handle amphorae from Kioni, therefore, do not appear to have been produced in Hayes' (conjectured) workshop in Nea Paphos, but may have come from the source producing the jars found at Palaipaphos,



20. Top of a small Roman amphora, B7-20.

Berenice, and Athens — perhaps Anemurium. The lack of the distinctive mica in the Kioni samples, however, as well as in the Athenian Agora amphorae, must be emphasized and indicates the possible existence of yet another origin for these amphorae.

Of final note for the date of these widely-distributed amphorae is a single pinched handle recently unearthed (1992) at Caesarea Maritima, Israel. This handle was discovered in a tunnel excavated beneath a massive concrete section of original breakwater (Area K3), which was installed in the late 1st century BC.<sup>80</sup> While only a single, isolated handle, this find was made in a possibly Herodian context, which may provide a *terminus ante quem* for pinched handle amphorae predating that at Pompeii.<sup>81</sup> Perhaps, as the stratigraphic study of Herod's harbour continues, such an unexpected early date for these amphorae can be rejected or confirmed.

The two small amphorae (B7-20, 7/8-26; fig. 20) and one handled jug (B7/8-29) from Kioni are probably also of Roman date. Several small storage amphorae in the Athenian Agora of a shape and fabric generally similar to B7-20 and B7/8-26 range in date from the 1st century BC through the 2nd century AD.<sup>82</sup> The one-handled jug (B7/8-29) has fewer parallels, but resembles Roman jugs such as the imported OΔ2804 in Nea Paphos, attributed by Hayes to perhaps the early 2nd century AD.<sup>83</sup> These three samples (B7-20, B7/8-26, B7/8-29), as well as the remaining samples from Kioni discussed below, are isolated finds of which no further examples were recorded on the seabed.

Amphora B3-11 is of a Late Roman/Early Byzantine type found at various sites in the Eastern Medi-



21. Medieval bowl of sgraffito ware, CC-31.

ean, for example Berenice, where a similar jar is by its probable 7th century context.<sup>84</sup> Amphorae of this type, dating to the 8th century, have also been found in Istanbul.<sup>85</sup> The origin of these amphorae is uncertain.<sup>86</sup>

test identifiable pottery in the anchorage consists of local medieval bowls (CC-30, CC-31), one of which (CC-31, fig. 21) is decorated inside with a sgraffito pattern. Their profiles are similar to those of Group VI in the fundamental study by du Plat Taylor and Megaw.<sup>87</sup> Two Group VI bowls, excavated by the British Museum in Nicosia, provide close parallels for those from Kioni and date to the second half of the 14th century.<sup>88</sup> The crude spout (CC-32) of dark greyish clay may also be of medieval date.

**Undated Finds**  
Samples (B3-10, B3-12, B8-15, B3-39) are of undated and remain unidentified. The small amphora (B3-10) is badly worn by the sea, while sample B3-22 is better preserved and represents a large fragment of coarse, very heavy, gritty fabric.<sup>89</sup> The ring-handled amphora (B3-39) belongs to a vessel with a rounded body of 18 cm diameter, perhaps also an amphora.

**Kouttouroumou**  
A fragment of Sagona's Type 13a or 13b was recorded during preliminary survey of the anchorage bay at Kasha tou Kouttouroumou.<sup>90</sup> This jar, which remains *in situ*, possesses high loop handles, low shoulders, and a simple neck and rim characteristic of Types 13a and 13b amphorae (Cypro-Classical I through Cypro-Classical II periods).<sup>91</sup> Hellenistic use of the cove is attested by Rhodian jar-tops as similar to those noted at Kioni. The top of

another, less familiar amphora (NB-41, fig. 23) appears similar to two jars found in a tomb in the Paphos District.<sup>92</sup> This tomb, dated to the Hellenistic I period (325-150 BC) by the excavator, also contained two Rhodian amphorae similar in shape to those found at Kioni and Kasha tou Kouttouroumou. Amphora NB-41, therefore, may also date to the late 3rd or early 2nd century BC.

