

PONTICA

LIII

*Doctissimis et illustribus
magistris et collegis*

ALEXANDRU BARNEA
EMILIAN POPESCU
MIHAIL ZAHARIADE

MUZEUL DE ISTORIE NAȚIONALĂ ȘI ARHEOLOGIE
CONSTANȚA

2020

PONTICA

Anuar al Muzeului de Istorie Națională și Arheologie Constanța
Annuaire du Musée d'Histoire Nationale et d'Archéologie Constanța

Comitetul științific / Comité scientifique:

ALEXANDRU AVRAM (Le Mans)
FEDERICA CORDANO (Milano)
FLORIN CURTA (Gainesville, Florida)
PIERRE DUPONT (Lyon)
PETYA GEORGIEVA (Sofia)
MANFRED OPPERMAN (Halle/Sa.)
ALEXANDER RUBEL (Iași)
CHRISTOF SCHULER (München)
GOCHA R. TSETSKHLADZE (Llandrindod Wells, Powys, UK)

Redactor șef / Rédacteur en chef:

LIVIA BUZOIANU

Colegiul de redacție / Collège de rédaction:

CONSTANTIN CHERA (Constanța)
GABRIEL CUSTUREA (Constanța)
VALENTINA VOINEA (Constanța)
GABRIEL TALMAȚCHI (Constanța)

Secretar de redacție / Secrétaire de rédaction:

IRINA SODOLEANU

Informatică editorială / Informatique éditoriale:

VASILICA PODARIU

Manuscrisele, cărțile propuse la schimb și toată corespondența vor fi adresate redacției: Muzeul de Istorie Națională și Arheologie, Piața Ovidiu nr. 12, 900745, Constanța, România, Tel./Fax. 0040-241-618763;
e-mail: revista.pontica@gmail.com

Les manuscrits, les livres et les revues proposés en échange, ainsi que toute correspondance seront adressés à la Rédaction: Musée d'Histoire Nationale et d'Archéologie, Piața Ovidiu nr. 12, 900745, Constantza, Roumanie, Tél./Fax 0040-241-618763;
e-mail: revista.pontica@gmail.com.

PONTICA ediție online/ PONTICA édition en ligne: www.revistapontica.com

ISSN 1013-4247
ISSN (online/en ligne) 2247 – 9341
ISBN 973-7951-29-8

SUMAR SOMMAIRE CONTENTS

HISTORICA

MIHAI OVIDIU CĂȚOI

- Martirii goți: *arieni* în calendarul nicean sau *niceeni* în calendarul arian?**
Les martyrs Goths: *Ariens* dans le calendrier nicéen, ou *Nicéens* dans le
calendrier arien ? 9

IONUȚ HOLUBEANU

- Noi interpretări privind evoluția organizării bisericești pe teritoriul**
provinciei romane Scythia în secolul al VI-lea p.Chr.
New Interpretations Concerning the Ecclesiastical Organization in the
Roman Province of Scythia During the 6th Century AD 33

GEORGI ATANASOV

- Encore une fois sur la datation et l'organisation des moines dans le**
monastère rupestre de Murfatlar (dép. de Constanța) 63

ARCHAEOLOGICA

MONICA MĂRGĂRIT, VALENTINA MIHAELA VOINEA

- Production of Bone Rings in the Hamangia Settlement of Cheia**
(Romania) 89

ANA ILIE, DANIELA STAN, BOGDAN CONSTANTINESCU

- Analize XRF asupra unor pigmenți identificați pe piese din lut ars din**
cultura Gumelnița descoperite pe teritoriul județului Dâmbovița
XRF Investigations of some Pigments Identified on Gumelnița Burned
Clay Items Discovered on the Territory of Dâmbovița County 109

PIOTR WŁODARCZAK

- Sequence of Graves in Barrows 4th-3rd Millennium BC in the Danube-**
Tisza Region 135

IULIAN BÎRZESCU

- Vase ale pictorului *polos*-ului din zona sacră de la Histria**
Vases of the *Polos* Painter from the Sacred Area in Histria 157

DENIS BORISOV

- On the Image of the Applique of Phiale B 71 from Tomb 1/II in the Mogilanska Mogila Tumulus** 169

FLORINA PANAIT-BÎRZESCU

- Fragmente de sculpturi din sectorul T de la Histria cu reprezentarea divinității *Meter Theon***
Sculptural Fragments Representing *Meter Theon* from Sector T in Histria 191

ADELA BÂLTÂC, CHRISTINA ȘTIRBULESCU

- Teracote din așezarea civilă de la Ostrov (*Durostorum*), județul Constanța (V)**
Terracottas from the Civil Settlement from Ostrov (*Durostorum*), Constanța County (V) 209

