

Catalogue of potential ancient ports in the Black Sea

Catalogue des abris et ports antiques potentiels en mer Noire

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Résumé – Un « havre » est un endroit où les bateaux peuvent trouver un abri. Dans le concept d'abri il faut inclure les mouillages, les plages sur lesquelles les bateaux peuvent être halés, et les ports avec des infrastructures. Même si les marins de l'antiquité pouvaient parcourir 50 à 100 miles nautiques par jour, il était important de connaître les abris sûrs dans un rayon de deux à trois heures de navigation ; c'est-à-dire environ 10 miles nautiques. Un total d'au moins 300 abris était donc nécessaire pour une navigation sûre autour de la mer Noire et de la mer d'Azov. Cet article présente une liste et une carte de 388 abris et ports antiques dans la région de la mer Noire et de la mer d'Azov, et conclut que des ports antiques sont sans doute encore à découvrir en Ukraine et en Russie méridionale.

Mot-clés : havre antique, abri antique, port antique, mer Noire, mer d'Azov

Abstract – A 'harbour' is a place where ships can seek shelter. The concept of 'shelter' has to include anchorages, landing places on beaches, and ports with infrastructures. Even though ancient seafarers could sail 50 to 100 nautical miles in a day, it was important to know where they could find safe shelter within two to three hours of navigation, i.e. only approximately 10 miles. For safe sailing, a total of at least 300 shelters was therefore required around the Black Sea and Azov Sea. This paper presents a list and map of 388 known ancient harbours in the Black Sea and Azov Sea, and concludes that ancient ports are probably still to be found in Ukraine and southern Russia.

Keywords: ancient harbour, ancient shelter, Black Sea, Azov Sea

I - Methodology

A 'harbour' is a place where ships can seek shelter. The concept of 'shelter' has to include anchorages, landing places on beaches, and ports including structures such as access channels, breakwaters, jetties, landing stages, quays, warehouses to store commodities and equipment, shipsheds and slipways. Shelters of interest include all places which may have been used by seafarers sailing over long distances. *Villae maritimae* are also of interest, but shelters used by local fishermen, who may have landed their boats on the beach in front of their homes, are of less interest. In this study, only maritime harbours and some river ports that could be reached by deep-sea ships are considered.

This paper presents work done to collect, identify and locate ancient harbours. It is based on a study of existing documentation, i.e. on the writings of 68 ancient authors and a few modern authors, including the Barrington Atlas.

The ancient authors are usually historians, philosophers or poets, but for the purpose of this study it is ancient geographers that have retained most of our attention: Strabo, Pliny the Elder, Ptolemy, and Arrian and Marcian who recount their journeys in the Black Sea. In addition to ports mentioned by ancient authors, some ports mentioned by modern authors have been included: Lehmann-Hartleben (1923), Frost (1963), Blackman (1982), Blackman and Rankov (2014), Flemming and Webb (1986), Talbert (2000), Cohen (1995 and 2006), Tiverios (2008), Dawson (2013), Gordiev (2015) and some up-to-date web sites (<http://pleiades.stoa.org/> and <http://dare.ht.lu.se/>).

In a first stage, only ports were listed that are explicitly mentioned by each ancient author (*portus, navale, statio*). Cities where the presence of a port was known from other

sources were not attributed to an author who mentions the city but does not mention the port. This limitation is certainly questionable, as one cannot imagine coastal settlements without at least minimal shelter for boats. It was therefore decided to include all sites mentioned by the authors of a Periplus who were sailing ships and for whom one might consider that all places they mention are harbours. Furthermore, it was considered that all coastal settlements mentioned in the Barrington Atlas and in the Digital Atlas of the Roman Empire (DARE) must have had a shelter, and they have been included too.

2 - Results

The result of this work is a list of over 4000 ancient ports and shelters that are scattered mainly around the Mediterranean Sea, but also in the North Sea, in the Atlantic Ocean, in the Red Sea and the Gulf and in the Indian Ocean.

Fig. 1 shows 388 known ancient ports and harbours in the Black Sea area. Out of this number, 165 places are mentioned as harbours by ancient authors. A detailed list of all of them is included hereafter in a clockwise rotation starting and ending at the Northern access to the Bosphorus, with their latitude and longitude coordinates.

3 - Analysis

Ancient seafarers often used beaches to land their ships. It may be noted that a 37 m military trireme with 170 'strong' oarsmen could be hauled on the beach if the slope was mild enough, for instance no more than 1:7 (about 15 %) which was also a maximum for slipways (BLACKMAN and



