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Depicting and Charting the Southern Coastline of Anatolia – Record of the Later Toponyms of Phaselis: Palyopoli-Paleopolis, Tekiroba, Gironda-Phionda-Fironda-Fionda – The 1812 Report of Rapid Coastal Erosion – The (Doubtful?) Islands and Evidence leading Towards a Date for the Collapse of the Upper Courses of the Inner Harbour Arm at Ancient Phaselis, Antalya

Güney Anadolu Sahil Şeridinin Tasviri ve Haritalanması – Phaselis’in Sonraki Toponymlerinin Kaydedilmesi Üzerine: Palyopoli-Paleopolis, Tekiroba, Gironda-Phionda-Fironda-Fionda – 1812 Yılı Hızla Yayılan Kıyı Erozyonu Raporu – Antalya Phaselis Antik Kenti’ndeki İç Liman Kolunun Üst Kısım Çöküntüsünün (Şüpheli?) Adalar ve Kanıtlar Işığında Tarihlenmesi

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Abstract: This article describes the varied and inaccurate cartographic record made of part of the coastline of southwestern Anatolia from the 14th to the 19th century and the attempt to produce an accurate scientific sea chart of the Mediterranean in the 18th and 19th centuries. It describes the various later toponyms employed for the port city of Phaselis on this coastline, Ottoman Turkish and Greek, and suggests the toponyms Gironda-Phionda-Fironda-Fionda for the Orthodox See and for the port-city were all transcriptions of the Greek word Γέροντας (*gerontas/gerondas*) - Γέροντα (*Geronta*, later Greek, pronounced Yeronda) literally meaning elder, but also meaning Elder of the Greek Orthodox Church. Capt. Francis Beaufort’s influential account of rapid coastal erosion at Phaselis is investigated and it is suggested that man rather than nature, physical defacement rather than erosion, was responsible for the damage to the carved white marble sarcophagi in the North harbour. A reason is offered for the islands which were for centuries marked off this coastline as a maritime hazard, ‘*Kephali tis Attalias*’. This was probably in consequence of note being taken of the gasses and oil coming to the surface of the sea released in the course of eruptions from a series of underwater mud volcanoes forming the Anaximander Mountains, suggesting to mariners the presence of islands in the vicinity. Part of the 19th c. published record concerning the state of the inner harbour and harbour arm at Phaselis-Fionda is related in detail in the attempt to determine when and in what seismic event it was damaged, as in 1811 on Beaufort’s chart and in his text it is recorded of the harbour arm, “*the masonry being still near perfect*”. It is suggested that damage to the Phaselis inner harbour arm occurred between 1842 and 1904 when the inner harbour was described as “*fenced by a broken mole*” and that this damage was caused by a local shallow depth seismic event not associated with a tsunami, perhaps in 1851, 1863, 1887 or 1897.

Keywords: Phaselis, Cartography, Toponyms, Γέροντας, Fionda, Geronda, Deface, Coastal-Erosion

Öz: Bu makale, 14. yüzyıldan 19. yüzyıla kadarki Güneybatı Anadolu sahil şeridinin bir kısmında yapılan çeşitli ve hatalı kartografik bir kaydı ve 18. ve 19. yüzyıllardaki doğru ve bilimsel bir Akdeniz deniz haritası üretim girişimini incelemektedir. Bu sahil şeridi üzerindeki Phaselis liman kentine verilen ve Osmanlı Türkçesi ile Hellence olan diğer toponimleri içermektedir. Ayrıca Ortodoks Piskoposluğu için Gironda-Phionda-Fironda-Fionda toponimleri ve liman kenti için Hellence, genel olarak yaşlı anlamına gelen ama aynı zamanda Yunan Ortodoks Kilisesi’nin kıdemlisi/mütevellisi anlamında da kullanılan Γέροντας (*gerontas/gerondas*) - Γέροντα (*Geronta*, geç dönem Hellencesi olup Yeronda şeklinde telaffuz edilmektedir) kelimesinin tüm transkripsiyonları öne sürülmektedir. Kaptan Francis Beaufort’un Phaselis’te meydana gelen ve hızla yayılan kıyı erozyonun etkileyici anlatımı incelenmiş; doğadan ziyade insanın, erozyondan

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ziyade de fiziksel tahrifin Kuzey Liman'daki beyaz mermerden oyulmuş olan sarkophagosun hasarından sorumlu olduğu ortaya konmuştur. Yüzyıllardır bu sahil şeridine komşu olan adalar için '*Kephali tis Attalis*', denize ilişkin bir tehlike olarak sunulmaktadır. Muhtemelen, Anaksimandros Dağları'nı oluşturan bir dizi su altı çamur volkanından çıkan patlamalar sırasında açığa çıkan gaz ve deniz yüzeyine gelen petrole ilişkin alınan nota istinaden denizcilere çevredeki adaların varlığından bahsedilmekteydi. Phaselis-Fionda'daki iç liman ve liman kolunun durumuna ilişkin yayınlanan 19. yüzyıl kaydının bir kısmı, 1811 yılında Beaufort'un harita ve metninde "*duvarcılık hala mükemmelliğe yakın*" şeklinde yazıldığı gibi, ne zaman ve hangi sismik olayda hasar gördüğünün detaylı bir şekilde belirlenmesiyle bağlantılıdır. İç liman "kırık bir dalgakıranla çevrelenmiş" şekilde tasvir edilirken Phaselis iç liman koluna verilen hasarın 1842 ile 1904 yılları arasında gerçekleştiği ve söz konusu hasarın, belki de 1851, 1863, 1887 ya da 1897 yıllarında, bir tsunami ile ilişkili olmayan yerel sığ bir derinlikteki sismik olaydan kaynaklandığı öne sürülmektedir.

Anahtar sözcükler: Phaselis, Kartografi, Toponym, Γέροντας, Fionda, Geronda, Tahrif, Kıyı Erozyonu

Claudius Ptolemy or the subsequent copyists of his Geography, presented later historical geographers with a slightly confused sequence of the names of some of the Lycian coastal cities, reading from west to east he gives: Patara, Antiphellos, Andriaca, Aperlae, to the mouth of the Limyrus River, this because Andriaca should follow, rather than precede, Aperlae¹. European scientific knowledge in the 17th and 18th centuries of the physical geography, the historical geography and of the topography of the southern coastline of Ottoman Anatolia and of the islands off its coast remained in its infancy, both informed and confused by the surviving copies of the works of Ptolemy, of Strabo and of other ancient authors, and was in many cases less accurate in its cartographic depiction than some examples of surviving portolan charts that had been produced from the experience of mariners 300 and 400 years earlier (eg. Fig. 1).



Fig. 1. Detail of the coastline from Macri=Fethiye to Stalimure=Anamur on Augusto Angelino Dulcert's 1339 portulan, Bib. Nat. de France, Paris, (B.696)². The island coloured red is Mengiste-Raudakastali³-Kastellorizon-Castelrosso/Castellorhizo⁴ Castellorizzo-Castle Ruzi⁵-Isle de Chateau Roux⁶, kistèl'-ros'so, also written Kasteloryzo, a small island of the S. coast of Asia Minor, 19 miles S.E. of Patara⁷-Mais=Meis Ada, Satalea=Antalya, Candelor=Alanya. The depiction of the overall shape of C. Silidonie=Gelidonya or Taşlık Br. and the shape of the inner Bay of Antalya, surpassed later cartographic representations of this area until the 19th c. No port is recorded in the location of Phaselis-Tekirova, indicating it was not recognised as a noteworthy port in the 14th c. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes.

¹ This same reversal occurs at times in the recorded position on maps of this coastline of *P. Venetianum*-Adrasan and *P. Genuese*-Yanartaş-Olympos, eg., in the 1509-1616 portolan drawn by Juan Oliva, as on the 1635 French world Sea Charts Atlas made by Jean Guerard, with *P. Genoese* indicated as Adrasan and the *P. Venetico* at Olympos.

² https://upload.wikimedia.org/wikipedia/commons/9/94/Map_of_Angelino_Dulcert_cropped.jpg

³ Hill, 1983, 179.

⁴ Makhairas 1932, 203.

⁵ Newett 1907, 303.

⁶ Recorded as 'Red Castle Island' on R. W. Seale's 1746 London chart entitled, "A correct Chart of the Mediterranean Sea, from the Straits of Gibraltar to the Levant; From the latest and best Observations" <https://www.raremaps.com/gallery/enlarge/35822> and as Mais- Castellorizzo by C. Fellows, Fellows 1839, 218-219.

⁷ Lippincott, 1895, 129.

The representation and circulation of knowledge by means of cartographic representation remained hampered by the lack of an accurate chronometer to determine longitude with scientific accuracy and with no accepted standard meridian, Tenerife, Mecca, Krakow, Paris, Greenwich etc., as in the Islamic world, where two different meridians had long been employed, one based upon the Ptolemaic meridian of the Fortunate-Canary Islands, the other, more frequently employed, with the longitudes based upon the Atlantic west coast meridian adopted by the astronomers associated with the Caliph al-Ma'mūn and al-Khwārazmī in his *Kitāb Šūrat al-Ard*⁸, a difference of 10 degrees of longitude, sometimes both meridians being employed within the same manuscript⁹. Consequently due proportion and a consistent perspective in cartographic representation could not be found (eg. Figs. 2, 3, 6, 6a, 6b, 7, 8, 9); while the localisation of antique sites on maps was at times somewhat confused, if not speculative, with practical epigraphic fieldwork barely begun. There was frequently confusion in the toponyms that were marked, those known from a body of evidence surviving from antiquity, in addition to those from medieval and from modern sources, in Greek, both ancient and later, represented in Latin letters, in Latin, and in transliterated Ottoman, with these toponyms often spelt in a considerable number of ways derived from a variety of sources, both literary and from transcribing into various European languages the names provided by members of the local populations, as also at times through carelessness in copying, reversing the sequence of names, as also in the transcription of the letters when maps were copied, giving rise for example to more than 90 varieties of spelling of the various toponyms that were employed for the city that is today called Antalya in the period from the 12th to the 19th c., a variety of recorded names ranging from Cataliye and Antālī to Andaliyye, Natalia, Atalia, Italia, and Cathaly¹⁰.

⁸ Trigg 2016, 372.

⁹ “Yāqūt quotes al-Bīrūnī on the different systems for latitude in the introduction to *Mu'jam al-Buldān*, noting that intelligence and skill are required in order to distinguish one from the other” Trigg 2016, 372, fn. 39.

¹⁰ A non-exhaustive list includes the following: Adalia, Adalie, Adaliya, Adalea, Adalta, Adalya, 'Adālyiah, Aftalia, Altatia, Andalia, Andaliye, Andaleyeh, Andaliyye, Antaliyah, Antalia, Antaliya, Antaliyya, Antaliya, Antālī, Antali, Antalia, Atalia, Atalie, Ataliya, Antaliyah, Anthaliyah, Attaleias, Attaleia, Attalial, Attalico, Attalie. Català, Catalya, Catalea, Cathaly, Cathalya, Cathailye, Cathaillye, Cetelia, Italia, Italya, Natalia, Natalie, Nouvelle Satalia, Odalia, Palaia Antalia, Sachala, Sadalia, Sakara, Salate, Salatrie, Sandalion, Saptalie, Sartalee, Satalay, Satalea, sataillie, Satali, Satalia, Satalia Nova, Sataliae, Satalías, Sataliam Novam, Satali, Satalie, Satalieh, Satalies, Satalias, Satallia, Satallies, Satallea, Satallye, Sathalia, Sathaliae, Sathalie, Sathalièh, Sathalien, Satalich, Satalya, Satalye, Sataliensis, Satalieyeh, Sataliyah, Satalyia, Satalib, Satafia, Satallye, Satellia, Sathalie, Sathaliae, Saterrea, Satilija, Satolla, Sattalia, Sattelia, Sattalea, Satyliaeh, S'atalia, Scacalia, Sectaliae, Sectalie, Septalia, Ssatallea, Ssatalie, Setalia, Settalia, Settelle and Sutalia.



Fig. 2. Detail showing the southern Anatolian coastline from the map entitled, *Geographiae Sacre Tabula quae Totius Orbis Partes Continens*, drawn by N. Sanson of Abbeville (1660-1667), Géographe Ordinaire du Roi, and published in 1668 in *Description de tout l'Univers*, by François Halma and engraved by A de Winter¹¹. Although *Patara*, *Myrra*, *Phaselis* and *Atalia*=Antalya are named, the relative distances indicated between their positions are quite misleading, while the record of the shape of the coastline and of the islands and of their relative proportions is most remarkably inaccurate, given the longevity and extent of French maritime trade with Ottoman Aleppo-Alexandretta in the 17th c.



Fig. 3. Detail of a map of Ancient Greece and the Eastern Mediterranean published by Homann Heirs¹² (Nürnberg) in 1741, indicating the then current state of knowledge amongst some of cartographers of the form of the southern Anatolian coast from the Gulf of Fethiye to Cape Anamur. While the port of *Telmessus* (Macri-Fethiye) is marked, it has been displaced from the Gulf of Fethiye, while adjacent to *Patara* (at times also recorded as *Patera*¹³-Paterane, Pathera, Patere, Catara, Batra, Patora, Patosa, Pattara, Pattera, Parara-

¹¹ <http://www.ebay.ca/itm/Geographiae-Sacre-Mediterranean-Old-map-Sanson-1668/282121790951?hash=item41afc4e5e7:g:uboAAOSwA3tXocxf>; see also: http://www.mapandmaps.com/24476-thickbox_default/middle-east-hebrew-track-original-old-map-chart-sanson-mercator-1683-1734.jpg; <http://www.mapandmaps.com/en/middle-east-antique-old-maps/2181-middle-east-hebrew-track-original-old-map-chart-sanson-mercator-1683-1734.html>

¹² J. B. Homann was cartographer and appointed Imperial Geographer by the Holy Roman Emperor Charles VI in 1715. When he died in 1724, the Nürnberg company he founded continued under the name Homann Heirs until 1848.

¹³ Eg. see below Fig. 5, *Patera* on d'Anville's map of Asia Minor in Antiquity, as also *Patera* on Figs. 6b, 7 and 9, as also on the London, engraver, cartographer and publisher (d. 1737) Herman Moll's 1736 map entitled *Turkey in Asia or Asia Minor etc.* https://upload.wikimedia.org/wikipedia/commons/0/0e/Moll,_Herman._Turkey_in_Asia%3B_or_Asia_Minor_%26c._1736.jpg; as likewise on Aaron Arrowsmith's 1804 map, Composite: A Map of the Environs of Constantinople. - David Rumsey Historical Map Collection. For further on the later toponyms of Patara see Duggan 2016.

Panthera), in the location of the port of Phoenicus-Scala Kalamaki-Kalamaky-*Calamach ou Port François*¹⁴-Kalkan, *Andriake* is marked and displaced inland, like *Antiphellus*-Kaş, not following copies of Claudius Ptolemy's Geography in locating Andriake to the east of Aperlae. *Mera*=Mirea-borg-Stamiro-Stamiris=Myra is placed inland. The representation of the coastline is most misleading, with the coast, Rhodes and the other islands quite out of proportion. *Phaselis* is however indicated near to its position, close to the Lycia-Pamphylia border, if somewhat further south, on the west side of the strangely narrowed Gulf of Antalya. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes¹⁵.

Joseph Bernard, Marquis de Chabert (1724 - 1805) the French sailor, geographer and astronomer was for more than half a century, from the 1750's onwards concerned with the construction of an accurate chart of the entire Mediterranean for the French admiralty. While engaged in this his last great work, a scientifically accurate general sea atlas of the Mediterranean, he was promoted to vice-admiral in 1792 and subsequently suffered blindness.¹⁶ In 1764 the *Hirondelle* commanded by Chabert Cogolin had conducted a long campaign of hydrographic surveys in the Mediterranean, which was followed by the voyage of the *Atlanta* in 1776 under the command of the Marquis de Chabert himself, at that time *capitaine des vaisseaux du roi*, in charge of collecting data for this new accurate chart of the Mediterranean and for most of the year it sailed its course of hydrographic survey through the Ottoman Aegean and along the Ottoman coast from Izmir (Smyrna) to Rhodes and Macry-Fethiye. In addition to the work of cartography there were a body of savants on the *Atlanta* and it was in consequence of participating in this voyage that the Comte M. G. A. F. de Choiseul-Gouffier (1752-1817), French Ambassador in Constantinople, published in Paris in 1782 his volume, '*Voyage Pittoresque de la Grèce*', with its engravings based upon the drawings made during the course of this hydrographic survey by the artist Jean-Baptiste Hilaire 1753-1822, (Fig. 4).

