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THE ARGONAUTICA ORPHICA VERSION FOR THE VOYAGE OF THE ARGONAUTS: A GEO-ANALYSIS

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ABSTRACT

This study traces and analyzes the itinerary followed by *Argo* and her crew, according to the unknown author of *Argonautica Orphica*: The voyage of the Argonauts from Iolcos to Colchis and their return following a different path, from Phasis River through central Europe to the Atlantic Ocean and then through the Mediterranean Sea. Conclusions are drawn about whether such a voyage could be possible in the remote antiquity and the “problematic” points of the description are pointed out.

KEYWORDS: Argonautics, Orphica, Orpheus, Circe, Charybdis, Sirens, Geo-Analysis

1. INTRODUCTION

The *Argonautica Orphica* is one of the texts known under the general title *Orphics*, which were traditionally attributed to Orpheus. It describes the expedition of the Minyans (mainly of Thessaly, see verses 249-277: in order to retrieve the “Golden Fleece” of **the ram that saved and carried Phrixus and Elle (the offspring of Nephele). The Minyans were an autochthonous prehistoric Proto-Greek group, rich and dynamic, with a rather high technology for their period and a naval power that flourished during the first half of the second millennium BC. They seem to disappear in the 9th century BC. The term *Argonautica* is derived from the name of the expedition’s ship, *Argo*, which was a ship that could move either by sails and/or by 50 rowers (v. 278-306). An indication that the expedition took place in the spring or in the summer was the presence of a heron which is a migratory bird in the description of the passage of the *Cyanean Rocks* (v. 695).**

Iolcos was located on the northern shore of the Pagasitic Gulf, under the slopes of mountain Pelion, as mentioned in v. 104-133 and 362-390, while Colchis was on the bank of Phasis River (now Rioni), in present-day western Georgia, near the Black Sea (Euxinus Pontos, v. 75-103). The local king at that time was Aeëtes, son of the sun god Helios.

Orpheus, besides being described as an excellent musician (a player of the lyre/phorminx) and poet, was said to be initiated in most ancient mysteries. Because his poems included some notions of these mysteries, they were subsequently called the “Orphic” mysteries. In *Argonautica Orphica* there is an extended reference about this information he had transmitted to the human race (v. 1-47):

...when, prompted by the sting of Bacchus and of the King Apollo, I revealed to the mortal men the horrible arrows and to the initiated ones the calm mystical rituals...

In the same text, it is also mentioned that Orpheus was a prophet, soothsayer, augur, interpreter of dreams, a performer of purifications, etc. He asserts that he had visited Egypt, in particular Memphis and the cities of the sacred bull Apis around the Nile, but also Libya (v. 40-47, 100-104 and 1382-1384).

Orpheus was the son of the Thracian king Oeagrus and the Muse Calliope who presided over epic poetry. With his “divine” lyre, Orpheus charms all living things and even the natural elements. He was born and lived in a cave near Leivethra (now Skotina), under Olympus (v. 50 and 1374). In *Argonautica*, this region is included in “Thrace” as in that period the

whole area of Macedonia was called Thrace, along with what is now Thrace. Oeagrus, according to one version, was the son of the god Ares, who was especially associated with Thrace, while according to another version he was the son of King Pierus and grandson of Makednos, who gave his name to Macedonia.

However, when Jason, as the leader of the expedition, visits the cave where Orpheus lives in order to invite him to participate (v. 75-103) he addresses him as “King of Vistonis”, which lies in the land of the Cicones. He informs us that he finds himself for the first time near the peaks of the Haemus Mountains, near the waters of Strymon River and the valleys of Rhodope mountain range. This region lies in the modern Thrace in Greece (Xanthe and Rhodope prefectures). This reference agrees with a third version about Oeagrus, according to which he was the son of Charops, King of Edonis (to the east of Chalkidiki, between the rivers Strymon and Nestos).

In any case, the participation of Orpheus in the Argonautic expedition is depicted on one of the three surviving metopes in Delphi, known as the **Sicyonian Treasury (570-560 BC). This indicates that** Orpheus was well-known in classical antiquity, as in the early 6th century BC. From the heroes who participated in the Argonautic expedition, such as Heracles, the *Dioskouroi* Castor and Pollux (brothers of Helen of Troy), Telamon (father of Ajax the Great), Peleus (father of Achilles, who is mentioned to be a little child when the expedition begins, v. 445-472) and others, it can be deduced that the expedition took place one or two generations before the Trojan War (Clemens, *Stromata*, I, 21, 131, 1, 1-2). Indeed, Clement of Alexandria writes in his *Stromateis*, which translates as follows: “*And Onomacritus of Athens, to whom they say belong the poems that are attributed to Orpheus, lived indeed during the period of the Peisistratid rule, approximately during the fiftieth Olympiad. However, Orpheus, who participated in a sea voyage together with Heracles, was the teacher of Musaeus [of Athens]. Amphion lived two generations before the Trojan War, while Demodocus and Phemius lived after the destruction of Troy (the one was among the Phaeacians, while the other was among the suitors) and were making a living by playing the guitar. They also say that the oracles attributed to Musaeus actually belong to Onomacritus*” (*Stromata*, I.21.131).

The Orphic hymns propagated through oral speech, like the Homeric poems until the epoch of Peisistratus (605-527 BC) and his son Hipparchus (527-514 BC). Onomacritus was heading the commission set up by Peisistratus to write down and edit the Homeric poems, and then he was hired by Hipparchus to write down the Orphic hymns. Herodotus reports (*Historiae* VII 6) that the teacher of

Pindar, Lasus of Hermione, accused Onomacritus that in his collection of the Orphics interspersed some verses of his own. For this reason, Herodotus adds, Hipparchus banished Onomacritus from Athens. Also, Pausanias attributes (*Description of Greece* 1, 22, 7) to Onomacritus several poems forged under the name of Musaeus.

