

a separate or connect? Are islands isolated or are they the
 nes of connectivity? The Mediterranean is an all-but closed sea
 marine locales around which 'its inhabitants live like ants and
 l a pond'. Cyprus, at its eastern end, is tucked between Asia
 e North, the Levant to the east, to Africa further south, and the
 rreanean to the west. From its vantage point, this island
 established connections across the Mediterranean in which it
 incorporated or remote in proportion to its integration into a
 etworks of exchange. The seventeen chapters in this volume
 ects of the relationship between the island as an immutable
 entity and its surrounding sea as an essentially transactional
 chapters are grouped under four headings: Approaching Cyprus
 Overseas, Artefacts – Production and Function, Sacralities –
 Setting, and finally, Collections – Private and Public. Chapters
 the Late Bronze Age to the twentieth century, and from Greece,
 Syro-Palestine, Egypt to Languan France. *Approaching Cyprus*
 d evokes a multi-directional convergence on the island in terms
 ytical and an intellectual journey – an inside viewed from an
 ough the research of an international group of scholars, each of
 ever varied their viewpoint, period and topic, offers a
 to our wider understanding of this remarkable island.

Maguire completed a PhD in 2012 on the Late Antique
 Cyprus. He has published on the orant Virgin at Livadia in
 studies of Late Antique Cyprus include explorations of
 and baptismal practice, the archaeology of Ayios Philon, the
 between Cyprus and Constantinople, imperial rhetoric and the
 es, and the relationship between eunuchs, angels and deacons.

Chick completed a PhD on the subject of the mosaic pavements at
 ia in Libya in the wider context of the Eastern Mediterranean in
 ublications include studies of the Okeanus and Nile imagery at
 ia, disorder and diversity in the mosaic pavements of Late
 enaica, the floors of Bir Messaouda in Carthage, and geometric
 ate Antique Cyprus.

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Approaching Cyprus

Richard Maguire
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Approaching Cyprus



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Edited by
Richard Maguire and Jane Chick

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CHAPTER FIVE

SAILING FROM COAST TO COAST: *CABOTAGE* ON THE CYPRIOT SOUTH COAST

EVI KARYDA

Seafaring with sailing ships has been characterised as the backbone of ancient trade and travel, since such seaborne exchanges were preferable to transport by land.¹ As such, the study of ancient sailing is very important in our understanding of ancient economy, technology and history.²

The purpose of this chapter is to discuss coastal sailing on the south coast of Cyprus, and more specifically, from cape Kiti to Governor's Beach, and to combine the available archaeological and textual evidence with meteorological and ethnographic information in order to provide a clearer and diachronic view of the maritime geography of the area. In the first part of this contribution, the factors related to the activity of coastal sailing and its importance will be examined; the second part will focus on the coastal line from cape Kiti to Governor's Beach, which will be used as a case study for the examination of coastal sailing.³

Approaching coastal sailing: a methodological framework

Coastal sailing, that is the sailing along the coast within visual distance, and *cabotage* have been considered as the basic modalities for all movements of goods and people in the Mediterranean before the age of steam.⁴ There is a discussion regarding the use of the term *cabotage* as a sailing and trading pattern. The argument concerns the predominance of *cabotage* in trading systems, as indicative of the scale of trade and size of markets.⁵ Additionally, there is confusion caused by the use of this French word in English, as it can indicate different forms of sailing and trading, for example, 'tramping', a term implying opportunistic trade from port to

port.⁶ In this chapter the term *cabotage* refers to communication and exchange from coast to coast.

In this context, it is important to notice the key role of small anchorages and naturally protected shelters in a system of seaborne communication. Nieto has divided Roman ports into two groups⁷: first, the main ports which had the proper infrastructure to serve large ships, and secondly, secondary ports (anchorages), through which the re-distribution of products took place. In an organised trading system, the surrounding coastal zone and periphery supply a large harbour with products for export. In reverse, the imported products are redistributed from the main harbours to the periphery. It has been suggested that the practice of beaching or mooring small vessels at an unimproved open beach to load and/or un-load products, must have played a significant role throughout antiquity.⁸ Nonetheless, as noted by Hohlfelder and Vann, this type of activity is "invisible" to researchers for two main reasons⁹: the first is the absence of ancient sources, and the second is the lack of relevant archaeological material, such as architectural infrastructure (e.g. docking facilities) or boats used for these activities.