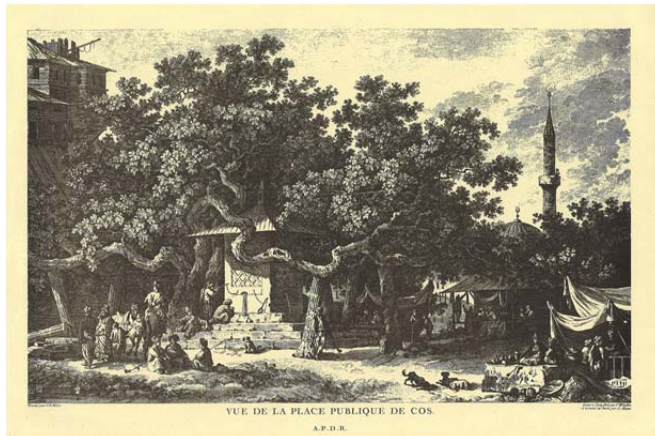


Fig. 4. Engraving published in '*Voyage Pittoresque de la Grèce*' of 1782 taken from the drawing made by Jean-Baptiste Hilaire in 1776, entitled *Vue de la place publique de Cos* (İstanköy), of the 'tree of Hippocrates' (Author's collection).

L-F. Cassas was another of several artists in the entourage of the Comte de Choiseul-Gouffier, who published his '*Voyage pittoresque de la Syrie, de la Phoenicie, de la Palaestine [sic] et de la*

¹⁴ As recorded on J. B. B. D'Anville's map of 1756 entitled, *Les Cotes de la Grece et l'Archipel*, Sphyroeras et al. 1985, fig. 134; as likewise on Choiseul Gouffier's *Carte de la Grece Moderne* from *Voyage Pittoresque de la Grèce*, Vol. 1 of 1782, illustrated, Sphyroeras et al. 1985, fig. 150.

¹⁵ https://commons.wikimedia.org/wiki/File:1741_Homann_Heirs_Map_of_Ancient_Greece_%5E_the_Eastern_Mediterranean_-_Geographicus_-_Graecia-homannheirs-1741.jpg

¹⁶ J. S. Pritchard, "CHABERT DE COGOLIN, JOSEPH-BERNARD DE, Marquis de CHABERT," in *Dictionary of Canadian Biography*, vol. 5, University of Toronto/Université Laval, 2003–, accessed August 1, 2016, http://www.biographi.ca/en/bio/chabert_de_cogolin_joseph_bernard_de_5E.html

Basse Aegypte, in Paris in 1799 and who drew at Myra the theatre in 1786, a drawing which he then made picturesque in his water-colour of it painted in 1808¹⁷. This was a most considerable advance in accuracy over the historical and geographical maps of the period describing this region¹⁸, such as those drawn by N. Sanson of Abbeville, Géographe Ordinaire du Roi, and published by Frans Halm in 1668 (Fig. 2), by the heirs of J. B. Homann in 1741 (Fig. 3), or those by Jean Baptiste Bourguignon d'Anville (1697 – 1782) (Fig. 6, 6a), as likewise by William Faden in 1785 (Fig. 7), but the coastline extending to the east of the mouth of the Zanthus-Esen River remained inaccurate in its depiction and uncharted. Although in respect to the mapping of the coast of Asia Minor the President of the Royal Geographical Society William Richard Hamilton, remarked in 1842, “*Commanders Graves and Brock, of H. M. Ships Beacon and Magpie, have thoroughly examined the western shores of Asia Minor. Deep and wide gulfs, little visited since the days of Athenian supremacy or Roman conquest, have been charted; and numerous cities on those classic shores have been rescued from oblivion by their labours*”¹⁹, it was the case that western shores of Asia Minor, the coast to the north of the Xanthus-Esen estuary, had been charted by the French nearly 70 years earlier.



Fig. 5. Detail of the accurate French chart of the Aegean and the west coast of Anatolia entitled, *Carte de la Grece Ancienne*, from, ‘*Voyage Pittoresque de la Grèce*’, that includes the results of the 1776 hydrographic survey led by the Marquis de Chabert showing the *Glaucus Sinus*-Gulf of Fethiye, a chart that stops north of the mouth of the Xanthus-Il Scamandro-Esen River, the coastline extending to its east remaining uncharted by scientific survey²⁰.

¹⁷ V&A London SD.214, <http://collections.vam.ac.uk/item/O142327/theatre-of-myra-now-demre-watercolour-cassas-louis-francois/> Signed and dated L.F.Cassas f. 1808.; on the back inscribed *Vue du Theatre De Cacanle en Cammancie*.

¹⁸ It was superseded by the chart entitled: *Part of Caria and Lycia*; By R. Hoskyn Esq. Master of H.M.S. Beacon in 1841-2, published by the R.G.S. London, by John Murray in 1843.

¹⁹ Hamilton 1842, xli.

²⁰ <http://gallica.bnf.fr/ark:/12148/btv1b5962163s/f1.highres>

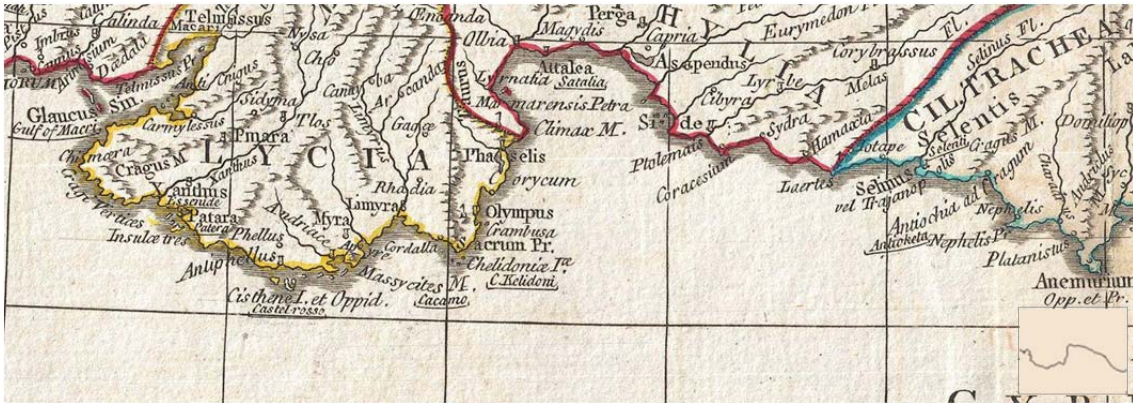


Fig. 6. Detail of d'Anville's map of Asia Minor in Antiquity, "*Asiae, quae vulgo Minor dicitur, et Syriae tabula geographica quantum per subsidia licuit elaborata, opere, si quod aliud in antiqua geographia, arduo. Quam tabulam Clariss. Dom. Comes de Caylus in aere incidi curavit*", published in 1764 (republished with additions by Laurie & Whittle of London in 1794)²¹. It records the state of knowledge of the shape of the southern Anatolian coast from the *Gulf of Macri*-Fethiye to *Anemurium*/*Estelmur*=Cape Anamur²². It places *Telmessus*/*Macari*=Fethiye on the same line of latitude as *Olbia*=Antalya distorting the shape of the Teke peninsular. *Phaselis* is marked in its approximate position between *Attalea*/*Satalia*=Antalya and the Hieron Pr.- *Sacrum Pr.*-*Kelidoni*=Silden Burnu/Kırlangıç Burnu/Gelidonya or Taşlık Burnu, but the form of the coastline north of *Phaselis* seems today inaccurate, and the lake, mentioned by Strabo (XIV. 3. 9) has been inflated in its size to stretch for kilometres, see Fig. 6a, forming a noteworthy feature, with its depiction extending like a lagoon, roughly north to south parallel to the coast, a remarkable topographic misrepresentation. Also noteworthy is that the *Chimaera* was then localized to the western end of the Seven Capes. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes.

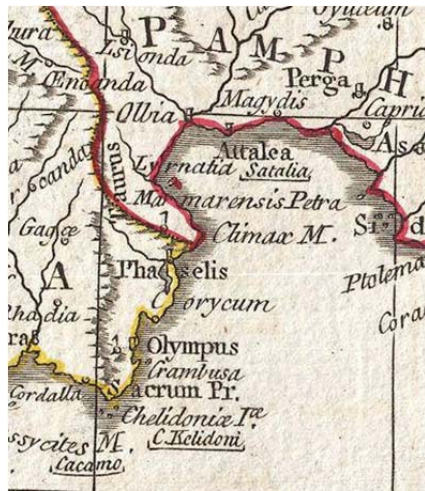


Fig. 6a. Detail of Fig. 6 showing Phaselis and its lake.

²¹ In the republished version entitled, "*A new map of Turkey in Asia by Monsr. d'Anville, first geographer to the most Christian King with several additions. London, published by Laurie & Whittle, no. 53 Fleet Street as the Act directs, 12th May, 1794*". In one version, in addition to the many additions, including the disappearance of the lake by Phaselis-Fionda and the leveling out of the coastline from the *Sacrum Pr.*-*Kelidoni*-*C. Chelidoni* to *Attalea*-*Satalia*, there is also the change in toponyms from the ancient to the contemporary ones, see for examples: https://upload.wikimedia.org/wikipedia/commons/4/4c/Anville%2C_Jean_Baptiste_Bourguignon._Turkey_in_Asia._1794_%28A%29.jpg; <http://www.davidrumsey.com/luna/servlet/detail/RUMSEY%8~1~24847~970001:Turkey-in-Asia-#>

²² [https://upload.wikimedia.org/wikipedia/commons/1/1e/1794_Anville_Map_of_Asia_Minor_in_Antiquity_\(Turkey,Cyprus,_Syria\)_-_Geographicus_-_AsiaMinor-anville-1794.jpg](https://upload.wikimedia.org/wikipedia/commons/1/1e/1794_Anville_Map_of_Asia_Minor_in_Antiquity_(Turkey,Cyprus,_Syria)_-_Geographicus_-_AsiaMinor-anville-1794.jpg)



Fig. 6b. Detail of the republished version d'Anville's map entitled, "A new map of Turkey in Asia by Monsr. d'Anville, first geographer to the most Christian King with several additions. London, published by Laurie & Whittle, no. 53 Fleet Street as the Act directs, 12th May, 1794". In one 1794 London version of this map²³, in addition to the many modifications²⁴ including the change in the toponyms, the ancient toponym Phaselis has been replaced by the contemporary one Fionda and the lake represented in 1764 (Fig 6a) by Phaselis has been removed, while between Fionda (Phaselis) and to its north, Agioi-pente=Rashat Is.²⁵=Sican Ada, there has been the leveling out of the line of the coastline, and the loss of the coastal Climax M.(mountain) depicted in 1764, possible supporting evidence for the loss of a mountain on the coast to the west of Rasat Is. which is recorded in the published account of the Attalea-Satalia-Antalya 1743 seismic event²⁶, see below. It is also noteworthy that in the 18th and 19th centuries Ölüdeniz was marked-known as Porto Symbolo²⁷ (see also Ölüdeniz marked as Porto Symbolo on Figs. 7, 17) and the adjacent Anti-Kragus=Baba dağı, as Mt. Symbolo, not least, because in antiquity it appears that the Lycian port/landing place by the Beymelek, Demre, Antalya, lagoon was known as Symbolon²⁸, but also, because of the relationship between harbour and mountain-headland which was, and remains important for navigation, as with the harbour of Geronda-Yeronda-Göklümanı and Mt. Geronda-Bunda Tepe (Fig. 18, see below), as with Phaselis and Mt. Phoenicus/Olympos-Tahtalı Dağı, etc. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes.

²³ https://upload.wikimedia.org/wikipedia/commons/4/4c/Anville%2C_Jean_Baptiste_Bourguignon._Turkey_in_Asia._1794_%28A%29.jpg

²⁴ For the 1795 London versions see also: <http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~24847~970001:Turkey-in-Asia->

<http://digi.ub.uni-heidelberg.de/diglit/beaufort1817/0016?sid=13ebd55774f4cca05a8477a404feb33b>

²⁵ Ambraseys – Finkel 1995, 118.

²⁶ Also recorded as such on Aaron Arrowsmith's 1804 map, Composite: A Map of the Environs of Constantinople. - David Rumsey Historical Map Collection <http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~233573~5509714:Composite--A-Map-of-the-Environs-of>

²⁷ Alkan 2013.



Fig. 7. Detail of the southern Anatolian coastline from Macri (Fethiye) to Cape Anemur on a map by William Faden published in London in 1783. The site of Phaselis is marked in its position on the coast by the toponym 'Fionda', with this map recording current rather than the antique toponyms. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes²⁹.

The heavy British naval losses during the war against France from 1793 onwards were a consequence not only of enemy action but due to the errors recorded on the navigational charts employed, which led to the demand for improved navigational information to be supplied to the Royal Navy and which was a contributory factor in the establishment of the Hydrographical Department of the Admiralty in 1795. The Hydrographical Department issued its first officially published Admiralty chart in November 1800³⁰. By 1810 the British Admiralty had realised the importance of the accurate charting of this coastline, in part because of the rising importance of the Eastern Mediterranean within the context of Anglo-French rivalry. Admiral Nelson's entire fleet had sheltered in Marmaris Bay before sinking most of the French Republican Mediterranean fleet on the 1st to the 3rd of August 1798 at the Battle of the Nile (Aboukir Bay on the Egyptian coastline) and, in 1801, from the 22nd of February for 52 days, the Mediterranean fleet under Admiral George Elphinstone, Baron Keith, was again moored in the bay, where General R. Abercromby (1734-1801) trained his 14,000 infantry, 1,000 cavalry and artillery to disembark within the day³¹, before the fleet sailed to Aboukir Bay on the Egyptian coastline, and disembarked Abercromby's forces in a contested landing on the 8th of March, 1801, that resulted in the Battle of Alexandria of the 21st of March and the subsequent siege of Alexandria with the French Republican garrison surrendering on the 2nd of September. This being the same bay that had been employed by the Ottoman fleet to concentrate its forces prior to the landing and forced capitulation of the Hospitaller Knights of St. John of Jerusalem's capital and territory of Rhodes in 1521, and was subsequently where the Ottoman fleet was blockaded in 1832 by the Egyptian fleet of Mehmet Ali Pasha and where, in 1840 again, but under the command of Sir Robert Stopford, the British Mediterranean fleet rendezvoused at the port of Marmaris³². Yet the entire southern coast and coastline extending from the Gulf of Macri to the east had remained uncharted by either French or British hydrographers until 1811-1812,

²⁹ https://commons.wikimedia.org/wiki/File:William_Faden._European_Dominions_of_the_Ottomans_or_Turkey_in_Europe._1795.jpg

³⁰ <http://discovery.nationalarchives.gov.uk/details/r/C16280>

³¹ "Abercromby", DNB, London, Macmillan, 1885, Vol. 1, 46. In consequence of this training at Marmaris, in only 23 min. 6,000 men in perfect order and ready for action could be landed.

³² Benedict 1974, 100.

even though there had been an English trade presence on Ottoman Cyprus for centuries, a vice-consul from 1605³³, as also a presence in the Gulf of Alexandretta³⁴, with a French presence preceeding the English, yet the sea charts and atlases of the coastline from Rhodes to Alexandretta-Scanderoon-Ichanderone were most inaccurate and had remained so, as evidenced by works such as: “*A map of the Mediterranean Sea with the adjacent regions and seas in Europe, Asia and Africa. East sheet. By William Faden, Geographer to the King*”³⁵. London, printed for Wm. Faden, Charing Cross, March 1st, 1785” (Fig. 7) and, “*A new map of Turkey in Asia by Monsr. d'Anville, first geographer to the most Christian King with several additions. London, published by Laurie & Whittle, no. 53 Fleet Street as the Act directs, 12th May, 1794*”³⁶ (Fig. 5b). It was only towards the end of the Napoleonic wars that hydrographers from Britain could chart the shores of Mediterranean, endeavors initially entrusted to Captain Beaufort and subsequently to Captain Smyth and his colleagues, including Captains Graves and Brock in the 1830's and 1840's³⁷.