ALINA STREINU, DAN PÎRVULESCU

- Shedding New Light on a Lot of Roman Lamps from Tomis from the Maria and Dr. George Severeanu Collection** 253

PHILIP BES, ALEXANDRA DOLEA

- Some Pontic Flavour on the Lycian Table Pontic Amphorae in Limyra ..** 279

BARTŁOMIEJ SZYMON SZMONIEWSKI

- Wind from West – Notes on Origins of a Special Type of Handle with Horizontal Thumb Plate in Eurasia (1st-10th c. AD)** 303

STELA DONCHEVA

- Early Medieval Bulgarian Belt Set – Composition and Function** 323

STELA DONCHEVA

- Similar Traits and Influences in the Production of Belt Sets in Bulgaria and Romania in the 10th Century AD** 343

MARIA CHRISTOVA-PENKOVA, ALEKSANDRA PETROVA

- Objets de vénération personnelle provenant de Vratitza médiévale** 371

PRESLAV PEEV, ALKIVIADIS-ALEXANDROS GINALIS

- Inventory of Late Antique and Medieval Ports Along the Western Black Sea** 381

EPIGRAPHICA

IOAN CAROL OPRÎȘ

- News of *Classis Flavia Moesica* in Rasova. Reexamining the Tile Stamps of the Fleet on the Lower Danube Limes** 393

CONSTANTIN C. PETOLESCU

- Un notabil din Istros cu numele martelat**
Un notable d'Istros au nom martelé 407

ALEXANDRU AVRAM	
Notes épigraphiques (XI)	413
DRAGOȘ HÂLMAGI	
Notes on Greek inscriptions (II)	425
DAN DANA	
La cuisine des congrès. La correspondance entre Dionisie M. Pippidi et Georgi Mihailov (1975-1981)	447

NOMISMATA

GABRIEL MIRCEA TALMAȚCHI, CRISTIAN CEALERA	
Contribuții privind prezența monedelor regatului celtic din Thracia în Dobrogea	
Contributions Regarding the Presence in Dobruja of Coins from the Celtic Kingdom in Thracia	475
GABRIEL CUSTUREA	
Date noi privind ponduri antice și medievale târzii descoperite în Dobrogea	
New Data on Ancient and Late Medieval Weights Discovered in Dobruja	483

RECENSIONES

Natalia MATEEVICI et Tatiana L. SAMOJLOVA, <i>Амфорные клейма из Тирь (раскопки 1998-2008 гг.) / Amfornye klejma iz Tiry (raskopki 1998-2008 gg.)</i> , Oleg Filjuk, Kiev, 2017, 234 p. (Thibaut CASTELLI)	493
VICTOR COJOCARU, <i>Bibliographia classica orae septentrionalis Ponti Euxini. Vol. III. Ars, res sacrae & mythologica</i> , mit Beiträgen von Lavinia Grumeza, Lucian Munteanu, Annamária-Izabella Pázsint, Dan Ruscu, Ligia Ruscu, Editura Mega, Cluj-Napoca 2019, 648 p. (Livia BUZOIANU)	500

IN MEMORIAM

Alexandru Barnea (1944 – 2020)	507
Emilian Popescu (1928 – 2020)	513
Mihail Zahariade (20 iulie 1950 – 29 iulie 2020)	517
 Cărți străine și românești intrate în biblioteca MINAC în 2019 / Foreign and Romanian Books Entries in MNHAC Library in 2019 (Andreea ANDREI)	523
Lista abrevierilor / Abréviations	533

INVENTORY OF LATE ANTIQUE AND MEDIEVAL PORTS ALONG THE WESTERN BLACK SEA*

Preslav PEEV**

Alkiviadis-Alexandros GINALIS***

Cuvinte-cheie: *porturi medievale, hărți nautice, geoarheologie, rețea.*

Keywords: *medieval ports, nautical charts, geoarchaeology, network.*

Rezumat: *Articolul își propune să analizeze modul în care a fost folosită coasta bulgară din punct de vedere istoric și economic, ca parte integrantă dintr-o rețea mai largă de porturi și rute maritime din spațiul Mării Negre și al Mediteranei. O cercetare arheologică sistematică a evoluției topografice a zonei de coastă în relație cu funcționarea porturilor și a altor facilități costiere în timpul antichității târzii și în perioada medievală ar aduce noi informații referitoare la dezvoltarea vieții pe litoral și mai ales la natura resurselor maritime, agricole, precum și a exploatării industriale în contextul comerțului maritim.*

