

DISCIPULI DONA FERENTES

BYZANTIOΣ

Studies in Byzantine History and Civilization

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DISCIPULI DONA FERENTES

Glimpses of Byzantium in Honour
of Marlia Mundell Mango

Edited by

Tassos Papacostas & Maria Parani



BREPOLS

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ALKIVIADIS GINALIS

The Pelion Peninsula – Byzantine Port Networks along Inhospitable Coastlines

With this contribution on a geographically quite distant, but thematically highly relevant topic for Marlia Mango's research area on Byzantine archaeology and trade, I would like to express my deepest gratitude for her advice and help in all matters. It is due to Marlia's support and thoughtful as well as dynamic and energetic guidance throughout my doctoral studies at Oxford University that I started working on the *terra incognita* of Byzantine ports. The present study of inhospitable coastlines is quite familiar to Marlia Mango, dealing with the 'archaeology of local, regional and international exchange' and 'questions of environment and economy' along the likewise inhospitable Levantine coast.

Introduction

The Magnesian or so-called Pelion peninsula is located in the central Greek province of Thessaly, limiting the Pagasetic gulf to the east. With a total length of around 100 km and an average width of 10 km, it reaches from the plain of Agia down to the islands of Skiathos and Euboea before turning west towards the gulf of Pteleos to form a hook (Fig. 1). Following the course of Mount Pelion, the peninsula possesses a mostly steep and inhospitable coastline, both within the Pagasetic gulf and even more along its outer eastern side.¹ In contrast to the western coast of the Pagasetic gulf and particularly the major port sites of Demetrias and Thessalian Thebes, the Pelion peninsula has attracted only marginal attention by archaeologists and therefore rarely been subject of investigations, as well as rarely been included into systematic historiographical and literary-based studies. Only very recently, Drakoulis showed that the Pelion peninsula was richer and more densely settled than previously

¹ P. Asimakopoulou-Atzaka, 'Early Christian and Byzantine Magnesia', in G. Hourmouziadis, P. Asimakopoulou-Atzaka, K. A. Makris, M. and R. Capon, eds, *Magnesia. The Story of a Civilization*, (Athens, 1982), 107–76 at 108.

thought.² In fact, it was so intensively occupied during the Byzantine era and especially during the periods of the fourth to seventh and eleventh to fourteenth centuries AD that it constituted the most densely settled area throughout Thessaly, even more so than in Antiquity.³ Geologically similar to Mount Athos, it particularly attracted ecclesiastical foundations. As such, monasticism was a major stimulant for the establishment of settlements as well as agricultural and industrial networks.⁴ Influencing and being influenced by the late antique and medieval history of the Mediterranean, the province of Thessaly was one of the most important and wealthiest agricultural and industrial provinces of the Byzantine Empire, providing various kinds of merchandise. Consequently, being deeply involved in commercial business, the numerous profitable *metochia* and monastic endowments on the Pelion peninsula resulted in a spiritual and cultural boost during the Early Byzantine period and an economic peak during the Middle and Late Byzantine periods.⁵ Furthermore, the geographical, social and commercial importance of the Pelion peninsula is reflected in the series of forts along its entire coastline.⁶

² D. Drakoulis, 'Η περιφερειακή οργάνωση των οικισμών της Επαρχίας Θεσσαλίας στην πρώιμη βυζαντινή περίοδο', in S. G. Gouloulis and T. Sdrolia, eds, *Άγιος Δημήτριος Στομίου*, (Larisa, 2010), 375–90.

³ P. Magdalino, 'The history of Thessaly 1266–1393', unpublished DPhil thesis, University of Oxford (1976), 98; for the settlement network of Thessaly and in particular the Pelion peninsula, see A. Avramea, *Η βυζαντινή Θεσσαλία μέχρι το 1204. Συμβολή εις την ιστορικήν γεωγραφίαν*, (Athens, 1974), 56–59, 103–04; Drakoulis, 'Περιφερειακή οργάνωση', 375–90; D. Drakoulis, 'Πόλεις, κόμεις και χωριά της Επαρχίας Ελλάδος στην πρώιμη βυζαντινή περίοδο (4^{ος}–6^{ος} αιώνες)', *Βυζαντιακά*, 29 (2009), 39–102; A. Ntina, 'Παλαιοχριστιανικοί οικισμοί Θεσσαλίας', in L. P. Gklegkle, ed., *Proceedings of the 1st International Congress on the History and Culture of Thessaly, 9th – 11th November 2006*, 2 vols, (Volos, 2008), vol. II, 410–30 at 415.

⁴ Due to the density of monastic settlements the Pelion peninsula was also known as *Kellia* (the mountain of the monastic cells): J. Koder and F. Hild, *Hellas und Thessalia*, *Tabula Imperii Byzantini* 1, (Vienna, 1976), 186, 233–34; Magdalino, 'Thessaly', 98; for the distribution of ecclesiastical establishments and the settlement network, see K. A. Makris and D. Zapheiroupolou, 'Post-Byzantine and Modern Magnesia', in G. Hourmouziadis, P. Asimakopoulou-Atzaka, K. A. Makris, M. and R. Capon, eds, *Magnesia. The Story of a Civilization*, (Athens, 1982), 177–277 at 181–83, 189–205; the maps in Koder, Hild, *Hellas und Thessalia*; G. Koulouras, 'Η περιοχή του Παρασητικού κατά τους μέσους χρόνους (Δ'–ΙΔ' αι.)', unpublished PhD thesis, University of Ioannina (1997), Maps; Ch. G. Dablias, 'The history of Thessaly in the 13th century A.D.', unpublished PhD thesis, University of Thessaloniki (2002), 36–45, 163–87.

⁵ For details on the economic profile and commercial activities of ecclesiastical establishments on the Pelion peninsula, see Magdalino, 'Thessaly', 98–105.

⁶ Koulouras, 'Η περιοχή του Παρασητικού', map; Magdalino, 'Thessaly', 98.



Fig. 1. Geographical border of Pelion Peninsula. (Map: A. Ginalis)

In respect of harbour installations, besides the major port cities of Demetrias, Thessalian Thebes, Almyros and Pteleos, Thessaly possessed numerous secondary harbour sites, private and ecclesiastical facilities with their own coastal infrastructures, as well as staple markets. Due to the physical, and to a certain extent geographical conditions of its mostly inhospitable coastline,⁷ the Pelion peninsula, however, did not possess any major port, nor was it equipped with primary harbour sites despite its spiritual and economic significance for Thessaly. Functioning solely as an agricultural and industrial hinterland for the major port cities along the western coast of the Pagasetic gulf and the wider central Greek foreland such as Demetrias and Thessalian Thebes,⁸ it provided mainly secondary harbours and staple markets, as well as numerous

⁷ Physical conditions are mainly defined by the consistence and configuration of a specific coastline, affected among many other aspects by the waves, currents, tides and winds, whereas geographical conditions characterize the location itself and its close relationship to the surrounding area. Both conditions vary quite often in the course of time, being the 'primum mobile' for the survival or even success of certain coastal structures.

⁸ While the hinterland refers to the region around the coastal site with its inland communication and social, political as well as economic activities in connection with the coast, the foreland denotes the sea itself as a platform for communication and networking: Y. Karmon, 'Geographical components in the study of ancient Mediterranean ports', in A. Raban, ed., *Harbour Archaeology. Proceedings of the First International Workshop on Ancient Mediterranean Harbours Caesarea Maritima, Haifa 24th – 28th June, 1983*, BAR International Series 257, (Oxford, 1985), 1–6.

other private and ecclesiastical coastal installations. These are again located almost exclusively within the Pagasetic gulf. The only sites orientated towards the Aegean Sea before reaching Velika and Koutsouppia are Aghios Georgios Sagora and Aghios Demetrios (Fig. 2). As such, in respect of harbour installations the Pelion peninsula still constitutes a *terra incognita*.



Fig. 2. The Pelion peninsula and its coastal sites. (Map: A. Ginalis)

Ancient literary sources, such as the written accounts of Scylax, Pliny, Strabo and Pomponius Mela, refer to a number of noteworthy settlements along the inner and outer coast of Pelion during the Classical and Roman periods.⁹ Apart from Lephokastro, the Byzantine settlements

⁹ The following coastal settlements are mentioned: Neleia, Methone, Korope, Korakai, Spalathra, Olizon, Isai, Melivoia, Rizus, Myrae and Sepias: K. F. T. Mayhoff, ed., Pliny the Elder, *Naturalis Historia*, (Leipzig, 1906), IV.15; G. Parthey, ed., *Pomponii Melae De Chorographia*, 3 vols, (Berlin, 1867), II.3 (580); G. Shipley, *Pseudo-Skylax's Periplus: The Circumnavigation of the Inhabited World. Text, Translation and Commentary*, (Exeter, 2011), 65.1–2; C. C. Müller and F. Dübner, eds, *Strabonis Geographica*, (Paris, 1953), IX.5; for more information, see A. J. B. Wace, 'The topography of Pelion and Magnesia', *Journal of Hellenic Studies* 26 (1906), 143–68.

and coastal activities more or less form continuations of their predecessors. The relevant coastal and coastal-related sites for the Byzantine period include Lechonia or Liconia, Kala Nera/Milies, Afyssos (Korakaipyrgos/Palaiopyrgos), Lephokastro, Aghios Demetrios, Olizon and the wider area of Agia. Following Drakoulis’s study of 2010, the region was the subject of investigations as part of a coastal survey conducted by the author for the very first time in 2012. However, since it was impossible to cover the entire area, it is not yet possible to discuss all coastal sites with their harbour structures. Only a first overview of the most relevant sites for maritime connectivity and port hierarchy during the Byzantine period can be presented at this stage. As such, according also to written accounts, the following sites are of interest: Platanidia, Kala Nera, Afyssos, Lephokastro, Chorto, Aghios Georgios Sagora, as well as Velika and Koutsoupia north of Pelion. Beyond a general differentiation based on hierarchical organization (primary ports, secondary harbours, staple markets, etc.), this paper aims to show that these coastal sites, by carrying out different functions, can further be classified into various categories and types of harbour infrastructures (Fig. 3).¹⁰ As following, these will be discussed in detail one by one according to their position on the map, starting from the Pagasetic to the Aegean coast, following a north-south direction. As a result, the latter provide an overall picture of hierarchical interactions of Byzantine coastal structures along the Pelion peninsula, which can be used as a model for other areas with similar landscapes.