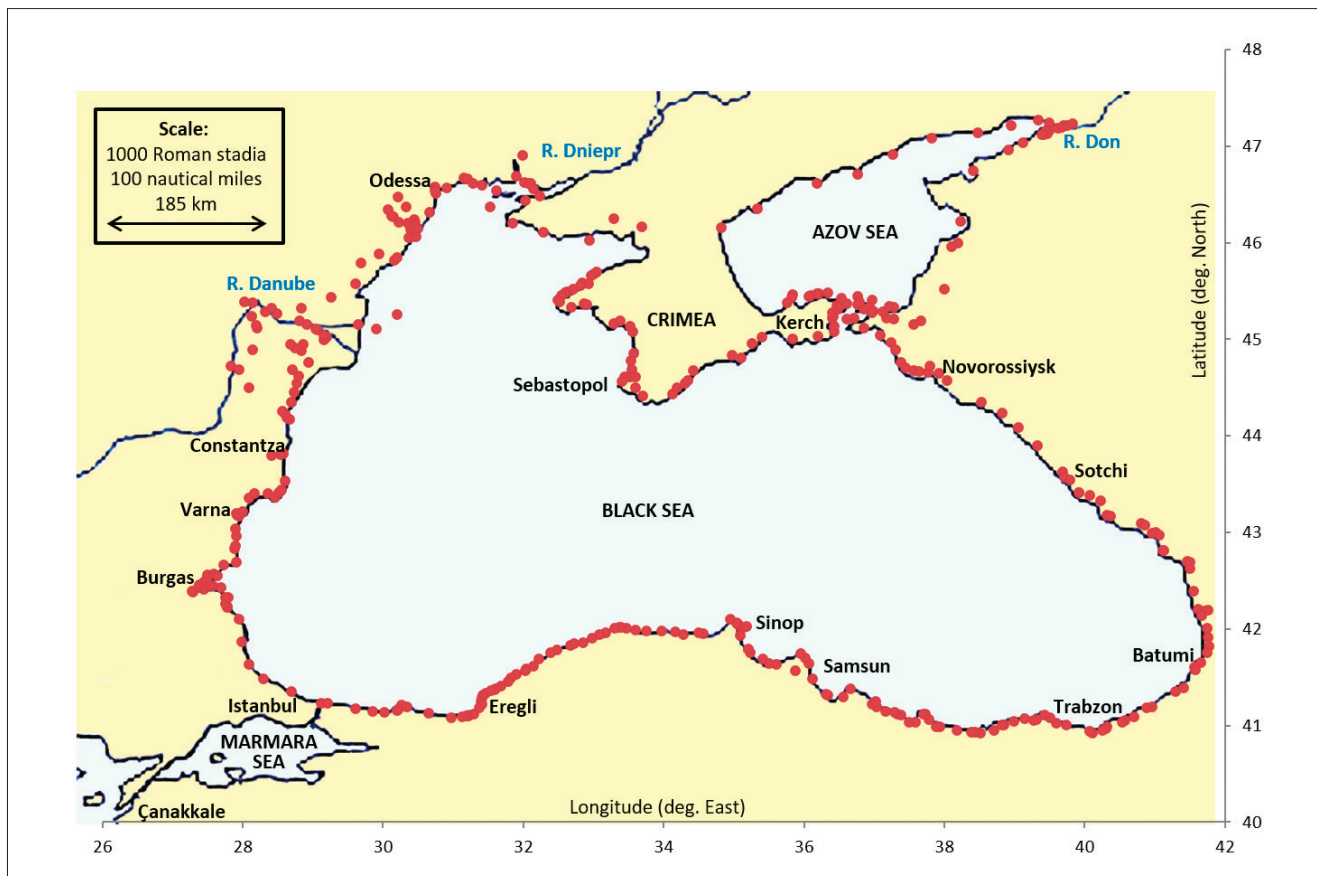


Fig. 67 – Ancient ports in the Black Sea area

RANKOV, 2014). This requires sand of a certain grain size (KOMAR, 1998): the very fine sands (or silts) found in large deltas yield a very flat slope which keeps ships far from land. Conversely, a shingle beach has a steep slope that is dangerous for landing ships on.

During military expeditions, 200 people had to be fed on board triremes. It was impossible for masters to fill their ships with tons of food. In the absence of ports, ship pilots had to find places with a degree of shelter where drinking water could be found, and river estuaries could provide both. The *Stadiasmus* is an example of a collection of such knowledge, and can be considered as the ancestor of medieval portolans and modern nautical instructions.

Commercial ships obviously preferred sheltered creeks with clear landmarks on shore (such as a mountain). Many shelters were needed, because seafarers often followed the coast, using safe shelters to stop overnight and escape bad weather. Even though they could sail 50 to 100 nautical miles in a day, it was important to know where they could find safe shelter within two to three hours of navigation; i.e. only approximately 10 miles. With the length of the Black Sea and Azov Sea coast being approximately 5,800 km (according to the Black Sea NGO Network, [bsnn.org/black_sea.html]) i.e. a little over 3,000 nautical miles, as an order of magnitude, they would hence have required a total of at least 300 shelters around the Black Sea and Azov Sea, which is fairly close to the 388 places found so far.

Many of these sheltered creeks still exist today, but large

changes have occurred in some places:

- crustal movements which explain why some ancient ports are buried under modern ports;
- relative sea-level rise of 0.30 to 0.50 m over the past 2000 years (see FLEMMING and webb, 1986; MORHANGE, 2014);
- storms and seismic events inducing tsunamis which devastated some coastal areas;
- river estuaries tend to silt up, and this explains why some ancient ports are now far from the sea (e.g. Danube and Don deltas) or have simply filled up with sand (ANTHONY *et al.*, 2014);
- in some large cities, the 'old port' has been reclaimed to create a new waterfront area (e.g. Varna, Mangalia, Constanza);
- beaches are subject to sedimentation and erosion by wave action, and the latter explains why some ancient ports were lost to the sea.

It should also be noted that ports mentioned here have been collected from texts of various dates ranging from 500 BC (except for Homer) to 500 AD (with a few exceptions). The various authors did not see the same things. Likewise, some authors simply repeated what others wrote before them!

Even though the total number of shelters is fairly close to a safe number of one every 10 nautical miles, it can be seen from Fig. 1 that many ancient harbours probably still remain to be found on the northern coasts of the Black Sea and in the Azov Sea, notably in Ukraine and in Russia. I can suggest some likely candidates in areas that today



provide some nautical shelter and access to fresh water, and that are a reasonable distance from each other and other known ancient ports:

- along the canal crossing the Crimean Peninsula between Perekop and Heniches'k,
- on several coastal lakes on the western Crimean coast,
- from Crimea to Marioupol: Gulfs of Fedotova, Obytichna, Berdiansk, Belosarayska, although it is acknowledged that this sandy coast with significant sediment transport (littoral drift) does not provide easy access for shipping,

- from Novorossiysk to Sokhumi: Krinitza, Dzhubga, Lermontovo, Olginka, Golovinka, Gudauta (R. Hypsta),
- on the main rivers: Dniepr, Don.

Some of these candidates might require more attention from historians and archaeologists. The Catalogue of Ancient Ports & Harbours tries to be exhaustive, but is most probably not. This list must be seen as an incomplete collection and the geographical location is sometimes speculative. This work needs to be corrected and completed.