Following on from the French admiralty's maritime charting expedition reaching Rhodes and the north-western corner of Lycia, including mapping the waters of Macry=Fethiye in 1776, it was during the course of the Napoleonic wars that Post Captain Francis Beaufort (1774-1857) of the frigate H. M. S. Fredericksteen³⁸ was tasked with charting for the British admiralty the entire southern coastline of Anatolia, a duty largely completed between July 1811 and June 20th 1812, when the survey was terminated due to an unfortunate incident. Beaufort was commissioned by Captain Thomas Hurd, appointed the second Admiralty Hydrographer in 1808, under whom served Captain Wood, and it was Captain Hurd in 1817 who established the Surveying Service of the Navy, as part of the Hydrographical Department, with staff and ships dedicated to the task, and responsible to the Board for the regular supply of accurate charts and other navigational material to the Fleet. This post was then occupied by Sir William Parry 1823-1829 and then by Rear-Admiral Sir Francis Beaufort who was appointed “*Hydrographer of the Navy*” from 1829 to 1855 when he resigned from office³⁹.

Captain Beaufort's duty in his hydrographic survey of 1811-1812 was to producing accurate maritime charts of this coastline, of its harbours, submerged rocks and reefs, shoals and islands, while also attending to the political circumstances of this coast and, as a matter of personal interest, investigating the historical sites and noteworthy features of this coastline, climate, inhabitants, settlements, landscape, with much of the information he accumulated presented to

³³ Hill 1952, 63.

³⁴ For mention of English Assistant Consuls and Consuls in Alexandretta-Scanderoon in the 17th c. see, Goffman 2002, 21, 25.

³⁵ “*Geographer to the King and to H.R.H. the Prince of Wales*” from 1771.

³⁶ The charts of record used by the Royal Navy during the Napoleonic Wars were William Heather's *A New Chart of the Mediterranean Sea* (1797), and regional charts contained in Heather's *The New Mediterranean Pilot* (1802). The charting of large expanses of Mediterranean coastline, including Ottoman territory and North Africa, remained most inaccurate.

³⁷ Penny 1839, 62. Sir Augustus Slade relates that the admiralty survey ship, “*The Tomtit concealed her mortification by running down the Hellespont, thence to proceed, she said, and survey the coast of Karamania, since Russia would not allow her to take the bearings of the Capes of Abasia*”, Slade 1837, 318, although what if any corrections were made in the 1830's is unclear.

³⁸ A Danish warship constructed in 1800, captured in 1807 and refitted and commissioned in 1810 becoming Captain Beaufort's first command.

³⁹ Laughton 2004, ODNB.

the literate public in his volume entitled: *Karamania: Or, A brief description of the south coast of Asia-Minor and of the remains of antiquity. With plans, views, & collected during a survey of that coast, under the orders of the Lords Commissioners of the Admiralty, in the years 1811-1812*, first published in 1817 in London by R. Hunter. A comparison of the respective volumes authored by Comte M. G. A. F. de Choiseul-Gouffier, '*Voyage Pittoresque de la Grèce*' and '*Karamania*' by Captain Beaufort F. R. S., published within 35 years of each other, exhibit quite different approaches, in terms of both the textual content and in the choice and style of the illustrations employed (eg. Figs. 4 and 24).

Following the production of the admiralty charts of this coastline there was increasing British naval and maritime frequentation of the southern Anatolian ports in the decades following the ending of the Napoleonic wars, together with the exploration of Lycia, Pamphylia and Cilicia and of the remains and ruins of antiquity by scholars and artists, followed by sightseers, and the development of the steamship route along this coastline, leading from 1852 onwards to the weekly passage of the French Messageries Impériale vessels passing along this coastline to and from Syria, the more occasional passage of an Österreichischer Lloyd vessel and of British steamships in the 1870's arriving at the port of Antalya.

Phaselis – 'Palyopoli', 'Tekiroba – Tekova – Tekrova – Trekova – Tekrova – Tétkrova – Tetrova – Tekova – Tekirowa – Tekirova', 'Pitiusa', 'Gironda – Phironda – Fironda – Fionda', 'Faselis – Faselis – Faselidis – Fasel – Fanfelis'

The early VIth c. compiler Stephanus Byzantinus recorded the initial name of the city as⁴⁰: Πιτύουσα (Pityousa), possibly relating to the pine forests; its second name as: Φάρσαλος (Pharsalos) with the word Φάρσαλος - Pharsalos, seemingly formed through the combination of φάρος + σάλος, that is the word pharos-large marker beacon, combined with the word salos, meaning an open roadstead outside a port for ships to anchor in,⁴¹ with the word pharos shortened to φάρ⁴² + σάλος = Φάρσαλος, and with the name Pharsalos to be understood therefore as providing a clear description of the place itself, that is a harbour with an open roadstead marked by a Pharos, a large marker beacon and light; and he records its third name as, Φάσηλις (Phaselis).

In the Ottoman tradition as recorded on Pîrî Reis's charts of 1521 and 1526 in his *Kitâb-ı Bahriye*, the abandoned ancient settlement of Phaselis is recorded as *Palyopoli* (Palyopoli = the ancient remains at Phaselis (Paleopolis-Pallopoli, meaning the old city-eskişehir). The harbours and presumably the area including the new settlement distant from the site of ancient Phaselis, is recorded as *Tekiroba*, while the South harbour of Phaselis is recorded in the text as *Altın Başmak*⁴³. It can be noted that the chart legend recording the name *Altın Başmak* has been displaced to the south of Üç adalar on these charts, and the harbour and area adjacent to and including *Palyopoli*-Phaselis is recorded as *Tekiroba*, from hence the name of today's settlement of Tekirova. Pîrî Reis's text in respect to this chart is to be read in two sections dividing either side of the end of the Cape, *Silden Burnu/Kırlangıç Burnu*/Gelidonya or *Taşlık Burnu*, first moving

⁴⁰ Steph. Byz. *Ethnika* 660.

⁴¹ See in the *Lexicon* of Liddle and Scott, s.v. φάρος and σάλος. As for example is recorded in the navigational instructions under 'Tekrova (ant. Pharselis)', in Purdy 1826, 302, "There is clean anchorage in the offing".

⁴² Φάρ, τό, occurs in the Apocalypse as a form of φάρος, (*pharos*) Hadrian Grammaticus I. 394. My thanks to Assoc. Prof. M. Alkan for his assistance in this matter. See also in the *Lexicon* of Liddle and Scott, s.v. φάρ.

⁴³ Read as *Altın Yaşmak-Gold Veil* in Pîrî Reis 2002, 580-581.

from the end of Silden Burnu/Kırlangıç Burnu up the east side of the peninsular to the north to Üç adalar and, following the description of Üç Adalar, the text continues to the north describing Tekiroba and the passage closes with the description of the harbour facing south by the ruined site named Palyopoli-Phaselis. The text then goes on in its second section to describe the coast from the west side of Silden Burnu/Kırlangıç Burnu to Göklimanı/Yeronda west of Finike⁴⁴. It is clear from the text that the harbour called *Altın Başmak* lies to the north of the three islands and the legend reading *Altın Başmak* on the chart has been misplaced.

“On the northern side of these islands (Üç adalar) is a harbour they call Tekiroba in which there is a ruined castle they call Palyopoli. The southern side of that castle-(meaning south of the abandoned acropolis ruins of Phaselis, the south harbour)- is a shelter for small ships and some people call this shelter Altın Başmak”⁴⁵.

Altın Başmak meaning gold slipper=Phaselis’s South harbour, the other two harbours at *Palyopoli*-Phaselis are to the North of Palyopoli = the acropolis remains at Phaselis. This harbour, termed by Pîrî Reis *Altın Başmak*, was the harbour that was formerly employed to over-winter the East Roman *Kibyrrhaiotai* fleet and was a base of the Kibyrrhaeot theme in the Xth c.⁴⁶. Looked at from a higher elevation this harbour can perhaps be understood to resemble in form a slipper (Fig. 8).

It is noteworthy that Theodose Zygomalas, the Protonotaire of the Orthodox Patriarch in Constantinople, in his 1576-1577 maritime tour of the Orthodox diocese’s, records in his itinerary the Ottoman Turkish name *Tekirova*⁴⁷, rather than the name ‘*Gironda-Phironda-Fironda-Fionda*’, and Tekirova also appears on some contemporary European portulans⁴⁸, while Pîrî Reis had recorded on his portolan the toponym *Tekiroba*.



Fig. 8. Photograph of the promontory of Phaselis-Palyopoli, the South harbour-Altın Başmak, the settlement of Tekiroba-Tekirova and the three islands, Trianesia-Üç Adalar. (Photograph: F. Yılmaz).

However, in European post-medieval gazeteers, texts, portulans and charts, as on some maps dating from the 17th into the 19th c. the site of the ancient city of Phaselis is frequently named ‘*Gironda*’, ‘*Fionda*’, ‘*Phironda*’ or ‘*Fironda*’⁴⁹, rather than Phaselis, or ‘*Faselis*’⁵⁰, ‘*Faselidis*’⁵¹,

⁴⁴ Pîrî Reis’s division of the text into these two parts is neither noted nor commented upon in Piri Reis 2013 or Piri Reis 1988.

⁴⁵ Pîrî Reis 2013, 246.

⁴⁶ Cons. Porph. de Them. 79, “now a base of the thematic fleet” Foss 1994, 44; while Clive Foss suggested at Phaselis, “the new docks appear to be of the 8th century..” Foss 1994, 50.

⁴⁷ Yerasimos 1991, 314.

⁴⁸ Yerasimos 1991, 68.

⁴⁹ The toponyms for Phaselis: ‘*Gironda*’, ‘*Fionda*’, ‘*Phironda*’ and ‘*Fironda*’, are not recorded in Hellenkemper –

‘Faseli’⁵², ‘Fasel’⁵³ or ‘Fanfelis’⁵⁴, variant toponyms for the port-city known from the transcriptions contained in the versions of the Septuagint of the Greek translation from the Hebrew of *Maccabees* I, 15:23⁵⁵ (excepting, extraordinarily, the English King James Version of the Holy Bible, when it was published with the Apocrypha from 1611 until 1885, where in *Maccabees* I, 15:23, instead of the toponym φασηλιδα-Phaselis being printed, it was omitted and instead the toponym Aradus occurs twice, repeated instead of Phaselis over the course of 274 years of publication⁵⁶); or the Ottoman *Palyopoli* for the ruins, and/or *Tekiroba-Tekirova* for the settlement.

The toponym ‘Fionda’ was the transcription of the Later Greek name given to the established Christian Orthodox See, as John Augustine Bernard related in the 17th c. in his continuation of the work of E. Bohun, entitled, ‘*A Geographical Dictionary, representing the present and ancient names of all the countries, provinces, remarkable cities, universities, ports, towns, mountains, seas, streights (sic), fountain, and rivers of the whole World, Their distances, Longitude and Latitude, With a short historical account of the same, and a general index of Ancient and Latin Names, published in London for Charles Brome in 1653*’. Bernard clearly relates ‘Fionda’ was understood as being the current name of the ancient city of Phaselis:

“Fionda, a small village on the shores of the Mediterranean Sea, in the lesser Asia, in the confines of Lycia and Pamphylia, which in Roman times was called Phaselis, and before (that) Pityussa: it lies east of the Chelidonian Rocks, and West of Mount Masicytus, 220 English miles from the most westernmost Cape of Cyprus. A Bishops See, under the Archbishop of Myra, now Stramira: but so very small, that little notice is taken of it in the later maps”⁵⁷.

Likewise Nicolas Visscher on his 1679 Amsterdam published map entitled “*Magni Turcarum Domini Imperium in Europa, Asia et Africa; tam in Proprias, Tributarias, ac Clientelares Regiones, quam in omnes ejusdem Beglirbegus sive Praefecturas Generales accuratissime distinctum . . .*” records the toponym Fionda rather than Tekiroba on the coast in the location of ancient Phaselis⁵⁸.

Hild 2004.

⁵⁰ Luther 1596, 188r., I. Maccabeorion, XV, 23. A passage indicating the independant status of the city of Phaselis, like Side at the time of Antiochus VII’s letter. As also ‘Faselis’: Dapper 1680, 341; Dapper 1681, 279; Biblia Pentapla 1712, 519, *idem*, Namen-Register 47; Luther 1831, 1665; Cuesta 1860, 608, in the summary of C. Fellows’ 1838 Account published in 1839, ‘*Sir Carlos Fellows, Asia Menor*’, 593-615.

⁵¹ As recorded in the Bishop’s Bible produced under the authority of the established Church of England in 1568.

⁵² As in the, *Annuario pontificio per l’Anno 1967*, 589, “Faseli (rovine presso Tekirova)”.

⁵³ Friderichs 1874, 1337, “Fasel is (Phaselis), I. Macc. 15, 23”.

⁵⁴ Ravennatis 1860, 104.

⁵⁵ “And to all regions: as Samsanes, to them of Spartia, Delo, Mydo, Sidon, Caria, Samos, Pamphilia, Lycia, Alicarnassem, and to the Rhodes, to Faselidis, Co, Sida, Arado, Cortyna, Gnidum, to Cypres, and Cyren” 1568 Bishops Bible, *Maccabees* I. 15:23.

For further versions see for example: <http://studybible.info/compare/1%20Maccabees%2015:23>

⁵⁶ “And to all the countries and to Sampsames, and the Lacedemonians, and to Delus, and Myndus, and Sicyon, and Caria, and Samos, and Pamphylia, and Lycia, and Halicarnassus, and Rhodus, and Aradus (sic.), and Cos, and Side, and Aradus, and Gortyna, and Cnidus, and Cyprus, and Cyrene”. *Maccabees* I. 15:23, King James Version.

⁵⁷ Bernard 1653, 143. The ‘Fionda’ text remained unchanged in the 1693 edition, 143, 315.

⁵⁸ <https://www.raremaps.com/gallery/enlarge/48160>

As likewise Mre Louys Moreri's, *Le grand dictionnaire historique, ou Le mélange curieux de l'histoire sacrée et profane*. Tome 2, Partie 2, of 1683, records, "*Pharseli'dite aujourd'huy Fionda, ville de Licie,...*"⁵⁹.

However, Romeyn De Hooghe on his large atlas entitled "*Carte Nouvelle De La Mer Mediterranee ou sont Exactly Remarques tous les Ports, Golfes, Rochers, Banks, de Sable & a l'usage des Armées, du Roy de la Grande Bretagne. Dressé sur les Memoires les plus Nouveaux par le Sr. Romain de Hooge. A Amsterdam chez Pierre Mortier Avec Privilège. 1694*"⁶⁰ and dedicated to King William III, Prince of the House of Orange on the English throne (1689-1702), clearly records the name Gironda, not Fironda or Fionda, in this location, he records only two toponyms between Celidonia= Silden Burnu/Kırlangıç Burnu/C. Gelidonya⁶¹ and Satalia= Antalya, Gironda and Aratia. There is the possibility that when this sea chart was being compiled the name of the port, Gironda=modern Yeronda-Göklümanı to the west of Finike, was mistakenly transposed to the east of Cape Celidonia or, and this seems the more probable, that the name of the port of Phaselis was known to some Dutch navigators as Gironda rather than Fionda-Fironda in the 17th c. (see below).



Fig. 9. Detail depicting the coastline between the *Golfe de Macari*=Gulf of Fethiye and *Estelmur*=Anamur recorded on Romeyn De Hooghe's 1694 chart of the Mediterranean⁶². It clearly records the name *Gironda* in the approximate location of ancient Phaselis. *Satalia*=Antalya. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes.

The reason for the names Fironda-Phionda-Gironda-Fionda being employed as the name of the Orthodox Bishop's See, and recorded in European texts and cartography as the then current toponym for ancient Phaselis, is today somewhat unclear. There is another Phionda/Phirondas, a village and a Cycladic site in the so-called Keros penumbra, on the Island of Naxos, although if the modern Orthodox See of Phionda centred on Phaselis, was founded by a monk from Naxos seems unrecorded. And it seems to be rather more probable that the later Greek toponym for the Orthodox See centred on ancient Phaselis was related to Γέροντα (*geronta*, "elder", from γέρων lit. "old man") so to the place names: *Yeronda* and *Girond-Gironda*⁶³-*Geronda*⁶⁴-

⁵⁹ Moreri 1683, Tome 2, Partie 2, 1183.