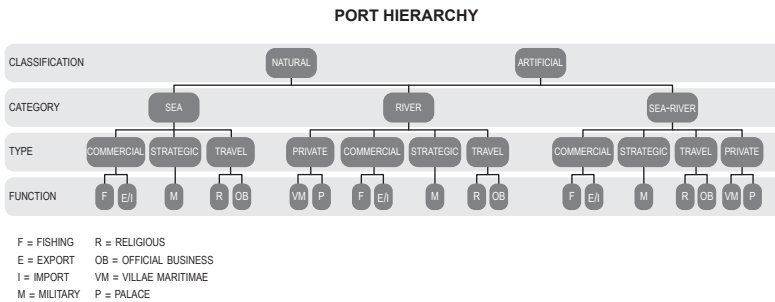


Fig. 3. The hierarchy of coastal structures. (Diagram: A. Ginalis)

¹⁰ Although Aghios Demetrios played a central role for the communication network of Thessaly, being the only approachable anchorage at the northern outer coast of the Pelion peninsula, due to lack of material it will not be discussed here; for this anchorage, see Avramea, *Θεσσαλία*, 104; Koder, Hild, *Hellas und Thessalia*, 146.

The Harbour Sites

Platanidia

The site of Platanidia is located around 10 km southeast of the gulf of Volos, which formed the northern commercial harbour of the port city of Demetrias. Coastal activities in that area go back as early as classical times, when Platanidia constituted the *epineion*¹¹ of the ancient inland settlement of Neleia.¹² During the Byzantine period, Platanidia continues to serve, together with the area of Agria (5 km northwest in between Platanidia and Volos), as the harbour site of late antique and medieval Lechonia, also known as Liconia.¹³ Despite its relatively close vicinity to the port city of Demetrias, Lechonia was one of the biggest and most important urban centres along the Pelion peninsula throughout the entire history of Byzantium.¹⁴ As the relocated successor settlement of ancient Methone, during the Early and Middle Byzantine period the nucleus of Lechonia's urban activities or at least its cultural hub and probably ecclesiastical centre seems to have been concentrated along the coast of Platanidia. This is confirmed by remains of two basilicas (A and B) dating to the fourth and fifth century AD, as well as a further church of the Middle Byzantine period on top of basilica B,¹⁵ which were identified and excavated during construction works of the coastal road at the western end of Platanidia in

¹¹ The term 'epineion' ('ἐπίνειον') describes a classical Greek invention and formed at the time a harbour area outside its associated city. Still, even though it formed an out-port, it should be regarded not as an independent city but as a part of its inland city: H. G. Liddell, R. Scott, *A Greek-English Lexicon*, (Oxford, 1843), with a revisited supplement (1996), 647, s.v. ἐπίνειον; D. J. Blackman, 'Ancient harbours in the Mediterranean. Part 2', *The International Journal of Nautical Archaeology*, 11.3 (1982), 185–211 at 193–94; K. Lehmann-Hartleben, *Die antiken Hafenanlagen des Mittelmeers. Beiträge zur Geschichte des Städtebaues im Altertum*, KLIO Beiheft 14, (Leipzig, 1923), 24.

¹² For Neleia, see K. Kourouniotis, 'Ανασκαφαί καὶ ἔρευναι ἐν Θεσσαλίᾳ κατὰ τὸ ἔτος 1910', *Πρακτικά τῆς ἐν Ἀθήναις Ἀρχαιολογικῆς Ἐταιρείας*, 66 (1911), 168–269 at 211–12; Wace, 'Pelion', 153–54.

¹³ Avramea, *Θεσσαλία*, 107; Koder and Hild, *Hellas und Thessalia*, 201–02.

¹⁴ For more detailed information on the history of Lechonia, see Kourouniotis, 'Ανασκαφαί', 211–16; Avramea, *Θεσσαλία*, 107–08; Koulouras, 'Η περιοχή του Παρασητικού', 264–68.

¹⁵ Originally located next to the sea, parts of their structures are currently situated underwater; Koulouras, 'Η περιοχή του Παρασητικού', 265; Ntina, 'Οικισμοί', 427; A. Ntina, 'Νεώτερες έρευνες στην παλαιοχριστιανική πόλη των Φθιωτιδών Θηβών', in R. Misdrachi-Kapon, ed., *La Thessalie. Quinze années de recherches archéologiques 1975–1990. Bilans et Perspectives II*, (Athens, 1994), 357–70 at 368–69.

the 1960s and 1980s (Fig. 4).¹⁶ Only by the end of the Middle Byzantine or beginning of the Late Byzantine period did the settlement and ecclesiastical activities shift inland, retreating to the safety of the hillside and the castle of Palaiokastro.¹⁷ Despite the consequent separation into Kato Lechonia, orientated towards Agria, and Ano Lechonia, orientated towards Platanidia, Platanidia kept its role as the main harbour site of the area.



Fig. 4. Remains of the Early Byzantine coastal basilica B at Platanidia. (Photos: A. Ginalis)

Although Platanidia functioned continuously as a harbour area since antiquity, its role as secondary harbour for neighbouring Demetrias never required major harbour installations. Its coastal infrastructure is therefore limited to a single central quay line with a length of at least 130 m. Similar to most harbour sites in central Greece, the original feature is now covered by modern superstructures. Nevertheless, the frontal façade is still visible, which allows to draw certain conclusions about the architecture and the composition of the quay (Fig. 5). The quay or rather its concrete base shows a very compact solid and homogenous composition of mortar, mixed with rubble stones and ceramics (Fig. 6). Although the feature is

¹⁶ D. R. Theocharis, 'Αρχαιότητες και μνημεία Θεσσαλίας. Γ. Τυχαία εύρηματα – περισυλλογαι – παραδόσεις αρχαίων', *Αρχαιολογικόν Δελτίον*, 21.Β2 (1966), 254–55; E. Kourkoutidou, 'Μεσαιωνικά μνημεία Θεσσαλίας', *Αρχαιολογικόν Δελτίον*, 22.Β2 (1967), 302–17 at 317; A. Ntina, '7η Εφορεία Βυζαντινών Αρχαιοτήτων. Νομός Μαγνησίας', *Αρχαιολογικόν Δελτίον*, 40.Β (1985), 218–23 at 221–23, plans 1–2, pl 87β–88β; S. Mamaloukos, 'Η ναοδομία στη Μαγνησία κατά τη μέση και την ύστερη βυζαντινή περίοδο', *Βυζαντινά*, 25 (2005), 176–232 at 190–91, figs 20–22.

¹⁷ The two-hundred-and-fifty-metre high hill of Palaiokastro preserves the remains of another three-aisled basilica, as well as traces of fortification; Koder, Hild, *Hellas und Thessalia*, 202; Magdalino, 'Thessaly', 92; Mamaloukos, 'Μαγνησία', 189–90.

heavily encrusted, which makes a clear identification difficult,¹⁸ the symmetrical uniform and linear shape of the concrete base supports an interpretation as a certain type of hydraulic concrete. In conjunction with the coastal basilicas and the fourth-fifth-century dated archaeological material in close vicinity, it can be suggested that an identical or at least similar construction method of *opus caementicium*, described by the Roman architect and engineer Vitruvius Pollio and later by the Byzantine scholar and historian Procopius of Caesarea, was applied and adapted for the construction.¹⁹ Some of the stone blocks that originally sat on top of the jetty can still be seen lying scattered in front of it. Based on the archaeological remains of the Constantinopolitan harbour of Theodosius at Yenikapı and other sites in central Greece, such as Amaliapolis or Lazareta at Skiathos,²⁰ a fourth-fifth-century AD date is suggested, which is again supported by the two basilicas and Lechonia's Early Byzantine urban activities at Platanidia. Apart from that single installation, the area does not appear to preserve any remains of further permanent features, which leads to the assumption that the open bay was simply used as a roadstead,²¹ featuring temporary landing stages extending over the entire coastline. Most of the landing stages may have served private businesses, though the ecclesiastical installations probably possessed their own independent facilities. West of the basilicas, various wall structures and coastal features leading into the water and extending over an area of approximately 70 m were observed (Fig. 7). Apart from workshops and residential as well as agricultural areas, these structures possibly also included simple jetties, forming landing stages for coastal maritime activities. A similar example represents

¹⁸ Future detailed investigation and petrographic analysis will provide more precise data.

¹⁹ V. Rose and H. Müller-Strübing, eds, *Vitruvii De Architectura*, (Leipzig, 1867), V. 12.3; J. Haury, ed., *Procopius Caesariensis VI libri Peri ktismaton sive De aedificiis: cum duobus indicibus et appendice*, (Leipzig, 1913), I.11.18–20.

²⁰ For information on central Greek harbour sites and Yenikapı, see A. Ginalis, 'Byzantine ports – Central Greece as a link between the Mediterranean and the Black Sea', unpublished DPhil thesis, University of Oxford (2014); A. Ercan, 'Yenikapı. A late antique and Byzantine harbor in Constantinople: a historical, archaeological and architectural study of the newly discovered remains', unpublished MA thesis, Koç University of Istanbul (2010).

²¹ A roadstead is a sheltered anchorage area for ships outside a harbour. Although providing less protection than the harbour, it basically forms a sufficiently protected and deep body of water where ships can permanently anchor. For further information, see Ginalis, 'Byzantine ports', 19–20; R. de Kerchove, *International Maritime Dictionary. An Encyclopaedic Dictionary of Useful Maritime Terms and Phrases, together with Equivalents in French and German*, (New York, 1961), 14, 656.

a small fifth-century basilica north of the harbour of Thessalian Thebes. Besides its immediate vicinity to the central harbour facilities of Thebes, from the seventh century onwards it seems to have possessed and used its own independent jetty next to it. As such, the close vicinity of the Early Byzantine coastal basilicas to the central jetty at Platanidia, suggests a similar phenomenon: an orientation towards the central harbour structures during the period of the basilicas and a possible shift towards independent ecclesiastical harbour facilities only in later centuries, belonging to the construction phase of the church after the sixth century AD.