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 MARCIAN of HERACLEA (5th century AD), *Periplus Maris Exteri*



Appendix

Arthur de Graauw is a coastal engineer with extensive experience in the Mediterranean area. He has compiled a list of ancient ports and harbours with latitude/longitude positioning, based on 68 ancient authors and some modern authors. The catalogue of ancient ports contains over 4,000 sites. It can be viewed on: [www.AncientPortsAntiques.com].

Catalogue of ancient ports & harbours in the Black Sea area

Ancient name	Modern name	Country	Latitude (°)	Longitude (°)
Panium, Symplegades insulae, Kyaneai insulae, Pompey's Pillar	Rumeli Feneri	Turkey	41.23498	29.11443
Philia, Phrygia, port of Delcus, Derkos, Derkoi	Durusu near Karaburun	Turkey	41.348057	28.692336
Scylla	Podima, near Yaliköy	Turkey	41.4871	28.3012
Salmydessus, Salmydesse, Medea, Midya	Kiyiköy	Turkey	41.635	28.0948
Thynias, Buaticum	Mert Gölü, near Igneada	Turkey	41.8658	27.982
Ableon Tihos, Aulaeum, Aulactichus, Avleuteichos, Agathopolis	Ahtopol	Bulgaria	42.099143	27.951729
	outlet of R Karaagasch	Bulgaria	42.224906	27.777205
Perinthos, Peronticum	Kiten, at cape Urdoviza	Bulgaria	42.232857	27.780019
Primorsko	outlet of R Djavolska	Bulgaria	42.262705	27.755799
Tera, Ranuli, Asine	Roman naval base, unlocated near cape Maslen Nos, in the bay of Paraskeva?	Bulgaria	42.321527	27.792529
Chersonnesus, Chersonese, Gersonosus, Tonzos	Roman fort at outlet of R Ropotamo	Bulgaria	42.328197	27.754538
Antea, Apollonia Pontica, Apollonia Magna	Sozopol, with ancient lighthouse on isle of St Yvan	Bulgaria	42.424361	27.692383
Antheia	Atiya	Bulgaria	42.448579	27.573028
	bay of Cenguene Skelja	Bulgaria	42.449138	27.533746
	Tvardica on the South bank of Lake Mandra	Bulgaria	42.414687	27.449732
	industrial area Kostadin Tchechma	Bulgaria	42.3865	27.2937
Deultum, Develton	Debelt on on the SW bank of Lake Mandra	Bulgaria	42.3882	27.2807
Pirgos	Greek fort between the villages of Konstantinovo and Chernivrah	Bulgaria	42.42775	27.367
	Shiloto	Bulgaria	42.45694	27.3804
	Burgas, Pobeda, Sladkite Kladentsi	Bulgaria	42.48245	27.4396
	Izgrevev	Bulgaria	42.5111	27.4784
	between the airport and Lake Atanasovo	Bulgaria	42.556161	27.493903
	Gerena	Bulgaria	42.5666	27.5812
Anchialos	Pomorie	Bulgaria	42.553	27.638
Mesembria, Mesembrie, Meneabria	Nessebar	Bulgaria	42.658426	27.727654
Haemus Prom., Gema, Aristaeum	Cape Emona	Bulgaria	42.689078	27.904284



Ancient name	Modern name	Country	Latitude (°)	Longitude (°)
Naulohus, Naulochos, Tetranaulohas, Heliopolis	Obzor	Bulgaria	42.8273	27.8858
Aspros, Templum Iovis	Cape Sveti Atanas	Bulgaria	42.855	27.901
	Shkorpilovtsi, at the outlet of R Kamchia	Bulgaria	42.9644	27.9045
Erite, Ereta	near Bliznatsi	Bulgaria	43.037	27.893
port of Karabizia?	near cape Galata	Bulgaria	43.170592	27.942562
	Karantinata, Lazuren Bryag	Bulgaria	43.174293	27.919003
Odessus, Tiberiopolis, Odissopolis, Ulyssopolis	Varna, ancient port unlocated near modern railway station, Roman naval base	Bulgaria	43.19825	27.91362
Catrizi, Castrici	Kastritsi	Bulgaria	43.21976	28.0029
Gerania, Kraneia	Kranevo	Bulgaria	43.354056	28.084006
Krounoi, Crunos, Dionysopolis, Matiopolis	Balchik, Balcik	Bulgaria	43.403915	28.164406
Byzone, Bizona, Byzus	near Kavarna	Bulgaria	43.407	28.354
Tirizis, Tetriciada, Tetrisiade	Cape Kaliakra	Bulgaria	43.364	28.4658
Rousalka	Rousalka	Bulgaria	43.413042	28.517872
Yaila	Yaila	Bulgaria	43.438001	28.550458
Karon Limen, Port Carus, Port of the Carians, Karia	cape Shabla	Bulgaria	43.538305	28.610005
Callatis, Kallatis, Pangalia	Mangalia	Romania	43.811929	28.583472
	Limanu	Romania	43.803562	28.535589
	Albesti	Romania	43.796961	28.410275
Tomis, Tomes, Tomis Costantiana	Constantza	Romania	44.172187	28.662766
Vicus Turris Mucaporis	Anadolchioi	Romania	44.19333	28.63506
Vicus Scaptia	Palazu Mare	Romania	44.22691	28.59833
	Ovidiu	Romania	44.2565	28.5717
	Cape Midia	Romania	44.344	28.7
	Capidava	Romania	44.493695	28.09031
Carsium	Harsova	Romania	44.681627	27.952134
	Piua Pietrei	Romania	44.72711	27.8365
Beroe	Piatra Frecatei	Romania	44.895372	28.139512
	Peceneaga	Romania		
	Piatra Rosie	Romania	45.11789	28.19972
Vicus Celeris	Vadu	Romania	44.44896	28.73504
Gistria, Histria, Istros, Ister	Istria	Romania	44.548725	28.775075