According to K. Khasapis (*The Orphic Hymns and Astronomy in the Second Millennium BC*), the Orphics collected by Onomacritus were works authored by Orpheus and his disciples, Musaeus being one of the latter (and a great astronomer, according to Khasapis). As probable members of the "commission" are reported Cercops and Brontinus, is mentioned by Clement of Alexandria (*Stromata* I, 21, 131, 3-5). Khasapis (1980, p. 48) notes: "Orphism was at the same time a higher initiation of its followers, a most ancient mystical initiation, introduced by Orpheus... and persisting in the following centuries, which was being taught in Eleusinian Mysteries, that is again only to the initiated ones. And those related to the collection of the Orphics, Onomacritus, Cercops, Lasus, Hipparchus, are described in the surviving works of other ancient authors as initiated to Orphism. Besides, this was the reason they assumed the task of collecting the Orphic texts." Thus, it seems that Onomacritus, an initiated person himself, rescued a part of the Orphic knowledge through recording the Orphic texts in written form, but he also wanted to insert in them some messages of his own.

In this study, we follow and analyze the voyage of Argo and of the (at least) 50 Minyans, based exclusively on the Orphic text.

2. FROM IOLCOS TO COLCHIS

The text of *Argonautica Orphica* describes the route followed by the Argonauts from the day they departed from Iolcos (v. 455-820). They left the Pagasitic Gulf, passed the island of Skiathos, and then went northeast towards Athos, "eureia Pallene" and Samothrace, where they participated in mystical rituals. Then, they arrived to Lemnos, an island where they waited until the "right" western wind blew in

order to enter the Hellespont strait (the Dardanelles, see Figure 1).

They passed from Troy and reached a shore populated by the tribe of Dolionians. There they were offered hospitality by King Cyzicus, who was nevertheless killed by mistake from Heracles. After the burial, they sailed and went to Mysia, where Heracles disembarked and left the expedition. Subsequently, Argo reached the land of Vevrykes and then Bithynia.

There they passed through a dangerous passage between two dark rocks, mentioned in this text as the *Cyanean Rocks* and described as two rocks that clashed together when somebody went through, stirring the sea. However, Argo managed to go through them by a divine intervention: a heron was sent and confused the rocks, although the end of its tail was cut by them, so that Argo had the time to pass through, as the rocks had to open before they could close again. After that day, the rocks remained open and motionless forever.

These *Cyanean Rocks* (Blackstones) are called by Euripides in his tragedy *Medea*, "Symplegades" (v. 2), a name meaning "Clashing Rocks" according to Lidell-Scott's *Greek-English Lexicon*. In the *Scholia in Euripidem (scholia vetera)* it is mentioned that, according to Eratosthenes, they represent an optical illusion, which arises from the changing perspective, while they are located "around the mouth of Pontos"¹, that is towards the exit of Bosphorus. Immediately next to this location there is the estuary of the river Revas or Revanos and the Thyneis Island (now Kefken Island in Turkey). After these, they passed the estuaries of the rivers Temvrios (now Porsuk) and Sangarios (now Sakarya), and they stopped for a while next to the estuary of Lycus river, a little to the south of the city Heraclea Pontica (Arrianus: *Periplus ponti Euxini*, 13, 3, 2). Then, they sailed towards the river Parthenios (now Bartın river) and reached the country of Paphlagonia, where they anchored at Cape Karamvia, near the Alys River (now Kızılırmak = "Red river").

¹ *Scholia in Euripidem (scholia vetera) Vita-argumentum-scholion* sch 2, 8 Symplegades: Simonides fragm 22.



Figure 1: (a) The route followed by the Argonauts from Iolkos to the Symplegades, the Clashing Rocks. Places and tribes they reportedly passed from or met with are indicated. (b) The route followed by the Argonauts from the “Clashing Rocks” to Colchis. The tribes whose regions are known today are indicated

Advancing next to the southern shores of the Black Sea, the Argonauts passed from Paphlagonia to the country of the Amazons, Themiscyra, drained by Thermodon River (now Terme). Several other tribes inhabited the regions adjacent to it, from the east: Chalybes, the Tivarene nations, Vecheiroi, Macrones,

and next to them the Mariandyni. The expedition continued from there to the countries of Philyres, Napates, Sapeiroi, Vyzeres, and Sigynes. At last, they reached Phasis River and entered from its mouth to the inland, the *Cyteis land*² (v. 821), where they

²The name Cyteis or Cytai, according to the Etymologicum Magnum dictionary is derived from the word *cytos*, which

is the name of a city in Colchis; hence Medea is also referred to as “Cytai”.

immediately saw the walls and the woods of Colchis (Figure 1).

Before the arrival to Phasis, there is a mention of Sinde Mountain, which forms the edge of Caucasus towards the Maeotis "lake" (Figure 1), stating that there flows the Araxos River, connected to three rivers: Thermodon, Phasis, and Tanaïs, next to which live the tribes Colchoi, Eniochi, and Avasgoi. The Argonauts skipped this river, sailing in the bays of Ouroi, Chindaeoi, Charandaeoi, and Solymoi, and they reached Sinope. We should immediately stress that:

1. Araxos is in Armenia (now called Aras) and is not related to the other three rivers. Thermodon (now Terme) is in Themiscyra, Phasis (now Rioni) in Colchis, while Tanaïs (now Don River) flows into the Maeotis "lake" (the Sea of Azov).
2. It seems impossible that, by "skipping" Araxos, they could find themselves in the land of Chindaeoi, which is near Maeotis (Figure 1), or in the land of Solymoi in Cilicia or in Sinope (south shores of the Black Sea).