As already mentioned, coastal sailing does not necessarily require organised harbours. The topographic features of the coastal landscape constrain the use of certain coasts for these activities. For example, a sandy or a pebbled beach is convenient for mooring or beaching a small boat in order to load and unload products. In other cases, cliffy areas with no proper features for trading activities, such as easy access to the beach, can provide shelter in cases of sudden bad weather.

During coastal sailing in shallow waters with reefs, the risk of accident was even higher compared to open-sea sailing. Thus, the knowledge of the coastal topography was crucial for ancient mariners and was directly connected to navigation, namely the technique of controlling the vessel from one place to the other. In addition to coastal topography, a maritime landscape includes factors that "an individual uses to perceive his/her location".¹⁰ These factors include landmarks, stars and currents and they form part of the specialised knowledge and skill that ancient sailors used for navigation.

Weather conditions and meteorological phenomena (prevailing, seasonal and local winds) are also directly related to sailing in general, and to coastal sailing in particular. Winds determine a number of factors such as access to ports, preferred sea routes, speed under the sail and thus the

duration of the voyages, and the sailing season.¹¹ Weather conditions near the coasts differ from the ones found in the open sea. The land-breeze that appears mainly at night—when the land surface becomes cooler than the sea surface—is a characteristic example of such local winds. Land-breeze allows ships to travel in directions other than the prevailing winds.¹² It is worth mentioning that, regarding meteorological phenomena, studies on Mediterranean winds have shown that weather conditions have not changed dramatically since antiquity.¹³ For this reason, current information can be used cautiously to assess past conditions.

In this chapter the coastal zone from Kiti to Governor's Beach, east of Cape Dolos, is used as a case study in order to examine coastal sailing (Fig. 5.1). First, the general topographical features of the area will be introduced. Then, the archaeological evidence of the area will be presented, complemented by textual evidence. Additionally, ethnoarchaeological information deriving from interviews with locals and fishermen will also be presented. Finally, an overview of the weather conditions of the area will be given.

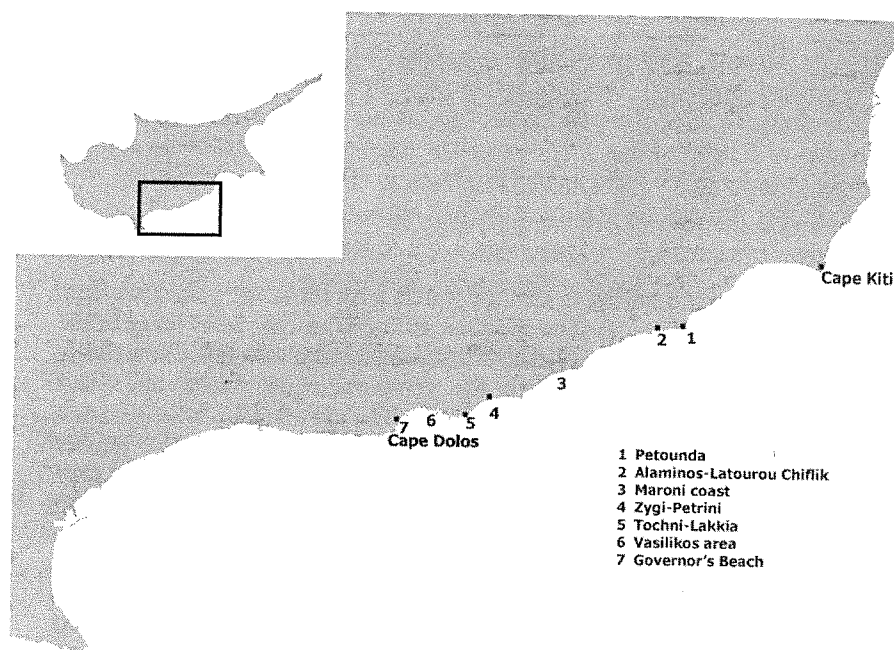


Fig. 5.1 Map of the sites mentioned in the text

The coastal landscape from Cape Kiti to Petounda is characterised by sandy or pebbled beaches and low-lying land. From Petounda to Vasilikos harbour pebbled beaches alternate with erosional scarps, the latter especially between Alaminos (Fig. 5.2) and the Vasilikos River. The modern industrial zone of the Vasilikos River and the adjacent nautical base are inaccessible to the public.