Fig. 5. Central quay construction at Platanidia. (Photos: A. Ginalis)

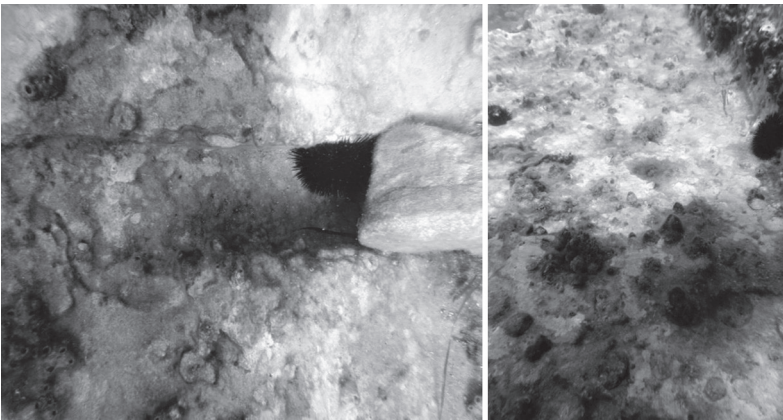


Fig. 6. Hydraulic concrete base of the quay at Platanidia. (Photos: A. Ginalis)



Fig. 7. Possible landing stages at Early Byzantine basilica. (Photos: A. Ginalis)

In conclusion, Lechonia and its surrounding area functioned as a direct hinterland for the port city of Demetrias through using Platanidia as a secondary harbour. The material remains show the strong presence and influence of both imperial authority and private entrepreneurs – particularly the Church on maritime interconnectivity and commercial business. Despite the existence of a single main quay installation, the establishment of religious facilities in close vicinity such as the basilicas suggest that also small-scale regional trade and cultural as well as social interactions have been carried out. As such, concerning a hierarchical allocation, beyond its role as secondary harbour, Platanidia represents both a commercial and travel-orientated type of coastal structures (Fig. 3). It was executing both economic exchange with its hinterland in order to supply the primary port of Demetrias, as well as functioned as political and social maritime gateway for the urban and ecclesiastical centre of Lechonia.

Kala Nera

Kala Nera is located at the turning point of the inner coast of Pelion towards the south, around 6 km east of Platanidia. Physical remains attest settlement activities in the area since the archaic period.²² The area

²² Wace, 'Pelion', 153.

of Kala Nera can probably be associated also with the location of ancient Korope or Korakai.²³ During the Byzantine period, the area shows a continuation of settlement activities, both inland, around the site of Mileas or Meleais (modern Milies), and along the coast, with Kala Nera as its *epineion*. While Milies constituted a junction of the inland road network connecting Aghios Demetrios on the eastern coast with Liconia on the western coast of the peninsula, Kala Nera formed a station of the maritime as well as coastal road network connecting northern with southern Pelion.²⁴ However, despite its function as the *scala*²⁵ of inland Milies, neither Byzantine nor western literary sources refer to any noteworthy harbour installations or ecclesiastical or private agricultural facilities at Kala Nera.²⁶

Apart from features of unknown function and date, which are mostly overbuilt by modern harbour superstructures, the bay of Kala Nera does not preserve any harbour installations.²⁷ Typical for a *scala*, the bay could have functioned as a port-of-call throughout ancient and medieval times. It can be assumed that Kala Nera possessed at the most temporary wooden piers forming simple mooring facilities for loading and unloading or embarking and disembarking activities.

²³ For Korope or Korakai, see Kourouniotis, 'Ανασκαφαί', 224–25; Wace, 'Pelion', 152–53.

²⁴ For the maritime and road networks around the Pagasetic gulf, see Avramea, *Θεσσαλία*, 103–17; Koder, Hild, *Hellas und Thessalia*, map; Koulouras, 'Η περιοχή του Παγασητικού', 18–28.

²⁵ A 'scala' represents the smallest type of coastal installation mentioned in written sources. Consisting of simple landing stages, it formed a platform structure from which passengers could be embarked and disembarked or cargo loaded and unloaded. Often it acted as a place, which simply provided space for boats to land people or goods. As such, it usually comprised small independent infrastructures such as jetties or piers, leading out into the sea. At bigger coastal complexes these jetties or piers sometimes might have been attached even to a small quay or wharf alongside the coast, providing permanent accommodation. However, the *scala* as a harbour type is mentioned exclusively in context with different purposes related to private or imperial needs and therefore designated only for the accommodation of private ships. With the establishment of independent western colonies and particularly during the Late Byzantine period, the *scala* becomes the characteristic harbour type, allowing each community to possess and act through their own coastal facilities: Ginalis, 'Byzantine ports', 20–21; Ercan, 'Yenikapı', 12.

²⁶ Wace, 'Pelion', 153; even Avramea just mentions the existence of the church of Aghios Nikolaos at Mileas of Pelion: Avramea, *Θεσσαλία*, 164–65, n. 7; for further information, see Kourouniotis, 'Ανασκαφαί', 226–27.

²⁷ K. A. Makris and D. Zapheirpoulou, 'Post-Byzantine and Modern Magnesia', 188.

Afyssos²⁸

Together with Lephokastro, Afyssos is located at the junction connecting Pelion's western inner coast with Aghios Demetrios at the narrowest crossing point of the peninsula, measuring a distance of just 10 km and with a road connection of around 19 km (Fig. 8).²⁹ It may be identified with byzantine Korakaipyrgos or Palaiopyrgos, situated around 6 km southeast of Kala Nera. The existence of a Byzantine fortification here, together with those of Lephokastro, Aghios Demetrios and Genitsarokastron at Lai (on the road in between Afyssos and Aghios Demetrios), confirms the importance of this access point protecting the crucial connection of the inner Pagasetic gulf with the outer Aegean coast.³⁰ Afyssos not only functioned as a strategic station on the Thessalian maritime and road networks itself, but constituted the gateway to the Pagasetic gulf for the inland settlements and numerous ecclesiastical installations of Neochorion and Lai, while probably also serving the settlement of Lephokastro close by.³¹



Fig. 8. East-west road connection. (Map: A. Ginalis)

²⁸ Kourouniotis, 'Ανασκαφαί', 224.

²⁹ The modern road connections, both from Afyssos and Lephokastro towards Aghios Demetrios, go back to an ancient road, which run through Lai near Neochori: Avramea, *Θεσσαλία*, 107; Wace, 'Pelion', 52.

³⁰ For Korakaipyrgos and the fortification network along this connection, see Avramea, *Θεσσαλία*, 107; Koder and Hild, *Hellas und Thessalia*, 191; Koulouras, 'Η περιοχή του Παγασητικού', map.

³¹ Koder and Hild, *Hellas und Thessalia*, 197; Koulouras, 'Η περιοχή του Παγασητικού', map.

During classical times, ships seem to have practised beaching or even may have moored at some harbour facilities on a small shore at the northern end of the bay, which formed an ideal sheltered harbour area with a southwest exposure. However, due to the bay's continuous use as anchorage up to the present day, no archaeological remains for practising beaching or any ancient facility could be identified with certainty yet. Therefore, the above suppositional allocation of the ancient harbour site is so far based only on topographical studies. In any case, what can be verified is, that the late antique and medieval harbour area shifted around 350 m towards the south (Fig. 9), where Byzantine harbour infrastructures could be identified beneath a modern coastal promenade. The still preserved Byzantine installation consists of a quay line and a single central jetty. Protruding from the coastline westwards into the sea, the latter is preserved to a total length of around 20 m and a width of approximately 5 m, forming a direct extension of the road from Aghios Demetrios.



Fig. 9. The harbour areas of Afysson. (Photo: A. Ginalis)

The quay is constructed with huge blocks of stone rubble consisting of a mixture of quarry stones and mortar, produced individually in uniform wooden formworks on land (Fig. 10). Showing high compositional and architectural similarities to other well studied harbour sites in central Greece, such as Pigadi at Pteleos and the southern harbour at Skiathos, a

date to the sixth century AD can be suggested. Consequently, this would allow a chronological association with the construction of the fortification of Korakaipyrgos and more importantly the defence network on the Pelion peninsula as part of Justinian's building activities.³² As a result, Justinian's building programme for the protection of Byzantine control over the area did not serve just military purposes. Moreover, besides the major markets of Demetrias and Thessalian Thebes, it primarily aimed to strengthen the local economies and to secure direct access to the resources of the Pelion peninsula.

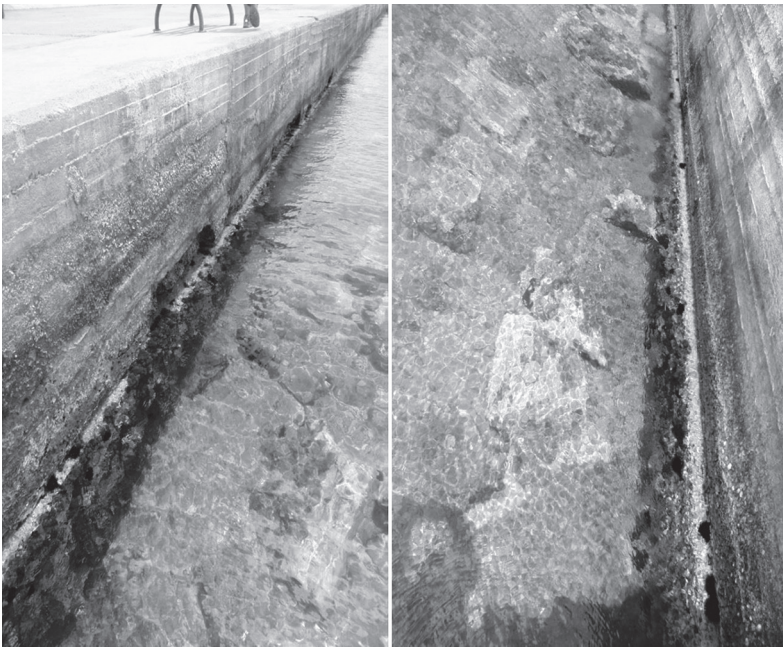


Fig. 10. Quay construction at Afyssos. (Photos: A. Ginalis)

In conclusion, Afyssos constituted an important multifunctional secondary harbour. Beyond its role as a link between Pelion's hinterland with its rich resources and the regional and supra-regional maritime trading routes and shipping lanes, providing Lephokastro and the Thessalian port cities with commodities, it formed a strategically important gateway for a direct communication and connection between the Pagas-

³² Ginalis, 'Byzantine ports', 99–100, 207–08.

etic gulf and the Aegean Sea. As such, although no military facilities can be associated with the harbour of Afyssos, it represents a combination of commercial and strategic harbour type. Together with Lephokastro it controlled the passage to Aghios Demetrios, ensuring imperial access to the Pagasetic gulf even during a time of geopolitical instability.