Ancient name	Modern name	Country	Latitude (°)	Longitude (°)
Insula Lupilor	Sinoe	Romania	44.62329	28.802835
Vicus Buteridavensis	Sariurt	Romania	44.6888	28.70366
Argamu, Orgame	Sase Martie, Cape Dolosman between Lake Golovita and Lake Razim	Romania	44.756104	28.941423
	Enisala	Romania	44.88375	28.8351
Enisala	Babadag	Romania	44.9112	28.7444
	Satu Nou	Romania	44.948107	28.687121
	Sarichoi	Romania	44.947851	28.861707
Aegyssos	Tulcea	Romania	45.186426	28.8148
Noviodunum, home port of Classis Moesica fleet	Isaccea	Romania	45.270489	28.491626
	Rachelu	Romania	45.28665	28.32573
Dinogetia	Gorvan	Romania	45.378884	28.138792
Barbosi	Galati	Romania	45.384993	28.025101
Arrubium	Macin	Romania	45.239231	28.127894
Troesmis	near Turcoaia	Romania	45.145451	28.186283
Halmyris, Salmorus	near Murighiol	Romania	45.024757	29.198041
Ad Stoma	Sfinu, Sfintul Gheorghe	Romania	44.99447	29.16058
Gratiana?	near Murighiol	Romania	45.03664	29.16174
Salsovia	2.5 km NW of Mahmudia	Romania	45.101	29.0675
	Fortificatia Getica, at Cetajuiu, 1.5 km W of Salsovia	Romania	45.1026	29.048
Thalamonium	Nufaru	Romania	45.15	28.91667
R Ister, Danuvius, navigable on a great distance, with many river ports	R Danube, Donau	Romania	45.108927	29.905618
Nakaron, Solin	Sulina	Romania	45.1566	29.6526
Ahillea, Hillia, Kealia	Kiliya	Ukraine	45.433	29.257
	Ismail	Ukraine	45.326236	28.831523
Aliobrix	Orlivka	Ukraine	45.31965	28.411852
Achille's island, Leuke insula, White island, Macaron insula, Blessed island, Isle of Serpents	Isle of Biel, Zmiinyi, in front of Sulina, in the delta of R Danube	Ukraine	45.254677	30.203218
Arpis Civitas, Harpis?	Denisoye near Desantne	Ukraine	45.570198	29.612769
Antiphili Turris, Ta Antipilou	near Trapivka, near Tartarboundary	Ukraine	45.78751	29.682246
	Zheltyy Yar	Ukraine	45.88703	29.94367
	Kremniskoy, near Lebedivka	Ukraine	45.822041	30.156114



Ancient name	Modern name	Country	Latitude (°)	Longitude (°)
Aepolium	Shabalata	Ukraine	45.843287	30.201405
	Belen'koye	Ukraine	46.049	30.3736
Neoptolemi Turris, Hermonactocome	Zatoka?	Ukraine	46.06002	30.467095
	Shabo	Ukraine	46.137906	30.390811
	Mologa	Ukraine	46.21609	30.23122
	Pivdennoye	Ukraine	46.27039	30.14335
	Semenovka	Ukraine	46.27891	30.12083
	Kosovka	Ukraine	46.34611	30.077
	Belyayevka	Ukraine	46.47289	30.21464
	Nadlimanskoye	Ukraine	46.37278	30.33335
	Ovidiopol	Ukraine	46.24426	30.44546
	Niconia, Nikonion, Niconium	Ukraine	46.21572	30.45485
	Palanka, near Roxolani	Ukraine	46.18376	30.436926
	Karolino-Bugaz	Ukraine	46.141443	30.501262
	Ilyichevsk, Illitichivsk, Tchornomorsk, with Greek lighthouse	Ukraine	46.316	30.668
	Isiakon Limen, Isiacorum Portus, port of the Isiacians	Ukraine	46.51	30.75
Istrianon Limen, port of the Istrians, Istrians	Kuial'nyk, near Odessa	Ukraine	46.573	30.74
	Zhevakhov	Ukraine	46.543	30.735
Scopuli	near Nova Dofinovka	Ukraine	46.566853	30.913587
	Kosharskoye	Ukraine	46.666	31.155
	Koblevo	Ukraine	46.661	31.208
	Ordesus, Odesus, Odessos	Ukraine	46.61	31.278
Borysthenes insula	isle of Berezan, was disconnected from mainland at cape Adzhyias'k, South of Vyktorovka, in 4 th c. BC	Ukraine	46.598556	31.412078
	Pokrovskoye, near cape Kinburns'ka	Ukraine	46.53639	31.61164
Olbia, Borysthenes, port of the Borysthenites, on R Hypanis, Danapris	Parutyne, on R Bug, Roman naval base	Ukraine	46.688537	31.904405
	Radsad	Ukraine	46.901	31.987
	Bublikova Balka	Ukraine	46.627	32.02
	Pugach	Ukraine	46.6128	32.0637
	Aleksandrovka	Ukraine	46.6097	32.1035
	Hippolaou Akra, at the mouth of R Borysthenes	Ukraine	46.556039	32.147822



Ancient name	Modern name	Country	Latitude (°)	Longitude (°)
	Rybal'chye	Ukraine	46.4809	32.2345
	Yagorlytskoye	Ukraine	46.4353	32.03
Eones	Cape Tendrivs'ka	Ukraine	46.375	31.528
port of the Acheans, Achille's course	Tendrivs'ka Kosa island	Ukraine	46.204966	31.852853
Hylaia, Pidea	Zaliznyi Port	Ukraine	46.107588	32.282864
Bonus Portus, North of Kephhalonesos insula, in Tamyrikes kolpos	Dzharylhach island in Dzharylhach'ka gulf, with an outlet near Lazurne	Ukraine	46.023	32.943
Karkine?	Kalanchak, on R Kalanchak	Ukraine	46.2528	33.294
Taphros, Tafros	Perekop, near Armians'k with canal crossing the Crimea isthmus	Ukraine	46.16162	33.69272
	Masliny, Sjeverne	Ukraine	45.695017	33.042744
	Burnel	Ukraine	45.6795	33.0037
	Groty	Ukraine	45.6629	32.9649
	Mezhvodnoye	Ukraine	45.58	32.84
	Dzharylgach	Ukraine	45.5785	32.9314
	Panskoye, in Yarylhats'ka Bay	Ukraine	45.552869	32.813667
Kalos Limen, Calos	Chornomors'ke, in Achmechet bay	Ukraine	45.51763	32.714032
	Karmyshev bay, port of Abuzlar?	Ukraine	45.4929	32.6202
	Kipchak bay, port of Kastel?	Ukraine	45.4812	32.5914
	Great Castel bay, port of Dzhangul?	Ukraine	45.457	32.5475
	Ocheretay bay, port of Chorotay?	Ukraine	45.407	32.49
	Karadzhinskoye near Olenivka	Ukraine	45.383	32.523
	port of Oyrat and Dzhan-Baba?	Ukraine	45.329	32.68
	Kulcuk, Kulchuk	Ukraine	45.367043	32.863964
	Belyaus	Ukraine	45.362281	32.905978
	Chaika, near Zaozerne	Ukraine	45.164263	33.290377
Kerkinitis	Yevpatoriia	Ukraine	45.189	33.379
	Novofedorivka	Ukraine	45.083	33.555
	Kara-Tobe, near Pryberezhne	Ukraine	45.139468	33.519253
	Dandace, near Peschanoye	Ukraine	44.853668	33.567574
	Kacha	Ukraine	44.7757	33.535
	Bel'bekskoye	Ukraine	44.6826	33.5454