The most characteristic landmark of this coastline is Mount Stavrovouni, still mentioned as such in the Mediterranean Pilot.¹⁴ The other characteristic landmarks of the area are the cliffs of Petounda and the white rocks of Governor's Beach. Despite the fact that this stretch of coastline is open to the winds, it has been exploited for maritime activities since the Late Bronze Age.



Fig. 5.2. Erosion at Alaminos area (author)

Cape Kiti

Cape Kiti is among the distinctive headlands of the south coast and a prominent feature on medieval maps. As noted by McCaslin,¹⁵ it is shown on these maps as bigger than it actually is, pointing to its importance, both

as a dangerous place but also as a landmark for ancient sailors, as for example, in Abraham Ortelius' map dated to 1570.¹⁶ The ancient name of the Cape remains unknown. According to Rupp,¹⁷ Cape Dades mentioned by Claudius Ptolemy in his *Geography* (5.14.1-7), may refer to Cape Kiti. Hadjioannou,¹⁸ however, placed Dades near Dekelia, while Leonard¹⁹ identified Dades with Cape Pyla and associated Cape Kiti with Palaia, mentioned by Strabo as a place between Kition and Amathus.²⁰ A certain *Dādis* is also included in the earliest map of medieval Cyprus, the "Book of Curiosities",²¹ a medieval Arabic manuscript with diagrams and maps dated to the first half of the 11th century.²² According to the manuscript, *Dādis* has a church and is protected from the Notos (South) wind.²³

Cape Kiti is also mentioned in the writings of medieval pilgrims, who visited the island en route to the Holy Land. Reinhold Lubenau, for example, who visited the island in 1583, narrates that a number of ships could not pass the Cape sailing westwards, due to contrary winds. He also describes Kiti as a piece of land entering deep into the sea.²⁴ Piri Reis, an Ottoman admiral and geographer, mentions in his "Book of navigation"²⁵ that from a distance, Cape Kiti looks like a small islet and that the area around it has shallow waters.²⁶

Archaeological investigations at the eastern side of the Cape (Fig. 5.3) brought to light concentrations of ceramics, stone and lead anchors-finds that testify to the exploitation of the area from the Late Bronze Age to modern times.²⁷ Some of the finds have originally been interpreted as possible shipwrecks, an interpretation, however, which is problematic; their concentration suggests that these finds might better be associated with an anchorage rather than with ancient shipwrecks.²⁸ The eastern part of the Cape provides (Fig. 5.4) some protection from the westerly and south-westerly winds. For this reason it has been suggested that the Cape was used as an anchorage. Nevertheless, the area has many reefs that can prove very dangerous for boats travelling near the Cape in strong winds.

During a survey, conducted by the University of Cyprus (2008-2009), three shipwrecks were located at the south-western side of the Cape. The existence of these shipwrecks testifies to the fact that the south-western area of the Cape presented many sailing hazards.²⁹