### Conclusions

The diverse accumulation of pottery in the bays at Kioni and at Kasha tou Kouttouroumou reveals a long history of use of the area from the Archaic or Classical period into the Early Byzantine period and again in the medieval period, even during those times when the inland site at Ayios Kononas may have lain more or less uninhabited.<sup>93</sup> The natural protection of the coves, the accessibility of fresh spring water nearby, and the advantage afforded by adjacent hillocks, from which approaching sea traffic could be monitored for some distance, all may have prompted past sea travellers to frequent these coastal sites. Kioni, with its deep channel, protective southern headland, and greater internal area was the primary anchorage of the two, while Kasha tou Kouttouroumou periodically provided additional, though more exposed, refuge.



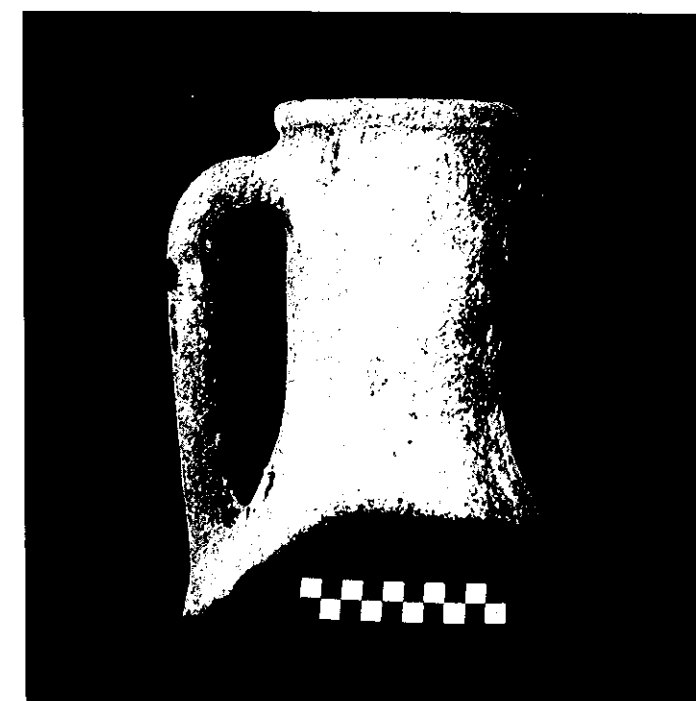
22. Fragment of undated transport amphora, B8-15.

The discovery of similar pottery at Kioni and at the site of Ayios Kononas including Hellenistic Rhodian and Roman North African or Gallic amphorae, as well as the though few local medieval wares provides support for an association, first proposed by Gunnis, between the anchorage site and its inland neighbour. Discrepancies between the sites' ceramic records, however, both in periods represented and in types of pottery within single periods, indicate the anchorage did not exist solely as a functionary of the inland settlement. The most striking difference between the anchorage material and the excavation/survey material is the abundance of typical Early and Mid Roman pottery and the lack of early Byzantine pottery among the collected material from the anchorage. Furthermore, despite the substantial number of Roman pinched-handle amphorae represented in the cove, very little evidence has been found for these same containers at Ayios Kononas.<sup>94</sup>

The relative absence at Kioni of Early Byzantine pottery of the 5th and 6th and early 7th centuries, when Ayios Kononas was in its *floruit* and the surrounding countryside was being most intensively used, may be the result to some extent of a shift in the flow of traffic to and from the settlement. The establishment of a road along the peninsula's western shore, probably in the Late Roman period, opened the way for merchants to supply Ayios Kononas overland, instead of sending goods through the anchorage at Kioni. Goods may have also come to the settlement from other more distant anchorages and harbours on the eastern coast of Akamas, such as Fontana Amorosa and Latzi.<sup>95</sup>