⁶⁰ https://www.raremaps.com/gallery/detail/33883dc/Carte_Nouvelle_De_La_Mer_Mediterranee_ou_sont_Exactement_Remarques_tous_les/De%20Hooghe.html

⁶¹ Marked on Gabriel de Vallseca's 1447 Portolan chart of the Mediterranean as *Yeridonne* en.wikipedia.org File: Portolan_chart_of_Gariel_de_Vallseca_(1447).jpg

⁶² <https://www.raremaps.com/gallery/enlarge/33883dc>

⁶³ *Gironda*, recorded as the name of the port to the West of *Fenica*=Finike on: the map entitled "*Isola D Cipro*" in Gioseppe Rosaccio's *Viaggio Da Venetia A Constantinopoli...* engraved by Jacomo Franco and published in Venice from 1598 on into the 17th c., see for example, <http://cyprussite.com/img/map05.jpg>

As also recorded on: John Seller's 1675 London chart entitled "*A Chart of the Levant or Eastermost part of the Mediterranean Sea By John Seller Hydrographer to The King*" <http://www.raremaps.com/gallery/enlarge/35583>; J. Roux's *Carte de la Mer Mediterranee, "I. De Cypre" – "X. Feuille"*, in the series of 12, Marseille, 1764, <http://cyprussite.com/img/map24.jpg>

Not to be confused with Goronto Island just w. of Kekova, Arrowsmith 1804 map, the Island of San Giorgio=Rho (Greek: Ρω) Island, with its Orthodox Church of Saint George, Ναός Αγίου Γεωργίου.

*Geronta*⁶⁵-*Geronte*⁶⁶-*Geronla*⁶⁷, a name that was also given to the nearby headland⁶⁸ as also to the small adjacent sheltered port⁶⁹ west of *Finica*-*Finike* that remains today, *Yeronda*⁷⁰- '*Port d'Yeronda*', eg. Fig. 10, a port⁷¹ which was also, from the 16th c. onwards recorded with the Ottoman Turkish toponym, *Göklimanı*⁷² (36° 15' 59" N, 30° 7' 59" E). It is suggested that the names *Fironda*-*Phionda*-*Gironda*-*Fionda* were perhaps derived through transcription from *Γέροντας* (*gerontas/gerondas*) - *Γέροντα* (*Geronta*, later Greek, pronounced *Yeronda*) literally meaning elder, as also, an Elder in the Greek Orthodox Church, a holy person gifted with the charism of spiritual direction, often a monk or hermit, at times meaning Jesus (The Elder Son and First Elder of the Church). Perhaps in this case in reference to an Orthodox monk or hermit, an elder, *Geronta*, being the founder of the later Orthodox See under the direction of the Archbishop of Myra, with the names *Fionda*-*Fironda*-*Phionda*-*Gironda* recorded in European texts and cartography stemming from the variants in transcription from the spoken and/or written Greek, the matter of the transcription of the spoken Greek letter Γ as G, or as Y and the Γ written incorrectly as F, or as Ph⁷³. In this context and perhaps for this same reason *Side* was at

⁶⁴ Abhandlungen der Bayerischen Akademie der Wissenschaften, München, Verlag der K. Akademi, 1866, 285, 286. Fig. 7. '*Geronda*' recorded on the detail of the southern Anatolian coastline from Macri (Fethiye) to Cape Anemur on a map by William Faden published in London in 1783.

⁶⁵ Abhandlungen der Bayerischen Akademie der Wissenschaften, München, Verlag der K. Akademi, 1866, 285; also recorded on J. B. B. D'Anville's map of 1756 entitled, *Les Cotes de la Grece et l'Archipel*, Sphyroeras et al. 1985, fig. 134; as also on Pinkerton's Modern Atlas of 1818, Fig. 18 here, *Geronta*, *Cape Geronta*.

⁶⁶ See William Faden's "A map of the Mediterranean Sea with the adjacent regions and seas in Europe, Asia and Africa". East sheet, published in London in 1785, Fig. 7 above.

⁶⁷ Recorded as such on Aaron Arrowsmith's 1804 map, Composite: A Map of the Environs of Constantinople. - David Rumsey Historical Map Collection <http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~233573~5509714:Composite--A-Map-of-the-Environs-of>

⁶⁸ *Cape Gironda*, recorded as the name of the promontory, today *Bunda*, to the west of *Fenica*=*Finike* on J. Roux's Carte de la Mer Mediterranee, "I. De Cypre" - "X. Feuille" in the series of 12, Marseille, 1764, <http://cyprussite.com/img/map24.jpg>

⁶⁹ "We now come to the high and bold promontory of *Phineka*, on the eastern side of which is the deep inlet of *Yeronda*, open to southerly winds", Purdy 1826, 300; as likewise, Playfair 1881, XXXVI.

⁷⁰ <http://www.haritatr.com/harita/Yeronda-Bay/11667> Beaufort translated the Gk. word to mean, 'old' (rather than Elder in the Greek Orthodox Church), *Karamania Chart I from Makry to Khelidonia... by Francis Beaufort F.R.S.... 1811* <http://collections.rmg.co.uk/collections/objects/539782.html>. For another *Geronda*-*Yeronda*, a small coastal town by Ağa Limanı-Liman Kalesi, Silifke, Sale et al. 1781, 195. There is also the village of *Geronta* at the ancient *Didyma*/*Hieron*, south of *Miletus*, also termed: *Jeron*-*Joran* -*Jeronda*-*Jaronda*-*Garonda*-*Leronda*-*Yeronda*, see Newton – Pullan 1863, 527; Wilski 1906, 5, 6, 17. This *Geronda* (also called '*Giaur Ura*', Dallaway 1797, 246) at *Didyma* was founded at the end of the 18th c. and populated by Albanians and Greek-Rum, Cockerell 1903, 162; or entirely by Greeks, Dallaway 1797, 246. There is also the nearby port of *Geronta* on *Samos*, Cockerell 1903, 160-161. And another, a little town by *Adata*, called *Geron* (*Geronta*), and a small fort of the same name in *Cappadocia* in the 9th c., Ramsay 2010, 301. Another *Geronda* (*città di Geronda*) was destroyed in the 1302 volcanic eruption of *Montagnone* on the Island of *Ischia*, when the Arso lava flow on its 2.7 km journey to the bay of *Naples* (*Punta Molina*, 1 km east of *Ischia Porto*) buried it in lava, Kilburn – McGuire 2001, 81.

⁷¹ Also marked in this location, but as an Island of this name, *Geronta I.* off the coast on Pierre-Gilles Chanlaire's 1780 map entitled, "Carte de la Turquie d'Europe en 15 Feuilles comprenant toute la côte orientale de la Mer Adriatique, l'Archipel, la Morée, l'île de Candie, la Crimée...", <http://eng.travelogues.gr/item.php?view=60228>

⁷² Recorded as such on Pîrî Reis's charts of 1521 and 1526 in his *Kitâb-ı Bahriye*.

⁷³ Errors have their authors and in the attempt to understand the relationship between the Greek word, *gerontas/gerondas* and *Fionda*-*Fironda*-*Phionda*-*Gironda* I have been greatly assisted by Doç. Dr. Fatih Onur, who kindly read the passage and suggested improvements, any remaining errors are my own.

times recorded as Chirionda⁷⁴, presumably another variant of Yeronda.

Guillaume De L'Isle (1675-1726), Premier Géographe du Roi, recorded on his 1707 Paris printed map entitled '*Carte de la Grèce dressée sur un grand nombre de mémoires anciens et nouveaux, sur ceux de Mrs Wheler et Tournefort*',⁷⁵ the name 'Fionda' in the approximate location of ancient Phaselis (Fig. 10)⁷⁶; as was also the case for his map published in 1712 in volume one of Paul Lucas's account of his voyage entitled: "*Voyage du Sieur Paul Lucas, fait par ordre du roy dans la Grece, l'Asie Mineure, la Macedoine et l'Afrique*" Paris, Nicolas Simart, MDCCXII, which contains a map of the Eastern Mediterranean entitled: "*Carte des pays du Levant parcourus par M. Paul Lucas, dressée sur ses memoires et sur quelques autres par G. De l'Isle de l'Academie Royale des Sciences*", upon which the site of Phaselis is likewise marked and named 'Fionda'⁷⁷, it being the only toponym to be recorded on the entire western coastline of the Golfe de Satalie=Bay of Antalya (Fig. 11).

However, also drawn by Guillaume De L'Isle, is the map entitled, *Theatrum Historicum ad annum Christi quadringentesimu. In quo tu Imperii Romani tu Barbarorum circum incolentium. status ob oculos ponitur. Pars Occidentalis*, published in Paris in 1705 and republished several times in Amsterdam and London into the 1780's⁷⁸, which clearly records in this same location the name Phaselis instead of Fionda, employing the ancient Greek and Roman toponym, as recorded by Strabo and Ptolemy, Livy *et al.*, as also recorded on the Tabula Peutingeriana, recording the ancient historical rather than contemporary Greek toponym. As was likewise the case for the map entitled, *Geographiae Sacre Tabula quae Totius Orbis Partes Continent* drawn by N. Sanson of Abbeville and published in 1668 (Fig. 2). However, the toponym Phaselis is also marked on the Hubert Jaillot 1692 Amsterdam, published version of the map drawn by S. Sanson, entitled, "*Estats de L'Empire des Turqs en Europe ou sont les Beglerbeglicz ou Gouvernements*", even though this was a map depicting contemporary Ottoman territory in Europe, also showing the western part of Anatolia, where perhaps one would expect to find the names, Tekiroba-Tekirova and/or, Gironda-Phironda-Fionda rather than the ancient name Phaselis, yet Phaselis is the only place to be recorded between Patera=Patara and Satalieyeh/Satalie=Antalya⁷⁹.

⁷⁴ Beaufort 1817, 147.

⁷⁵ [http://gallica.bnf.fr/ark:/12148/btv1b5962140s/f1.item.zoomCarte_de_la_Grèce_dressée_\[...\]Delisle_Guillaume_btv1b5962140s](http://gallica.bnf.fr/ark:/12148/btv1b5962140s/f1.item.zoomCarte_de_la_Grèce_dressée_[...]Delisle_Guillaume_btv1b5962140s)

⁷⁶ As also on his *Accurata Totius Archipelagi et Graeciae Universae Tabula, Carte de la Grece*, printed in Amsterdam, see for an example, Sphyroeras *et al.* 1985, fig. 95.

⁷⁷ <http://eng.travelogues.gr/item.php?view=54434>

⁷⁸ See for example: <http://tile.loc.gov/image-services/iiif/service:gmd:gmd7:g7420:g7420:ct003757/full/pct:12.5/0/default.jpg> And that version published by J. Senex in London in 1712, at: <https://www.loc.gov/item/2004629155/>

⁷⁹ http://art-of-maps.blogspot.com.tr/2011_10_01_archive.html



Fig. 10. Detail of Guillaume DeLisle's 1707 map entitled: "*Carte de la Grèce dressée sur un grand nombre de mémoires anciens et nouveaux, sur ceux de Mrs Wheler et Tournefort*"⁸⁰; of the southern Anatolian coastline from Macri=Fethiye to Estelmur/Anemur=Anamur. The site of Phaselis is marked as 'Fionda', the mapmaker employing the contemporary Greek name transcribed into Roman letters, rather than the ancient or the Ottoman name. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes.



Fig. 11. Detail depicting the southern Anatolian coastline from the Gulf of Macri (Fethiye) to Cape Anemur-Estelmur=Anamur, from Guillaume DeLisle's 1712 map entitled, "*Carte des pays du Levant parcourus par M. Paul Lucas, dressée sur ses mémoires et sur quelques autres par G. De L'Isle de l'Académie Royale des Sciences*"⁸¹. The site of Phaselis is marked as 'Fionda', the only place to be marked on the west coast of the Golfe de Satalie-Bay of Antalya. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes.

In Nürnberg in 1720 Christopher Weigel published a map entitled: '*Asiae Peninsula sive Asia intra Taurum*' which records only the toponyms from antiquity placed upon an outline of the coastline that exhibits almost no knowledge of the actual topography of Asia Minor, nor of the actual line of the southern coast, nor of the relationship between the islands, headlands, gulfs and bays, with for example the island of *Atelbusa*=Rashat-Sican placed off the coast of Cyprus rather than by *Attalia*=Antalya and the Island of *Megiste*=Meis depicted on the same latitude as New Paphos,

⁸⁰ <http://gallica.bnf.fr/ark:/12148/btv1b5962140s/f1.highres>

⁸¹ <http://tr.travelogues.gr/item.php?view=54248>

However, the toponym Pitiussa marking the site of the city of Phaselis seems to be unrecorded in the published European cartographic record of this coastline in the 17th, 18th and 19th centuries⁸⁸. The site of ancient Phaselis' accurate position relative to Satalie-Adalia-Antalya seems to have been determined from before the 18th c., as being at a distance of approximately 10 leagues-40 km-26 miles⁸⁹.

The Géographe Ordinaire du Roi, St. Robert (Gilles Robert de Vaugondy, Le Sieur/Monsieur Robert (1688–1766), published with his son Didier, the Atlas Universel in 1757. On his 1748 map entitled *Turquie Asiatique*, there are recorded on the coastline to the west of *Satalie*=Antalya, only two names, *Phaselis* and *Patera*=Patara, Telmessus-Macari-Fethiye is unmarked, with Phaselis marked in the approximate location of Finike, west of the unrepresented Cape Gelidonya, in the region named *Caramanie* (Fig. 13). The shape of the coastline closely resembles that drawn by N. Sanson of Abbeville (1660-1667), Géographe Ordinaire du Roi, in his map "*Geographiae Sacre Tabula quae Totius Orbis Partes Continent*", published a century earlier (Fig. 2 above).

Rigobert Bonne and Guillemme Raynal's 1780 map entitled "*La Turquie d'Europe et Celle d'Asie*", published in G. Raynal's *Atlas de Toutes les Parties Connues du Globe Terrestre, Dressé pour l'Histoire Philosophique et Politique des Établissements et du Commerce des Européens dans les Deux Indes*, Paris, 1780, recorded no toponyms between Macari=Fethiye and Satalie=Antalya, but provided a depiction of the form of this coastline (Fig. 14), being quite different from that presented by the Géographe Ordinaire du Roi, St. Robert eight years later in 1748 (Fig. 13), and is somewhat less inaccurate in its representation of the shape of the coastline.



Fig. 13. Detail of the coastline east and west of *Satalie*=Antalya on St. Robert's 1748 map entitled *Turquie Asiatique*⁹⁰. Phaselis is marked south of its location, being recorded in the approximate position of Finike, which like Cape Gelidonya is unmarked. *Satalie*=Antalya. *Sessin*=Sij-Sik-Sigh-Siki-Sechin-Softa Castle which is marked to the west rather than to the east of Cape Anamur.

William Faden, Geographer to the King and to H. R. H. the Prince of Wales, published in 1785 a work entitled, *A Map of the Mediterranean Sea with Adjacent Regions and Seas in Europe, Asia and Africa*, which carries on this coastline the sequence of names from South to North: *C. Chelidoni*, *Cambrusa* or *Pto Venitico*, *Pto Genovese*, *Fionda*=Phaselis, *Ekder*, *Ernatia*, *Agiopente*=Atelebusa=Rashat Is.=Sican Ada, and, *Antalia/Satalia*=Antalya (See Fig. 7 above). This is the same sequence of names as recorded on Pierre-Gilles Chanlaire's map published in Paris in 1805.

⁸⁸ There are other Pitiusa-Pityusa-Pityussa elsewhere: at the southern end of the Saronic Gulf, Spetses, the ancient Pitiusa, or 'pine tree' island, off the East coast of the Peloponnesus, "*After it comes Pityussa (Pine Island)*" Paus. II. 34. 8; and there is also the island of Pityussa, Plut. Sert. 7. 3., said by some to be the Canary Islands; another, Lampsacus (mod. Tr. Lapseki) Strabo relates was formerly called Pityussa, Strab. XIII. 1. 19 "*also, it is said, was Chios*" formerly called Pityussa, Strab. XIII. 1. 19; "*Salamis was called also Pityussa from pitys, the pine tree*" Strab. IX. 1. 10.