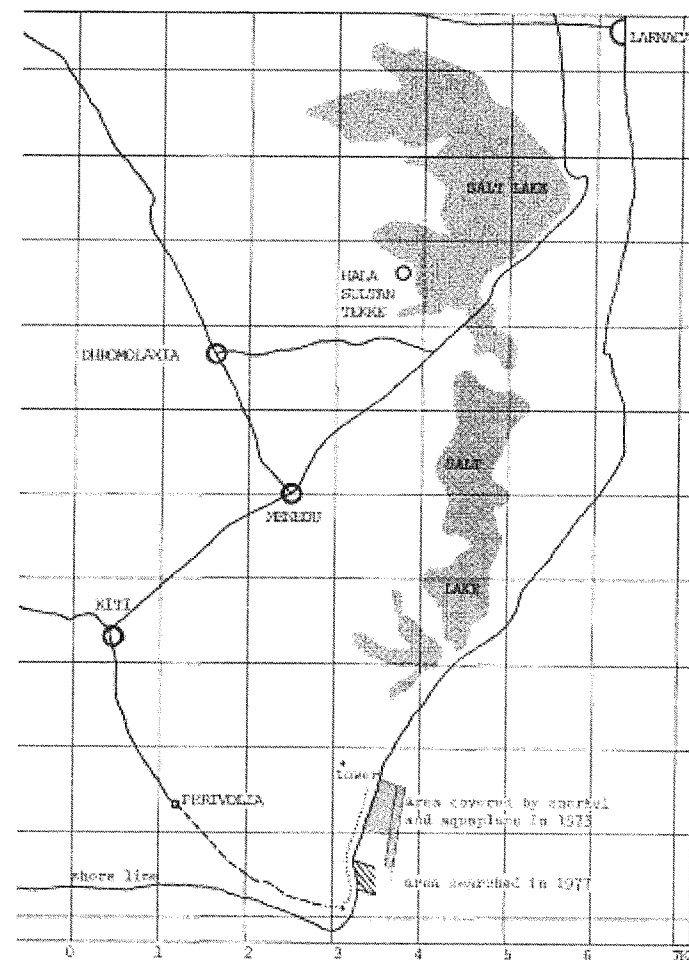


Fig. 5.3 Map of Cape Kiti researched areas (McCaslin 1978, 100, fig. 209)



Fig. 5.4 Cape Kiti eastern site (author)

Petounda

Cape Mazotos or Mazote (Fig. 5.5) is regularly found on medieval maps, for example, Giovanni Francesco Camocio's map dated to 1566.³⁰ The area has many reefs, and Piri Reis warns sailors that the sea at Cape Mazote (Petounda) is very shallow, and one has to push two miles from the Cape in order to avoid the shallows.³¹

Mazotos-Petounda is an area of archaeological interest. Until recently, according to oral tradition, the area was known to locals as "vaftistiri", meaning 'baptistery' in English, a word that connects the area to its past, as recent excavations at the top of the hill revealed an Early Christian baptistery.³² Just below the eastern side of the hill, on the eroded scarp behind the sandy beach, large quantities of pottery have been found. Divers and locals have mentioned stone anchors located in the sea. It is very possible therefore, that the east part of the cove was used as an anchorage, or as place for loading and unloading ships, since it provides some protection from the westerly and south-westerly winds.



Fig. 5.5 Petounda (author)

Alaminos-Latourou Chiflik

Alaminos-Latourou Chiflik is a coastal site located west of a small modern marina constructed in 2000. Scattered ceramics were located on the seaward site of the pedestrian's footpath and on the eroded scarp. The pottery appears to be homogeneous in fabric and dated to the 6th and 7th centuries A.D. Ancient walls were also reported on the top of the mound's eroded summit.³³ The material found at the site probably represents either a rural villa or a small rural settlement dated to the Late Roman/Early Christian period.³⁴ The shore was used for conducting small scale local trade, and for loading and unloading cargo ships.³⁵ Indeed, the sandy beach just in front of the site allows for this kind of activity.

Maroni coast

An archaeological survey at Maroni Valley since 1991 has attested to the use of the area from the Neolithic period to the modern era.³⁶ The site of Maroni-Tsarroukas has been characterised as a primary costal centre, involved in port activities during the Late Bronze Age. It had a key role

within the trade networks of the area, in association with an administrative centre excavated at Maroni-Vournes.³⁷ Underwater investigations revealed more than 30 stone anchors along with ceramics dating from the Late Cypriot I to the Iron Age.³⁸ The concentration of anchors in the mouth of the gully along the northeast edge of the Tsaroukkas site suggests that the area may have originally been an inlet formed by two capes, with communication to the sea.³⁹ However, as noted by Leonard,⁴⁰ even if erosion is much evidenced in the area, the disappearance of two capes would have meant the movement of massive amounts of coastal material, which would have covered the archaeological remains; thus, the anchors would not have been visible. Instead, the anchors which were located outside the present mouth may indicate that during that time, ships were anchored offshore for loading and unloading. Further to the west of Maroni-Tsaroukkas, the Roman site of Maroni-Vrysouthkia was characterised as a possible Roman anchorage related to Maroni-Petrera, a Roman to Late Roman site with an Early Christian basilica.⁴¹