The scarcity of Early Byzantine pottery, however, particularly in contrast to the abundance of Roman material in the cove, nevertheless remains problematic. Maritime activity at Kioni, as indicated by discarded pottery and lost cargo on the seabed, appears to have reached its peak in the Mid to Late Roman period. The rough road along the west coast, founded evidently in the latter stages of this period when settlement at Ayios Kononas was on the rise, provided merely *alternative* access to the area, for the less arduous and probably better travelled route remained across the sea. The apparently limited amount of Early Byzantine material in the cove, represented by amphora B3-11, may indeed be the result of decreased activity at the anchorage, but also may be due in part to incomplete sampling during the survey. Furthermore, unlike the extensive sherd scatters from Hellenistic and Roman shipwrecks, there is no evidence for Byzantine shipwrecks in the cove.

Architectural remains at Kioni, preserved on land and in the sea, also attest to the cove's use and development. The stone foundations visible on the eastern shore, which may represent only one of several buildings originally standing on the site, perhaps housed trade goods, harbour officials, or weary travellers.



23. Hellenistic (?) amphora from Kasha tou Kouttouroumou.

Based upon surface pottery, these foundations may date to the Late Roman or Early Byzantine periods. The columns in the sea were probably mooring posts, as Gunnis surmised, but also may have served as navigational aides flanking the channel and marking the deeper safer water within the anchorage.<sup>96</sup> The original positions of columns now gone remain uncertain, but may have been beside the standing column (evidenced by the empty socket) or along the edge of the southern shore near the column now submerged. The two preserved columns, whose marble material seems unusual for constructions destined merely to serve as mooring posts or guides, are probably reused members brought to the anchorage perhaps from Marion/Arsinoe or the settlement at Cape Drepanon.<sup>97</sup> The date of their installation remains unknown and may have been as late as the medieval period.

The underwater mapping of the ceramic evidence reveals that Roman wares are widely scattered on the cove's northern seabed, extending along the length of the submerged ridge from Buoy 1 to Buoys 7 and 8. The greatest concentrations of Roman jars are those from North Africa and Gaul on the top of the ridge at Buoy 1 and the pinched-handle amphorae along its winding foot at Buoys 7 and 8. The Hellenistic amphorae are clustered in the area of Buoys 1-4, both on top and below the ridge, while Archaic-Classical material has been recorded on top around Buoys 7 and 8. One Canaanite jar (B3-9) was found nearer shore. The few examples of later, medieval pottery noted during the survey lay in the sandy southern channel. In general, the bulk of the pottery visible in the anchorage





24. Partly submerged quarry at Ayios Nikolaos on the eastern coast of the Akamas peninsula, illustrating the change in sea level since antiquity.

appears to have been washed north and east by natural processes to settle along the northern submerged ridge, while other isolated sherds have been dispersed all around the perimeter of the cove. The distinct grouping of similar North African and Gallic jars at Buoy 1, however, suggests that some pottery was originally deposited directly onto the top of the northern ridge, perhaps by an ancient ship once moored near the standing marble column. The abundant Hellenistic Rhodian and Roman pinched-handle amphorae on the seabed probably represent the spilled cargoes of two ships that wrecked in the anchorage after snagging their hulls on submerged rocks. Getting into the anchorage would have been especially tricky with only sails or oars to rely upon and sailors must have been constantly on guard to prevent their ships from blowing into the northern shallows.<sup>98</sup> If the sea level

were any lower in antiquity, as it probably was, the top of the northern ridge (now no more than about 2.5m below the surface) would have been even shallower and more dangerous. The sharply jutting peak at Buoy 6 (now about 2.6m deep) would have also been closer to the surface and may once have been responsible for rupturing the hull of the Roman ship that held the pinched-handle amphorae dumped at Buoys 7 and 8. A gusting wind from the southwestern quarter would have blown directly across the snag at Buoy 6 in the direction of the submerged ridge just beyond where quantities of pinched-handle amphorae are still visible today scattered on the seabed.