Ancient name	Modern name	Country	Latitude (°)	Longitude (°)
Ctenus, Calamita	Inkerman? Sebastopol	Ukraine	44.610233	33.596857
Eupatoria, Eupatorion	Pivdenna bay? Sebastopol	Ukraine	44.61291	33.531048
Chersonesos, Chersonnese, Heraclea	Roman naval base, near Karantynna Bay, La Quarantaine	Ukraine	44.610306	33.487901
Three ports between Heraclea and cape Parthenium	Strilets'ka bay, Kruhla bay, Kamyshova bay	Ukraine	44.61	33.441
Palaia Chersonesos, near cape Parthenium	SE of the airport, 10 km NW of cape Fiolent	Ukraine	44.5644	33.4096
Portus Symbolorum, port of the Symbols, Symbolon, Bonus Portus	Balaklava	Ukraine	44.5024	33.598
Criumetopon Prom.	Laspynska bay, near Cape Sarych	Ukraine	44.418	33.704
Kharax, Charax	Cape Ai-Todor	Ukraine	44.4317	34.13
Lagyra	near Yalta	Ukraine	44.4967	34.185
Port of Phrourion	Hurzuf?	Ukraine	44.5464	34.3013
Port of Lampas	Partenit?	Ukraine	44.571	34.349
Aluston, Aloustou Phrourion	Alushta	Ukraine	44.673649	34.424744
Skythotauron Limen, port of the Tauroscyths, Athenaeum	near Sudak	Ukraine	44.83098	34.971394
Port of inland settlements: Akra-Deresi, Tokluk, Koz, Kefessia	possibly at cape Bugas, near cape Mehanom	Ukraine	44.811	35.111
Aphineon? Callitra?	Koktebel	Ukraine	44.955	35.262
Theodosia, Theodosie, Caffa	Theodosia	Ukraine	45.026756	35.40311
Cazeca, Kazeka	Cape Chauda	Ukraine	45.008242	35.832027
Port Cimmerion, Cimmerium, Kimmerikon	Cape Opuk	Ukraine	45.027976	36.202315
Kytai, Kitey	South of Cape Takyl	Ukraine	45.07935	36.4263
Akra, Zephyrium	North of Cape Takyl	Ukraine	45.132641	36.427795
	Geroyevka	Ukraine	45.21565	36.40682
Nymphaion, Nymphaeum	about 13 km from Kerch, near Eltiguen memorial	Ukraine	45.236682	36.417346
Tyritake, Tiritaca	near Pryozerne industrial port	Ukraine	45.27708	36.4072
Hermisus	Cape Ak Burun	Ukraine	45.317	36.486
Pantikapaion, Panticapee	Kerch	Ukraine	45.351	36.4685
Myrmekion	Cape Karantynnyi, East of Kerch	Ukraine	45.3532	36.5214
Parthenion	near Zukovka	Ukraine	45.369	36.6156
Porthmion, Porthmia	near Yurkine	Ukraine	45.4265	36.5278
Zenonos Chersonesos, Zenon Hersonissos	Kurtortnoe, near Cape Zyuk, Ziuk	Ukraine	45.476783	36.337184
	General'skoye Vostochnoye	Ukraine	45.472	36.2126
	Salachik	Ukraine	45.47364	36.18908



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	Zolotoye Vostochnoye	Ukraine	45.4538	36.1022
	Zolotoye	Ukraine	45.43946	36.07205
Heracleon	Cape Kazantyp, near Mysove	Ukraine	45.459174	35.843472
	Mysovoye	Ukraine	45.43888	35.82588
	Semenovka	Ukraine	45.3812	35.7607
Neontichos, Enichi, Henichi	Heniches'k	Ukraine	46.155	34.82
	Kyrylivka, at root of cape Fedotova	Ukraine	46.353	35.34
	Obytichna gulf	Ukraine	46.61	36.18
	Berdians'ka gulf	Ukraine	46.71	36.76
Haliëuma Theou, Palestra, Palastra	in Bilosarais'ka gulf	Ukraine	46.91	37.27
Hygreis	Shyrokyne, East of Marioupol	Ukraine	47.086	37.821
Karoia	Mius'kyi Firth, near cape Beglyts'ka	Russia	47.135	38.474
Kremnoi, Kremny	Taganrog	Russia	47.2118	38.95
Tanaïs, on R Tanais	near Nedvigovka on R Don	Russia	47.268109	39.335434
	several places close to Sukho-Chaltyrskoye	Russia	47.2443	39.49956
	Nizhne-Gnilovskoye	Russia	47.187	39.627
	Temirnitskoye	Russia	47.1948	39.6737
	Rostovskoye	Russia	47.209	39.7
	Kizitirinskoye	Russia	47.218	39.75
	Kobyakovo	Russia	47.229	39.83
	Yelizavetovskoye Gorodishche	Russia	47.159809	39.491058
	Kazachiy Yerik	Russia	47.16083	39.44512
	Stanitsa Yelizavetovskaya	Russia	47.12913	39.4705
Patarva	Podazovskoye, inside the fortress of Azov	Russia	47.1165	39.4212
Paniardis	Krepostnoe, near Azov	Russia	47.1208	39.3898
	Vysochino	Russia		
	Pavlo-Ochakovo	Russia	47.034	39.123
	Chambur-Kosa	Russia	46.962	38.921
Pataroue, near R Rhombites Megas, Rombit	near Glafirovka, on Yeysky liman with R Yeya	Russia	46.743056	38.417705
R Rhombites Mikro, Rombit	Beysugsky liman and R Beysug	Russia	46.219	38.227
	Mertvy Redant, SE of Primorsko-Akhtarsk	Russia	46.0007	38.1975