Lephokastro

Together with Lechonia and Olizon, Lephokastro or Lyphokastro constituted another major Byzantine urban centre on the Pelion peninsula. With a distance of just 2.5 km southeast of Afyssos, it too was directly connected to the road network between the east and the west coast. The importance of the fortified settlement derives mainly from its role as a transshipment area for the fertile hinterland at Miriovriti, north of inland Argalasti, as well as ecclesiastical nucleus. This is clearly shown by the remains of numerous churches, which have been recorded, such as those of Early Byzantine Panagia or Middle Byzantine Aghioi Apostoloi and Aghios Sostis.³³ Furthermore, rescue excavations conducted in 2010 revealed intensive and continuous settlement activities between the fourth–fifth and twelfth–thirteenth centuries AD.³⁴ As such, similar to Thebes, Lephokastro probably functioned as a cultural centre and social hub for the surrounding area almost throughout the entire Byzantine era.³⁵ It is located on a northeast-southwest orientated rocky promontory, forming an open harbour bay on its southern side (Fig. 11). However, apart from a small jetty of unknown date, probably no features which can be associated with a proper harbour installation ever existed. According to Anastasiadou, an annexation of Aghios Sostis at the outmost point of the promontory probably was used also as a watchtower for the protection of the harbour bay and the entire coastline up to Afyssos.³⁶ Taking into account that no harbour features could be identified as proper harbour installations, this suggests that the sandy bay functioned as an open roadstead. Therefore, Lephokastro probably used the nearby harbour of

³³ Kourouniotis, 'Ανασκαφάι', 222–24; Avramea, *Θεσσαλία*, 107; A. Anastasiadou, 'Έρευνες και σωστικές ανασκαφές στο Λεφόκαστρο Πηλίου', in A. Mazarakis-Ainian, ed., *Proceedings of the 4th International Congress on the History and Culture of Thessaly, 15th – 18th March 2012*, 2 vols, (Volos, 2015), vol. I, 439–40; Mamaloukos, 'Μαγνησία', 190–93.

³⁴ Anastasiadou, 'Λεφόκαστρο', 441–42.

³⁵ For details on settlement activities at Lephokastro, see Avramea, *Θεσσαλία*, 106–07; Koder, Hild, *Hellas und Thessalia*, 201; Wace, 'Pelion', 152.

³⁶ Anastasiadou, 'Λεφόκαστρο', 440.

Afyssos for major harbour activities. Different material remains, such as columns of *verde antico* or plates of type ‘Champlevé Ware’, however, attest not only the existence of local economies and district wide inter-connections as showed by Afyssos earlier, but also strong direct links with the entire Thessalian regional and supra-regional trading network. Both the plates and the Thessalian stone have even been documented as cargo on numerous wreck sites such as the sixth-century shipwreck of Marzamemi or the twelfth-century shipwrecks of Pelagonesos and Skopelos. These link the local site of Lephokastro with trading routes towards centres like Thessaloniki, Constantinople, Philippoi and even as far as Italy, Cyprus, the Levantine coast or the Crimean peninsula, etc.³⁷ This again shows, that Lephokastro together with Afyssos constituted not only important diachronic transshipment centres for their agricultural hinterlands, but also intermediate stations, controlling the passage to Aghios Demetrios for the connection of the Pagasetic gulf with the Aegean and wider Mediterranean trading networks.



Fig. 11. Settlement remains of Lephokastro. (Photos: A. Ginalis)

³⁷ Anastasiadou, ‘Λεφόκαστρο’, 442, figs 11–12; Wace, ‘Pelion’, 152; for *verde antico*, see Olga Karagiorgou, ‘Urbanism and economy in Late Antique Thessaly (3rd–7th cent. AD): the archaeological evidence’, unpublished DPhil thesis, University of Oxford (2001), 183–95; Ch. Kritzas, ‘Τὸ βυζαντινὸν ναυάγιον Πελαγονήσου – Αλοννήσου’, *Αρχαιολογικά Ανάλεκτα ἐξ Ἀθηνῶν*, 4.2 (1971), 176–82; K. Mavrikis, *Ἀνω Μαγνήτων Νήσοι*, (Alonnisos, 1997), 311–16; A. J. Parker, *Ancient Shipwrecks of the Mediterranean and the Roman Provinces*, BAR International Series 580, (Oxford, 1992), 267, 306, 407–08; P. Throckmorton, ‘Exploration of a Byzantine wreck at Pelagos Island near Alonnesos’, *Αρχαιολογικά Ανάλεκτα ἐξ Ἀθηνῶν* 4.2 (1971), 183–85; for the Champlevé Ware, see P. Armstrong, ‘A group of Byzantine bowls from Skopelos’, *Oxford Journal of Archaeology*, 10.3 (1991), 335–47; D. Papanikola-Bakirtzi, *Byzantine Glazed Ceramics. The Art of Sgraffito*, (Athens, 1999), 20, 133–34 (nos 145–47); J. Vroom, *Byzantine to Modern Pottery in the Aegean – 7th to 20th Century. An Introduction and Field Guide*, (Utrecht, 2005), 92–93.

Chorto³⁸

Chorto is situated along the large bay of Valtoudi, which is ideal for anchoring. Together with the 2 km distant site of Milina, it constituted the southern *epineion* and later the *scala* of inland Argalasti and the *metochion* of Aghios Nikolaos, as well as the *scala* of inland Lavkos further to the south.³⁹ In addition, the entire area, including Lavkos, Milina and the site of Chorto, shows a strong ecclesiastical presence and agricultural exploitation throughout the entire Byzantine period.⁴⁰

Chorto is situated around 7.4 km southeast of Lephokastro. Associated with the ancient settlement of Spalathra, coastal activities at Chorto go back as early as classical times.⁴¹ Mainly due to the rich agricultural hinterland with its numerous ecclesiastical installations producing and exporting olive oil, Chorto remained prosperous into the Byzantine period. Its importance as agricultural hinterland for the trading network of Pelion is further supported by the construction of the Byzantine fortification of Chortokastro.⁴² Constituting another element within the chain of defense network on the Pelion peninsula, it protected the entire bay of Valtoudi. The settlement itself is concentrated around the mouth of an approximately 3 km long river, which connects the coastline with the fertile inland up to present Metochi. An around 200 m long channel, which crosses the present homonymous coastal village, regulates the mouth of the river and is still used as mooring area (Fig. 12). Consequently, like the port city of Almyros and the sites of Troulos and Kechria on Skiathos, respectively,⁴³ it belongs to the rare category of river-sea-harbours (Fig. 3). Choosing this particular site for the foundation of Chorto and

³⁸ D. R. Theocharis, 'Αρχαιότητες και μνημεία Θεσσαλίας. Δ. Δοκιμαστικά σκαφαί – τοπογραφ. έρευνα – περισυλλογὰ ἀρχαίων', *Αρχαιολογικὸν Δελτίον*, 19.Β2 (1964), 260–64 at 263; Kourkoutidou, 'Μεσαιωνικά μνημεία', 308; A. Ntina, 7η Εφορεία Βυζαντινῶν Αρχαιοτήτων. Νομός Μαγνησίας. Ανασκαφικές εργασίες', *Αρχαιολογικὸν Δελτίον*, 39.Β (1984), 166, fig. 1; n.a., 'Ειδήσεις', *Επετηρίς Εταιρείας Βυζαντινῶν Σπουδῶν*, 10 (1933), 530–34 at 531; Kourouniotis, 'Ανασκαφαί', 216–17, 219–22.

³⁹ K. A. Makris and D. Zaphiropoulou, 'Post-Byzantine and Modern Magnesia', 188; Avramea, *Θεσσαλία*, 106; Wace, 'Pelion', 149.

⁴⁰ Numerous remains of Early to Late Byzantine churches and basilicas have been recorded, both inland and along the coast surrounding the site: Avramea, *Θεσσαλία*, 106; Koder and Hild, *Hellas und Thessalia*, 140, 218; Mamaloukos, 'Μαγνησία', 194–95; A. Philippon and H. Lehmann, *Die griechischen Landschaften*, Band 1: *Der Nordosten der griechischen Halbinsel*, Teil I: *Thessalien und die Spercheios-Senke*, (Frankfurt, 1950), 160.

⁴¹ For Spalathra, see Wace, 'Pelion', 149–51.

⁴² Koulouras, 'Η περιοχή του Παγασητικού', map.

⁴³ Ginalis, 'Byzantine ports', 149, 156–57.

moreover using the mouth of the river for its harbour facilities, allows the assumption that in Byzantine times agricultural products were transported from the inland sites to the coast particularly by using the course of the river. Since the river is even today still navigable up to a certain point, the goods may even have been transported by small boats, which in turn trans-shipped the commodities onto merchant vessels. Unfortunately, since the artificial channel is still used as a mooring area and consequently entirely built up with modern harbour superstructures, no remains of former installations can be identified with certainty at this stage of research.



Fig. 12. The river-sea harbour of Chorto. (Photos: A. Ginalis)

In conclusion, together with Milina and numerous other landing stages and roadstead around the huge sheltered bay of Valtoudi and the island of Alata further south,⁴⁴ Chorto belonged to the dense network of staple markets of southern Pelion. These not only acted as communication platforms between the widely stretched chain of ecclesiastical installations and various surrounding settlements such as Olizon, Kottai or Trikerion,⁴⁵ but also served as collection points for the exploitation of their agricultural units.