A possible difference in mean sea level since antiquity seems the only visible change in the natural topography of Kioni, aside from some silting along the cove's eastern and southern shores. Changes in past sea

level have been variously estimated by researchers and may amount to as much as a 3m eustatic rise in the last three millennia.<sup>99</sup> In seismically active Cyprus the issue may be further complicated by questions of local uplift and subsidence of coastal areas. Submerged archaeological remains at coastal sites such as Nea Paphos, where the ancient breakwaters are as much as 4.5m below the surface,<sup>100</sup> may be indicative of some subsidence of the southwestern Cypriot coast. Also other sites, such as the partly submerged seaside quarry (Ayios Nikolaos) (fig. 24) on eastern Akamas, appear to show movement of the coast or changes in sea level (see above p. 59 with ref.). The position of the standing column at Kioni, now partially submerged to a depth occasionally reaching 0.50m, seems to indicate that past sea level in the cove was not any *higher* than today and, if anything, has risen slightly to its present level, either through eustatic rise or local subsidence of the ground. Sandy silt, visible in the area of the standing column and along the southern shore, may have conversely contributed to a slight shallowing of the inner anchorage. The natural topography of Kioni, then, seems to have changed little since antiquity, although ships formerly may have been subject to greater risks from hidden snags in entering the cove and, once inside, could perhaps have moored more closely around the standing column(s) in the east and south before being discharged of goods and passengers.

The study of the ceramic samples collected from Kioni reveals both local and regional trade contacts in the Cypro-Archaic and Cypro-Classical periods. The different shapes of the 'basket' and Canaanite amphorae may indicate a variety of goods shipped from the Levant to Cyprus. Local coasters and foreign ships both probably frequented the anchorage, a practice that would have continued into later periods when trade goods from western sources, such as Rhodes, were distributed around the island. During Roman and Early Byzantine times, as trade contacts expanded, North African amphorae from the opposite end of the Mediterranean were discarded into the cove. The abundant Roman pinched-handle amphorae may attest to regional, Eastern Mediterranean trade at Kioni and Ayios Kononas, perhaps with Anemurium to the north or some other, still undetermined, provincial neighbour. Local and foreign ships continued to sail the coastal waters during the medieval period, carrying goods such as the Cypriot *sgraffito* bowl found in the anchorage. Pilgrims on their way to and from the Holy Land often stopped along the island's shores, usually at Famagusta, the Salines (Larnaca), or Paphos.<sup>101</sup> Occasionally, however, as their ships laboured along the southern coast, these early travellers sought refuge in smaller anchorages. Some may have sheltered at Kioni or disembarked to pray in the chapels at Ayios Kononas.

Kioni was probably a busy anchorage at various

times in its history, for there were no other western anchorages of equal merit north of the Lara Peninsula (fig. 1). If ships bypassed the cove at Kioni, they would have had to sail the entire stretch of rugged coastline from Lara to Fontana Amorosa, on the lee side of Cape Arnaoutis, before finding another cove so well protected from the western and southern winds. The deep inlet south of Cape Yeronisos seems an ideal anchorage, enclosed by a bluff on one side and a flooded ridge ending in a steep-sided 'island' on the other.<sup>102</sup> This inlet, however, has a southwest-northeast orientation and lies directly open to the wind. Preliminary survey of the area revealed only six possibly Roman sherds on the seaward side of the flooded ridge. The only other accessible cove offering even limited shelter on western Akamas is Kasha tou Kouttouroumou. On the east side of Akamas, however, the situation is distinctly different. Not only does the Akamas peninsula as a whole provide shelter, but the eastern coast is punctuated by little coves, including the aforementioned Fontana Amorosa and the small bay (Ayios Nikolaos) where stone was once quarried beside the sea, apparently for loading directly onto ships. Farther east, at Latzi, an ancient mole constructed of squared stones, perhaps from the Ayios Nikolaos quarry, protrude from beneath the modern rubble breakwater. The eastern littoral of the Akamas peninsula, therefore, offered both natural and manmade refuge, while the western littoral provided only natural anchorages at Kioni, Kasha tou Kouttouroumou, and Lara.<sup>103</sup>