Pornind de la această bază, proiectul de cercetare se concentrează pe analiza mediului paleogeografic legat de fluctuațiile nivelului Mării Negre în siturile arheologice selectate. Prin utilizarea ortofotogrametriei, a scanărilor 3D, precum și a datelor geoarheologice, cercetarea completează informațiile arheologice deja existente. Ultimele vor fi la final folosite pentru cercetarea modelelor de rețele de comunicare maritimă și a studiilor comparative supra ierarhiilor portuare și a funcționalităților interdependente ale structurilor costiere. Aceasta va duce la elaborarea unei platforme noi pentru o mai bună

* The present study is part of the project „Inventory of Late Antique and Medieval ports along the Western Black Sea” funded by the National Science Fund of the Ministry of Education and Sciences of the Republic of Bulgaria (Grant Agreement no KII-06-Austria/11) and the Centre for International Cooperation & Mobility (ICM) of the Austrian Agency for International Cooperation in Education and Research (OeAD) of the Federal Ministry of Education, Science and Research (BMBWF).

** Preslav PEEV: Department of Marine Geology and Archaeology, Institute of Oceanology - Bulgarian Academy of Sciences; e-mail: peev@io-bas.bg.

*** Alkiviadis-Alexandros GINALIS: German Archaeological Institute, Istanbul Department; e-mail: alkiviadis-alexandros.ginalis@dainst.de.

înțelegere a economiei maritime, precum și a conexiunilor sociale și culturale din regiunea Mării Negre.

Adesea se poate observa cum siturile portuare antice prezintă continuitate în perioadele medievală sau otomană, iar unele dintre ele chiar până perioada modernă. Totuși, o utilizare diferită a peisajului litoral și legătura sa cu rețelele maritime sunt condiționate de schimbările morfologice ale țărmului, migrațiile, schimbările politice și etnice, în ceea ce privește populația locală. Stadiul inițial al programului de cercetare se axează pe colectarea și analiza bibliografiei secundare relevante, a informațiilor din hărți nautice medievale și post-medievale și periploi, precum și a relatărilor istoriografice din izvoarele literare scrise. Acestea vor fi confruntate cu informația arheologică deja publicată referitoare la 33 de porturi, limanuri și puncte de ancorare identificate pe coasta bulgară a Mării Negre.

Abstract: *The study aims to investigate the historical and economic use of the Bulgarian coastline, which is an integral part of the wider port networks and maritime connectivity of the Black Sea and the Mediterranean. A systematic archaeological research of the topographic evolution of the coast in association to the functionality of port sites and other coastal facilities during Late Antiquity and the Middle Ages shall provide new data on the development of coastal life and especially the nature of marine resources and agricultural as well as industrial exploitation in context of maritime commerce.*

Building upon this base, the research project emphasizes on the analysis of the palaeogeographic environment linked to the Black Sea level fluctuations in areas of preselected archaeological sites. By using orthophotography and 3D shooting, as well as geoarchaeological data of the landscapes, the investigation complements the already existing archaeological information. Latter will eventually be used for the study of network patterns and comparative studies of port hierarchies and interrelated functionalities of coastal infrastructures. This eventually will provide a new platform for a better understanding of maritime economy as well as social and cultural connectivity throughout the Black Sea region.

It can often be observed that ancient port sites show a continuation to the medieval or Ottoman periods and some of them even up to modern times. However, a different utilization of the coastal landscape and its connectivity to the maritime networks is given due to physical changes of the coastline caused by the rise of sea-level, migration and political or ethnic changes of the coastal population. The initial stage of the research programme focuses on collecting and analysing relevant secondary literature, information from medieval to post-medieval nautical charts and Periploi as well as historiographical accounts in written sources. These will be set against the already published archaeological data of in total thirty-three registered ports, harbours and anchorages along the Bulgarian Black Sea coast.

INTRODUCTION

Since the beginning of human activities around the Black Sea, life has been strongly influenced by maritime connectivity. The latter is reflected on the one hand by various aspects of seafaring and on the other hand by associated coastal infrastructures. In both cases, their nature has been continuously influenced by

various components.¹ Particularly coastal installations such as harbours, transshipment areas, landing stages or anchorages are closely connected to the characteristics of certain landscapes, which rely primarily on physical and geographical conditions.²

Physical conditions are mainly formed by the consistence and configuration of a specific coastline, affected among many other aspects by the waves, currents, tides and winds, whereas geographical conditions characterise the location itself and its close relationship to the surrounding area. Along the Western Black Sea coast primarily the prevailing wind conditions (NE-SW during summer and SW-NE during winter) strongly affected the nature of shipping as well as the selection and foundation of harbour sites and other types of anchorages as early as the Bronze Age. Therefore, both in the Archaic, Classical as well as the late antique and medieval periods, ships and their landing places depended very much on the consistence and configuration of the coastline. But in the course of time both conditions vary being the “*primum mobile*” for the selection of sites and the foundation as well as development of certain coastal structures in specific areas.