⁴⁴ The bay of Valtoudi served as the *scala* for the classical to Early Byzantine inland settlement of Olizon (Palaiokastro), on which see Avramea, *Θεσσαλία*, 105–06; Koder and Hild, *Hellas und Thessalia*, 227; Wace, 'Pelion', 148–49; for Alata, see Kourouniotis, 'Ἀνασκαφαί', 218; Avramea, *Θεσσαλία*, 106; Koder and Hild, *Hellas und Thessalia*, 169–70.

⁴⁵ Avramea, *Θεσσαλία*, 105–06; Koder and Hild, *Hellas und Thessalia*, 194, 227, 278–79; for the numerous churches, basilicas, monasteries, *metochia* and other ecclesiastical properties, see Koulouras, 'Ἡ περιοχή του Παγασητικού', map; Magdalino, 'Thessaly', 98–105.

Aghios Georgios Sagora

The first harbour site that one encounters sailing along Pelion's rocky and inhospitable outer coast from the south is Aghios Georgios, today colloquially known as Katigiorgi. Located exactly opposite Skiathos, it still constitutes one of only two approachable and safe anchorages on the entire eastern coast of the peninsula before reaching Aghios Demetrios further north. Its history is attested by written sources as early as the fifth century BC and it can possibly be identified either with the ancient settlement of *Sepias* or *Myrae*.⁴⁶ Flanking the passage of Skiathos to the west, Aghios Georgios played a prominent role during the Persian War.⁴⁷ Due to its unique and strategic position, it continued, together with the settlement of Theotokos further north, to function as a crucial anchorage and coastal centre throughout the Byzantine period. This is confirmed both, by the remains of a basilica dating to the fifth to sixth century AD which might even be the eponymous church of Aghios Georgios with the byname *Sagora* or *Zagora*,⁴⁸ as well as the wall remains of the fortification of the so-called Palaiokastro. The latter allowed direct visual contact from Aghios Demetrios to the Kastro at Skiathos for the military control and protection of the trading route and shipping lane passing through the channel. Accordingly, the site is regularly mentioned as an approachable harbour in portolans and portolan charts as well as other written accounts.⁴⁹ Surprisingly, however, despite their importance, neither Aghios Georgios itself nor the site of Theotokos show any harbour features. While Theotokos is completely exposed to the northern winds,

⁴⁶ Unfortunately, until today neither written accounts, nor historians and archaeologists, respectively, agree on the allocation of *Sepias* and *Myrae* to Aghios Georgios, Platania or Pouri at Zagora: Wace, 'Pelion', 147.

⁴⁷ H. Stein, ed., *Herodoti Historiae*, 2 vols, (Berlin, 1884), vol. II, VII.113, 188, 191; for classical *Sepias*, see Wace, 'Pelion', 145–48.

⁴⁸ Kourouniotis, 'Ανασκαφῶν', 219; Avramea, *Θεσσαλία* 104–05; Koder and Hild, *Hellas und Thessalia*, 164; A. J. B. Wace and J. P. Droop, 'Excavations at Theotokou, Thessaly', *The Annual of the British School at Athens*, 13 (1906/1907), 315–21; for the byname 'Sagora' or 'Zagora' given in order to differentiate it from a homonymous church in the gulf of Pteleos, see Koder and Hild, *Hellas und Thessalia*, 162, 164, 282–83.

⁴⁹ A. Delatte, *Les Portulans Grecs*, Bibliothèque de la Faculté de Philosophie et Lettres de l'Université de Liège 107, (Liège, 1947), 226, 296; K. Kretschmer, *Die italienischen Portolane des Mittelalters. Ein Beitrag zur Geschichte der Kartographie und Nautik*, (Berlin, 1909), 417, 513; G. L. F. Tafel and G. M. Thomas, eds, *Urkunden zur älteren Handels- und Staatengeschichte der Republik Venedig mit besonderer Beziehung auf Byzanz und die Levante*, 3 vols, *Fontes Rerum Austriacarum* 12–14, (Vienna, 1856–57), vol. III, 219–20.

Aghios Georgios provided some shelter for a certain number of ships. However, consisting of a small sheltered cove with a sandy beach, it is likely that Aghios Georgios functioned exclusively as an anchorage. The question of whether access to land was provided by landing stages or whether beaching was practiced cannot be answered. If any kind of harbour structures existed, it is likely that these consisted of wooden piers and possibly a wharf along the sheltered northern rocky shore. Beyond its vital role as an anchorage for ships sailing along the Pelion peninsula, Aghios Georgios together with Theotokos constitute classical representatives of staple markets.⁵⁰ Directly connected with inland Lavkos, via Pelion's road network, and with Skiathos and the other islands of the Northern Sporades, via shipping lanes, it formed both an agricultural production area (hinterland) of the Thessalian economic network and a centre for the distribution of products (foreland). Being connected with the secondary harbour and staple markets of Skiathos, Aghios Georgios supplied the harbours and port cities within and beyond central Greece with agricultural products.⁵¹

Velika and Koutsoupia⁵²

Although Velika and Koutsoupia geographically do not belong to the Pelion peninsula but to the plain of Agia and its wider fertile hinterland

⁵⁰ While private coastal facilities, such as *villae maritimae* or later monasteries and their *metochia*, took part both in commercial and travel-orientated activities, staple markets acted as small-scale transshipment centres. Without being connected to any infrastructural facilities, the latter were used exclusively for the agricultural and industrial exploitation of their immediate or wider hinterland.

⁵¹ This is indicated by an inscription found in the vicinity, mentioning the use of an olive press, and by a Venetian document of AD 1276, implying trading connections between a place called Sagora and Chalkis on Euboea: "Item Georgio de Crete, derobato die III intranet Marcio MCCLXXVI, dum venire cum una sua barca de Sagora,...cum foret ad pontam Delitalde, veniendo Nigropontem, per Grecos de Loreo...", Kourouniotis, 'Ανασκαφαί, 219; Tafel, Thomas, *Urkunden*, vol. III, 219; Koulouras, 'Η περιοχή του Παρασητικού', 21–22; it has to be mentioned here, that Magdalino allocates the referred site to one of the three candidates for the ancient site of Sepias, namely the coastal site of Pouri at Zagora: Magdalino, 'Thessaly', 104; however, it may rather refer to Aghios Georgios, to which the byname *Sagora* or *Zagora* was given in order to distinguish it from a homonymous church in the gulf of Pteleos, as already stated above.

⁵² N. Nikonanos, 'Βυζαντινά και μεσαιωνικά μνημεία Θεσσαλίας. Καταγραφάι μνημείων – εικόνων', *Αρχαιολογικόν Δελτίον*, 25.B (1970), 292–95 at 292; N. Nikonanos, 'Βυζαντινά και μεσαιωνικά μνημεία Θεσσαλίας', *Αρχαιολογικόν Δελτίον*, 26.B2 (1971), 305–13 at 307; S. Sdrolia, 'Ευρήματα παλαιοχριστιανικής περιόδου στη Βελίκα. Συμβολή στην έρευνα για την Μελίβοια των πρώτων βυζαντινών χρόνων', in A. D. Zoukas, ed., *Αναζητώντας την αρχαία Μελίβοια*, (Melivoia, 2010), 65–86.

(Fig. 1),⁵³ as the first hospitable coastal area passing the Pelion peninsula towards the north they played a major role for the maritime network of the Pelion peninsula and are therefore included in this paper.

The site of Velika, also known as Byzantine Verliki, is situated at the northern end of the 10 km long north-south orientated favourable sandy bay of Aghiokampos (Fig. 13). The history of coastal activities in that area goes back to the classical period. However, Velika and its coast become particularly prominent from the Roman Imperial period onwards and especially during the Byzantine era as the Roman and mainly Byzantine successor of the important ancient coastal settlement of Melivoia after its destruction by the Romans in 168 BC.⁵⁴ As the successor of Melivoia, which has recently been located at modern Kato Polidendri (Fig. 13),⁵⁵ it seems that by the sixth century AD at the latest, the nucleus of coastal activities shifted from the southern shore of Aghiokampos to Velika, north of the river of Aghiokampos and the stream of Dragouti towards cape Dermatas.⁵⁶ Due to the geopolitical circumstances during the Middle to Late Byzantine periods, the coastal road north of Aghiokampos towards the Pineios delta acted as a crucial bypass route to the Vale of Tempe.⁵⁷ Consequently, the importance of controlling this coast, and in particular that of Velika, is shown by the chain of coastal fortifications, such as the sixth-seventh-century Byzantine castles of Velika and Kokkino Nero.⁵⁸ Additionally, the role

⁵³ For Agia and its surrounding settlement and ecclesiastic-agricultural activities, see Avramea, *Θεσσαλία*, 82; Koder and Hild, *Hellas und Thessalia*, 169.

⁵⁴ S. Sdrolia, 'Habitation in the region of Mount Ossa during the Early Byzantine period', *Archaeological Reports*, 62 (2016), 125–32; S. Sdrolia, *Τὸ Ὄρος των Κελλίων*, (Larissa, 2013); Sdrolia, 'Ευρήματα παλαιοχριστιανικής περιόδου στη Βελίκα', 72.

⁵⁵ For the history and geographical location of the ancient city of Melivoia and its harbour site, see A. Tsiafalias, 'Το μυστήριο της αρχαίας Μελίβοιας', in Zoukas, ed., *Αναζητώντας την αρχαία Μελίβοια*, 9–26; B. G. Intzesiloglou, 'Μελίβοια. Η αρχαία πόλη στη θέση "Κάστρο" στο Κάτω Πολυδένδρι Σκήτης, της επαρχίας Αγιάς, στο Νομό Λάρισας', in Zoukas, ed., *Αναζητώντας την αρχαία Μελίβοια*, 9–63; Wace, 'Pelion', 147.