Geographical position, abundant ceramic evidence, and architectural remains all attest to Kioni's important role in past seafaring around the Akamas Peninsula. As the westernmost anchorage on Cyprus, Kioni may have played a role in long-distance as well as local shipping, occasionally serving as the last and first stop for ships sailing to and from the west.<sup>104</sup> Despite the hazards of maneuvering around the rocky cove, indicated by ceramic scatters of three possible cargoes strewn on the seabed both inside and outside the anchorage, sea travellers continued to seek shelter at Kioni throughout antiquity and into the medieval period. Today, local fishermen still use the remote anchorage, perhaps in much the same way their predecessors once did (fig. 25).

Although this preliminary survey of Kioni provides an initial overview of the site's long history and use, further, more intensive study is needed. Topographical changes may be more clearly discerned through geological study of wave-notches and other geomorphological evidence in the area of the anchorage. Excavation of the foundations on shore, and probing for other ancient buildings around the cove, may finally provide dates for the anchorage's architectural development, while comprehensive handle counts and collection of other, previously-unsampled ceramic





25. Overall view of the anchorage at Kioni.

forms from the seabed will provide a more complete record of the extensively preserved, diverse ceramic assemblage that constitutes the primary importance of the ancient site. The concentration of Roman pinched-handle amphorae, in particular, represents one of the largest groups of these jars yet recorded. Perhaps as further studies of Kioni's distinctive remains are pursued, taking up where this preliminary survey leaves off, an even greater understanding can be gained of this modest but historically significant cove on western Akamas.

#### Modern Use of the Kioni Anchorage

Data on the modern use of the anchorage at Kioni and on local sailing conditions were gathered through a brief interview conducted with Mr. Michalis Stavrou, one of the two fishermen who continue today to anchor their boats in the cove. Eighteen questions were asked of Mr. Stavrou through a translator on 28 September, 1993. His responses, which were recorded in a notebook as they were translated, have been edited slightly for brevity and are presented here:

Q: How long have you used the anchorage?

A: Sixteen years. I'm from Famagusta.

Q: Is your father a fisherman and did he ever use Kioni?

A: No, he's from Bogaz; he isn't a sailor.

Q: What is the length and draft of your boat?

A: 28 feet long, 3-4 feet draft.

Q: Have you ever seen larger boats use the anchorage?

A: No, only the same size as mine.

Q: During what times of year can you use the anchorage?

A: At all times, the whole year.

Q: Do you use the standing column as a navigational guide when entering the anchorage?

A: No.

Q: What do you sight on for navigation?

A: At night I look at the mountains, their shape.

Q: Does the tidal change in the cove affect how you use the anchorage?

A: No.

Q: Are there tricky winds around the anchorage?

A: The northwest wind is dangerous. Sometimes the winds inside Kioni are stronger because of the shape of the land. But even in big winds, the land breaks up the wind and there are only small swells in the anchorage. My [anchor] ropes are never taut.

Q: Are there noticeable currents in the area of the anchorage?

A: There are currents, but none are dangerous.

Q: Have you ever experienced troubles getting into or out of the anchorage?

A: No, [but inside] you have to drop your anchor well. Some people have problems, but not me because I'm experienced.

Q: Do you always anchor in the southern channel or are there other areas within the cove where you can moor?

A: [Yes, always in southern channel.] If you have a good anchor, the wind can't push you to the other side.

Q: Besides Kannoudhion Island, are there any other obstacles that need to be avoided in entering or leaving the anchorage?

A: There are long shoals, high in the water, off [Cape] Arnaoutis, and also south of [Kannoudhion] island near Kioni.

Q: Why do you use Kioni?

A: Because in other places the fishermen use trailers and nets; but here there are rocks, so only I can fish here [since I don't use those things].

Q: How many other fishermen use this anchorage?

A: Just one.

Q: Are there any other anchorages besides Kioni between Lara and Cape Arnaoutis?

A: No, only Lara, but the south wind disturbs it. Kioni is the best.