Zygi

A Late Roman 1 amphorae kiln has been found on the eroded scarp at Zygi-Petrini, west of the modern Zygi Marina. Even though the site was known and studied before, by the Vasilikos Valley Survey Project,⁴² a more extensive survey took place in 1997, within the framework of the Maroni Valley Archaeological Survey Project.⁴³ In addition to the kiln, the study identified at least seven buildings, some with open courtyards, and also storage or work areas.⁴⁴ As in the case of Maroni-Vrysoudia, the location of the site and the context of its remains attest to its engagement in maritime trade, as Zygi could have been the port anchorage, for collection and redistribution of products, related to sites such as Kalavassos-Kopetra.⁴⁵ Until recently, the area of Zygi was a well-known place for exporting carobs.⁴⁶ Using a small jetty, carobs were loaded onto small boats, and transferred to large cargo ships anchored offshore. The old warehouses of the area, still visible and restored today, were used for storing carobs.

Tochni-Lakkia

Tochni-Lakkia is a Late Cypriot site located on the eroded coastal cliff just in front of the modern BBC station. The site was investigated within the framework of the Vasilikos Valley Survey project and it was suggested that even if "the site has not produced clear evidence of a Late Bronze Age

port, the existence of Late Bronze Age material is clearly of interest in relation to the site of Ayios Dhimitrios and the routes by which contacts may have been maintained between the inhabitants of that site and other parts of the island abroad".⁴⁷

Vasilikos area

The mouth of the Vasilikos (royal in Greek) River seems to have been a place used by ships. Vasilopotamos is depicted on medieval maps, both as a river-probably the same river we still call Vasilikos-but also as a settlement. Vasilopotamos as a place where maritime activities took place is attested in the aforementioned "Book of Curiosities", where a certain "River of the kings" is cited.⁴⁸ Gaudenz von Kirchberg, a pilgrim who visited the island in 1470, mentions that his ship anchored at a place called Vasilopotamos, in order to collect wood and fresh water.⁴⁹ According to Todd it is not very clear whether the name Vasilopotamos on the maps or in the sources refers to a monastery, a village or to the river, and continues that "if either of the former, it would presumably lie in the area of Zygi-Petrini".⁵⁰ Nowadays, the area of the Vasilikos River is very much altered and industrialised by the Vasilikos cement works, the power station, and more recently by the infrastructure for implementing the Energy Centre of Cyprus. It is therefore, difficult to document further this landscape in terms of archaeology. Even before the construction of the industrial harbours, cement was transferred to the sea by an aerial tram and loaded onto the cargo ships anchored offshore. Thus, the tradition of maritime activities in this area continues. The naval base with its own naval port follows further to the west.

Governor's Beach

The so-called Governor's Beach, east of Cape Dolos, is today a famous tourist bay. The area is known to locals as *Asprokaos*, meaning white promontory. It is indeed possible that this is the 'white promontory' cited by Piri Reis.⁵¹ According to oral sources, the area was used as an anchorage by sponge-divers coming to Cyprus from the island of Kalymnos. The bay at Governor's Beach offers some protection from the westerly wind; thus it could have been used in for maritime activities. Finally, the white rocks of the promontory probably functioned as a landmark for sailors.

Meteorology

As mentioned above, modern meteorological information can be used cautiously in order to assess the meteorological conditions of the past. According to the meteorological service of Cyprus,⁵² the prevailing surface winds of the south coast during winter are easterly to westerly (Fig. 5.6). During summer, the prevailing wind is the southwesterly to westerly, enforced by the sea-breeze in daytime. Land-breeze, of a north-westerly or north-easterly direction, starts between about 20.00–21.00 hours, reaches its maximum in the early hours of the morning and lasts until about 05.00 or 06.00 hours.⁵³ This north–northwesterly wind reaches up to 3–to a maximum of 4 beaufort (bft). In addition, the katabatic winds (that is the downslope winds) tend to reinforce the land-breeze. In spring the winds vary from easterly to westerly gradient winds and in autumn are predominantly southwesterly.⁵⁴