⁵⁶ For information on the settlement history of Velika and its surrounding area, see Avramea, *Θεσσαλία*, 82; Koder and Hild, *Hellas und Thessalia*, 134; Sdrolia, 'Habitation'; Sdrolia, *Όρος Κελλίων*; Sdrolia, 'Ευρήματα παλαιοχριστιανικής περιόδου στη Βελίκα'.

⁵⁷ A. N. Drosos, 'Οι επισκοπές Βεσάινης, Χαρμένων και Κατριάς: η εκκλησιαστική περιφέρεια Αγιάς κατά την Βυζαντινή και Μεταβυζαντινή περίοδο', unpublished PhD thesis, Aristotle University of Thessaloniki (2013), 262; B. Leib, ed., *Alexiade. Règne de l'empereur Alexis I Comnène 1081-1118*, 4 vols, (Paris, 1937), vol. II, 24.

⁵⁸ <http://www.dimosagias.gr/paralies/item/55-kastro-belikas.html>;
<http://www.dimosagias.gr/fusi-peribalon/item/84-kastro-kokkinou-nerou.html> (03.09.2015).

of Velika as an important and rich coastal station and harbour area of northern Thessaly throughout the entire Byzantine period is attested by portolans and other written accounts, particularly of the Late Byzantine period.⁵⁹

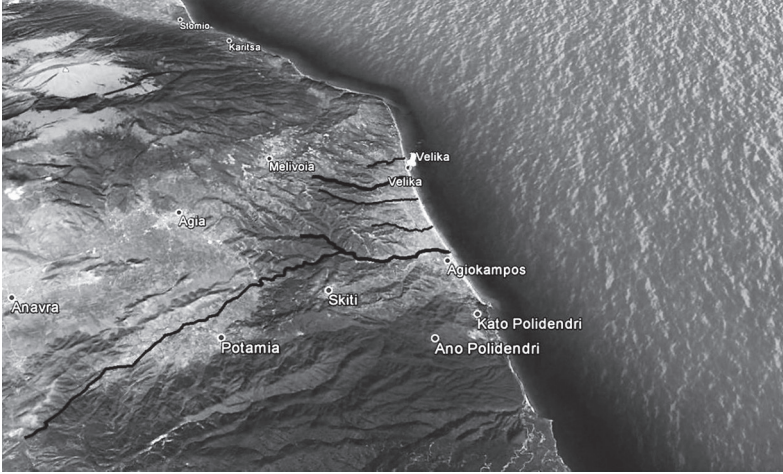


Fig. 13. The coastal area of Agia. (Map: A. Ginalis)

The area was visited by the author together with the director of the Greek Ephorate for Antiquities of Larissa (former 7th Greek Ephorate for Byzantine Antiquities), Dr Stavroula Sdrolia, during an investigation of the entire northern Thessalian coastline from Aghiokampos up to Kokkino Nero.⁶⁰ Although no archaeological remains indicate any harbour infrastructures along the entire bay of Aghiokampos, this bay was probably used as a roadstead. As a port-of-call, the area represents a typical *scala* despite the fact that not even simple harbour infrastructures seem to have been existed along the coast. It is possible, however, that the harbour site at Kato Polydendri continued to be used as transshipment centre for the entire area also during the Byzantine era. Alternatively, the synonymous river of Aghiokampos together with a



⁵⁹ Delatte, *Portulans*, 226; Kretschmer, *Portolane*, 323, 514, 637; Tafel, Thomas, *Urkunden*, vol. III, 218 (no. 370).

⁶⁰ Here, the author wants to express his gratitude to Dr Sdrolia for her time and effort in guiding the author personally to the sites and conducting a field survey along the entire northern Thessalian coast.

number of other rivers flowing into the bay further north, was possibly not just accessible for small riverboats transporting agricultural products to the coast, but also to bigger open-sea ships. Similar to the northern Greek river Strymon,⁶¹ or in case of Thessaly the river Xerias at the port city of Almyros,⁶² as well as that of Chorto, these rivers were probably seasonally navigable by larger merchant vessels. Consequently, if any facilities along the northern shore ever existed, the harbour area must have been located further up the river.⁶³ In any case, it is equally possible that it formed a seasonal staple market, which would not have needed major harbour facilities. Taking into account the dating of the castle of Velika to the sixth–seventh century AD, and the Early to Middle Byzantine remains of settlements such as that of Skiti on the river Aghiokampos further inland, the possible construction of a river-harbour may go back at least to the Early Byzantine period.⁶⁴

Beyond Velika, the coastline north of cape Dermatas to the castle of Kokkino Nero and the site of Stomio show plenty of Early Byzantine material remains, which reflect intensive coastal activities in this area. The first relevant and in fact most important harbour area north of Aghiokampos forms the site of Koutsoupia (Fig. 14). The small harbour with a northern exposure is located approximately 1 km east of the modern homonymous village and the eastern slope of Mount Kissavos (Byzantine Ossa). At the harbour site of Koutsoupia, just north of cape Dermatas and around 5.7 km northwest of the bay of Aghiokampos, ancient structures were detected and identified which are to be associ-

⁶¹ A. Dunn, 'Byzantine and Ottoman maritime traffic in the estuary of the Strymon: between environment, State, and market', in J. Bintliff and H. Stöger, eds, *Medieval and Post-Medieval Greece. The Corfu Papers*, BAR International Series 2023, (Oxford, 2009), 15–31.

⁶² Ginalis, 'Byzantine ports', 199; E. Z. Ökte, ed., *Piri Reis, Kitab-i-bahriye*, 4 vols, (Istanbul, 1988), vol. I, 281.

⁶³ Unfortunately, a verification of this hypothesis is impossible at this stage. Detailed archaeological investigations and a geophysical prospection have to be conducted, which may be realized in a future co-operation with the 7th Greek Ephorate for Byzantine Antiquities.

⁶⁴ A dating to the Roman Imperial period, however, should not be excluded. The destruction of Melivoia shortly after 168 BC and the shift of coastal activities further north probably during the period of the *Pax Romana* forms a hypothetical *terminus post quem* for the construction of the river-harbour and the commercial exploitation of Velika and its hinterland.

ated with the ancient site and port city of Rizus.⁶⁵ Plenty of Byzantine material remains, however, show that during the Byzantine era extremely intensive secular and ecclesiastic coastal activities succeeded ancient Rizus. These include both settlement traces, winepresses and widely spread monastic units, all orientated towards the coast and its harbour.⁶⁶

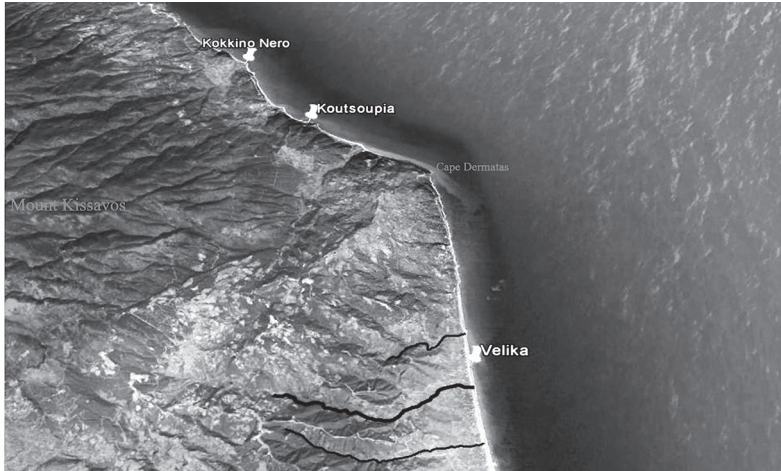


Fig. 14. The site of Koutsoupia. (Map: A. Ginalis)

Consequently, concerning the function of the harbour itself, the intensive secular and ecclesiastic activities suggest the execution of economic and social transactions. Therefore, the existence of some sort of secondary commercial harbour or staple market can be assumed. Similar to its present use and toponym, however, it may also have included and served as a shipyard, a so-called *tarsanas*, for the classical to Early Byzantine coastal settlement of Rizus. A function as a local military base, a so-

⁶⁵ Koder and Hild, *Hellas und Thessalia*, 252; Avramea, *Θεσσαλία*, 82; N. Georgiades, *Θεσσαλία*, (Athens, 1880), 222; F. Stählin, *Das hellenische Thessalien. Landeskundliche und geschichtliche Beschreibung Thessaliens in der hellenischen und römischen Zeit*, (Stuttgart, 1924), 50; Wace, 'Pelion', 147.

⁶⁶ A. S. Arvanitopoulos, 'Ανασκαφαί και έρευναι έν Θεσσαλία', *Πρακτικά τής έν Αθήναις Αρχαιολογικής Εταιρείας τού έτους 1910*, 168–264 at 191–94; Avramea, *Θεσσαλία*, 82; Drosos, 'Οι επισκοπές Βεσαίνης', 296–97, 299–302; S. Mamaloukos and S. Sdrolia, 'Αρχαιολογικά κατάλοιπα στο "Όρος των Κελλίων"', in A. Mazarakis-Ainian, ed., *Αρχαιολογικό έργο Θεσσαλίας και Στερεάς Ελλάδας 2. Πρακτικά επιστημονικής συνάντησης*, 2 vols, (Volos, 2006), vol. I, 585–601 at 586–92; Koder and Hild, *Hellas und Thessalia*, 252.

called *naustathmos* (ναύσταθμος), is unlikely but equally possible. However, archaeological investigation has to be carried out in order to verify the indications given by this first stage of observations.