Q: Have you ever heard of anyone finding anything in the anchorage?

A: A cannon was found about eight years ago, about 3km out to sea, northwest from Kioni.

Stavrou's comments concerning local winds and currents must, of course, be tempered by the fact that his boat is equipped with an engine, thereby relieving him of many of the concerns which would have weighed upon ancient and medieval sailors. Nevertheless, the way in which Stavrou and other present-day fishermen use the anchorage may be similar in some respects to the way in which ancient mariners maneuvered in and around the anchorage, particularly when entering

through and anchoring in the deep southern channel.

A white, highly visible marker buoy (reused plastic container) was recorded by the survey in the outer area of the cove in 1991, and had been installed by the fishermen then using the anchorage (fig. 6). Just as Stavrou continues to do today (although without the buoy, which has since been removed), the fishing boats approached the cove on a course parallel with the coast, then swung perpendicularly into the anchorage on a direct line into the deep southern channel.<sup>105</sup> The white buoy apparently marked the northern limit of the southern channel, in which the fishing boats travelled and anchored (figs. 2, 6). It is interesting to note that the white buoy was placed not far from the tall pinnacle at Buoy 6 (fig. 6), which may have been a potentially dangerous snag in antiquity and may still today be a concern to those entering the cove.<sup>106</sup>

The dimensions of Stavrou's fishing boat are smaller than those of past sea-going ships, but are perhaps comparable to those of local coasters. Archaeological and archival evidence indicates that ancient and medieval sea-going ships were longer and had greater drafts. For example, the Kyrenia ship, which sank about 300 BC was c. 14m long by c. 4.5m abeam, with a draft of c. 1.4m.<sup>107</sup> Roman and Byzantine ships were even larger, such as the 2nd century Chrétienne C wreck (15.5m long) and the 7th century Yassi Ada wreck (c. 21m long), while the largest ships at this time were probably the gigantic grain ships.<sup>108</sup> The 11th century Serçe Limani wreck (16m long)<sup>109</sup> is a relatively small example of later craft, for medieval ships were generally much larger: a Venetian merchantship (*usciera*) ordered for construction in the late 13th century had an intended length of 25.76m.<sup>110</sup> The remains of the Bremen Cog, a clinker-built ship of a type that operated to some degree within the Mediterranean as well as in Northern Europe, indicate an original length of c. 24m. and date to the second half of the 14th century.<sup>111</sup> If Stavrou's diminutive fishing boat signifies the lower end of the size spectrum for ships capable of using Kioni's anchorage, the longer, later ships cited above may represent the approximate upper limits. Ships of greater length would probably have encountered difficulty in maneuvering within the anchorage, even if the southern channel's depth (c. 5m-7m+) was great enough to have accommodated them.<sup>112</sup>

Stavrou's references to occasional gusts inside the cove and the need to anchor well so as not to be pushed over to the other side of the anchorage are significant, for ancient ships without engines would have been even more at risk inside the anchorage than modern fishing boats. Perhaps the possible cargo scatters on the northern side of the cove, particularly the scatter of Hellenistic Rhodian amphorae around Buoys 1-4, were the result of ships blown across the cove from their failed moorings in the south.



Also of interest is Stavrou's use of natural topography for navigating, instead of sighting upon the prominent standing column. Although the several columns which once stood in the cove may have been merely mooring posts, prominent architecture and other manmade navigational marks on shore were often used by sailors in antiquity for steering into harbours.<sup>113</sup>

Stavrou's confirmation that Kioni is the best anchorage on western Akamas north of Lara is significant. His observation on the disruptive south wind at Lara indicates that he is referring to the southern anchorage below the peninsula. The anchorage on the northern side, which is better protected from the wind, may have been used by ancient ships,<sup>114</sup> but today is off-limits to local fishermen and others because of a governmental turtle hatchery.