⁸⁹ See for example: Echard 1786, 259, but where its location on the Gulf of Satalya-Antalya is recorded as Long. 48.32, Lat. 36.45, today, 36.51° N, 30.53° E. By the new coastal road the distance is today 35 km - 21.748 miles.

⁹⁰ <http://www.columbia.edu/itc/mealc/pritchett/00maplinks/mughal/devaugondy/atlas1749/turkeyasia1749.jpg>

The London publisher R. Wilkinson's map entitled *Turkey in Asia Drawn from the most respectable authorities*, of the 1st of September 1794, seems to have been based upon that published by William Faden in 1783 (reprinted 1785, Fig. 7) but with less detail (Fig. 15), but which, like that of Pierre-Gilles Chanlaire in 1805, represents *Macri*=Fethiye and *Satalia*=Antalya as being on almost the same line of latitude, thereby distorting the shape of the Teke peninsular.



Fig. 14. Detail of the coastline from *Macari*=Fethiye to *Anemur*=Anamur from Rigobert Bonne and Guillaume Raynal's 1780 map entitled "*La Turquie d'Europe et Celle d'Asie*"⁹¹ *Satalie*=Antalya.



Fig. 15. Detail depicting the southern Anatolian coastline from the *Gulf of Macri*=Gulf of Fethiye to *Anemur*=Cape Anamur from R. Wilkinson's map *Turkey in Asia* of 1794. It records only *Fionda* on the western inner shore of the *Gulf of Satalia*=Gulf of Antalya and it is not associated with a river. *Finica*=Finike is marked as distant from the coast, *Myra* as a port on a bay by the sea and *Patera*=Patara. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes⁹².



Fig. 16. A detail from William Faden's 1795 map depicting the southern Anatolian coastline from the *Gulf of Macri*=Gulf of Fethiye to *Anemur*=Cape Anemur. Like the majority of cartographic works produced before Beaufort's survey, the coastline is depicted as bulging out between *Manavgat* and *Selenti*=Gazipaşa rather than curving inwards between *Manavgat* and *Anamur*. *Fionda* is marked on the coast of the *Gulf of Satalia* between *C. Chelidoni* and *Satalia*=Antalya. *Macri*=Fethiye and *Satalia*=Antalya are represented as being on almost the same line of latitude distorting the shape of the Teke peninsular. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes⁹³.

⁹¹ https://commons.wikimedia.org/wiki/File:1780_Raynal_and_Bonne_Map_of_Turkey_in_Europe_and_Asia_-_Geographicus_-_TurquieEurope-bonne-1780.jpg

⁹² http://thumbs4.picclick.com/d/w1600/pict/282116922895_/1794-Turkey-In-Asia-Middle-East-By-Wilkinson.jpg

⁹³ https://upload.wikimedia.org/wikipedia/commons/thumb/a/ac/William_Faden._European_Dominions_of_the_Ottomans_or_Turkey_in_Europe._1795.jpg/2048px-William_Faden._European_Dominions_of_the_Ottomans

William Faden, Geographer to the King and to H.R.H. the Prince of Wales, published in August 1795 an engraved map entitled, “*European Dominions of the Ottomans or Turkey in Europe*” (Fig. 16). It seems to be based in large part upon the work of the map-maker and engraver L. S. De la Rochette (1731-1802), whose 1791 map entitled “*Greece, Archipelago and Part of Anadoli*”, was ‘published for William Faden, Geographer to the King’ on Jan. 1st in London, and which also records the name *Fionda*,⁹⁴ rather than either Tekiroba or Phaselis.

John Cary, the London publisher, engraver and map seller published on December the 21st 1801, ‘*A New Map of Turkey in Asia Divided into its Provinces from the best authorities*’ (Fig. 17).



Fig. 17. A detail from John Cary's 1801 map depicting the southern Anatolian coastline from the Gulf of Macri=Gulf of Fethiye to Anemur=Cape Anamur. It records the site of Phaselis on the coast with the name *Fionda* but, unlike most maps, does not mark it by a river and/or lake, as *Ernatia* is marked in the position of *Fionda*=Phaselis, with *Fionda*=Phaselis being displaced to the south. *Macri*=Fethiye and *Antalia or Satalia*=Antalya are represented as being on almost the same line of latitude distorting the shape of the Teke peninsular. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes⁹⁵.

The London cartographer Aaron Arrowsmith (1750-1823), who is thought to have trained under William Faden, produced a steel engraved composite map entitled: “*A Map of the Environs of Constantinople Drawn from a great number of accurate astronomical & geographical manuscripts and printed documents, by A. Arrowsmith 1801 and 1804. London, Published by A. Arrowsmith, No.10 Soho Square, 4th September 1804. London*”⁹⁶, which depicts the entire southern coastline of Anatolia. Although it is a more elegant engraving, to a larger scale, it carries a very close resemblance to the depiction of the southern Anatolian coastline on the map by William Faden published in London in 1785 (Fig. 7), purveying, in the absence of any hydrographic survey of this coastline, the same important errors in its description as that produced 20 years earlier, together with many of the same toponyms. These errors in representation are significant and include for example, that the Island of *Castelrosso*=Meis and the adjacent coast was shown as extending further to the south than Cape Chelidoni, and that Cape Chelidoni was depicted as extending further to the south than Cape *Anemur*=Anamur, this being the reverse of what is in fact the case. Secondly, there are no mountains indicated by *Alaiah*=Alanya, *Anemur*=Anamur, with Alanya like Cape Anamur represented not as rocky promontory but as a part of the coastal plain. Thirdly, the line of the coast from before *Menovat*=Manavgat to Alanya extends out towards the south-west, forming a prominent bulge on the east side of the Gulf of

_or_Turkey_in_Europe_1795.jpg

⁹⁴ Sphyroeras et al. 1985, fig. 145.

⁹⁵ https://upload.wikimedia.org/wikipedia/commons/f/fd/1801_Cary_Map_of_Turkey_Iraq_Armenia_and_Sryia_-_Geographicus_-_TurkeyAsia-cary-1801.jpg

⁹⁶ Composite: A Map of the Environs of Constantinople. - David Rumsey Historical Map Collection.

Satalia=Antalya Bay and narrowing the mouth of the Gulf on its eastern side, all of which are significant misrepresentations. On both maps the site of Phaselis is still marked with the transliteration of its later Greek toponym, '*Fionda*' rather than '*Tekroba*' or a variant thereof.

Pierre-Gilles Chanlaire (1758-1817) directeur de l'Atlas national de France, published in Paris in 1805⁹⁷ his map entitled, "*Carte de la Turquie d'Europe en 15 Feuilles comprenant toute la côte orientale de la Mer Adriatique, l'Archipel, la Morée, l'île de Candie, la Crimée et la partie occidentale de la mer Noire*,"⁹⁸ On it the southward extension of the coastline from *Macri ou Macari*=Fethiye to *C. de Macri* has been exaggerated, due to *Macri ou Macari* and *Antalia ou Satalia*, that is today, Fethiye and Antalya, being represented as being on almost the same line of latitude thereby changing the shape of the Teke peninsular, as was also the case with earlier representations of this coastline including John Cary's 1801 map (Fig. 17). On the coast between *Cap Chelidoni* and *Antalia ou Satalia*, the location of Phaselis is marked by the toponym *Fionda*.

After the publication of Beaufort's *Karamania* in 1817, in which the place name '*Phionda*' is only recorded by Captain Beaufort for Phaselis in his quote from Meletius, "*Meletius gives Phaselis the modern names of Phionda and Pitiusa, but from the Turkish peasants we learned that at present it is called Tekrova*"⁹⁹, with the modern Ottoman Turkish and ancient Greek toponyms, respectively given by Beaufort in Roman characters and *Italics*: "*Tekrova, Phaselis*", appearing on his chart dated 1817 entitled, the '*South Coast of Asia Minor commonly called Karamania*', and '*Phaselis*' on his chart of the ports (Fig. 24), as also the title of the chapter, '*Phaselis*'. A further ten charts, plus an index, to *Karamania*, were published by the British Admiralty in 1819, in addition to the charts, plans and engravings that were published in 1817 in *Karamania*, all of which record the names *Tekrova* and/or *Phaselis*. Yet, for decades the name of the modern Christian Orthodox see, *Gironda-Fionda-Phionda-Phironda* continued to be employed in European texts and cartography to describe the ancient site of Phaselis¹⁰⁰, together with the various variant spellings of the Ottoman Turkish name: *Tekiroba*¹⁰¹, *Tekrova*,¹⁰² *Tékrova*,¹⁰³ *Tetrova*,¹⁰⁴ *Tekova*¹⁰⁵, *Trekova*¹⁰⁶, *Tekrowa*¹⁰⁷, *Tekirowa*¹⁰⁸, *Tirikowa*¹⁰⁹, *Tekirova*¹¹⁰.

⁹⁷ Recorded at the Aikaterini Laskaridis Foundation website as "*ca. 1780*", rather than 1805, <http://eng.travelogues.gr/item.php?view=60228> as also, <http://eng.travelogues.gr/collection.php?view=468>, <http://tr.travelogues.gr/item.php?view=60498> etc.

⁹⁸ <http://ids.lib.harvard.edu/ids/view/22397657?buttons=y>;

⁹⁹ Beaufort 1817, 69, as likewise: "*Its modern names, according to Miletius, were Phionda and Pitiusa. It is at present called Tekrova*", Anon. 1824, 248; and repeated, Conder 1830, 234.

¹⁰⁰ See also: "*Fionda*", Worcester 1817; Beck 1822, 113, "*die Ruinen von Phaseiis (Phionda bei den Griechen, Tekrova bei den Türken)*"; Butler 1821, 94, "*Above it is Phaselis, now Fionda*"; "*FIONDA, or Phionda, anciently Phaselis, a decayed city of Asia Minor, on the west coast of the Gulf of Satalia. It is called Tekrova by the Turks, and is still the see of a Greek bishop*" Anon. 1829, 230; Foris 1829, 360; "*Lycie*", F. Dehèque, Wahlen 1843, 201, "*étaient la ville et le port de Phaselis (aujourd'hui Fionda)*".

¹⁰¹ Pîrî Reis 2013, 246.

¹⁰² Beaufort 1817, 69; Beck 1822, 113; Conder 1830, 234; Partington 1836, 892; Smith 1857, 592.

¹⁰³ Fellows 1839, 211, with the two toponyms, "*Tékrova, Phaselis*" recorded on his '*Map of part of Asia Minor Illustrating the Journey of Charles Fellows 1838*'. As also the toponyms, *Italia* and *Adalia* for Antalya.

¹⁰⁴ Anon. 1845, 323.

¹⁰⁵ Anon. 1854, 245.

¹⁰⁶ Playfair 1881, XXXV.

¹⁰⁷ "*Das Osmanisher Reich in Asien*", Gotha: Justus Perthes, 1859, <http://aligunduz.org/img/maps/OttomanAsia.jpg>

¹⁰⁸ Benndorf-Niemann 1884, 43.

Charles Frederick Partington in his work entitled, *The British Cyclopædia of literature, history, geography, law, and politics*, of 1836 related:

*“Fionda, or Phionda. A city of Asia Minor, on the West coast of the Gulf of Satalya, which is now in ruins. Its ancient name was Phaselis; but the Turks call it Tekrova. The present town is almost deserted... Fionda is twenty-six miles south of Adalia”*¹¹¹.

While the name Fionda was employed together with Phaselis by Victor Hugo in his Rhine river travel guidebook meditation of 1842 entitled, *Le rhin: “dans Fionda, Phaselis, où Alexandre fut obligé de mettre un pied dans la mer, tant le passage Climax était étroit;...”*¹¹² and subsequently in Darby's *Universal Gazetteer* published in 1846 where the entry reads, *“Fionda, ancient Phaselis, city of Asia Minor, on the W. coast of the Gulf of Satalia, 36 miles S. from Adalia”*¹¹³.

In 1812 William Heather's *Navigation Warehouse and Naval Academy* published a three part nautical chart of the entire Mediterranean, entitled: *A Chart of the Mediterranean Sea, Including the Gulf of Venice and Black Sea*. This chart was revised by J. W. Norie in 1818, *A Chart of the Mediterranean Sea, Including the Gulf of Venice and Black Sea, Drawn from the Latest Surveys*¹¹⁴, and which seems to include the hydrographic findings made by Capt. Francis Beaufort and published in *Karamania* in 1817. It was again updated in 1822 by J. W. Norie¹¹⁵ on the basis of other British Admiralty charts¹¹⁶. *From 1823 chart publications were also on sale to the general public, and a number of complementary publications were produced such as Tide Tables, Lists of Lights and Sailing Directions*¹¹⁷, as, *“with the rise of the British Admiralty and its own maritime chart productions”*¹¹⁸, the business of “Chart Purveyor” in London dramatically changed. Admiralty charts and pilot books, designed for military use, were offered through established intermediaries, like Norie, at bargain prices. Most chart makers of the period found it profitable to use the highly technical Admiralty charts to update their own more decorative vernacular charts¹¹⁸. The easternmost sheet of the John Norie 1822 revised version of, *A Chart of the Mediterranean Sea, Including the Gulf of Venice and Black Sea, Drawn from the Latest Surveys*, clearly incorporates Beaufort's scientific redrawing of the southern coastline. It records in the location of Phaselis the toponym *Tekrova*, as recorded by Beaufort, rather than Fionda-Fironda-Gironda.

However, while John Norie in London was incorporating the results of Captain Beaufort's survey published in 1817, into the 1818 version of *“A Chart of the Mediterranean Sea, Including*

¹⁰⁹ The Geography of Strabo. Literally translated, with notes, Trans H. C. Hamilton, W. Falconer, Vol. II. London. George Bell & Sons. 1903, <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0239%3Abook%3D14%3Achapter%3D3%3Asection%3D9> see, fn. 1.

¹¹⁰ Yerasimos 1991, 314.

¹¹¹ Partington 1836, 892.

¹¹² Hugo 1842, 479.

¹¹³ Darby 1846, 320, unchanged from the 1823 edition.

¹¹⁴ For an example of the revised 1818 chart see: http://www.mapsofantiquity.com/store/Heather_Chart_of_the_Mediterranean_Sea/inventory.pl?id=NAU130
1822 William Heather and John Norie Nautical Chart of the Eastern Mediterranean; <http://www.geographicus.com/P/AntiqueMap/MediterraneanSeaEast-heather-1822>

¹¹⁶ <http://discovery.nationalarchives.gov.uk/details/r/C16280>

¹¹⁷ <http://www.nationalarchives.gov.uk/help-with-your-research/research-guides/admiralty-charts-maps/>

¹¹⁸ http://www.ebay.com/itm/1822-William-Heather-and-John-Norie-Nautical-Chart-of-the-Eastern-Mediterranean-/361655726923#cvip_desc

In London in 1826 or 1827 there was published, “A New Chart of the Mediterranean Sea Comprehending the Coasts from Cape St. Mary: in Portugal to Constantinople; and from Rabat, In Africa, to Alexandretto or Iskenderoon, in Asia, &c. Reduced from the late Spanish and French charts made by Order of the respective governments. With the Recent Surveys of Capt. Wm. Hy. Symth, R. N., Capt. F. Beaufort, R. N. and other British Officers”, drawn by Capt. W. H. Symth (who had conducted hydrographic surveys from 1813 to 1824 around the coast of Sicily, the Maltese islands, the coasts of northwestern Italy, Greece, Libya and Egypt) and R. H. Laurie, who also published John Purdy’s *New Sailing Directory for the Mediterranean Sea* in 1826. This was the first chart of the entire Mediterranean to have been compiled from scientific hydrographic surveys, not an entirely British production but also employing charts recording the hydrographic surveys of the coasts of France and Ottoman Syria-Palestine produced by the French Dépôt de la Marine, as well of the surveys of the coasts of Spain and Morocco by the Spanish Armada Real.¹²³ Its production finally realised the 1750 vision of Joseph Bernard, Marquis de Chabert, of an accurate scientific sea chart of the entire Mediterranean Sea.



Fig. 19. Detail of the unique surviving copy of the chart published by R. H. Laurie in 1826-7, showing the area of the southern Anatolian coastline from the Gulf of Makry (Fethiye) to C. Anamur-Anamur as surveyed by Capt. F. Beaufort. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes¹²².