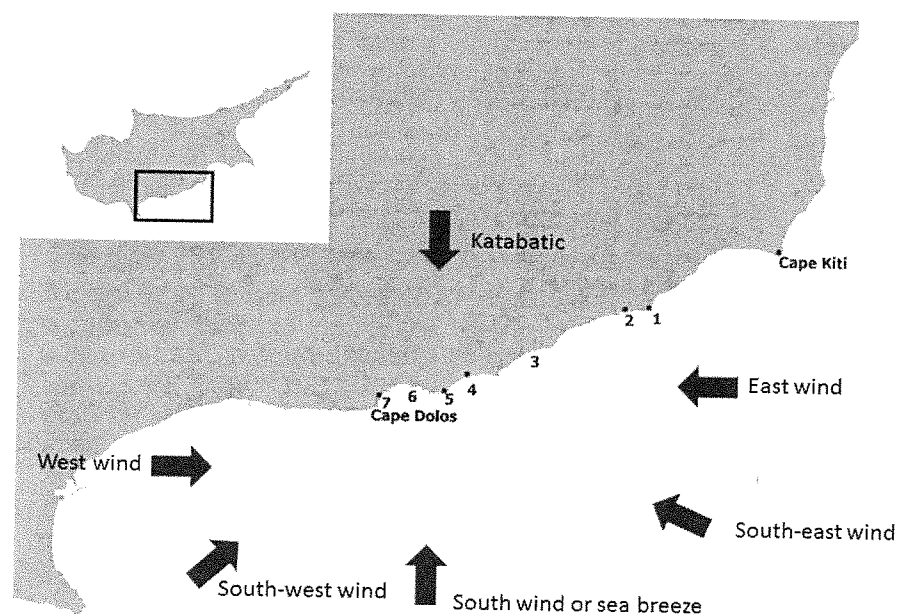


Fig. 5.6 Map depicting the area under study with the winds

The coast under examination is particularly exposed to south-westerly winds. Some protection from the south-westerly wind could be sought by sailors at the south-eastern site of Cape Kiti and at the eastern site of Petounda. According to local fishermen, easterly winds during summer are rare, and their force is very light. Generally, the north wind does not affect the southern coastal area much, but waves occur further into the open sea. The north wind, according to local fishermen, occurs near the rivers during winter. South winds are also very dangerous and there is no efficient protection in any area. In cases of bad weather ships would have to anchor offshore and wait for calm weather. The Mazotos shipwreck, even if it sank about 1.5nm from the shore, most probably attests the effects of the strong winds that occur in the area.⁵⁵

Conclusions and Future Plans

The purpose of this chapter is to offer some preliminary results on coastal sailing in Cyprus in antiquity. The existing textual and archaeological evidence, combined with interviews has been a promising undertaking. Using a small area on the south coast as a case study, this research has shown that it is only after employing a multi-disciplinary approach that we are able to comprehend the maritime geography of the island and address more complex issues, such as trade mechanisms. As indicated above, despite the fact that this coastal zone is exposed to the winds, it has been exploited for maritime activities since the Late Bronze Age. The archaeological investigations in the area brought to light sites which were used as anchorages (i.e. eastern site of Cape Kiti, Maroni-Tsaroukkas, Alaminos-Latourou Tsiflik), production centres (i.e. Zygi-Petrini) and areas with sailing hazards (i.e. the western site of Cape Kiti). Additionally, ethnographic research testifies to diachronic maritime activities at the sites. The area of Zygi in particular, is illustrative of this statement. The information collected through interviews is very useful. In addition, we can better connect the areas under study with their past. This is the case at Mazotos, for example, where the locals were able to provide information on the toponymy of the area which recalls its past use. Finally, through interviews we were able to approach local weather phenomena, not included in the general meteorological reports.

This preliminary work provides the basis for future study. All the collected (textual, archaeological, meteorological and environmental) data are entered into a relational database, which has been designed for this research. This database will be linked to a Geographic Information

Systems (GIS) environment where different data can be combined to support predictive modelling. Finally, experimental voyages using the replica of Kyrenia shipwreck, Kyrenia Liberty, will take place in order to test and further develop the models suggested in relation to coastal sailing in Cyprus.