### Catalogue: Pottery from the Survey of Kioni

#### Abbreviations

G.D. = Greatest Diameter

M.D. = Mouth Diameter

P.H. = Preserved Height

R.D. = Rim Diameter

Clay colours are assigned with reference to *Munsell Soil Color Charts*. Baltimore (1975).

#### B1-1

Rhodian transport amphora.

Neck, rim, one handle; stamp illegible. Clay varies from pink (5YR 8/4) to reddish yellow (5YR 6/8), occasional dark grey grits, some voids. P.H.: 30.5cm, R.D.: 12.6cm. c. 175 BC.

#### B1-2

Rhodian transport amphora.

Portions of rim, neck and one handle; stamp illegible. Similar in shape to B1-1. Red clay (2.5YR 5/6). P.H.: 27.5cm. c. 175 BC.

#### B1-3

Mauretanian transport amphora.

Rim, one handle, portions of neck and shoulder. Red clay (2.5 YR 5/8), very small white, grey grits. P.H.: 15.5cm, R.D.: 12.2cm. 1st-3rd cent. AD.

#### B1-4

Mauretanian transport amphora.

Rim, one handle, portions of neck and shoulder. Light red clay (10R 6/8), small white, grey grits. P.H.: 13.5cm, R.D.: 11 cm. 1st-3rd cent. AD.

#### B1-5

Mauretanian transport amphora.

Handles, portions of rim, neck and shoulder. Red clay

(10R 4/8), very small white, grey grits. P.H.: 14.5cm, R.D.: 11.8cm. 1st-3rd cent. AD.

#### B1-6

Gallic transport amphora.

Rim, neck, handles, portion of shoulder. Reddish yellow clay (7.5YR 7/6) with inner layer of light red (2.5YR 6/8), very small white, grey grits, some voids. P.H.: 11.5cm, R.D.: 12.7cm. 1st-4th cent. AD.

#### B1-7

Gallic transport amphora.

One handle, portions of rim, neck and shoulder. Pink clay (7.5YR 7/4) with inner layer of light brown (7.5YR 6/4), white, grey, red grits. P.H.: 15cm. 1st-4th cent. AD.

#### B1-8

Mauretanian transport amphora.

Rim, neck, handles, portion of shoulder. Light red clay (2.5YR 6/8), small white, grey grits; some grey inclusions appear to be mica. P.H.: 16.5cm, R.D.: 11.2cm. 1st-3rd cent. AD.

#### B3-9

Canaanite transport amphora.

One loop handle, portions of rim, shoulder and upper body. Red clay (2.5YR 5/6) with occasional inner layer of dark grey (2.5YR N4/), small white grits, some very small voids. P.H.: 22.5cm. 600-400 BC.

#### B3-10

Small amphora.

Neck, one handle, portion of shoulder; much abraded by sea. Reddish-yellow clay (7.5YR 6/6) between inner and outer layers of grey (7.5YR 5/0). P.H.: 15cm. Undated.

#### B3-11

Transport amphora.

Rim, neck, handles, shoulder. Clay varies from reddish-yellow (5YR 6/6) to red (2.5YR 5/6), occasional very small white, grey grits, some very small voids. P.H.: 19cm. 7th-8th cent. AD.

#### B3-12

Transport amphora.

Rim, neck, handles, portion of shoulder. Light reddish-brown clay (5YR 6/4) with thick inner layer of red (2.5YR 5/8), small white, grey grits; some grey inclusions appear to be quartz. P.H.: 16cm, R.D.: 15.7cm. Undated.

#### B5-13

Amphora.

Neck, handles, portions of rim and shoulder. Reddish-yellow clay (7.5YR 6/6), white, grey grits, some voids;

some larger white inclusions appear to be quartz. P.H.: 25cm. Poss. 1st-2nd cent. AD.

#### B5-14

Ring-base, found in assoc. with B5-13.

With portion of lower body of vessel. Clay varies from reddish brown (5YR 5/4) to brown (7.5YR 5/4), very small grey grits. P.H.: 4.5cm. Poss. 1st-2nd cent. AD.

#### B8-15

Transport amphora.