During the late antique and medieval periods, however, it can be observed that profitable geographical locations were preferred to favourable coastal sites with physical advantages, as they create demand and stimulate certain amounts of traffic. This is based on the fact that the harbour cannot be seen as an independent and separate structure acting as an isolated feature, but rather as a linking gate for communication and economic exchange, functioning as a commercial hub and cultural as well as social meeting point. As such, they relied not just on physical and geographical conditions but depended also very much on the political, social and economic aspects of their surrounding area, which are very much determined by human impact.³

The defined surrounding areas can be summarised and divided into designative models of “Hinterland” and “Foreland”.⁴ The degree and pattern of connectivity are to be distinguished between local, districtal, regional and supra-regional activities, which in turn indicate a hierarchical model of functional interrelation between coastal sites.⁵ Based on this principle of differentiating coastal infrastructures, the existence of “primary” and “secondary” ports can eventually be proposed. These different coastal infrastructures reflect a complex combination of direct distribution and coastal cabotage redistribution⁶ with which to understand the maritime networks along the Bulgarian Black Sea coast (**Fig. 1**). Building upon this concept, the current study aims to re-examine the inventory of late antique and medieval ports as an integral part of wider port networks and maritime connectivity of the Black Sea and the Mediterranean.

¹GINALIS 2014, p. 9.

²KARMON 1985.

³SCHÖRLE 2011, p. 93.

⁴HORDEN & PURCELL 2000, p. 140ff.; KARMON 1985, p. 2, 5.

⁵GINALIS 2014, p. 11, 22.

⁶ARNAUD 2011; GIANFROTTA *et al.* 1997, p. 154-159.

HISTORICAL BACKGROUND

The Bulgarian Black Sea coast constitutes a region with unique geographical characteristics, playing a decisive geopolitical role as junction of the north-south trade connections between Constantinople, the Danube region and northeast Europe. Accordingly, the manifestation of any political and economic power in the wider region of the western Black Sea was based on the establishment and development of port cities; even more so during the late antique and medieval periods. Beyond playing an important role in the logistics for military supremacy in northern Thrace, these acted as essential stations to control the shipping lanes along the coastline. As a result, these have ever since been highly disputed.⁷

As early as the period of Greek colonisation maritime communication and consequently the harbour network system along the Western Black Sea coast expanded due to heightened maritime traffic and commerce. As such, the entire range of potential anchorages was utilised.⁸ These artificial harbour sites, roadsteads, staple markets and simple landing stages or natural anchorage grounds continued to be used also in later centuries. This is not only shown by extensive archaeological material but also by rich historical accounts and written sources such as nautical charts or so-called *Periploi* and *Portulans*.

Due to the confrontation of the Roman and eventually the Byzantine Empire with various tribes like the Avars or the Proto-Bulgars as well as later with the Bulgarian Empire in the eastern regions of the Balkan peninsula, the majority of the coastal sites such as Apollonia Pontica (byzantine Sozopolis or modern Sozopol), Anchialos (modern Pomorie), Mesembria (modern Nesebăr) or Agathopolis (Ahtopol) find regular mention in the literary sources of the Early and Middle Byzantine periods.⁹

Beyond the narratives of the Byzantine historiography for the Early Middle Ages, particularly travel maps, so-called *itineraria*, like the *Tabula Peutingeriana*¹⁰ and handbooks of sea navigation, the *periploi*, are of huge importance for the localisation and characteristics of the coastal landscape and its harbour sites. Additionally, they indicate the interconnective role of the various coastal sites within the maritime network of the Western Black Sea. In accordance with the above-mentioned principles of local, districtal, regional and supra-regional distribution and redistribution trade system, they imply a hierarchical distinction. Accordingly, as for the port hierarchy along the Bulgarian Black Sea coast, the site of Anchialos is referred as *limen* (harbour), whereas Mesembria forms a *hormos* (anchorage, roadstead).¹¹

The Bulgarian coast and its ports also occupy a special position in portolans and portolan charts. Not only do they specify the distances between harbours, but often provide further crucial information about the topography and the features of the sites. Especially portolan charts composed by Western European cartographers such as Pietro Vesconte, Battista, Agnese, Diego Homem, Joan Martinez and

⁷ HEHER *et. al.* 2015, p. 107; SIMEONOV 2013, p. 51.

⁸ PEEV 2004; PEEV 2016, p. 17.