3. FROM COLCHIS TO THE MAEOTIS "LAKE"

After they met Aeëtes, the Argonauts, assisted by his daughter Medea, steal the Golden Fleece and kill Absyrtus, the son of Aeëtes. His dead body is carried away by the waters of the river, which flows into the Euxinus Pontus, and is left on the shore of one of the estuary islets, hence the ancient name of these islets: Absyrtidae Islands. Nowadays, there are some small islands in front of the estuary of Phasis (Rioni), which could be identified with Absyrtidae Islands, despite the fact that the geography of such an estuary region must have been changed by the river's flow and deposits from ancient times.

After Medea killed Absyrtus, the Argonauts, leaving hastily in the night, moved "foolishly" as the text has it, taking the wrong direction, not towards the river's estuary and into the Black Sea, but towards Caucasus (Figure 2). During that journey, they passed from localities inhabited by tribes such as Gymni, Vuonomaie, and Arkyes,³ as well as Cercetians and Sindi, which reside near Caucasus,⁴ through the narrow *Erytheia* (v. 1045-1048). However, *Erytheia* is mentioned by other ancient sources as an island between Iberia and Gádeira (now Cádiz) in Spain (Aelius Herodianus, *De prosodia catolica*, 3, 1, 59, 1; Strabo, *Geographica*, III, 2, 11, 9), near the Pillars of Heracles (Herodotus, IV, 8, 6), the modern Gibraltar, a region unrelated to the region of Caucasus.

After the dawn, the Argonauts approached an islet between two rivers, Phasis and Saranges (*Argonautica Orphica*, v. 1030-1035). However, it is added that Saranges inundates through the land from Maeotis and so it ends up to the sea near a swamp. Although it seems that there is a certain division of the river Phasis around an islet, the second river directs upstream to Caucasus and does not communicate with Maeotis. Yet, the other ancient sources place Saranges river in Bactria (Polyaenus, *Stratagemas in War*, I, 1, 3, 2), that is in today's Afghanistan and Turkmenistan, or in India (Arrian, *Indica*, 4, 8, 2) and not in the region of Caucasus. Afterwards, according to the text, the Argonauts rowed continuously for two days (v. 1056) and reached the Cimmerian Bosphorus (now Kerch Strait) in Maeotis "lake" (now the Sea of Azov), as illustrated in Figure 2.

However, in order for the Argonauts to reach Maeotis from Phasis through Caucasus, as *Argonautica Orphica* narrates (v. 1055-1064), they should follow some other river, one that flows in Maeotis. There is actually such a river, known as Hypanis (today's Kuban), which flows from a main source at an altitude of 3400 m on Mount Elbrus, the highest peak of Caucasus Mountains (Figure 2), although Kuban does not flow near Rioni at any point. However, if after Rioni they followed a path through the rivers Tskhenistskali, Kheledula, Kasleti, Nenskra, and Dalari, they could reach Kuban.

This itinerary, being considerably difficult in certain locations, reaches a maximum altitude of approximately 2,000 m above sea level. The watery path is interrupted in just two parts, of total length 6 km. Of course, there is always the possibility that the topography of the region could change during the intervening centuries, albeit slightly. The main impossibilities arising from the text are the following:

1. How did they ascend the tall and rough slopes of Caucasus by rowing against the strong current of the river and its rapids? The task seems impossible.
2. Rioni and Kuban do not meet (the minimum distance between them is 60 km – see the scale in Figure 2), so, even if the Argonauts followed the path through the smaller rivers mentioned above, they would have been forced to carry their ship across land on rough mountainous terrain in order to transfer it from one river to another.
3. Could they cover the distance of such a long and difficult route into just two days (48 hours)? They had to cross Caucasus traveling

³According to Lidell-Scott's *Greek-English Lexicon*, the word *arkyes* means hunting nets, thus indicating a tribe of hunters.

⁴See Scylax perieg.: *Periplus Scylacis*, 72, 1.

a distance of 870 km on Kuban River, in order to reach Maeotis.

4. It is highly improbable that a region and a river under the names *Erytheia* and *Saranges*,

respectively, the same as in Iberia and central Asia?



Figure 2: (a) The route from Colchis to Maeotis (“Maeotic Swamp”). The easiest route corresponding to the text is to follow Phasis (Rioni) to point A and from there through tributaries reach point B, the source of Hypanis (Kuban).

- (b): The route A to B through Caucasus corresponds to a distance of about 60 km. The watery path through tributaries is interrupted in two cases where land crossings are required, for a total length of 6 km. The blue markings on the image denote the two land crossings.

Obviously, Onomacritus himself, realizing the great difficulty of the feat, rushes to “justify” the Argonauts, by writing that this was done because of

“foolishness” and loss of orientation, as they departed nightly and under pressure (v. 1036-1044).



Figure 3: The tribes inhabiting the shores of Euxinus Pontus (the Black Sea) according to Ortelius (1624).

4. FROM MAEOTIS TO THE RIPHEAN MOUNTAINS AND THE CRONIAN SEA

After they reached the Maeotis “lake”, the Argonauts sailed next to its shore, rowing all day and meeting the Maeotes and other tribes that inhabited the region (Gelones, Vathychaetes, Getae, Gymnaei, Cecryphs, Arsops⁵, Arimaspi⁶ (*Argonautica Orphica*, v. 1055-1064), as in Figure 3. Apart from the improbability of meeting so many tribes within one single day, it seems paradoxical that the Argonauts were being chased by the Colchians and at the same time they were “exploring” the shores of Maeotis. Immediately after these verses, there is a small gap in the text, in the description of some difficult passing. The Argonauts, according to the narration, sail through a kind of “mouth” and for nine days they pass from the lands of Pactoi, Arctei, Lelioi, Scythians, and Tauri. The three tribes mentioned first, do not occur in any other ancient text, while the well-known Scythians resided to the north of Maeotis, expanding

towards Central Europe and Asia (Figure 3), reaching the Ural Mountains. The Tauri occupied Tauris, the modern Crimea on the Black Sea (Figure 3).