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Azara	near Sadki	Russia	45.96	38.102
	Belikov, SE of Achuyevo	Russia	45.51754	38.00175
	Krasnyy October, Red October, West of Slavyansk-na-Kubani	Russia	45.194	37.666
Labrita, Labrys	near Semibratneye Gorodishche, near Varenikovskaya	Russia	45.1537	37.5629
	Strelka	Russia	45.2089	37.286
	Golubitskoye Gorodishche	Russia	45.334212	37.2783
Tyrambe	Starotitarovskaya	Russia	45.21866	37.17477
	Stanitsa Peresyp	Russia	45.337622	37.211466
	Duboviy Mys	Russia	45.28	37.123
Achillion	Kuchugury	Russia	45.408398	36.970666
	near Il'ich	Russia	45.43942	36.769743
	Batareyka near Zaporozhskoye	Russia	45.39	36.788
Patrasys	Kamennaya near Zaporozhskoye	Russia	45.357083	36.764766
	near Zaporozhskoye	Russia	45.313152	36.85376
	Tatarskiy	Russia	45.327	36.93
Kepoi, Cepi	near Sennoy	Russia	45.294983	36.982623
Phanagoria	near Sennoy	Russia	45.277	36.9659
Hermonassa	Ataman	Russia	45.21952	36.71422
Korokondame	near Ataman	Russia	45.213532	36.614144
	Bugaz	Russia	45.1126	36.861
	Stanitsa Blagoveshchenskaya	Russia	45.039794	37.085413
Sindicos, Sindique, Gorgippia, Anapa	Khutor Blagoveshchenskiy	Russia	44.970273	37.239085
	Anapa	Russia	44.896	37.31
	Sukko, near cape Utrish	Russia	44.7618	37.3811
	Malyy Utrish	Russia	44.708	37.453
	Dyurso	Russia	44.6758	37.56
	Yuzhnaya Ozereyka	Russia	44.666	37.639
Bata, Bathai, Patous, Port Hieron	Myskhako	Russia	44.654	37.765
	Novorossiysk, on R Tsems	Russia	44.723333	37.793801
	Kabardinka	Russia	44.646	37.928
Torikos, Praegae, Pagres, Heptalou, Eptala	Gelendzhik	Russia	44.571643	38.034439



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Palaia Achaia, Vetus Achaia, Ancienne Achaia	Arkhipo-Osipovka? on R Vulcan	Russia	44.349313	38.529342
Vetus Lazica, Ancienne Lazique	Novomikhaylovskoye? on R Nechepsuho	Russia	44.233168	38.830548
Nicopsis, shelter East of a promontory not named by Arrian?	Tuapse, East of cape Kadosh	Russia	44.085518	39.057199
Zigoj, Zigi	Lazarevskoye	Russia	43.895	39.333
	Mamai Kala, on R Mamayka	Russia	43.623	39.693
outlet of R Achaeunte, Achaious	R Shakhe, Sochi	Russia	43.573	39.707
Masaitike, at outlet of R Masaetica, Masaetique	Matsesta, on R Matsesta	Russia	43.541	39.788
Herakleion Prom. near outlet of R Naessus, Nesis	Pobeda, near R Khosta	Russia	43.412	39.9206
outlet of R Borgys	R Mzynta at Adler, near Sochi airport	Russia	43.411	39.921
outlet of R Abascus	Gantiadi Monastery at Tsandripsh, between R Khashupse (East) & R Psou (West)	Abkhazia	43.3793	40.0709
Stennitike, Nitica, Nitike, Triglite	Roman fort near Gagra	Abkhazia	43.325	40.2225
Pityus, Pitynte, Amzara, near R Korax	Roman fort at Pitsunda with port on Lake Inkit, near R Bzyb	Abkhazia	43.1736	40.3185
	Lidzava	Abkhazia	43.166	40.369
Anacopia, Tracheia, near R Apsara	Roman fort at Novyj Afon, New Athos, near R Psyra	Abkhazia	43.0945	40.8083
	Gvandra	Abkhazia	43.074	40.86
R Anthemus	Krasnyy Mayak, near R Gumista	Abkhazia	42.99	40.96
Dioscurias, Sauastopoli, Sebastopolis	Sukhumi	Abkhazia	42.996	41.018
Port Marfitam, Port Mengrels, Klisura, on R Chrysorrhaoas	? on R Kelasuri, Kyalasur	Abkhazia	42.97	41.063
R Astelephus, Stelippon, Euripos	R Kodori, possible ancient northern branch of a delta	Abkhazia	42.815	41.1257
	R Hippus	Abkhazia	42.812154	41.121505
Guenos, Gyenos, Cygnus, Neapolis on R Cyaneus, Glaucus, Ciani, Tarsuras	Ochamchira, on R Galidzga	Abkhazia	42.7035	41.46
	Roman fort at Ilori, South of Ochamchira, on R Galidzga	Abkhazia	42.6956	41.4986
Siganeon, Zigane on R Singames (navigable)	Roman fort near R Gudava	Abkhazia	42.6286	41.5013
R Chobus, Chorsos	Pichori near R Enguri, near Anaklia	Abkhazia	42.3894	41.548
R Charieis, Arios (navigable)	northern arm of R Rioni	Georgia	42.2088	41.624
Patara Poti, on R Phasis (navigable)	Roman fort at Patara Poti, on R Rioni	Georgia	42.1848	41.709
Simagre, on R Phasis (navigable)	on R Rioni	Georgia	42.197	41.7645
Phasis, between R Phase & lake Paleostomi, Paliastomi	Poti, on southern arm of R Rioni, with Roman naval base (on lake Paliastomi?)	Georgia	42.1413	41.6745
R Mogrus (navigable)	R Supsa	Georgia	42.01135	41.74261
R Isis (navigable)	R Natenebi	Georgia	41.9122	41.7616