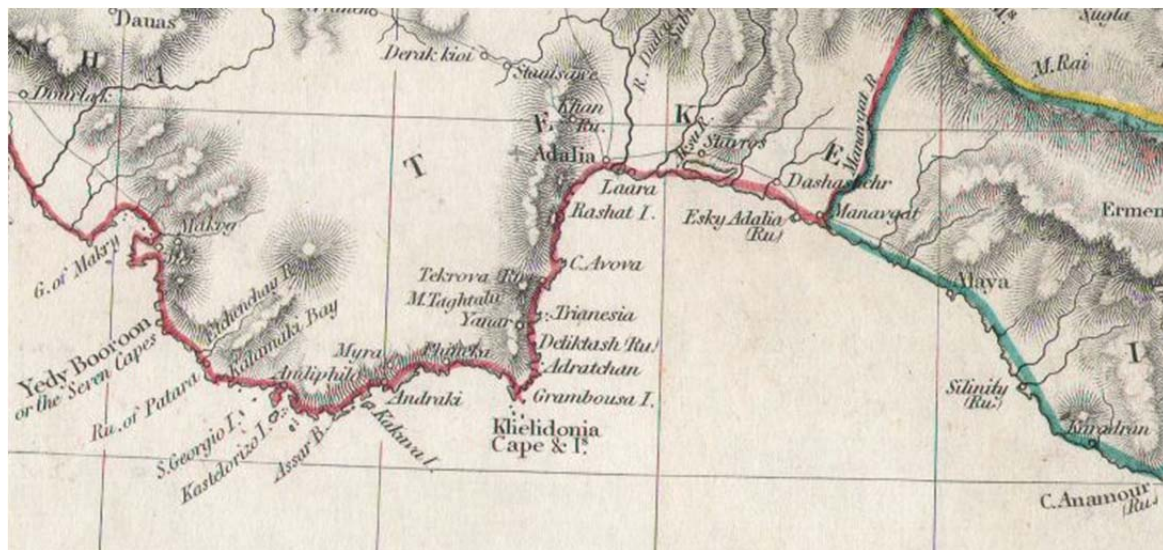


Fig. 20. Detail of the map entitled, *Turkey Containing the Provinces in Asia Minor*, published May 1st, 1830 by Baldwin and Craddock, London, under the superintendence of the Society for the Diffusion of Useful Knowledge, depicting the southern Anatolian coastline from the Gulf of Makry (Fethiye) to C. Anamur-

¹²² <https://www.raremaps.com/gallery/enlarge/34696mb>; <http://bostonraremaps.com/inventory/only-known-example-of-a-landmark-mediterranean-chart/>

¹²³ https://www.raremaps.com/gallery/detail/34696mb/A_New_Chart_of_the_Mediterranean_Sea_Comprehending_the_Coasts_from_Cape_St_Smyth-Laurie.html

Anamur. It copies the line of the coastline established through Beaufort's survey of 1811-12 as published on the Admiralty charts and through the chart published by R. H. Laurie in 1826-7 (Fig. 19). The settlement of Tekrova is marked, together with *Ru.* marking the ruins of ancient Phaselis¹²⁴.



Fig. 21. Detail of the coastline from the Gulf of Makri=G. of Fethiye to Cape Anamur=C. Anamur from the map entitled *Asia Minor* of 1851, by John Tallis (1817–1876) steel engraved and published by John Tallis and Company (1830-51), London, that incorporated information from the chart drawn by Captain Beaufort in 1811-12. It records the site of Phaselis as *Tekrova*, Antalya as *Adalia* and Adrasan as *Artrasarny*¹²⁵. Another map entitled *Turkey in Asia* but with a less accurate record of the coastline, engraved to a smaller scale and carrying fewer toponyms was also published in 1851 by R. M. Martin, and J. and F. Tallis (Fig. 22), only recording between C. Kelidonia and *Adalia*=Antalya, *Deliklach*¹²⁶ (sic.) and *Tekrova*¹²⁷.



Fig 22. Detail of the coastline from the Gulf of Makri=Fethiye to Cape Anamur=Anamur from the map entitled *Turkey in Asia* of 1851, by John Tallis (1817–1876) steel engraved and published by John Tallis and Company, London, that incorporated less of the information from the chart drawn by Captain Beaufort in 1811-12 than is shown on the map of *Asia Minor* published by the same company also in 1851 (Fig. 21) and is more inaccurate, as a comparison between the shapes of C. Kelidonia on these two maps shows. A line drawing of the actual shape of the coastline is attached to the right for comparative purposes.

¹²⁴ <http://www.atlassen.info/kaarten/algemeen/sduk/picslarge/sduk001k083.jpg>

¹²⁵ <http://dl.mospace.umsystem.edu/mu/islandora/object/mu%3A110887>

¹²⁶ Recorded as 'Deliktash' in Purdy 1826, 302.

¹²⁷ [https://upload.wikimedia.org/wikipedia/commons/6/69/Martin,_R.M.%3B_Tallis,_J._%26_F._Turkey_in_Asia._1851_\(H\).jpg](https://upload.wikimedia.org/wikipedia/commons/6/69/Martin,_R.M.%3B_Tallis,_J._%26_F._Turkey_in_Asia._1851_(H).jpg)



Fig. 23. Detail of the coastline from the Gulf of Makry=Gulf of Fethiye to Cape Anamur from the map entitled *Turkey in Asia* by Alexander Keith Johnston, Geographer at Edinburgh in Ordinary to the Queen, from the “*Royal Atlas of Modern Geography*” of 1876, which marks the ancient site as ‘Tekrova (Phasetis sic.)’¹²⁸.

On the suggested winter wave activity of 1811-1812 and broken relief carvings and tombs

Captain Beaufort visited the abandoned ancient city of Phaselis in the course of charting this coastline in 1811 and again, after the refitting of H. M. S. Fredericksteen in Malta, in April, 1812¹²⁹, when he met the architect and archaeologist Charles Robert Cockerell, in a hired caique¹³⁰ near to the abandoned ancient harbour city where Cockerell had spent the previous day sketching two broken tombs in the North harbour, lying below the ‘mausoleum’ marked on Beaufort’s chart (Fig. 24). Beaufort relates: “The sea had also broken into a square mausoleum, that stands on the shore between the two eastern ports, and a couple of large sarcophagi, which lay on the beach, appeared to have been washed out by its violence. They were of the whitest marble and of very neat workmanship. The lids were flat, and on each was a recumbent human figure, in low relief: the sculpture on one of them represented a funeral procession, and in the opposite compartment a chace (sic), in which the figures of the boar, the rhinoceros, and the elephant, were manifest. The other was richly ornamented with wreaths of flowers and fruit, but neither of them bore any inscriptions”¹³¹. It would surely be most remarkable for waves to break into the square Mausoleum constructed on the podium which remains today more than 3 meters above sea level and reach in and pluck out two large white marble sarcophagi with their lids, leaving other nearby limestone sarcophagi, at a lower level, in their original positions.

¹²⁸ <http://dl.mospace.umsystem.edu/mu/islandora/object/mu%3A357253>

¹²⁹ Cockerell 1903, 171

¹³⁰ For the depiction by C. R. Cockerell of such a vessel, see B.M. London, No. 2012,5001.647 http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=3468808&partId=1&searchText=Charles+Robert+Cockerell&page=4

Interesting comparisons can be made between the drawings of the same view made from the deck of H.M.S. Fredericksteen in 1812 by Captain Beaufort, published in *Karamania*, and those by the architect-archaeologist C. R. Cockerell, of the Port of Satalya-Antalya, of Side, of Alanya, of Selinty-Trajanopolis, as of Anamur castle, these drawings by Cockerell are in the B.M., collection, London. Cockerell left Captain Beaufort after H.M.S. Fredericksteen returned to Malta on the 18th of July, 1812 (C. R. Cockerell, *Obit. The Builder*, Sept. 26th 1863, 683-5, 684).

¹³¹ Beaufort 1817, 59-60.

Concerning these broken white marble tombs-sarcophagi by the North harbour, Beaufort further remarks: *"As they lay on a gravel beach, exposed to the swell, the sharper parts of the sculpture had, in the period of our first visit, already suffered from the attrition of the pebbles; but on our return the following year, we were astonished at the rapidity with which the work of destruction had advanced: the more delicate parts were utterly effaced, and the whole was so bruised and disfigured, as to be hardly recognized: even the huge blocks of marble were turned over, or broken into fragments"*¹³² *...If the havoc made here by the sea should continue its progress in the same ratio, there will soon remain but few vestiges of Phaselis: the peninsular will be undermined, and will gradually sink into a shapless reef of rocks below the surface of the ocean"*¹³³. However, rather than the havoc made by the sea in the winter of 1811-12 as Beaufort suggested, there were no tsunami recorded in the eastern Mediterranean in 1811-12¹³⁴, it seems rather more reasonable to suggest that the havoc was caused by the actions of man in the deliberate defacing and destruction, the smashing of the reliefs carved on these white marble sarcophagi, presumably to discourage any further visits to the site by the foreigners. Further, it seems reasonable to suggest that Cockerell would not have wasted time in drawing the remains of these white marble sarcophagi in 1812 in the condition that was described by Beaufort, *"the more delicate parts were utterly effaced, and the whole was so bruised and disfigured, as to be hardly recognized"*, but that the relief carving on these sarcophagi, *'of very neat workmanship,'* were still largely intact and was only thoroughly bruised, disfigured, defaced and broken following Cockerell's visit on the 27th of April, as Cockerell records, *"There were tombs only just recently mutilated, which I thought worth making drawings of"*¹³⁵. Consequently, having already been *'mutilated'*, it seems these relief carvings were quite deliberately defaced after Cockerell's visit and before Beaufort's return visit to the site after April 1812. It is therefore regrettable that the sketches of the *'mutilated'* tombs by the North harbour that were made by Cockerell on the 27th of April 1812 are today lost, scattered or uncatalogued-unpublished¹³⁶. Beaufort himself relates from Cockerell in respect to Myra and

¹³² Consequently, given its condition, the complete sarcophagus chest underwater in the North harbour probably should not be identified with one of the two that are remarked upon by Beaufort and Cockerell, contra Aslan – Baybo 2015, 6, *"sağlam durumda büyük boy bir lahit ile kapağı bulunmaktadır (Fig. 4)" dn.31,"Bu lahit olasılıkla Beaufort'un 1881 (sic) yılında burayı ziyareti sırasında gördüğü iki lahitten biri olmalıdır. Mermerden üretilmiş bu lahitlerden birinin üzerinde alçak kabartmalı uzanmış insan figürü ile yan yüzünde çiçek ve meyve çelengi, diğerinde cenaze alayı ve yaban domuzu, gergedan, fil figürleri olduğu ifade edilmektedir* (Beaufort 2002, 62)". Beaufort 1817, 64-65. The astonishingly rapid havoc wrought by the sea at Phaselis as reported by Beaufort was then noted elsewhere, as in the French review of his chart and book published in 1823, entitled, *Nouvel Atlas Hydrographique de la Cote de Karamanie* (288-300, 390-405), *"M. Beaufort rapporte des exemples frappants des ravages rapides que la mer y fait sur le roc tendre de cette côte; dans peu toute cette presque île sera précipitée dans les abîmes de l'océan, et disparaîtra totalement de la surface de la terre"* Zach 1823, 396.

¹³⁴ Papadopoulos 2015, 228.

¹³⁵ Cockerell 1903, 171.

There are however some of Cockerell's drawings of Lycia in 1812 in the B.M. London, including several views of Patara and the sequence of sketches which presumably once included the sketches of these broken tombs from the same sketch book: B.M. No. 2012,5001.21, *"View of the coast of Lycia"* 1812 http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?assetId=1127922001&objectId=3439635&partId=1 No. 2012,5001.20, *"View of the coast of Lycia"* 1812, http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?assetId=1127919001&objectId=3439638&partId=1 No. 2012,5001.26, *"View of Mount Climax, Lycia"* 1812, http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?assetId=1128449001&objectId=3440015&partId=1.

the attitude of the local population, “...that he (Cockerell) led but a miserable life, in constant apprehension of the Turks, who were very violent and finatical hereabouts”, and, in respect to the foreigners’ interest in ancient statues, an attitude which may have been shared by the population around Tekova-Tekirova at that time: “The inhabitants are chiefly Turks, and he (Cockerell) described them as more than ordinarily jealous and ferocious. While examining some statues, one of the mob exclaimed, “If the infidels are attracted here by these blasphemous figures, the temptation will soon cease; for when that dog (Cockerell) is gone, I will destroy them”.. Mr Cockerell succeeded, however, in making some sketches...”¹³⁷. Beaufort clearly cites concerning Myra from Cockerell’s own journal, as Cockerell wrote: “While examining some statues I heard one of them exclaim, ‘If the infidels are attracted here by these blasphemous figures the temptation shall soon cease, for when the dog (Cockerell) is gone I will destroy them’”¹³⁸. To prevent the arrival of even more infidels, understood to have been attracted to Tekrova by the carvings of ‘blasphemous figures’, in part, doubtless because of the length of time it takes to make an accurate sketch or drawing, with the ‘infidel’ sitting in front of and looking intently at, and copying these carvings of ‘blasphemous figures’, the carvings on these two white marble sarcophagi were, following the departure Cockerell, most thoroughly erased. However, there still remain today pieces of fine white marble of a thickness that suggests they may well have formed parts of these two white marble sarcophagi, lying around on the shingle beach below the mausoleum.

‘Kephaltis Atalias (doubtful)’

Usually recorded as ‘Kephali tis Attalias’ (Fig. 6, 7) - ‘Kefali tis Italias’, or indicated as a “danger”¹³⁹ for navigation, as on Romeyn De Hooghe’s 1694 chart of the Mediterranean (Fig. 9) – lying to the south of Cape Chelidoni, but recorded following Beaufort’s survey on William Heather and John Norie’s Nautical Chart of the Eastern Mediterranean as: “Kephaltis Atalias (doubtful)”¹⁴⁰, there were long said to be a group of islands in this location, but there is no evidence for any group of islands in this location today. However, deep beneath the surface in approximately this location there are a series of mud volcanoes forming the Anaximander Mountains that are some 4 million years old¹⁴¹. It seems possible that the repeated release of methane gas and oil from a depth of 2000 m reaching the surface gave rise to the longstanding notion that in this area of the sea there were a group of islands.

The Chart of 1811

Captain Beaufort had confirmed in 1811 through the inscriptions found recording the name Phaselis¹⁴² the localisation of the city, already repeatedly represented as Phaselis/Fionda in its approximate position in European 17th and 18th cartography (eg. Figs 1, 2, 4, 6, 8, 9), and in texts, as also from Strabo’s explicitly clear description of the city, as Beaufort records of it: “On a small peninsula, at the foot of Takhtalu, are the remains of the city of Phaselis, with its three

¹³⁷ Beaufort 1817, 30-31.

¹³⁸ Cockerell 1903, 167.

¹³⁹ Recorded as such on the 1746 Françoise Olivier chart entitled, “Nouvelle Carte de la Mer Méditerranée Jusques au Cap S. Vincent et Cap Cantin” published in Toulon, <https://www.raremaps.com/gallery/enlarge/35686dc>

¹⁴⁰ 1822 William Heather and John Norie Nautical Chart of the Eastern Mediterranean; <http://www.geographicus.com/P/AntiqueMap/MediterraneanSeaEast-heather-1822>.

¹⁴¹ Lykousis *et. al.* 2009, 854–872.

¹⁴² Beaufort 1817, 65.

ports and lake, as described by Strabo, (xiv. 2. 9. sic)¹⁴³. He also decided in correspondence with his brother William, that the proper transcription into English of the ancient name of the city was not to be either 'Faselis' or 'Phaesis', but was 'Phaselis'¹⁴⁴. Beaufort also drew a chart of Phaselis with its three ancient harbours to scale (Fig. 24). This chart not only accurately recorded in detail this coastline, its sunken rocks and outcrops off the coast and marked the depth in fathoms, 2 and 4 in the north harbour, 5 off the ruined pier in the south harbour, 7, 7, 9; but also marked upon it some of the visible remains from antiquity: *sarcophagi, mausoleum, port, arched aqueduct, artificial pier (harbour arm), port, avenue, temples, theatre, port, ruined pier, ruined houses*, together with indicating in other legends on the chart some of the topographical features of the city: *low Isthmus, swamp, petrified beach, cliffs about 50 feet high*. A copy of this chart, including more of the coastline to north and south and the adjacent maritime soundings, measuring 19 x 22.5 cms and drawn to a scale of 1:15,000, entitled 'Plan of Tekrova The antient (sic.) Phaselis',¹⁴⁵ was also added as an inset into the finished Admiralty Chart entitled 'Karamania, Chart II, Fom Cape Khelidonia to Cape Karaboornoo', published according to the Act of Parliament by Captain Wood, R.N. Hydrographer to the Admiralty, on the 5th of October, 1819¹⁴⁶.