From the above, it can be argued that the author envisioned Argo passing through the Kerch Strait, reaching the Black Sea and then sailing westward for nine days, *along the southern shore of Crimea*. However, he adds that they bypassed the Hyperboreans, who, according to Hellanicus of Lesbos, lived beyond the Riphean Mountains (Clement, *Stromata*, I 15); also, the Nomads, the north-African Numidians of the Romans⁷ (Appian, *Historia*, *Proem*, 3, 4), as well as the Caspians of the Caspian Sea (Stephanus of Byzantium, *Ethnica*, 365, 3). However, these three groups did not reside in the same region and obviously not on the shores of Black Sea. How can they possibly associate with the above description of the voyage? In any case, on the tenth day, the Argonauts reached the valleys of the *Riphean Mountains* (v. 1065-1080) and then, through a narrow river, Argo “fell” in the Ocean that the Hyperboreans

⁵According to the explorer Scylax, the boundary of Asia is Tanaïs River (now Don). As first nation geographically, he mentions *Sauromatae* (the Sarmatians) and then the Maeotes, Sindi, Cercetians, Torettes, Achaeans, Eniochi, Coraxi, Colici, Melanchlaeni, Gelones, Colchians, and others (*Periplus Scylacis*, 70, 1+)

⁶Eustathius describes the Arimaspi as a Scythian nation, owing their appellation in the fact that they were one-eyed (*Commentary on Odyssey*, 31.1 and Herodotus, III, 115, 2).

⁷Against the Numidians, who had Jugurtha as their king, had campaigned Gaius Marius in c. 107 BC

call “Cronian Pontos” (Cronian Sea) or “the dead sea” (v. 1078-1081).

Two main distinct views about the location of the Riphean Mountains have been supported since antiquity (see Table 1 and Table 2):

- i. The Riphean Mountains are located near the Alps and can be identified as the modern-day Black Forest, near the French-German border, with dark-colored conifer forests, from where Danube rises (the ancient Istros), a river that empties into the Black Sea.

- ii. The Riphean Mountains are considered to be in Eastern Europe where the countries of Scythia, Arimaspi, Sarmatia and Hyperborea etc. were located.

The proposed routes according to these two views are shown in Figure 4, respectively. However, as it can be also deduced from the Table 1 and Table 2, Onomacritus wrote at the same period with the geographer Hecataeus of Miletus (c. 550 - c. 476 BC). It is reasonable to suppose that Onomacritus is based on the knowledge of his age, according to which Istros (Danube) rises from the Riphean Mountains. Indeed,

Table 1: The Riphean Mountains in Europe

Author	English translation of greek text
Hecataeus, <i>Hist.</i> , Fragmenta Volume-Jacoby -F 1a,1,F, fragment 18b, line 8	- 284: He claims (Apollonius) that Istros flows from the Hyperboreans and the Rhipean mountains (he said that following Aeschylus in Prometheus Unbound who had mentioned it). When it reaches the area between Skythians and Thracians is split and the one (brunch) is flowing in our sea and the other in the Pontic sea [the other in the Adriatic gulf].
Aeschylus, <i>Fragmenta</i> , Tetralogy 32, play B, 330, 2	Istros is flowing from the Hyperboreans and Rhipean mountains
Hellanicus, <i>Fragmenta</i> Volume-Jacoby -F 1a,4,F, 187b, 2	Hellanicus is narrating that the Hyperboreans live over the Rhipean mountains
Timagetus 1b, 3	Claims that Istros flows from the Hyperboreans and the Rhipean mountains • he said that following Aeschylus in Prometheus Unbound who had mentioned it).
Hecataeus, <i>Hist.</i> , Fragmenta Volume-Jacoby -F 1a,1,F, 18a, 10	<Istros> flows from the Phipean mountains which lie on Celtic then empties in the lake of Celts and then is split in two (parts) with the one falling into the Euxine and the other into the Celtic sea. It is said that the Argonauts sailed through this mouth.
Plutarch, <i>Camillus</i> 15, 2, 4	some of them, passing the Rhiphaean mountains, fell upon the Northern Ocean, and possessed themselves of the farthest parts of Europe;
Aelius Herodianus, <i>De prosodia catholica</i> 3, 1, 115, line 2	Protarchos names the Alps as Rhipean mountains and those living beyond the Alps Hyperboreans
Athenaeus, <i>Deipnosophistae</i> VI, 23, 30	...and the mountains that long ago were called Rhipean, later were called Olvia and nowadays Alpia (of Gaul)

Table 2: The Riphean Mountains in Eastern Europe

Author	English translation of greek text
Damastes, <i>Fragmenta</i> , 1, 3.	Hyperboreans... Damastes in (his work) On Nations • Up from Skythians Issadones inhabit and up from them Arimaspi, up from Arimaspi the Rhipean mountains where the north wind blows and there in never lack of snow • over those mountains Hyperboreans have come down to the other sea.
Claudius Ptolemaeus <i>Math.</i> , <i>Geographia</i> III, 5, 5, 10	And Sarmatia is encircled from other mountains of which are named Pefki 51° N 51° E Amadoka mountains 55° N 51° E and Vodinon mountain 58° N 55° E and the Rhipeans...