Rim, one handle, portions of second handle, shoulder and upper body. Red clay (2.5YR 5/8), many dark grey, blue grey, white grits. P.H.: 33.5cm, R.D.: 13.4cm. Undated.

#### B7/8-16

Pinched-handle transport amphora. (Mid Roman 4; Anemurium Type A)

Rim, neck, handles, portion of shoulder; handles grooved, with pinch at corner. Reddish yellow clay (5YR 6/6), red, white, grey grits. P.H.: 17.7cm, R.D.: 13.5cm. 1st-4th cent. AD.

#### B7/8-17

Pinched-handle transport amphora.

Rim, neck, handles, portion of shoulder. Similar in shape to B7/8-16. Light reddish-brown clay (5YR 6/4), small white, grey, red-orange grits; some white inclusions appear to be quartz. P.H.: 18.2cm, R.D.: 15.3cm. 1st-4th cent. AD.

#### B7/8-18

Pinched-handle transport amphora.

Rim, neck, handles, portion of shoulder. Similar in shape to B7/8-16. Reddish-yellow clay (5YR 6/6), small white, grey, tan, red grits. P.H.: 17.5cm, R.D.: 14cm. 1st-4th cent. AD.

#### B7/8-19 (no drawing)

Pinched-handle transport amphora.

Handle, portions of rim, neck and shoulder; extremely concreted. Similar in shape to B7/8-16. Reddish-yellow clay (5YR 6/6), occasional very small white, grey grits. P.H.: 22cm. 1st-4th cent. AD.

#### B7-20

Small amphora.

Handles, portions of rim, neck and shoulder. Pink clay (5YR 7/4), occasional small white, grey grits. P.H.: 15.5cm. Poss. 1st-2nd cent. AD.

#### B7-21

Canaanite transport amphora.

One loop handle, portions of rim and shoulder. Similar

in shape to B3-9. Red clay (2.5YR 5/8), very small white grits, some very small voids. P.H.: 8.5cm. 600-400 BC.

#### B7-22

Canaanite transport amphora.

Rim, one loop handle, portions of shoulder and upper body. Similar in shape to B3-9. Red clay (2.5YR 5/8), small white, tan grits, occasional very small grey grits. P.H.: 9cm. 600-400 BC.

#### B7-23

Canaanite transport amphora.

Portions of rim and shoulder. Similar in shape to B3-9. Red clay (2.5YR 5/8), small white grits. P.H.: 6cm. 600-400 BC.

#### B7-24

Canaanite storage amphora.

One loop handle, portions of rim, shoulder and upper body. Similar in shape to B3-9. Red clay (2.5YR 5/6) with occasional yellow inner layer (10YR 7/6). P.H.: 15.7cm. 600-400 BC.

#### B7-25

Canaanite storage amphora.

One loop handle, portions of shoulder and upper body. Similar in shape to B3-9. Red clay (2.5YR 5/8) with greyish central layer, small white grits. P.H.: 10cm. 750/725-400 BC.

#### B7/8-26

Small amphora.

Rim, one handle, portions of neck and second handle. Clay varies from light reddish-brown (5YR 6/4) to pink (5YR 7/4), small white, grey grits, occasional small red brown grits, some small voids. P.H.: 12.5cm, R.D.: 6.9cm, M.D.: 3.1cm. Poss. 1st-2nd cent. AD.

#### B8-27

Horizontal amphora handle.

With portions of vessel body. Pinkish white clay (7.5YR 8/2) with pink inner layer (5YR 8/4), small grey, orange grits. 750/725-475 BC.

#### B8-28

Horizontal amphora handle.

With portions of vessel body. Similar in shape to B8-27. Pink clay (5YR 8/4), very small dark grey, red grits. 750/725-475 BC.

#### B7/8-29

One handled jug.

Rim, neck, handle, portion of shoulder. Reddish yellow clay (5YR 6/6). P.H.: 9.8cm, R.D.: 7cm. Poss. 2nd cent. AD.