Ports-Bays-Harbours-Roadstead-Mooring area-Anchorage

Over the course of the past 200 years there have been a wide range of terms employed to distinguish between the three ports that were recorded by Strabo at the start of the first millennia A.D., as were recorded by Captain Beaufort at the start of the 19th c. and which remain visible at Phaselis today¹⁴⁷. In addition to these three ports there was of course the large roadstead – anchorage – for mooring off these ports. The larger ports to either side of the peninsular are usually described as the North and South¹⁴⁸ ports or harbours or bays¹⁴⁹. However, the much smaller third port has been described by a wide range of descriptive terms including: 'inner'¹⁵⁰, 'third harbor'¹⁵¹; 'city harbour'¹⁵², 'central'¹⁵³, 'small'¹⁵⁴, 'very small N.E.

¹⁴³ Beaufort 1817, 59; Strabo in his Geography 14.3. 9., "Then follows Phaselis, a considerable city, with three harbours and a lake"; Bean 1979, "The city had three harbors". <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.04.0006%3Aentry%3Dphaselis>

¹⁴⁴ Friendly 1977, 223.

¹⁴⁵ <http://collections.rmg.co.uk/collections/objects/539785.html>

¹⁴⁶ National Maritime Museum, Greenwich, London, Object ID: G235:8/7, The original chart is dated 1812, this version of it was drawn by J. Walker, and was published in 1819.

¹⁴⁷ For the ongoing underwater survey at Phaselis see: Aslan – Baybo 2015.

¹⁴⁸ Schafer 1981 records the North harbour as the North Bay- *Nordbucht*, but the South as, the harbour in the South Bay- *Hafen in der Südbucht*, drawing a terminological distinction between the function of the two bays. Yet the mole-breakwater in the North harbour and the pier-harbour arm of the south harbour suggest both were employed as harbours. Aslan – Baybo 2015, 2, record the North harbour-port-bay as the, 'North mooring area'.

¹⁴⁹ Although W. Smith 1863, Vol. 2, "Phaselis" 829; as likewise, Smith 1872, Vol. III, 2480, describes the North harbour-port-bay as a "roadstead,"

¹⁵⁰ Lloyd 1989, 141. Aslan – Baybo 2015, 2, record the lake itself as being the 'inner harbour'.

¹⁵¹ 'Phaselis' G. Bean, PECS 1979, "The third harbor lies between the other two at the N foot of the acropolis hill; ..." <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.04.0006%3Aentry%3Dphaselis>

¹⁵² Schafer 1981, 65-67 etc. and as per map. *Stadthafen*; Foss, 1994, 44.

¹⁵³ Brandon et al. 2014, 136, 240; 'Central harbour', Aslan – Baybo 2015, 2.

¹⁵⁴ Texier 1862, 699, "Petit port"; Merckel 1899, 359, "kleineren Häfen"; Heikell 1985, "the N bay and small ancient harbour"; Pentreath 1990, 89.

port'¹⁵⁵, 'Protected(Sun)'¹⁵⁶, 'military or protected'¹⁵⁷, 'closed'¹⁵⁸, 'enclosed'¹⁵⁹, as also as a member of the group of 'state harbours enclosed in city circuits'¹⁶⁰.

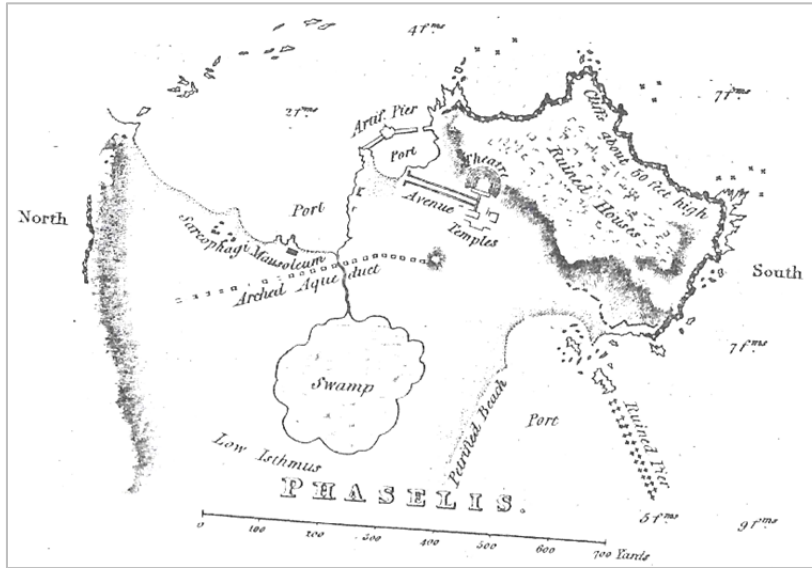


Fig. 24. The chart drawn by F. Beaufort of the coastline around Phaselis which was subsequently employed to head the chapter of the same name in his, *Karamania: Or, A Brief Description of the South Coast of Asia-Minor*, first published in 1817, 56, and this chart encompassing a larger area was added as an insert to the Admiralty chart entitled *Karamania II* of 1819¹⁶¹.

The importance of this nautical chart of Phaselis drawn in 1811 is not only that it is the first detailed chart of the port city since the 16th c., and explicitly records the three 'ports', but that it clearly records the inner harbour as having its harbour arm - "artificial pier" - and its narrow entrance intact; with the harbour arm extending from the promontory enclosing the north side of the harbour to the rock outcrop and from there to join the south side of the harbour, with the harbour mouth entrance and arm recorded as entire and above water. There is no possibility that this chart records Beaufort's own reconstruction of this "artificial pier" - harbour arm, not only because the course of the ruined pier in the south harbour is marked clearly as ruined and its ruined state is recorded as such in the associated legend 'ruined pier', but because this is a chart, like the charts of the coasts and ports preserved in Piri Reis' 1525 *Kitab-ı Bahriye*¹⁶², it is not a work of reconstruction but a maritime chart, drawn to accurately record the current state of the maritime terrain and coast for mariners¹⁶³ and pilots, that is, containing instructions for navigating the various coasts, islands, bays, ports, and harbours, and for avoiding the numerous rocks, shoals, and other dangers in the sea. If parts of the harbour arm were below water level in 1811 they would have been marked on this chart with broken lines,

¹⁵⁵ Denham 1973, 31.

¹⁵⁶ <https://en.wikipedia.org/wiki/Phaselis>; http://www.antalyafourseasons.com/privatedetay.asp?kategori_no=11; www.turkishyachtchartering.com/phaselis.html

¹⁵⁷ <https://www.lonelyplanet.com/turkey/phaselis>

¹⁵⁸ "Phaselis" W. Smith 1863, Volume 2, 829; likewise, Smith 1872, vol. III, 2480, "On the eastern side of this were a closed port and a roadstead, and on the western a larger artificial harbour, formed by a mole run out into the sea"; *Bulletin analytique d'histoire romaine*, Association pour l'étude de la civilisation romaine, 1975, Vol. 10, No. 932, 287, "port fermé".

¹⁵⁹ Schaefer 1974, 139-146.

¹⁶⁰ Blackman *et al.* 2014, 89, 187; Pentreath 1990, 199.

¹⁶¹ <http://collections.rmg.co.uk/collections/objects/539785.html>

¹⁶² Piri Reis 1988, 571, 581.

¹⁶³ See Duggan – Aygün 2015, 264, fn. 71.

like those marking the remains underwater of the ruined pier in the south harbour. Further, Captain Beaufort records the following remarks concerning the state of the arm of the inner harbour in 1811:

*"One of them (harbours) is very small, with a narrow entrance in the pier, where it seems to have been closed by Gates. The pier is angular with a rock for its outer abutment, and to this circumstance it probably owes its preservation, the masonry being still near perfect"*¹⁶⁴.

It is evident therefore from both the evidence provided by this chart and from Captain Beaufort's published remarks that in 1811, two hundred and five years ago, that the upper courses of large stone masonry blocks employed to construct this inner harbour arm in antiquity remained *in situ*, were not as yet cast down into the waters. This therefore raises the question as to precisely when over the course of the past two centuries was much of the inner harbour arm of Phaselis above the waterline destroyed, to provide its appearance today?

It should be noted that Captain Beaufort's description and his chart recording the state of the inner harbour is entirely at variance with the description provided by the architect Charles Robert Cockerell on April 27th 1812, who spent one day at the site:

*"Phaselis... It stands on a peninsula easily defended, and has or had - for all are now destroyed - three excellent harbours"*¹⁶⁵. Strangely, in Cockerell's own sketch drawn from the edge of the acropolis hill, overlooking the inner harbour at Phaselis on the 27th of April, 1812 (Figs. 25, 26), the harbour arm of the inner harbour is clearly drawn and it appears not to be in any destroyed or ruined state.



Fig. 25. C. R. Cockerell's sketch of the 27th of April, 1812 depicting the inner harbour at Phaselis, Inscribed, "*Phaselis. / asia minor. / South East / coast*". British Museum No. 2012,5001.25¹⁶⁶ © The Trustees of the British Museum



Fig. 26. Detail of Fig. 25 of the harbour arm and entrance to the inner harbour

¹⁶⁴ Beaufort 1817, 60.

¹⁶⁵ Cockerell 1903, 170. It is unclear if this passage had been edited by Cockerell's son for its 1903 publication or if the text is as it was written in 1812.

¹⁶⁶ http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?assetId=1128017001&objectId=3439673&partId=1

Subsequent repetitions and accounts:

Col. William Martin Leake although not visiting Phaselis in the course of his travels, records from Captain Beaufort-Strabo:

“Phaselis, a large city with three harbours and a lake”¹⁶⁷.

John Purdy in his, *New Sailing Directory for the Mediterranean Sea*, London, 1826, records:

“Tekrova, [ant.Phaselis]. — At 4 miles N. by E. [North/i] from Trianesia the ruins of the ancient city of Phaselis may be found on a small peninsula; but, in 1811, no inhabitants were found on the spot. On each side are the remains of an artificial port; the one however is too small, and the other too much ruined, to be of any utility at present. There is clean anchorage in the offing”¹⁶⁸.

Although clearly citing from Beaufort’s record of 1811, the hydrographer John Purdy oddly records only two ports, not the three ports that are explicitly recorded both in Beaufort’s text and on his chart published in 1817 as also on that published by the British Admiralty in 1819 entitled *Karamania II*¹⁶⁹, and this omission of the north port was then repeated by J. W. Norrie in his *New Piloting Directions for the Mediterranean Sea* of 1831:

“309 Tekrova. Four miles to the northward of Trianesia, on the summit of a small peninsula, are the ruins of the ancient City of Phaselis, now called Tekrova; but in 1811 there were no inhabitants: the remains of the port are visible on each side; but the one is too small, and the other too much in ruins to be of the least utility at present. The anchorage in the offing is clean”¹⁷⁰.

J. A. Cramer in his, *A Geographical And Historical Description of Asia Minor with a Map* of 1832, cites Beaufort: *“Phaselis, with its three ports and lake, as described by Strabo”¹⁷¹.*

These descriptions record nothing further concerning the inner harbour of Phaselis than that which Captain Beaufort recorded in 1811, suggesting that the port had not been visited in the interval or that no corrections needed to be made.

Charles Fellows on Saturday the 14th of April 1838 visited Phaselis and he records that he arrived in an Arab dhow from Constantinople at the port of Tédrova:

“In five hours, before eight o’clock in the morning, we were at Tédrova, the ancient Phaselis. I landed and at once saw the remains of this ancient port”¹⁷², which indicates he landed in the North harbour and saw only the inner port as being the port of Phaselis and he consequently wrote:

“The harbour and town of Phaselis are both well built and interesting, but very small”¹⁷³.

¹⁶⁷ Leake 1824, 174.

¹⁶⁸ Purdy 1826, 302.

¹⁶⁹ <http://collections.rmg.co.uk/collections/objects/539785.html>

¹⁷⁰ Norrie 1831.

¹⁷¹ Cramer 1832, 263.

¹⁷² Fellows 1839, 211.

¹⁷³ Fellows 1839, 211.

Fellows thereby recording the well built and interesting, but very small port, the inner harbour, as being the harbour of Phaselis, and he makes no mention of the other two ports of the city.

A Handbook for travellers in the Ionian Islands, Greece, Turkey, Asia Minor and Constantinople, (no author given), published by John Murray in 1840 relates concerning Route 101 Adalia (Antalya) to Phaselis by sea, in about 5 hours, that:

*"The harbour and port of Phaselis are extremely well built, and very interesting; but very small"*¹⁷⁴.

This is a direct quotation from Charles Fellows publication of the previous year but where the word 'town' has been replaced by the word 'port', thereby increasing the number of ports-harbours at Phaselis from Fellows's one, to two, following Purdy and Norie, rather than three, as Beaufort and Strabo had related.

The new edition of J. W. Norie's *New Piloting Directions for the Mediterranean Sea* of 1841, removes the words "at present", but otherwise adds nothing to the published 1831 description:

*"the remains of the port are visible on each side; but the one is too small, and the other too much in ruins to be of the least utility. The anchorage in the offing is clean"*¹⁷⁵.

On the 17th of April 1842, Lt.T. A. B. Spratt and Prof. E. Forbes visited Phaselis and they record:

*"The next place of any consequence visited was Phaselis, the ruins of which town have been fully described by Captain Beaufort. The former importance of the ancient city is attested by the two artificial ports, the theatre and many ruins of great buildings..."*¹⁷⁶.

Spratt and Forbes not in fact following Beaufort whom they cite, who stated there were three ports-harbours, nor Charles Fellows who only noted one port, the inner harbour.

In the new edition of, *'A Handbook for travellers in the Ionian Islands, Greece, Turkey, Asia Minor and Constantinople,'* of 1845, the number of ports-harbours at Phaselis remains two, as in the first edition of 1840, following Purdy and Norie, and Spratt and Forbes, rather than the three ports, the description of the inner harbour has been added as being well built and very small which probably derives from Charles Fellows's 1838 account *"The harbour and town of Phaselis are both well built and interesting, but very small"*, but, as distinct from the port, the harbour has also been included within this description, repeating the 1840 edition of, *A Handbook for travellers*, although Beaufort makes no mention of any harbour, with masonry being near perfect or otherwise:

*"Tetrova (sic) the ancient Phaselis. The harbour and port of Phaselis are extremely well built, and very interesting; but very small"*¹⁷⁷.

In the same year 1845, Volume 21 of the *'Universal Dictionary of Knowledge'*, edited by Edward Smedley, was published and it provides an account of Phaselis directly citing from Captain Beaufort's account of 1817:

¹⁷⁴ Anon. 1840, 324.

¹⁷⁵ Norie 1841, 322.

¹⁷⁶ Spratt-Forbes 1847, 196.

¹⁷⁷ Anon. 1845, 323.

*"The other two ports are on the eastern side; one of them is very small, with a narrow entrance in the pier, which seems to have been closed by gates. The pier is angular with a rock for its outer abutment; and to this circumstance it owes its preservation, the masonry being still nearly perfect"*¹⁷⁸.

In the revised and greatly augmented third edition of *'A Handbook for Travellers in Turkey: describing...'* published in 1854, concerning the inner harbour of Phaselis there has been no change from the 1845 edition:

*"Tekova (sic) the ancient Phaselis. The harbour and port of Phaselis are extremely well built, and very interesting; but very small"*¹⁷⁹.

Sir William Smith in his *A Dictionary of the Bible* published in 1863 was presumably citing from Captain Beaufort's account of the inner harbour arm of Phaselis published in 1817, as the description is very similar:

*"On the eastern side of this were a closed port and a roadstead... The masonry of the pier which protected the small eastern port is nearly perfect"*¹⁸⁰.