As for its various facilities, surface investigation of Koutsoupia revealed the existence of both the northern and western breakwaters, which are still entirely preserved beneath the modern equivalent structures (Fig. 15). The bigger northern breakwater has a total length of approximately 80 m, with a width of up to 40 m. The western breakwater is smaller, with a length of approximately 30 m and a width of 15 m. Forming arms extending from the coast into the water, the breakwaters faced each other at the northwestern end, enclosing a harbour basin of 0.49 ha with a 20 m wide entrance (Fig. 16). The northern breakwater at Koutsoupia shows a gentle incline towards the north, lending high stability to the structure against the strong and constant northern winds by absorbing the force of the waves of the open sea. Concerning its construction, it consists of two different structural parts, an internal and an external one. The internal core section is built of a mixture of quarry rubbish and small stones, while its external part consists mainly of huge raw rock boulders. The original feature is currently situated just between 0.10 m and 0.50 m below the present water level and probably did not protrude greatly from the sea even at the time of its construction.⁶⁷ Consequently, in contrast to the modern superstructure, the exterior part of the breakwater indicates that waves were allowed to break over it in order to create currents within the harbour basin for the prevention of siltation (Fig. 17). This can be identified as a form of mound breakwater.⁶⁸ Furthermore, it can be assumed that it did not support mole structures along its internal side, which indicates

⁶⁷ D. J. Blackman, 'Evidence of sea level change in ancient harbours and coastal installations', in D. J. Blackman, ed., *Marine Archaeology, Proceedings of the Twenty-third Symposium of the Colston Research Society, Bristol 1971*, Colston Papers 23, (London, 1973), 115-37.

⁶⁸ Depending on the conditions of the area, mound breakwaters of rubble stones had been constructed in cross-sections, that is starting from the core to the outer protective covering. The core usually consisted of a mixture of quarry rubbish and small stones in order to gain maximum compactness. The purpose of its external part was to prevent the movement and washing out of the rubble material. According to the stone size used for the core part as well as the thickness of the outer covering, sometimes a second layer of stones was required to cover the whole mound. Its efficiency and stability depended not only on the size, thickness of the stones and the weight of the composition but also on the grade of the slope. The slope provided stability to the construction material by preventing a possible undermining by the waves. For further information, see H. F. Cornick, *Dock and Harbour Engineering*, 4 vols, (London, 1958-62), vol. II, 116, 118-20.

that no supplementary mooring facilities were needed. Although the possible date range of such a feature extends from the Roman Imperial up to any pre-industrial historical period, its first phase probably goes back to the Early Byzantine period. Due to its high compositional and dimensional similarities with breakwaters at other harbour sites in central Greece, such as Skiathos or Achilleion at Pteleos,⁶⁹ actually a date to the end of the sixth century AD may be proposed. Furthermore, a close relationship with the intensive fortification activities in the surrounding coastal area during the sixth-seventh century AD is suggested, which would again support this dating. It may, therefore, be assumed that the harbour of Koutsoupia was associated with the extensive building programme in central Greece under Emperor Justinian I (AD 527–65).



Fig. 15. The harbour site of Koutsoupia. (Photo: A. Ginalis)



⁶⁹ Ginalis, 'Byzantine ports', 93–95, 204.



Fig. 16. The harbour features of Koutsoupia. (Photo: A. Ginalis)



Fig. 17. The northern breakwater of Koutsoupia. (Photos: A. Ginalis)

In terms of further potential harbour installations, no features could be identified at the present stage. Even if mooring facilities existed, however, these would not have taken the entire coastline of the harbour. Instead it is likely that, similar to today, both ends of the coast provided space for slipways and other necessary facilities for the repair of ships. Whether Koutsoupia possessed shipsheds for the protection and maintenance of war- and patrol ships is still unclear and needs more detailed investigation. The absence of mole structures and the assumed limited space for quay areas exclude a function as a primary merchant harbour and support

its interpretation as secondary harbour for local needs or rather ecclesiastical or agricultural staple market, possibly including also a small shipyard.

In conclusion, based on the geographical conditions of the coastline and Koutsoupia's present use as local shipyard, beyond its role within the regional port network of northern Thessaly, the latter constituted a centre for repairs and presumably even construction works. As such, due to its central location between the bay of Aghiokampos and the Pineios River, Koutsoupia served both as the main harbour site and shipyard for the settlement of Rizus and the entire coastline up to the harbour site of Kokkino Nero.

Conclusions

Although most of the sites still lack proper archaeological investigation in order to provide supporting material such as pottery evidence, the investigated coastal infrastructures already allow a first insight into the hierarchy of Pelion's maritime network. Despite its inhospitable coastline, the Pelion peninsula possessed a rich and complex coastal system, forming nevertheless a dense network of secondary harbours and agricultural as well as ecclesiastical coastal staple markets. These not only represent both categories of sea and river-sea structures, but also include all types of installations, serving different functions (Fig. 3). While all sites under investigation show a focus on agricultural and industrial exploitation for commercial activities, several of them such as Platanidia, Afyssos and Koutsoupia indicate also other functionalities and therefore represent multiple harbour types. However, although Platanidia and Afyssos show travel-orientated activities and Koutsoupia possibly even military functions, only the sites of Platanidia and Koutsoupia indicate that their multiple harbour activities effected the harbour area and its facilities. During the early centuries, official, private or even religious/cultural travel business was conducted mainly via the central public harbour infrastructures, whereas in later centuries distinct facilities for at least religious travel-orientated activities seem to have developed, which were largely owned or operated by the Church.⁷⁰ Finally, while Koutsoupia, as one of the rare examples of local shipyards performed military functions for the surveillance of the local as well as regional trading routes and shipping lanes, Platanidia, Afyssos, Chorto and especially Lephokastro show the strong association between

⁷⁰ The function of private coastal sites with their infrastructures form an independent case.

the harbour sites and coastal activities with that of the defence network on the Pelion peninsula throughout the Byzantine era.

As such, it seems that Arnaud's and Nietos's concept of a symbiotic hierarchical relationship between local production centres, secondary harbours and regional and supra-regional primary harbours and ports reached a new peak in the Byzantine period.⁷¹ Especially the trading system of Pelion's hinterland provides a clear picture of the interaction especially between the rural production sites of the local settlement and monastic or military networks shown by Koder and Drakoulis, with Thessaly's regional and supra-regional commercial maritime connectivity.

In conclusion, what at first sight seems to be an unimportant and infertile rocky area of only marginal interest, the Pelion peninsula actually functions as a crucial hinterland and a strategic key area not only for the port city of Demetrias, towards which it is orientated, but for the entire Thessalian port network. As such, reflecting hierarchical interactions of Byzantine coastal structures from the fourth to the fifteenth century AD, it can be used as a model for the economic system and social life of Byzantium's inhospitable coastlines such as the Levantine coast, which, like the Pelion peninsula, needs further investigation.

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⁷¹ P. Arnaud, 'Ancient sailing-routes and trade-patterns: the impact of human factors', in D. Robinson and A. Wilson, eds, *Maritime Archaeology and Ancient Trade in the Mediterranean*, Oxford Centre for Maritime Archaeology 6, (Oxford, 2011), 61–80; P. A. Gianfrotta, X. Nieto, Patrice Pomey and A. Tchernia, *La navigation dans l'antiquité*, (Paris, 1997), 154–59, esp. 156–57.

Bibliography

Sources

- J. Haury, ed., *Procopius Caesariensis VI libri Peri ktismaton sive De aedificiis: cum duobus indicibus et appendice*, (Leipzig, 1913).
- B. Leib, ed., *Alexiade. Règne de l'empereur Alexis I Comnène 1081-1118*, 4 vols, (Paris, 1937).
- K. F. T. Mayhoff, ed., Pliny the Elder, *Naturalis Historia*, (Leipzig, 1906).
- C. C. Müller and F. Dübner, eds, *Strabonis Geographica*, (Paris, 1953).
- E. Z. Ökte, ed., *Piri Reis, Kitab-i-bahriye*, 4 vols, (Istanbul, 1988).
- G. Parthey, ed., *Pomponii Melae De Chorographia*, 3 vols, (Berlin, 1867).
- V. Rose and H. Müller-Strübing, eds, *Vitruvii De Architectura*, (Leipzig, 1867).
- G. Shipley, *Pseudo-Skylax's Periplus: The Circumnavigation of the Inhabited World. Text, Translation and Commentary*, (Exeter, 2011).
- H. Stein, ed., *Herodoti Historiae*, 2 vols, (Berlin, 1884).
- G. L. F. Tafel and G. M. Thomas, eds, *Urkunden zur älteren Handels- und Staatengeschichte der Republik Venedig mit besonderer Beziehung auf Byzanz und die Levante*, 3 vols, *Fontes Rerum Austriacarum* 12-14, (Vienna, 1856-57).

Secondary Literature

- A. Anastasiadou, 'Ερευνες και σωστικές ανασκαφές στο Λεφόκαστρο Πηλίου', in A. Mazarakis-Ainian, ed., *Proceedings of the 4th International Congress on the History and Culture of Thessaly, 15th - 18th March 2012*, 2 vols, (Volos, 2015), vol. I, 439-46.
- P. Armstrong, 'A group of Byzantine bowls from Skopelos', *Oxford Journal of Archaeology*, 10.3 (1991), 335-47.
- P. Arnaud, 'Ancient sailing-routes and trade-patterns: the impact of human factors', in D. Robinson, A. Wilson, eds, *Maritime Archaeology and Ancient Trade in the Mediterranean*, Oxford Centre for Maritime Archaeology 6, (Oxford, 2011), 61-80.
- A. S. Arvanitopoulos, 'Ανασκαφαί και έρευναι έν Θεσσαλία', *Πρακτικά τής έν Αθήναις Αρχαιολογικής Εταιρείας τού έτους 1910*, 168-264.
- P. Asimakopoulou-Atzaka, 'Early Christian and Byzantine Magnesia', in G. Hourmouziadis, P. Asimakopoulou-Atzaka, K. A. Makris, M. and R. Capon, eds, *Magnesia. The Story of a Civilization*, (Athens, 1982), 107-76.
- A. Avramea, *Η βυζαντινή Θεσσαλία μέχρι τού 1204. Συμβολή εις την ιστορικήν γεωγραφίαν*, (Athens, 1974).
- D. J. Blackman, 'Ancient harbours in the Mediterranean. Part 2', *The International Journal of Nautical Archaeology*, 11.3 (1982), 185-211.