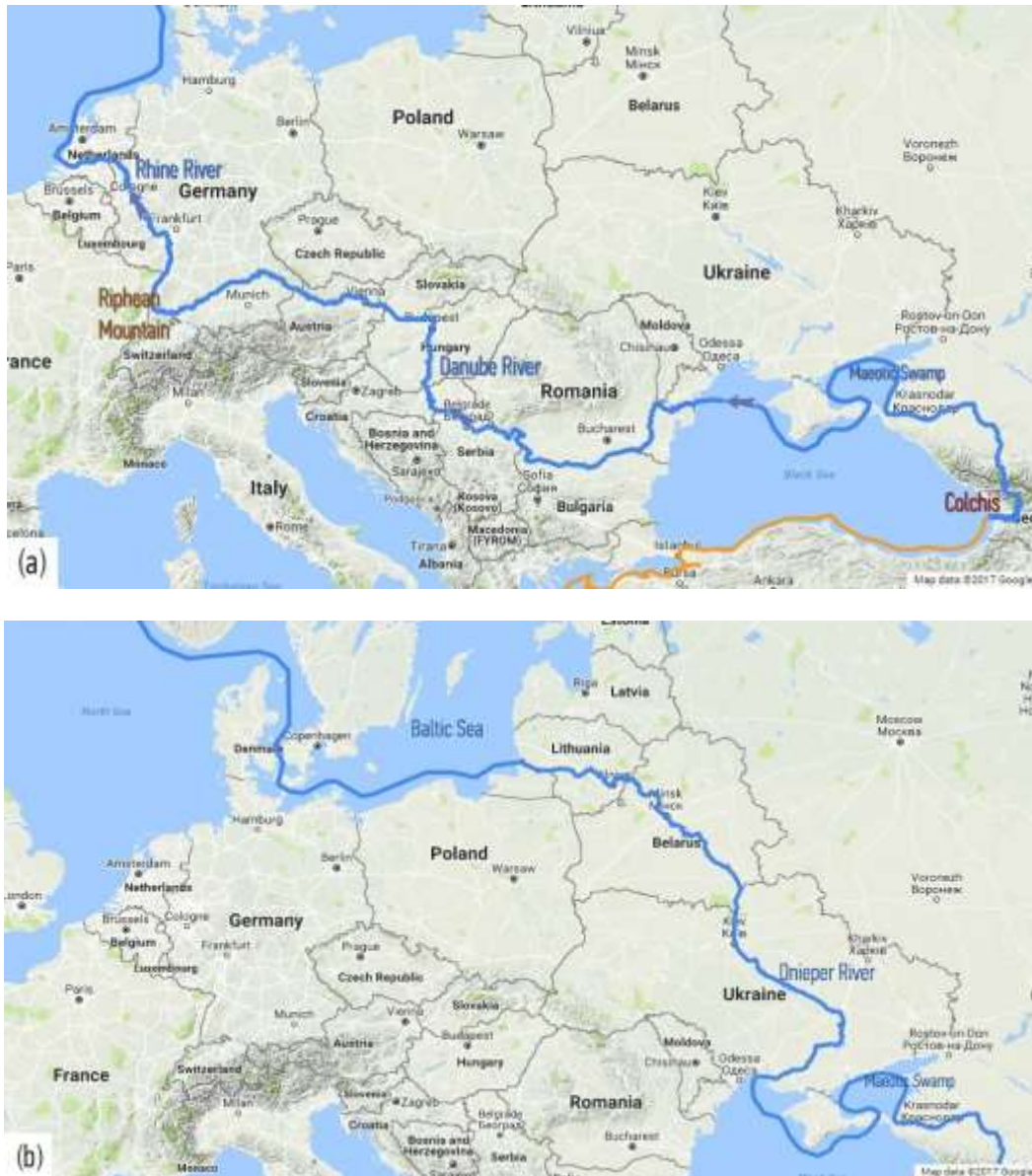


Figure 4: (a) The itinerary followed by the Argonauts from Colchis to the “Cronian Sea”. They sail along the northern shores of the Black Sea and enter mainland Europe through Danube, which they follow up to its sources in the Black Forest (Rhiphean Mountain). Then, entering the Rhine, they “fall” in the North Sea (Cronian Sea). (b) The itinerary of the Argonauts from Maeotis through Dnieper River and their exit in the Sarmatian (Baltic) Sea

According to Hecataeus: ⁸ «*Istros flows from the Hyperboreans and the Rhiphean mountains*». Of course, it is common knowledge that Danube rises from the Black Forest (Figure 5). This river was and is navigable almost up to its Central-Europe sources, near the Alps. Moreover, this first view agrees more closely with the text of *Argonautica Orphica* and our estimation that the Argonauts sailed westward while returning by the Black Sea. In their path, they reach the Danube Delta (now mainly in Romania). Also, in the description of the country of Cimmerians the Rhiphean Mountains are located near to the Alps (v. 1128).

Following Rhine’s flow, the Argonauts were led to what is now Rotterdam in the Netherlands and the estuary of the river, “falling” in the Cronian Sea (Figure 4 and Figure 6). According to the descriptions given in all ancient sources, the Cronian Sea can be identified in the North Atlantic Ocean and part of the Arctic Ocean (Anonymous: *Hypotyposis Geographias*, 45, 8). It is also called *Hyperborean Ocean* (John the Lydian, *De mensibus*, III, 1, 11; Plutarch, *De facie in orbe lunae*, 941 A, 10). It should be noted, though, that the text of Onomacritus gives the impression that the Rhiphean Mountains are located relatively near the

⁸ Jacoby, F: Hecataeus *Hist., Fragmenta* Vol.1- 1a,1,F, fragment 18b, line 8

Atlantic Ocean, while according to the above view they are in Central Europe.



Figure 5: The Danube River

(Source: https://commons.wikimedia.org/wiki/File:Danube_map.jpg)



Figure 6: Danube's minimum distance from the Rhine is approximately 70 km in straight line. Their connection is possible thanks to the existence of numerous rivers rising from the Black Forest (towards both the east and the west) and of their valleys, which make the path easier, avoiding higher altitudes. Here the largest valley is chosen, the one of rivers Dreisam-Elz.

Taking the second view, according to which the Riphean Mountains are in today's Russia, the Argonauts would have to sail through rivers such as Dnieper (the Borysthenes of Herodotus) and from there, following other rivers, reach the Baltic Sea (Sarmatian Sea). After that, they should sail across the

Baltic in order to pass the Jutland peninsula (Cimbrian Peninsula) and thus to find themselves in the Cronian Sea (North Atlantic Ocean). However, in the Orphic text the Argonauts "fall" directly from the river to the Cronian Sea, and not through another sea.