The Journal of the Royal Geographical Society: JRGS, Volume 38, 1868, page cxx, records amongst the accessions to the map room of the RGS a French map, Acc. No. 2344 providing a Plan du Tekrova (ancien Phaselis). The date of the drawing of this map and the degree it differs, if any from that of Captain Beaufort's in its representation of the inner harbour is important, in possibly narrowing down the date of the damage to the inner harbour arm.

In the revised fourth edition of 1878, of the retitled, *'Handbook for Travellers in Turkey in Asia: Including Constantinople...'* there was no change made to the text except that the size of the inner port has changed from being *"very small"*, in 1840, 1845 and 1854, as Beaufort had described it in 1811, to simply *"small"*:

*"The harbour and port of Phaselis are extremely well built, and very interesting, but small"*¹⁸¹.

Robert Lambert Playfair in the first part of his *Handbook to the Mediterranean: Its Cities, Coasts, and Islands, for the Use of General Travellers and Yachtsmen* of 1881, in the section entitled *'Hints as to Ports and anchorages in the Mediterranean'*, records:

*"Trekova, anc. Phaselis. — Remains of artificial ports. Anchorage abreast of it on clean ground"*¹⁸².

Unfortunately it is not entirely clear if the *"remains of artificial ports"* refers to the ruined pier in the south harbour and an already damaged inner harbour arm by 1881, or if, instead, this refers to the ruined condition of the breakwater of the north harbour (Beaufort's suggestion that the

¹⁷⁸ Smedley – Rose 1845, 622.

¹⁷⁹ Anon. 1854, 245. Benndorf-Niemann 1884, 43, records the number of houses as 21, and the population as 76 in Tekirowa-Tekirova-Tekiroba.

¹⁸⁰ Smith 1863, 829.

¹⁸¹ Anon. 1878, 354.

¹⁸² Playfair 1881, XXXV.

reef was, ‘*once the foundation of a great mole*’¹⁸³) and the ruined pier in the south harbour. The probability is perhaps the former, as nobody since Captain Beaufort and those who copied or paraphrased his description or Strabo’s, recognised the north port as a port, and limited the recognised ports at Phaselis to one, the inner harbour, or, to two, the south port and the inner harbour, but, given that Playfair gives Beaufort as one of his sources consulted¹⁸⁴, it is uncertain if visible damage to the inner harbour arm subsequent to Spratt and Forbes visit in 1842 led to this comment, as none of the works recommended for consultation make mention of it. Part 1 of the *Handbook to the Mediterranean* further records of Phaselis:

*“On a small peninsular at the foot of Takhtalu are the remains of the city of Phaselis, with its three ports and lake as described by Strabo; the latter is now only an unwholesome swamp”*¹⁸⁵, in part, quoting directly from Beaufort’s published description: *“On a small peninsula, at the foot of Takhtalu, are the remains of the city of Phaselis, with its three ports and lake, as described by Strabo. The lake is now a mere swamp, occupying the middle of the isthmus and was probably the source of those baneful exhalations, which, according to Livy and Cicero, rendered Phaselis so unhealthy”*¹⁸⁶.

Following D. G. Hogarth’s visit to Phaselis with R. Norton and A. W. van Buren in 1904, D. G. Hogarth’s article entitled ‘Chimaera and Phaselis’ was published in Volume 93 of the *Cornhill Magazine* in 1906, and this was reprinted in 1910 in his book entitled, *Accidents of an Antiquary’s Life*. In it he relates concerning the condition of the inner harbour at Phaselis:

*“The lie of the land gave the city (Phaselis) two harbours, the southern is large, shallow and silted up, while the northern, the most pellucid rock-bay imaginable, still fringed with broken quays and fenced by a broken mole”*¹⁸⁷.

There has apparently to date been no scientific recognition of the discrepancy between Beaufort’s account with his chart recording the inner harbour at Phaselis in 1811 and the 20th century and present state of the inner harbour arm at Phaselis.¹⁸⁸ Nor has there been any attempt made to determine the date and the reason for this post 1812 destruction. However, from the above compilation it seems evident that the inner harbour arm probably remained in the condition recorded by Captain Beaufort in 1811-12 *“The masonry of the pier which protected the small eastern port is nearly perfect”*, until some point after 17th of April 1842. This, because Lt. T. A. B. Spratt and E. Forbes visited Phaselis on this date, and they recorded that: *“The next place of any consequence visited was Phaselis, the ruins of which town have been*

¹⁸³ Beaufort 1817, 60.

¹⁸⁴ Playfair 1881, 79, the other books Playfair recommended the reader to consult, which also mention Phaselis, are Fellows and Spratt and Forbes. Also mentioned are Newton, *Travels and Discoveries*, 1865, and Davis, *Life in Asiatic Turkey*, 1879.

¹⁸⁵ Playfair 1881, 81.

¹⁸⁶ Beaufort 1817, 59; Strabo in his *Geography* 14.3.9, εἶτα Φάσηλις τρεῖς ἔχουσα λιμένας, πόλις ἀξιόλογος καὶ λίμνη *“Then follows Phaselis, a considerable city, with three harbours and a lake”* or, *“Then one comes to Phaselis, with three harbours, a city of note, and to a lake”*. The *Geography of Strabo*, Vol. V of the Loeb Classical Library edition, 1928, Trans. H. L. Jones, contra Aslan – Baybo 2015, 7, *“Strabon, Phaselis limanlarından bahsederken üç limanı ve bir bataklığı olduğunu aktarmaktadır”*, where the lake mentioned by Strabo has been translated as already transformed into a marsh, rather than, *“...ve bir göle gelinir”*.

¹⁸⁷ Hogarth 1910, 113-4.

¹⁸⁸ See Schafer 1981, 65-67; likewise, Blackman 1973, 355–364.

fully described by Captain Beaufort", clearly indicating there was no evident change to be made to the full description that Captain Beaufort had provided. This, not least because Lt. T. A. B. Spratt like Captain Beaufort was a trained hydrographer and would almost certainly have noticed and remarked upon any significant damage to the inner harbour arm. However, it seems at some point in the period between 1842 and sometime before 1904 the inner harbour arm was quite severely damaged by a seismic event, this to the extent that D. G. Hogarth could describe it as, "*a broken mole*".

There is a most considerable body of evidence both from the historical record and from contemporary science showing there is ongoing subduction (earthquakes at subcrustal depths) occurring in the Antalya Basin, in the north-west part of the Cyprian arc, with "*the existence of tectonic structures leading to intermediate depth earthquakes in the Eastern Mediterranean region that mostly occur in the Antalya basin and beneath Cyprus*"¹⁸⁹.

Small earthquake generated Eastern Mediterranean tsunamis are recorded in this period from 1842 to 1904 in: 1851 28th Feb./3rd April and 23rd May earthquakes struck Fethiye associated with tsunami waves¹⁹⁰; 1855 on the 2nd of March an earthquake struck Fethiye associated with a tsunami wave; 1856 on the 12th October, Rhodes-Kos earthquake and tsunami¹⁹¹; 1870, on the 3rd of April Fethiye, Rhodes, which resulted in coastal rises and produced a fault over 20 km long, and another in 1872 on the 24th of June, at Harem, Armanaz, Syria¹⁹². It is however evident from the recorded locations of these small tsunami events within the wider region within this 60 year period; together with the lack of recorded evidence concerning the impact of these events in the inner reaches of Antalya Bay, which suggests that recorded seismic sea waves/tsunamis were of no consequence concerning this matter of damage to the inner harbour arm at Phaselis given its location, sheltered from the south by the promontory-acropolis and by the remains of the artificial mole of the north harbour and the falez cliff to the north.

Consequently, given the way the blocks have fallen¹⁹³ one can suggest the possibility of the inner harbour arm having been shaken, probably by a relatively powerful but shallow seismic event, with its epicentre close to the inner harbour arm at Phaselis. Within this period extending from 1842 to 1904 there are seven possible seismic events recorded for Antalya-Adalia which may record the event which caused the destruction of much of the upper courses of large stone blocks forming the inner harbour arm at Phaselis. It seems probable that the seismic event itself would have been noted, although this damage may itself not have been recorded or dated, given that the inner harbour was not in use and that only a small population inhabited the surrounding area and, even less if this event happened in summer when most of the population had migrated from Tekirova to summer pastures.

¹⁸⁹ Ambraseys 2009, 820; Cagnan – Tanircan 2009, 232; Yalçiner *et al.* 2005; Erel-Adatepe 2007; Görgün *et al.* 2016. Likewise, Magnitude 5.3 - 41km SE of Tekirova, Turkey 2014-09-04 21:00:04 UTC 36.210°N 30.820°E 46.0 km depth earthquake.usgs.gov/earthquakes/eventpage/usb000s99n; Magnitude 4.3 - 48km SSE of Tekirova, Turkey 2015-09-16 03:23:23 UTC 36.121°N 30.787°E 71.9 km depth <http://earthquake.usgs.gov/earthquakes/eventpage/us20003jvl#executive>

¹⁹⁰ <http://web.itu.edu.tr/~taymaz/docs/2007-Yolsal-et-al-SP291-Understanding%20Tsunamis%20in%20the%20Eastern%20Mediterranean-2007.pdf>, p. 226; <http://www.deprem.gov.tr/en/historicalevent> 1851 37.0000 29.0000 Fethiye, Kaya-Muğla, Rodos Ad. Magnitude IX 28.6 E(8), 28.75 E(1), I=VI(8), Tsunami(1); Yalçiner-Ersoy 2005, 276. Soysal 1981, No 344; Çelikkol 1992, 22; Balducci 1987, 12.

¹⁹¹ <http://www.deprem.gov.tr/en/historicalevent> ;1856 36.0000 28.0000, Rodos, Karpatos, Kasos, Girit, Magnitude X 36.5 N(8), 27.5 E(8), 35.5 N(1), 26.0 (1), I=VI(8), Lübnan'da I=VI (4), h=i(40,1), r=1450 km.(1), Tsunami (1)

¹⁹² For the 1870 and 1872 tsunami events, see Salamon *et al.* 2007, 5-6.

¹⁹³ Aslan – Baybo 2015, Figs. 5, 6, 9, 10.

1. There was a significant earthquake in Antalya in 1849 and it seems most probable that the restoration of the Tekeli Mehmet Paşa Mosque in Antalya in 1850 paid for by İbrahim Ağa, and for the restoration work carried out at the Bali Bey Mosque in Antalya in 1849-50 were the result of earthquake damage from this earthquake of 1849.
2. There is notice of a seismic event in Antalya in April 1851 unconfirmed, but perhaps related to the substantial 28th Feb / 3rd of April 1851 Fethiye-Rhodes earthquakes¹⁹⁴.
3. It seems probable that the 1858 Antalya-Adalia magnitude V earthquake at 36.880°N, 30.600°E¹⁹⁵, was too distant from Phaselis 36.51° N, 30.53° E to have caused damage to the inner harbour arm.
4. The September 26th 1863 Antalya-Adalia earthquake¹⁹⁶.
5. The October 2nd 1864 Meis-Rhodes magnitude VIII earthquake¹⁹⁷.
6. The January 8th 1887 Finike earthquake¹⁹⁸.
7. The November 8th 1897 Antalya-Adalia earthquake¹⁹⁹.

Although there may have been damage from the magnitude VIII 1864 event, from the available evidence it can be suggested that the damage to the inner harbour arm was probably a consequence of a strong localised shallow depth earthquake in 1851, 1863, 1887 or 1897, that did not give rise to a tsunami, unlike the 14th of March 1743 localised nearby major seismic event, where the report states: *“I have been informed from Satalia (Antalya) that from the 8th to 20th of the month there were terrible earthquakes as a result of which the port dried up for some time, many houses collapsed as well as part of the walls at different places which fell on the (French) consul’s house, destroying it. Many villages were lost in these earthquakes and a mountain opposite that, which lies west of the islet of Rachat (Rasat, Güvercin, today Sican Island²⁰⁰), sunk completely”*²⁰¹, with the sinking of this mountain generating a tsunami which struck Cyprus, reaching a height of 30-50 m and is now known to have moved boulders

¹⁹⁴ Accounts of this major seismic event of the 28th of February 1851 are preserved in the Liverpool Albion newspaper published on April the 7th 1851, *“Letters from Rhodes, of the 8th ult.(8th of March), furnish details of the great earthquake which took place on the 28th Feb. Rhodes has suffered considerably; the fortifications were completely destroyed, and several even have completely disappeared. At Marmorice (Marmaris) 500 houses were laid prostrate. At Macri (Fethiye) all the stone buildings have been knocked down. Two hills have met and swallowed up the village of Melaakjik; and at Egendjik a mountain was removed into the port. The casualties are estimated at about 1,000 souls. It is stated that earthquakes took place at Satalia (Antalya) and Tarsus”*. Reprinted in the Maitland Mercury Newspaper, Australia, 16th August 1851, my thanks to M. Üstün for drawing my attention to this article.

¹⁹⁵ <http://www.deprem.gov.tr/en/historicalevent> 1858, B3 37.0000 31.0000 Antalya, magnitude V

¹⁹⁶ <http://www.deprem.gov.tr/en/historicalevent> ; Ambraseys 2009, 708. Not to be confused with the magnitude IX event of the 22.04.1863 centred on Fethiye, Rhodes.

¹⁹⁷ <http://www.deprem.gov.tr/en/historicalevent>; 1864 36.0000 30.0000, Meis Adası, Fethiye, magnitude VIII IO=VII(20),M=6.1(20).

¹⁹⁸ Ambraseys 2009, 752.

¹⁹⁹ Ambraseys 2009, 788. Not to be confused with that of the decade before, <http://www.deprem.gov.tr/en/historicalevent> ; 1887, 36.0000 26.0000 Rhodes,Crete,Southwest Anatolia, magnitude VIII I=VI(20), I_{max}=VII(40), Cyprus=III-IV(3), h=i(40,1), M=4.9(20), M=7.7(40), r=283km(1).

²⁰⁰ In a straight line, Rasat, today Sican Island is 31km from the inner harbour of Phaselis. The mountain would have collapsed into the very deep trench at the foot of the Bey Mountains and presumably prior to this event, formed an extension into the sea as a promontory of the large hill immediately to the south of Büyük Çaltıcak at 36.783°N 30.574°E.

²⁰¹ Ambraseys – Finkel 1995, 118.

weighing more than 20 tons inland²⁰².

It seems possible that the 30th of April 1911 earthquake of magnitude 6.2 at a depth of 180.0 km²⁰³; the 3rd of November, 1914 magnitude 7.1 earthquake off the coast of Antalya Province, with the epicenter being beneath the sea at a depth of 70 km, 47 km south of Phaselis²⁰⁴, and the 1926 earthquake that struck Finike on the 18th of March²⁰⁵, with its epicenter at Meis island opposite Kaş, of 6.8 magnitude, with aftershocks from this earthquake felt until June, were seismic events that may have resulted in some further damage to, or to the shifting of the displaced blocks which formerly comprised the upper courses of the Phaselis inner harbour arm.



Fig. 27. Oil painting of the inner harbour at Phaselis, August 2013-August 2014, T. M. P. Duggan.

²⁰² Tsunami damage recorded in detail by Kelletat – Schellmann 2002, with dated evidence to the period 1700-1750 along the coastline of Cyprus, which was, in all probability, a consequence of this Antalya earthquake, with its epicenter to the west of Rasat-Fare or Sican Ada in the complex of 4 parallel faults running along the foot of the Taurus Mountains extending towards Konyaltı, Antalya.

²⁰³ https://en.wikipedia.org/wiki/List_of_earthquakes_in_1911; Türkiye'nin Deprem Tehlikesi. T.C. Devlet Deprem Katalog, 1996.

²⁰⁴ http://earthquake.usgs.gov/earthquakes/eqarchives/year/1999/1999_08_17_eq_list.php 1914 10 03, 36.210°N 30.850°E, citing from the USGS/NEIC EDBS database, the Earthquake catalogue of the Kandilli Observatory, Bogazici University, Istanbul, supplied by NOAA/NGDC (Meyers and Von Hake), Boulder CO, 1985.

²⁰⁵ Dipova – Cangir, 2011, Table 1, 101; <http://earthquake.usgs.gov/earthquakes/eventpage/iscgem909771#executive> 1926-03-18, 36.021°N 29.521°E 15.0 km depth, Finike, magnitude 6.8.

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