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R Acinasis, Akinases	Pichvnari, near Kobuleti on R Kintrish	Georgia	41.816	41.769
Petra Pia Iustiniana	Roman fort at Tsikisdziri	Georgia	41.759	41.741
Bathys Limen on R Bathys, Portus Altus	Roman fort at Batumistsikhe, on R Korolis Tskali	Georgia	41.656123	41.650231
R Acampsis (navigable)	R Chorokh	Georgia	41.60455	41.565274
Apsaros, Apsaruntos, Apsyrtus	Roman fort & naval base at Fort of Gonio, 10 km South of Batumi	Georgia	41.57311	41.573741
Kissa, on R Kissa	Hopa	Turkey	41.392	41.409
Arhabia, on R Archabis	Arhavi, on R Kabisre Deresi	Turkey	41.3536	41.2967
R Prytanis	R Firtina near Ardesen	Turkey	41.1916	40.9607
Atina, Athenae, near R Zagatis	Pazar, near Hemsin Deresi	Turkey	41.1817	40.8805
R Adienus	R Madenli near Cayeli	Turkey	41.089391	40.709049
R Ascurus	R Askoroz	Turkey	41.048905	40.569334
Rhizos, Rhizaion, Becheirikos, Port Bechirique, on R Rhizius	Rize, on R Tasli	Turkey	41.036149	40.534456
R Calos	North of Eskipazar	Turkey	40.990875	40.323847
R Psychros	South of Eskipazar	Turkey	40.972625	40.305805
Ophius, on R Ophis	Of, on R Solakli	Turkey	40.948389	40.259139
Susarmia, Sousourmena, Hyssus Portus on R Kora, Missy Portus, Augustopolis	Sürmene, on R Manahoz Deresi	Turkey	40.918188	40.112901
Erakleia, Psoron Limen, near Kaine Parenbole	Arakli, on R Karadere, near Canayer	Turkey	40.94234	40.068253
Trapezos, Trapezonte, Trapezunt, initial home port of Iassus Pontica fleet	Trabzon	Turkey	41.004909	39.739089
Ermonassa, Platana, Pulathane	Akcaabat	Turkey	41.021783	39.596558
Chordule, Cordila, Kordyle	Akcakale	Turkey	41.079233	39.509828
Hieron Oros	Yoroz Burun	Turkey	41.104543	39.435566
Kerasous	Kirazlik	Turkey	41.0637	39.318
Libiopolis, Linopoli	Vakfikebir, on R Fol Deresi	Turkey	41.0518	39.2776
Coralles, Koralla	Eynesil	Turkey	41.068	39.141
Philokalea	Görele	Turkey	41.044571	38.992223
Argyria, at outlet of R Tripolis	Quarry at Halkavala, at outlet of R Harsit	Turkey	41.008	38.85
Tripolis	Tirebolu	Turkey	41.008085	38.821436
Port Zephyriose, Zephyrium	Espiye	Turkey	40.9526	38.7056
	Kesap, on R Vanazit	Turkey	40.919	38.5157



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Aretias insula, Aretide, Areonesos, Arrhentias, Halkeritida, Ares, in front of R Pharnacea	Isle of Giresun Adasi, in front of R Aksu	Turkey	40.92895	38.43706
Pharmacya, Pharmakeia, Pharnacee, Kerasus, Cerasus, Kerasonte, Choerades	Giresun	Turkey	40.926512	38.390134
Ischopolis, at the outlet of R Pharmatenos	Bulancak, at outlet of R Pazarsuyu	Turkey	40.947353	38.174747
R Melanthius	R Melet near Ordu	Turkey	40.990334	37.932806
Kotyora, Cotyorum, Kitoros, near the outlet of R Genetes, Genetes, near ape Genetaios	Ordu, near the outlet of R Akcaova	Turkey	40.991364	37.884258
Boona	Persembe in the bay of Vona	Turkey	41.0603	37.784
Kilikon Nesos insula, Isle of the Cilicians	Isle of Persembe Adasi	Turkey	41.117387	37.728723
Stamene, Ameneia?	near Yason Burnu, Jason's Cape	Turkey	41.116	37.705
Polemonium	Bolaman	Turkey	41.0348	37.5838
Phabda, Phadisana, Side	Fatsa	Turkey	41.038	37.499
Ameletos, Camila	near Yüceler	Turkey	41.10855	37.387574
R Phigamunte	near Cevizdere	Turkey	41.120359	37.332904
Oenoe, Caena	Ünye	Turkey	41.1327	37.289
R Thoaris	R Akcay	Turkey	41.1506	37.17
R Beris	R Arimdere, near Milic	Turkey	41.189159	37.037293
Cape of Amazones, Themiscyra, at the outlet of R Thermodon	Terme, on R Terme Süyu	Turkey	41.216698	36.976401
Lamyron, Herakleion, Heracleum	Sivaslılar Köyü	Turkey	41.2456	37.0258
Ankon, Acona on R Iris	at the outlet of R Yesil	Turkey	41.383	36.66
Chadisia on R Chadisia	near Kurtulus at the airport of Samsun	Turkey	41.2924	36.5626
Amisos, Amisus, Peiraieus, archaic Enete	Baruthane, near Samsun	Turkey	41.3149	36.339631
Eupatoria	Karasamson	Turkey	41.3249	36.3176
Eusene	Ballica, near Derenköy	Turkey	41.487	36.124
Conopaeum, Conope, Conopeius Lacus	Cernek Gol, Gernek Gölü	Turkey	41.643	36.07
Naustathmus	Liman Gol, Gölü	Turkey	41.697	36.018
R Halys	R Kizilirmak at cape Bafra	Turkey	41.74762	35.959063
Gadilon, Helega? on R Halys	Bafra	Turkey	41.56985	35.882748
Zaliches, Leontopolis on R Zaleco	Alacam	Turkey	41.636	35.603
	Yakakent Liman	Turkey	41.638876	35.501672
Zagora	Cayagzi	Turkey	41.686531	35.415002