5. ON THE SHORES OF THE CRONIAN SEA

According to the text (v. 1085), Ancaeus, the helmsman, directed Argo towards the *right-hand side of the shore*. Because the ship was sailing along the European coast (the section near today's Rotterdam on the North Sea), a direction towards the right means a northern direction (Figure 7). This is confirmed by the description of the author that "the sea was sleeping under the Helike and the last waters of Tethys" (v. 1103-1104). Helike was a name given to the Ursa Major constellation signifying the northern direction. Tethys is the wife of titan Oceanus, whose "last waters" were at its northern edges. Subsequently, because of lack of wind, the Argonauts were forced to pull their ship to the pebbles of the beach, moving "swiftly" northwards along the shore for 5 days (v. 1098-1104). This movement was obviously to the north, since Argo was already on the "right-hand side of the shore", i.e. on the northeastern side of the estuary of the river.

Of course, it would be more reasonable to move towards the southwest, in order to pass through the English Channel and return to the Mediterranean Sea through Gibraltar. However, the prevailing current in the English Channel flows towards the northeast⁹ (Figure 7), which would make sailing difficult against it, that is towards Gibraltar. Hence, after they pulled the ship to the other direction for 5 days, the sixth day found them in the land of the *Macrobian*s, a nation of virtuous people living several hundred years in grassy meadows. It is well-known that the regions of the Netherlands towards the northern shores of Germany and the Jutland peninsula are very flat and comprised mostly of meadows. If it is supposed that the speed of a walking person is 4 to 5 km/hour (Browning et al. 2006), and that this person moves without any pause or stop during day and night, then that person would cover approximately 600 km in 6 days. This distance corresponds to the approximate distance from Rotterdam to Esbjerg in Jutland peninsula (Denmark).

⁹ For details concerning the ocean currents, see: <http://www.eea.europa.eu/data-and-maps/figures/north-sea-physiography-depth->

[distribution-and-main-currents](http://www.sciencedirect.com/science/article/pii/S0078323411500193)
<http://www.sciencedirect.com/science/article/pii/S0078323411500193>



Figure 7: The route of the Argonauts in the Cronian Sea. The map indicates: 1. A part of the ocean currents of the North Atlantic Ocean (red color). 2. The Argo route from the estuary of Rhine (Rotterdam) to the circumvention of Iernides islands (Great Britain and Ireland). 3. The six-day sailing of approximately 600 km towards the Macrobian lands. 4. The route of 200 km south of Ireland, during which they could not see any land.

Concerning the tribe of the *Macrobian*s there are the following references in the ancient literature:

1. The description by Herodotus (*Historiae* III, 17, 3-4), meaning that they were a branch of western Aethiopians. It should be pointed out that Herodotus uses the word *makrovios* as an adjective and not as the proper name of a tribe. In any case, he refers to the period of the Persian king Cambyses (6th century BC).
2. Dionysius Periegetes (2nd century A.C.) writes about the tribe of Aethiopians who lived on the island *Erytheia* of the Atlantic Ocean, that they were the descendants of the Macrobian, who came in the land of Geryon (*Orbis descriptio*, 560-561).
3. According to *Paraphrases In Dionysium Periegetam* (Section 555-564, line 7), this happened after the death of Geryon. As it is known, Heracles (who initially participated in the Argonautic expedition) killed Geryon after taking his famous cattle (as required for his Tenth Labor).
4. Moreover, in the *Scholia In Dionysium Periegetam, Vita-verse of Orbis descriptio* (560, line of scholion 1) it is mentioned that the Macrobian were settlers from either the eastern Ethiopia or the Hyperborean region, and that they arrived in *Erytheia* after Geryon's

death. They are called "theoeideis" Aethiopians (god-like Aethiopians) and said to be descended either from the Hyperborean Macrobian or from the eastern Aethiopians, who are distinct from the "unjust" western Aethiopians. Several ancient authors support the first version, among them Callimachus of Cyrene (3rd century BC).

The text of *Argonautica Orphica* supports the existence of the Hyperborean Macrobian, since the region mentioned (Jutland peninsula) belongs to the wider region of the Hyperboreans. Also, the characteristics attributed to them by the text agree with the description of the "god-like Aethiopians" of *Erytheia* Island, in which they presumably settled later on.

Continuing their wandering, the Argonauts arrived in the land of the *Cimmerians*, the "Acheron River" and the "low" (flat) *Hermionia* with its many "pastures" (v. 1131-1141). This is another fitting description for Jutland and Denmark. As for the "Acheron River", this term always signifies any entrance to the underworld, wherever that may be located.

The described *dark nature* of the region of the **Cimmerians** is not attributed to the long winter nights of the far northern regions, but rather to the fact that this region is located between high mountains, so that

direct sunlight does not find a way to reach the ground (v. 1123-1127). The region of the Cimmerians, according to the text, is surrounded by the *Riphean Mountains* (the Black Forest), the Calpeion “saddle”, the vast Phlegre and the *Alps*. According to Herodotus, Phlegre or Phlegra is in Chalkidiki, Greece (*Historiae* VII, 123), while there is no reference to a “Calpeion” in any Greek text. On the contrary, it is well known that the Alps are in Central Europe and do border with the Black Forest, i.e. the Riphean Mountains (Figure 6).

At this point, we notice two major inconsistencies, for which it is difficult to believe that they have escaped the attention of a scholar such as Onomacritus:

- a) The Cimmerians are located both at the Atlantic shore and amidst the tall mountains of Central Europe, such as the Alps.
- b) The sunlight is said to be obscured in the early morning by the Riphean Mountain, in the noon hours by Phlegra, and during the last hour before sunset by the Alps (v. 1123-1127). Yet (Figure 6), the Alps are to the east and the Riphean Mountain (the Black Forest) lies to the west; hence, the east-west orientation reported in the text is exactly the opposite from the one generally accepted, for a place located between these mountain ranges.