Notes

- ¹ Casson 1994, 512-3; Horden and Pucell 2000, 137-143.
- ² Rougé 1981, 11.
- ³ This study is part of a project entitled "Sailing in Cyprus through the centuries, an interdisciplinary approach," funded by the Research Promotion Foundation of Cyprus, under the National Framework Programme for Research, Technological Development and Innovation 2009-2010. The main object of the project is the diachronic study of coastal sailing patterns in Cyprus by applying interdisciplinary approaches and combining various elements (archaeological, ethnoarchaeological and textual evidence, GIS techniques and experimental archaeology). In this chapter some preliminary results are presented based on a literature review, field documentation and interviews of local fishermen.
- ⁴ Horden and Purcell 2000, 365.
- ⁵ Wilson 2011, 53-4.
- ⁶ Arnaud 2011, 61-2.
- ⁷ Nieto 1997, 153-4.
- ⁸ Houston 1988, 560-1.
- ⁹ Hohlfelder and Vann 2000, 197.
- ¹⁰ Ford 2011, 4.
- ¹¹ Casson 1951; Morton 2001; Arnaud 2005, 26-8; Beresford 2013.
- ¹² Morton 2001, 145.
- ¹³ Murray 1987; 1995.
- ¹⁴ Mediterranean Pilot 2005, 195.
- ¹⁵ McCaslin 1978, 97.
- ¹⁶ Navari 2003, 76.
- ¹⁷ Rupp 1994, 1097.
- ¹⁸ Hadjioannou 1983, 187.
- ¹⁹ Leonard 1995, 231 fig.4, 241 fig. 12; 2005, 104.
- ²⁰ Leonard 2005, 104, 105 n. 42, 448-9; see contra Hadjionannou (1983, 188) who placed Palaia near village Mari.
- ²¹ The manuscript is now in the Bodleian Library, Oxford and can be viewed online via <http://cosmos.bodley.ox.ac.uk/hms/home.php>.
- ²² Regarding "Book of Curiosities" and Cyprus see Metcalf 2009, 507-11.
- ²³ Metcalf 2009, 511.
- ²⁴ Koder 1988, 225-6.
- ²⁵ For the original text see Senemoğlu, Y. [1973]. *Kitab't Bahriyye Piri Reis*, Tercürman 1001 temel eser 9. Istanbul: Denizcilik Kitabı, 279-83.
- ²⁶ Adreadi 1980, 111; Michael 2001, 431.

- ²⁷ Engvig and Åstrom 1975; Engvig and Beichman 1984; McCaslin 1978.
- ²⁸ Leonard 2005, 442-5.
- ²⁹ Demesticha 2015.
- ³⁰ Navari 2003, 60.
- ³¹ Adreadi 1980, 111; Michael 2001, 431.
- ³² *Annual Report of the Department of Antiquities Cyprus* 2008, 84.
- ³³ Leonard and Demesticha 2004, 200, 195.
- ³⁴ Leonard 2005, 461.
- ³⁵ Leonard and Demesticha 2004, 195-7, 200-1.
- ³⁶ Manning and Conwell 1992; Manning et al. 1994a.
- ³⁷ Manning et al. 1994b.
- ³⁸ Manning et al. 1997, 117 fig. 3, 128-9.
- ³⁹ Manning et al. 2002a 113-4, fig.6.
- ⁴⁰ Leonard 2005, 470-2.
- ⁴¹ Manning et al. 1994a, 347; Manning et al. 2002a, 199, 121; Manning et al. 2002b, 14; Manning et al. 2002b.
- ⁴² Todd 2004, 413-4.
- ⁴³ Manning et al. 2000, 237.
- ⁴⁴ Manning et al. 2000, 239-45.
- ⁴⁵ Rautman 2001, 247, 254-5; 2003, 241.
- ⁴⁶ Leonard 2005, 721, 1002.
- ⁴⁷ Todd 2004, 133-4.
- ⁴⁸ Metcalf 2009, 510.
- ⁴⁹ Grivaud 1990, 79-80.
- ⁵⁰ Todd 2013, 116-7.
- ⁵¹ Adreadi 1980, 111.
- ⁵² *Surface winds* 1986, 9.
- ⁵³ *Surface winds* 1986, 4.
- ⁵⁴ *Surface winds* 1986, 9.
- ⁵⁵ Demesticha 2011.

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