⁹ SIMEONOV 2013, p. 49.

¹⁰ TALBERT 2010.

¹¹ Arrian, *Peripl.*, 25.5 (86.7-8); DILLER 1952, p. 136, 156.

many more anonymous authors pay attention to the Bulgarian lands. This is due to the fact that the latest from the 12th century onwards mainly Italian merchant colonies take active part in maritime trade along the Black Sea coasts.¹²

Together with the evaluation of historical facts and historiographic studies by the *Tabula Imperii Byzantini*¹³ and scholars like V. Velkov, P. Soustal, A. Külzer, I. Hristov, G. Toncheva, G. Simeonov or M. Lazarov, a general picture of the coastal life, the development of seafaring and the organisation of port networks along the Bulgarian coast can already be generated (Fig. 1): particularly the Roman expansion towards the east between the 2nd century BC and the 3rd century AD had a first major impact on the sea affairs along the Western Black Sea. In order to control the vital trade routes, a carefully chosen network of port cities was established. The manifestation of an intensive harbour system can be observed also during the Byzantine era. While maritime activities seem to decline after the 7th century AD, by the 12th century AD mainly Genoese merchants herald a new height in harbour activities.¹⁴

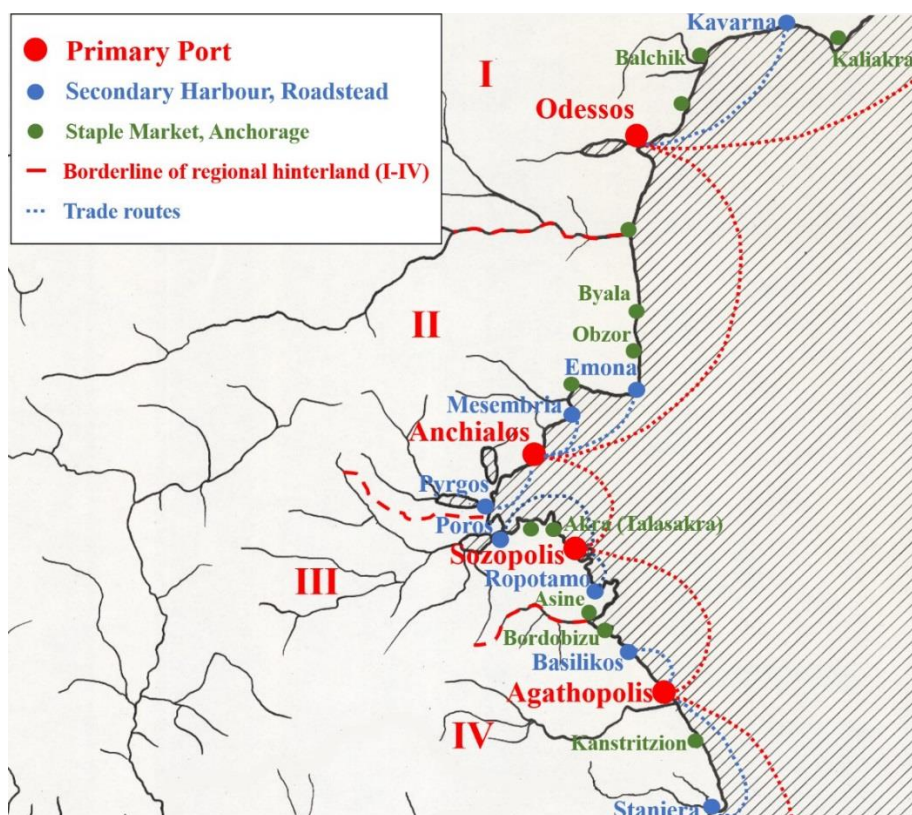


Fig. 1 - Port hierarchy and trade network along the Bulgarian Black Sea coast.

¹² STANIMIROV 2003, p. 21.

¹³ KÜLZER 2008; SOUSTAL 1991.

¹⁴ STANIMIROV 2003, p. 20-21.