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Garzoubanthon, Orgibate	Kurzuwet	Turkey	41.752598	35.238398
Karousa, Carusa, Caruse, Polichnion	Gerze	Turkey	41.792039	35.201452
Kyptasia	near Demirciköy	Turkey	41.928869	35.090278
Sinopa, Sinope	Sinop	Turkey	42.020602	35.14885
Scopelus	peninsula of Sinope	Turkey	42.025972	35.178924
R Ochosbanes, Ochthomanes	R Karasu Cayi	Turkey	42.031935	35.074574
Armene, Harmene, port of Sinop	Akliman	Turkey	42.050028	35.05828
Harmene?	Hamsilos	Turkey	42.060269	35.04221
Gerna, Leptes?	Inceburun	Turkey	42.098035	34.955292
Potamoi, Potamos	Camurka, near Ayancik	Turkey	41.94845	34.56
Stephane	Caylioglu, near cape Usta	Turkey	41.965	34.5012
Koloussa	Güllüsu Liman, West of Türkeli	Turkey	41.945262	34.279437
Kinolis and Antikinolis	Ginoglu Liman, near Kaslica	Turkey	41.967	34.166
Aeginetes	Yaka Ören, outlet of R Ilisi, near Abana	Turkey	41.981	33.9726
Abonuteichos, Abonutichus, Abonus, Ionopolis	Inebolu	Turkey	41.981333	33.758788
Garium, Gario	Özlüce?	Turkey	41.99	33.601
Zephyrium	Doganyurt	Turkey	42.009959	33.466118
Marsylla, Kallistratia?	Marcula Plaji	Turkey	42.0126	33.398
Karambis Prom.	Ilyasbey on Cape Kerempe	Turkey	42.021193	33.362693
Timolaion, Timolaium	Güble, near Cayyaka	Turkey	42.0095	33.3075
Thyne, Thymena, Timena, Teuthrania?	Timne, near Ugurlu	Turkey	41.96	33.171
Klimax, Climace	Sakalli	Turkey	41.9414	33.0856
Aegialus	Cide	Turkey	41.901342	32.984664
Kytoros, Cytorus, Cytore	Gideros, near Kumluca	Turkey	41.859419	32.858033
Kromna, Cromna	Kurucasile	Turkey	41.830868	32.66982
Tripoli	Tekkeönü	Turkey	41.846	32.7233
Erythrioi, Erythines, Erifin	Cakraz, near Senyurt	Turkey	41.784254	32.481548
Amastris, Sesamos, Sesamus	Amasra	Turkey	41.754893	32.386015
R Parthenius	Poseidon temple at outlet of R Bartin	Turkey	41.686554	32.215629
Mokata? on R Psillide	Muda, formerly Mukata	Turkey	41.611	32.15



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R Billaeus, Billaios	R Filyos near Szaköy	Turkey	41.583552	32.045434
port of Tieion, Tieum, Tius, Billaios	Filyos, Hisarönü, with a submerged breakwater connected to the promontory	Turkey	41.571794	32.0247
Psylla	Isikveren	Turkey	41.5258	31.9
Krenides	near Kilimli	Turkey	41.488533	31.827473
Sandaraca, Sandarake	Zonguldak	Turkey	41.459393	31.78667
Oxinas on R Oxinem,	Ilıksu Köyü, near Esenköy	Turkey	41.412321	31.68226
Nymphae	Cavusagzi	Turkey	41.378872	31.604219
Tyndarides	Kireclik	Turkey	41.374739	31.588112
Posidium	Alacaagzi	Turkey	41.36536	31.542509
Metroum, Metroon, Aulia	Köseagzi near Bali	Turkey	41.331225	31.464391
Cape Acherousias, Akonai	vers Kemer Köyü	Turkey	41.31701	31.417137
Herakleia Pontica, Heraclee	Eregli	Turkey	41.2821	31.413
R Lycus	R Gülüc South of the port of Eregli	Turkey	41.245359	31.391451
	Kilisecik near Göktepe	Turkey	41.216755	31.406413
Nippus, Cales on R Calete	Alapli on R Alapli	Turkey	41.182038	31.375819
Elaios on R Elaesus	near Kocaman	Turkey	41.119224	31.300354
Kalesa, Kelesa	near Cayagzi	Turkey	41.1	31.215
Lilius, Liliaios	East of Akcakoca	Turkey	41.0967	31.186
Dia, Diaspolis, Diospolis	Akcakoca	Turkey	41.0924	31.1233
R Hypius, Hippius	R Melen, Buyukmelen, near Melenagzi	Turkey	41.079158	30.967863
R Sangarius, border of Bithynia	R Sakarya near Ihsaniye	Turkey	41.130681	30.649346
Chalai, Cheles	Dikili Sahili	Turkey	41.195	30.337
Isle of Thynias, Isle of Apollonia	Kefken Adasi	Turkey	41.214126	30.260447
Rhoe on R Rhoes	Kefken	Turkey	41.1704	30.224412
Calpas, Calpe, Kalpe	Kerpe	Turkey	41.156349	30.194158
Tenba	near Bagirganli	Turkey	41.140762	30.019743
Psillion on R Psillis	Yesilcay on R Agua, Göksu	Turkey	41.143723	29.847963
Artanes and Chelaita on R Artanes	Sile	Turkey	41.178163	29.60646
Rhebas on R Rhebas	Riva on R Iriva, near Cayagzi	Turkey	41.226963	29.210147