- D. J. Blackman, 'Evidence of sea level change in ancient harbours and coastal installations', in D. J. Blackman, ed., *Marine Archaeology, Proceedings of the Twenty-third Symposium of the Colston Research Society, Bristol 1971*, Colston Papers 23, (London, 1973), 115–37.
- H. F. Cornick, *Dock and Harbour Engineering*, 4 vols, (London, 1958–62).
- Ch. G. Dablias, 'The history of Thessaly in the 13th century A.D.', unpublished PhD thesis, University of Thessaloniki (2002).
- A. Delatte, *Les Portulans Grecs*, Bibliothèque de la Faculté de Philosophie et Lettres de l'Université de Liège 107, (Liège, 1947).
- D. Drakoulis, 'Η περιφερειακή οργάνωση των οικισμών της Επαρχίας Θεσσαλίας στην πρώιμη βυζαντινή περίοδο', in S. G. Gouloulis and T. Sdrolia, eds, *Άγιος Δημήτριος Στομίου*, (Larisa, 2010), 375–90.
- D. Drakoulis, 'Πόλεις, κώμες και χωριά της Επαρχίας Ελλάδος στην πρώιμη βυζαντινή περίοδο (4^{ος}–6^{ος} αιώνας)', *Βυζαντιακά*, 29 (2009), 39–102.
- A. N. Drosos, 'Οι επισκοπές Βεσαίνης, Χαρμένων και Κατρίας: η εκκλησιαστική περιφέρεια Αγιάς κατά την Βυζαντινή και Μεταβυζαντινή περίοδο', unpublished PhD thesis, Aristotle University of Thessaloniki (2013).
- A. Dunn, 'Byzantine and Ottoman maritime traffic in the estuary of the Strymon: between environment, State, and market', in J. Bintliff and H. Stöger, eds, *Medieval and Post-Medieval Greece. The Corfu Papers*, BAR International Series 2023, (Oxford, 2009), 15–31.
- A. Ercan, 'Yenikapı. A late antique and Byzantine harbor in Constantinople: a historical, archaeological and architectural study of the newly discovered remains', unpublished MA thesis, Koç University of Istanbul (2010).
- N. Georgiades, *Θεσσαλία*, (Athens, 1880).
- P. A. Gianfrotta, X. Nieto, Patrice Pomey and A. Tchernia, *La navigation dans l'antiquité* (Paris, 1997).
- A. Ginalis, 'Byzantine ports – Central Greece as a link between the Mediterranean and the Black Sea', unpublished DPhil thesis, University of Oxford (2014).
- B. G. Intzesiloglou, 'Μελίβοια. Η αρχαία πόλη στη θέση "Κάστρο" στο Κάτω Πολυδένδρι Σικήτης, της επαρχίας Αγιάς, στο Νομό Λάρισας', in A. D. Zoukas, ed., *Αναζητώντας την αρχαία Μελίβοια*, (Melivoia, 2010), 9–63.
- O. Karagiorgou, 'Urbanism and economy in Late Antique Thessaly (3rd–7th cent. AD): the archaeological evidence', unpublished DPhil thesis, University of Oxford (2001).
- Y. Karmon, 'Geographical components in the study of ancient Mediterranean ports', in A. Raban, ed., *Harbour Archaeology. Proceedings of the First international Workshop on Ancient Mediterranean Harbours Caesarea Maritima, Haifa 24th – 28th June, 1983*, BAR International Series 257, (Oxford, 1985), 1–6.

- J. Koder and F. Hild, *Hellas und Thessalia*, Tabula Imperii Byzantini 1, (Vienna, 1976).
- G. Koulouras, 'Η περιοχή του Παγασητικού κατά τους μέσους χρόνους (Δ'-ΙΔ' αι.); unpublished PhD thesis, University of Ioannina (1997).
- E. Kourkoutidou, 'Μεσαιωνικά μνημεία Θεσσαλίας', *Αρχαιολογικόν Δελτίον*, 22.Β2 (1967), 302-17.
- K. Kourouniotis, 'Άνασκαφαι και έρευναι εν Θεσσαλία κατά το έτος 1910', *Πρακτικά τής εν Αθήναις Αρχαιολογικής Εταιρείας*, 66 (1911), 168-269.
- K. Kretschmer, *Die italienischen Portolane des Mittelalters. Ein Beitrag zur Geschichte der Kartographie und Nautik*, (Berlin 1909).
- Ch. Kritzas, 'Τò βυζαντινόν ναύαγιον Πελαγονήσου - Αλοννήσου', *Αρχαιολογικά Ανάλεκτα εξ Αθηνών*, 4.2 (1971), 176-82.
- K. Lehmann-Hartleben, *Die antiken Hafenanlagen des Mittelmeers. Beiträge zur Geschichte des Städtebaues im Altertum*, KLIO Beiheft 14, (Leipzig, 1923).
- H. G. Liddell and R. Scott, *A Greek-English Lexicon*, (Oxford, 1843); with a revisited supplement (1996).
- P. Magdalino, 'The history of Thessaly 1266-1393', unpublished DPhil thesis, University of Oxford (1976).
- K. A. Makris, D. Zapheirou, 'Post-Byzantine and Modern Magnesia', in G. Hourmouziadis, P. Asimakopoulou-Atzaka, K. A. Makris, M. and R. Capon, eds, *Magnesia. The Story of a Civilization*, (Athens, 1982), 177-277.
- S. Mamaloukos, 'Η ναοδομία στη Μαγνησία κατά τη μέση και την ύστερη βυζαντινή περίοδο', *Βυζαντινά*, 25 (2005), 176-232.
- S. Mamaloukos and S. Sdrolia, 'Αρχαιολογικά κατάλοιπα στο "Όρος των Κελίων"', in A. Mazarakis-Ainian, ed., *Αρχαιολογικό έργο Θεσσαλίας και Στερεάς Ελλάδας 2. Πρακτικά επιστημονικής συνάντησης*, 2 vols, (Volos, 2006), vol. I, 585-601.
- K. Mavrikis, *Άνω Μαγνήτων Νήσοι*, (Alonnisos, 1997).
- N. Nikonanos, 'Βυζαντινά και μεσαιωνικά μνημεία Θεσσαλίας. Καταγραφαί μνημείων - εικόνων', *Αρχαιολογικόν Δελτίον*, 25.Β (1970), 292-95.
- N. Nikonanos, 'Βυζαντινά και μεσαιωνικά μνημεία Θεσσαλίας', *Αρχαιολογικόν Δελτίον*, 26.Β2 (1971), 305-13.
- A. Ntina, 7η Εφορεία Βυζαντινών Αρχαιοτήτων. Νομός Μαγνησίας. Ανασκαφικές εργασίες', *Αρχαιολογικόν Δελτίον*, 39.Β (1984), 166.
- A. Ntina, 7η Εφορεία Βυζαντινών Αρχαιοτήτων. Νομός Μαγνησίας', *Αρχαιολογικόν Δελτίον*, 40.Β (1985), 218-23.
- A. Ntina, 'Νεώτερες έρευνες στην παλαιοχριστιανική πόλη των Φθιωτίδων Θηβών', in R. Misdrahi-Kapon, ed., *La Thessalie. Quinze années de recherches archéologiques 1975-1990. Bilans et Perspectives II*, (Athens, 1994), 357-70.

- A. Ntina, 'Παλαιοχριστιανικοί οικισμοί Θεσσαλίας', in L. P. Gklegkle, ed., *Proceedings of the 1st International Congress on the History and Culture of Thessaly, 9th – 11th November 2006*, 2 vols, (Volos, 2008), vol. II, 410–30.
- D. Papanikola-Bakirtzi, *Byzantine Glazed Ceramics. The Art of Sgraffito*, (Athens, 1999).
- A. J. Parker, *Ancient Shipwrecks of the Mediterranean and the Roman Provinces*, BAR International Series 580, (Oxford, 1992).
- A. Philippson and H. Lehmann, *Die griechischen Landschaften*, Band 1: *Der Nordosten der griechischen Halbinsel*, Teil I: *Thessalien und die Spercheios-Senke*, (Frankfurt, 1950).
- S. Sdrolia, 'Habitation in the region of Mount Ossa during the Early Byzantine period', *Archaeological Reports*, 62 (2016), 125–32.
- S. Sdrolia, 'Ευρήματα παλαιοχριστιανικής περιόδου στη Βελίκα. Συμβολή στην έρευνα για την Μελίβοια των πρώτων βυζαντινών χρόνων', in A. D. Zoukas, ed., *Αναζητώντας την αρχαία Μελίβοια*, (Melivoia, 2010), 65–86.
- S. Sdrolia, *Το Όρος των Κελλίων*, (Larissa, 2013).
- F. Stählin, *Das hellenische Thessalien. Landeskundliche und geschichtliche Beschreibung Thessaliens in der hellenischen und römischen Zeit*, (Stuttgart, 1924).
- D. R. Theocharis, 'Αρχαιότητες και μνημεία Θεσσαλίας. Δ. Δοκιμαστικά σκαφαί – τοπογραφ. έρευνα – περισυλλογαι αρχαίων', *Αρχαιολογικόν Δελτίον*, 19.B2 (1964), 260–64.
- D. R. Theocharis, 'Αρχαιότητες και μνημεία Θεσσαλίας. Γ. Τυχαία ευρήματα – περισυλλογαι – παραδόσεις αρχαίων', *Αρχαιολογικόν Δελτίον*, 21.B2 (1966), 254–55.
- P. Throckmorton, 'Exploration of a Byzantine wreck at Pelagos Island near Alonnessos', *Αρχαιολογικά Ανάλεκτα ἐξ Ἀθηνῶν*, 4.2 (1971), 183–85.
- A. Tsiafalias, 'Το μυστήριο της αρχαίας Μελίβοιας', in A. D. Zoukas, ed., *Αναζητώντας την αρχαία Μελίβοια*, (Melivoia, 2010), 9–26.
- J. Vroom, *Byzantine to Modern Pottery in the Aegean – 7th to 20th Century. An Introduction and Field Guide*, (Utrecht, 2005).
- A. J. B. Wace, 'The topography of Pelion and Magnesia', *Journal of Hellenic Studies*, 26 (1906), 143–68.
- A. J. B. Wace and J. P. Droop, 'Excavations at Theotokou, Thessaly', *The Annual of the British School at Athens*, 13 (1906/1907), 309–27.