As for the topographic characteristics of harbour sites, coastal settlements along the Western Black Sea coast can be assigned to three main types: locations on headlands whose steep east side provide sheltered southern harbour basins, as is shown at Orgame (at Jurilovca), Tomis (Constanța), Kallatis (Mangalia), Kaliakra or Odessos (Varna), the foundations on peninsulas with two potential anchorage areas, as can be found at port cities going back to the period of Greek colonisation during the 8th-6th century BC such as Histria (near Istria), Mesembria (Nesebăr), Anchialos (Pomorie), Sozopolis (Sozopol), Akra (near Černomorec), Agathopolis (Ahtopol) or Urdoviza (Kiten) and finally the use of river estuaries emptying into deep sheltered bays, as can be seen at the Batova river or the Ropotamo river.¹⁵

RESEARCH AIMS

Since the end of the 19th century, a significant amount of information has been gathered concerning the harbour situation and maritime connectivity along the Western Black Sea coast. A series of recent research projects such as the cross border co-operational project "LIMEN: Institution of the Cultural Ports of the Black Sea", the "OLKAS: From the Aegean to the Black Sea – medieval Ports in the Maritime Routs of the East" by the European Centre of Byzantine and Post Byzantine Monuments (EKBMM) or "Harbours and landing places on the Balkan coasts of the Byzantine Empire (4th to 12th centuries)" as part of the DFG-Priority Programme 1630 "Harbours from the Roman period to the Middle Ages" by the Leibniz Research Institute of Archaeology of the Römisch-Germanisches Zentralmuseum Mainz (Germany) have further enriched our knowledge about the port sites in the area of question.¹⁶ However, despite detailed historical analysis together with intensive archaeological investigation in the last decades by scholars like S. Stanimirov, K. Porozhanov, B. Dimitrov or A. Orachev, complex interdisciplinary approaches have not yet fully been implemented. Particularly the interrelation between the various coastal sites and their facilities needs to be emphasized more. Unfortunately, the impact of the nature and especially that of river landscapes in connection to the purpose and function of harbour basins and their associated infrastructures has so far largely been ignored as well. The role of rivers emptying into the Black Sea as communication routes and economic areas may provide new data on the strong connection between the agricultural as well as industrial exploitation of the hinterland and the relevant maritime trade routes.¹⁷ In this way, new facets of coastal life can be revealed through time and hence contribute to the comprehensive study of the historiographic development of the Bulgarian coast.

As such, the current study aims to re-investigate the diachronic use of the Bulgarian coastline as part of the wider port networks and maritime connectivity of the Black Sea and the Mediterranean. The written sources, historical accounts and already existing archaeological data compiled from relevant secondary literature form the groundwork for the following stage of systematic archaeological, topographical and geophysical documentation of individual sites such as an-

¹⁵ STANIMIROV 2003, p. 23, 28.

¹⁶ GINALIS *et al.* 2019; KARAGIANNI 2013.

¹⁷ PEEV 2014.

cient Karon limen or Bizone (modern Kavarna).¹⁸ After the analysis of all collected information from written sources and nautical charts as well as published archaeological data, a total number of thirty-three port sites of the late antique and medieval periods can be counted along the Bulgarian Black Sea coast (**Tab. 1**). Almost all of them constitute successor sites of ancient foundations and one third are in use even until modern times.

№	Site name	Historical period			
		Late Antiquity	Middle Ages	Ottoman Period	modern
1	Shabla	x	x	?	-
2	Toprak kale	x	-	-	-
3	Yailata	x	-	-	-
4	Rusalka	x	-	-	-
5	Kaliakra	x	x	-	-
6	Timum	x	x	-	-
7	Timum – West	x	-	-	-
8	Kavarna	x	x	x	x
9	Aphrodision	x	-	-	-
10	Tuzlata	x	-	-	-
11	Balchik	x	x	x	x
12	Kraneya	x	?	-	-
13	Kastritsi	x	x	?	-
14	Varna (Odessos)	x	x	x	x
15	Rosito	x	x	?	-
16	Galata	x	x	x	-
17	Byala	x	x	x	x
18	Obzor	x	x	?	-
19	Irakli	-	-	x	-
20	Emona	x	x	x	-
21	Nesebar (Mesembria)	x	x	x	x
22	Pomorie (Anchialos)	x	x	x	x
23	Poros	x	x	-	-
24	Skafida	-	x	-	-
25	Debelt	?	x	-	-
26	Akra	x	-	-	-
27	Hrisosotira	x	x	x	-
28	Sozopol	x	x	x	x
29	Sveti Toma	x	x	-	-
30	Urdoviza (Bordobizu)	x	x	x	x
31	Primorsko (Asine)	x	-	-	-
32	Vasiliko	-	x	x	x
33	Ahtopol (Agathopolis)	x	x	x	x

Table 1 - Ancient harbours along the modern Bulgarian coast and historical period of functioning.

¹⁸ PEEV 2016, p. 18-20.

The localised and documented late antique ports are in total twenty-nine. The registered medieval ports are twenty-three. Twenty of them form continuations of late antique predecessor sites. The newly established ports are Skafida and Vasiliko. Regarding medieval Debelt, based on its location it can be assumed that it is not to be equated with the classical site of Develt. The ports used during the Ottoman period and the Bulgarian Revival are eighteen. Of these, only the port of Irakli seem to be a modern foundation. The modern Bulgarian ports are ten.