Certain ancient authors attribute the darkness of the Cimmerian land that is mentioned in both *Argonautica Orphica* and in the *Odyssey*, to the long winter nights of the far northern regions of Scandinavia¹⁰, an effect known in antiquity; for example, according to Geminus of Rhodes (1st century BC), who cites the Stoic philosopher Crates of Mallus (2nd century BC), “at the end there us a land towards the north, where the pole lies in the zenith. The longest day there is six months long, as is also the night. These lands are also mentioned by Homer, as Crates the grammarian argues when he writes of the residence of the Cimmerians (Geminus, *Isagoge*, VI, 15,1-6). Even the most celebrated of the Ancient Greek commentators on the writings of Aristotle, Alexander of Aphrodisias (3rd century CE), knew the existence of places towards the North Pole, “where the sun does not set” (*On Aristotle Metaphysics*, 534, 4).

However, the “Orphic” text describes the darkness of the Cimmerian land as a result of the existence of tall mountains, which surround it and do not allow the solar rays to reach the ground. So there is no

connection at all with the long polar night. Moreover, the Argonauts could not possibly reach the Arctic Circle (from where they could observe the phenomenon) by pulling their ship on the shore for six days and nights.

It is also noticeable that, in the period when Onomacritus writes *Argonautica Orphica* (6th century BC), the Cimmerians were scattered on the shores of the Black Sea. The oldest reference to them, as living on the shores of Maeotis, is in a text (*Fragmenta*, 195, 5-6) by Hecataeus of Miletus (560/550-480 BC). Also, Polybius the historian (c. 200-120 BC) notes that the name of the mouth of Maeotis (the Sea of Azov) is “Cimmerian Bosphorus” (*Historiae* IV, 39, 3, 1). However, in *Argonautica*, where all tribes living around the Black Sea during the Mycenaean period are mentioned in detail, there is no any reference for Cimmerians; it seems that this nation appeared in the region much later. Correspondingly, the Jutland peninsula, where Cimmerians are placed by Onomacritus, is identified as the *Cimbrian Peninsula*, which according to Ptolemy is located “after” Alvis River (now Elbe) and is populated by the Cimbrians (Claudius Ptolemy, *Geographia*, II, 11, 2). Additionally, according to Strabo (*Geographica* IV, 4, 3, 4), the Cimbrians lived near the Germans and the Teutons.

After leaving the Cimmerian land, the Argonauts reached “rough prominent turn and a shore protected from the wind”, where Acheron River had its estuary, a region characterized as “cold”; this could still correspond to Jutland. The waters of the river are described as having a silvery and golden color (v.1131-1132). The coastal area of Ho Bugt (Figure 8) near Esbjerg, with its several sand dunes, which forms an extended lagoon, could fit this description, since the yellow (“golden”) color can originate from the erosion of the dunes by the water, or, more probably, from the enrichment of soil in minerals, or by the yellowish sediments transferred by the river waters. Many studies have been done on the aeolian deposits (dunes) along the Ho Bugt landscape. The whole west-coast area of Denmark is characterized by a dynamic sedimentary environment experiencing erosion, transportation and re-deposition of sand along the coast. The mineralogical studies indicate that the main mineral concentrations are quartz, k-feldspar, zircon, amphibole, pyroxene, epidote, garnet, ilmenite and oxides. The contact between the aeolian and underlying sediments is a well-developed peaty palaeosol, the top of which yields

¹⁰The phenomenon of the prolonged day is caused by the obliquity of the axis of the Earth. More precisely, it is visible 50 arc minutes (') to the south of the Arctic Circle, due to the atmospheric refraction, plus the non-negligible diameter of the solar disc: The minimum (southernmost) geographic

latitude that experiences a 24-hour day is in our century 65° 42', but in 800 BC it was 65° 22', because the obliquity fluctuates, since the terrestrial axis is not constant (in 1200 BC was even less, 65° 19').

dates between 2300 BC and 600 BC (Szkornik et al. 2008 and Knudsen et al. 2009).



Figure 8: The Ho Bugt wetland on the west coast of Jutland peninsula (Denmark), at the estuary of Varde River.

Additionally, we note that, while the ship was previously being pulled upon pebbles, it is written that in this region *"the vast waters of the Ocean hum over the sand"* (v. 1150-1151). In this region, the Argonauts experienced a change in weather, as the calm turned gradually into a strong westerly wind (*Zephyros*), so they embarked in their ship and prepared to sail towards the Ocean (v. 1131-1141).

6. THE ROUTE TO CIRCE

The Argonauts were on the west coast of Denmark, facing the North Sea (Atlantic Ocean). It seems unreasonable that one could sail from a shore facing west towards the open ocean, having a west wind. Such a wind has the exactly opposite direction, i.e. from the ocean towards the land. However, in the specific region flows a branch of the North Atlantic Ocean currents, known as the Norwegian Current, coming from the west, which upon turns northwards, following first the shore of Denmark and then the shore of Norway (Figure 7). The most reasonable act that would be in accordance with the text is that

Ancaeus directed the ship to the north-northwest, aided by the direction of the Norwegian current.

Thus, some days later they passed from the north of Ierne (Great Britain), while they were pushed from behind by *"a black storm with thunders that bellied the sail and the boat run fast"* (v. 1160-1169). As the author had previously alluded to the direction of the wind, the *"push from the back"* means that they go west, or west-northwest, if we add the effect of the Norwegian Current. It seems that the northern course of the six days had the purpose of reaching this current. The course that will be followed by Argo and the dangerousness of that course is given through the talking branch of the sacred oak, which is attached at the stern. After passing Ierne, they turned south, in order to reach the *"sacred capes"* of Dionysus (v. 1247-1260), that is the Pillars of Heracles (Strait of Gibraltar), and they should be very careful not to overshoot them, since this strait it is difficult to spot. In such a case, they would be lost in the Atlantic Ocean with the great danger of losing site of land. Indeed, according to accounts of modern sailors, the Strait of Gibraltar cannot be discerned from a distance (Petrides 1994, p. 117).