The reasons for the abandonment of certain ports are due to different reasons. As already mentioned, in the course of time geographical and physical conditions as well as human impact vary being the “*primum mobile*” for the rise and decline of certain coastal sites. Accordingly, beyond the change in the coastline configuration as a result of sea-level rising after Classical Antiquity, mainly the Slavic – Avar invasions of the 6th and early 7th centuries AD, which resulted in the migration and ethnic replacement of the coastal population and hence to geopolitical changes, had a major impact on the maritime connectivity along the Western Black Sea coast.

METHODOLOGY

There are still no systematic studies on the organisation of Black Sea ports similar to those for the Mediterranean. Consequently, a systematic archaeological research of the topographic evolution of its coastline in association with the functionality of harbour infrastructures and other coastal facilities during Late Antiquity and the Middle Ages shall provide new data on the development of coastal life and especially the nature and exploitation of marine resources in context of maritime commerce.

This research project therefore emphasizes on the analysis of the paleogeographic environment linked to the Black Sea level fluctuations in areas of preselected archaeological sites.¹⁹ By using orthophotography and 3D shooting as well as geoarchaeological data of the landscapes, the investigation complements the already existing archaeological information. The interdisciplinary investigation of individual pre-selected archaeological sites will eventually be conceptualised and put into the historiographical context for a comprehensive catalogue and database of harbour sites, roadsteads, anchorages and bays used in certain historical periods. Latter shall significantly advance the *status quo* of knowledge concerning the network patterns and comparative study of port hierarchies. This different approach will provide a new multidisciplinary platform for a better understanding of the maritime economy as well as social and cultural exchange throughout the Black Sea region.

To summarise, the research is divided into three different stages. The initial stage focuses on the collection and analysis of historiographical information. This comprises both the study of written sources such as Herodotus, Pliny the Elder, Strabo or Procopius, that of nautical charts, *Periploi* and later maps, as well as archaeological data from excavations (on land and underwater). The next stage

¹⁹ PEEV *et al.* 2020.

constitutes the systematic archaeological, topographical and geophysical documentation of individual sites such as ancient Karon limen or Bizone. The site documentation will be conducted in two fieldwork seasons. While the first one aims a general approach of interdisciplinary methodology, the second one targets a more into depth investigation. The results will eventually be conceptualised and set against comparative studies of port hierarchies and network analysis for the Black Sea.

BIBLIOGRAPHY

- Arrian, *Periplus Ponti Euxini*, A. Liddle (ed.), 2003, Bristol.
- ARNAUD 2011 - 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, p. 61-80.
- BARALIS *et al.* 2011 - A. Baralis, B. Devillers, N. Marriner, Ch. Morhange, A. Hermay, *Coastal Geoarchaeology of Apollonia Pontica (Bulgaria)*, *Méditerranée* 117 (2011), p. 103-109.
- DILLER 1952 - A. Diller, *The Tradition of the Minor Greek Geographers*, New York, 1952.
- GIANFROTTA *et al.* 1997 - P. A. Gianfrotta, X. Nieto, P. Pomey, A. Tchernia, *La navigation dans l'Antiquité*, Paris, 1997.
- GINALIS 2014 - A. Ginalis, *Byzantine Ports. Central Greece as a Link between the Mediterranean and the Black Sea*, Unpublished PhD thesis, University of Oxford, 2014.
- GINALIS *et al.* 2019 - A. Ginalis, D. Heher, A. Külzer, J. Preiser-Kapeller, G. Simeonov, *Harbours and Landing Places on the Balkan Coasts of the Byzantine Empire (4th to 12th Centuries)*, in: L. Werther, H. Müller and M. Foucher (eds.), *European Harbour Data Repository*. Vol. 4. Jena, 2019.
- HEHER *et al.* 2015 - D. Heher, J. Preiser-Kapeller, G. Simeonov, *Staatliche und maritime Strukturen an den byzantinischen Balkanküsten*, in: Th. Schmidts, M. M. Vucetic (eds.), *Häfen im 1. Millennium A D. Bauliche Konzepte, herrschaftliche und religiöse Einflüsse*. Römisch-Germanisches Zentralmuseum 22, Mainz, 2015, p. 93-116.
- HORDEN & PURCELL 2000 - P. Horden, N. Purcell, *The Corrupting Sea: A Study of Mediterranean History*, Oxford, 2000.
- KARAGIANNI 2013 - F. Karagianni (ed.), *Medieval Ports in North Aegean and the Black Sea. Links to the Maritime Routes of the East*, Thessaloniki, 2013.
- KARMON 1985 - 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 Int. Series 257, Oxford, 1985, p. 1-6.
- KÜLZER 2008 - A. Külzer, *Ostthrakien (Europe). Tabula Imperii Byzantini* 12, Vienna, 2008.
- PEEV *et al.* 2020 - P. Peev, H. Farr, V. Slavchev, M.J. Grant, J. Adams, G. Bailey, *Bulgaria: Sea-Level Change and Submerged Settlements on the Black Sea*, in: G. Bailey, N. Galanidou, H. Peeters, H. Jöns, M. Mennenga (eds.), *The Archaeology of Europe's Drowned Landscapes*. Coastal Research Library 35, 2020.
- PEEV 2016 - P. Peev, *Using Archaeological Data to Infer Past Relative Sea-Level Positions along the Bulgarian Coast of the Black Sea*, *Méditerranée* 126 (2016), p. 17-24.
- PEEV 2014 - P. Peev, *Ancient Harbors in the Gulf of Varna*, in: I. Pâslaru, S. Colesniuc and T. Dimov (eds.), *Kallatida*, Mangalia, 2014, p. 179-186.

PEEV 2004 – P. Peev, *Submerged Prehistoric Settlements along the Western Black Sea Coast: the Problem of Situation*, in: H. Dobrzanska, E. Jerem, T. Kalicki (eds.), *The Geoarchaeology of River Valleys*, Archaeolingua Series minor 18, Budapest, 2004, p. 161-169.

SCHÖRLE 2011 - K. Schörle, *Constructing Port Hierarchies: Harbours of the Central Tyrrhenian Coast*, in: D. Robinson, A. Wilson (eds.), *Maritime Archaeology and Ancient Trade in the Mediterranean*. Oxford Centre for Maritime Archaeology 6, Oxford, 2011, p. 93-106.

SIMEONOV 2013 – G. Simeonov, *Harbours on the Western Black Sea Coast and the Byzantine Campaigns against the Avars and Bulgarians from the 6th until the 8th Century*, in: KARAGIANNI 2013, p. 49-56.

SOUSTAL 1991 – P. Soustal, *Thrakien (Thrake, Rodope und Haimimontos), Tabula Imperii Byzantini* 6, Vienna, 1991.

STANIMIROV 2003 – S. Stanimirov, *Underwater Archaeological Sites from Ancient and Middle Ages along Bulgarian Black Sea Coast – Classification*, *Archaeologia Bulgarica* 7 (2003), 1, p. 1-34.

TALBERT 2010 - R. J. A. Talbert, *Rome's World. The Peutinger-Map Reconsidered*, Segment 7, Cambridge, 2010.

LISTA ABREVIERILOR / ABRÉVIATIONS

AA	Archäologischer Anzeiger, Berlin.
A(A)RMSI	Academia Română Memoriile Secțiunii Istorice, București.
ACSS	Ancient Civilizations from Scythia to Siberia, Leiden-New York.
AH	Archaeologia Hungarica, Budapesta.
AJA	American Journal of Archaeology.
AMN	Acta Musei Napocensis, Cluj-Napoca.
ArhMold	Arheologia Moldovei, Iași.
BSNR	Buletinul Societății Numismatice Române, București.
CA	Cercetări Arheologice, București.
Dacia NS	Dacia. Revue d'Archéologie et d'Histoire Ancienne, nouvelle série, București.
FA	Folia Archaeologica, Budapesta.
JAHA	Journal of Ancient History and Archaeology, Cluj-Napoca.
JHS	Journal of Hellenic Studies, Londra.
JS	Journal des Savants, Paris.
MCA	Materiale și Cercetări Arheologice, București.
RA	Révue Archéologique, Paris.
RAIA	Romanian Archaeological Institute in Athens Bulletin.
RE	Real-Encyclopädie der classischen Altertumswissenschaft, Stuttgart.
RCAN	Revista de cercetări arheologice și numismatice, București.
REB	Revue des Études Byzantines, Paris.
RESEE	Revue des Études Sud-Est Européennes, București.
RMM	Revista Muzeelor și Monumentelor, seria Muzeu, București.
SCIVA	Studii și Cercetări de Istorie Veche și Arheologie, București.
SMMIM	Studii și Materiale de Muzeografie și Istorie Militară, București.
ZPE	Zeitschrift für Papyrologie und Epigraphik, Bonn.
ИАИ	Известия на Археологическия институт, София.
ИНМВ	Известия на Народния музей Варна.
КСИА	Краткие сообщения о докладах и полевых исследованиях Института археологии АН СССР.
СА	Советская археология.