Thus, after passing from the north of Scotland, the Argonauts sailed towards the south (Figure 7). It should be noted that as long as they sailed along the shores of the Iernian islands keeping an eye contact with the land, they knew their whereabouts, but when they left the southernmost edge of Ireland, they found themselves in the open ocean and did not see any land. In the poet's words, *"neither anybody conceived in his mind in which part [of the ocean] we were located"* (v. 1185). This section of the voyage lasted for 12 days and the Argonauts had a feeling of having been lost. They were in the Atlantic Ocean without seeing any land for such a long time.

Figure 9 shows the most probable route of Argo during these 12 days, assuming a speed of 6 or 7 km/h (Casson, 1951), with a general direction from Ireland towards Gibraltar. The starting point for this calculation is approximately 200 km from the southernmost point of Ireland, so that the Argonauts could not see any land, since all shores of continental Europe are much farther away. They should follow the flow of the ocean current known as the Azores Current towards the south and approach Gibraltar (Figure 9). However, according to the text, after the twelfth day, Lynceus observed *"from very far away"* in the *"calmly flowing Ocean"* a pine-covered island, where the palace of Demeter was located (v. 1187-1190); around them there was a great circular cloud. In other words, the presence of a distant land was detected thanks to the orographic clouds formed over a tall mountain, a well-known method of land detection for sailors. Indeed, the southernmost point

of this route lies approximately 100 km from Madeira, which means that it could barely be visible. It was detected by means of the orographic clouds covering the peaks of its mountains (1861 m being the altitude of the highest peak, Pico Ruivo).

Therefore, what is mentioned as the “Island of Demeter” must be Madeira Island (Figure 9). The Mediterranean climate and the fertility of the soil

agree to a goddess of agriculture such as Demeter; today it is a well-known year-round resort, being visited every year by about one million tourists. The Argonauts knew that they should not approach this particular “sacred island”. However, their view of this known island meant that they had overshot Gibraltar and so they should change their course immediately (v. 1187-1190).



Figure 9: The route to Circe in the Atlantic Ocean. A part of Atlantic Ocean currents are shown as well as the position of Madeira Island, which corresponds to the “Island of Demeter” mentioned in the text. It is assumed that 200 km south of Iernides Islands no land can be discerned, while Madeira could most probably be visible from a maximum distance of approximately 100 km.

Then, Argo took a turn to the left. It is clear from the map of Figure 9 that it turned eastwards in an attempt to enter the Strait of Gibraltar. However, Argo was already sailing upon the Canary Current, which flows to the south in that region (Zhou et al. 2000), as shown in Figure 9. Thus, their attempt failed and their eastbound course, influenced by the current, became a southeastern route, which led them to the shores of what is now Morocco, hundreds of km away from Gibraltar. As it can be seen in Figure 9, this route leads the ship to the vicinity of Essaouira peninsula of Western Morocco. The distance of approximately 700 km from the north of Madeira Island to Essaouira peninsula is covered within this time span at a speed of 9 to 10 km/hour, i.e. the speed of 6 to 7 km/h added to the speed of the Canary Current of 1 to 2 km/h.

According to the text, in the third day they arrived at the residence of Circe, which was in a land called Aeaëon or Lycaëon, according to three different editions of *Argonautica Orphica*:

- The Leipzig 1829 edition (mentioned by I. Passas in the *Orphics* edition of the *Helios* encycl. editions) writes of the arrival of Argo at the place (v. 1213), known as Aeaëa.
- The Leipzig 1764 edition writes about a location (v. 1206)¹¹, which is translated as “*Lykaion peninsula*”.
- The Paris (Les Belles Lettres) edition of 1930 calls the place (v. 1208) as “*Lygeon peninsula*”. It is most probably a misspelling of the word *Lykaion*.

The determining expression *Lykaion* for the peninsula, from the root *lyc* = light,¹² reminds of the “Mountain of the Sun” mentioned by Ptolemy in his *Geography* (IV, 1, 3, 1); this topographic feature

¹¹ Available in the Internet at <https://archive.org/details/argonauticahymn00unkngoog>

¹² Cf. Mount Lykaion (Mons Lycaeus), Apollo Lyceus, the Greek words *lycophos/lycauges* = twilight, and other instances.

corresponds to the coordinates of Essaouira (31° 30' 47" N, 9° 46' 41" W). Moreover, Circe was daughter of Hyperion Helios (v. 1218-1228), the Greek sun-god, and sister of king Aeëtes (the father of Medea). Also, in the same region, Homer placed the residence of Eos (Od.12.1-5), the personification of the dawn and sister of both Helios and Selene (the Moon goddess).

The text initially describes a continental land or peninsula (*χῆρσον*) and subsequently it mentions that it is an island (v. 1241). As shown in Figure 10, the island Mogador lies just 1.5 km away from the peninsula of Essaouira, a fact indicating the possibility that a few thousand years ago the island could be an extension of the modern peninsula. Thus, the appearance of the ancient peninsula would resemble an extended long-and-narrow island.

Argo approached the Essaouira peninsula and anchored on the rocks. Some of the Argonauts disembarked in order to explore this *endless land*, which now belongs to Morocco. However, Circe appears almost immediately, coming from the opposite direction (from the interior of the land) and not allowing them to walk further, telling them that they cannot enter her house because they are impure due to murder. However, she supplied them with food in order to be able to continue their long voyage. She also instructed Orpheus to cleanse them on Cape Maleas of Peloponnese in Greece (v. 1214-1233), where an entrance to the underworld existed. Orpheus knew this location, as he had descended from there to the underworld in his attempt to take Eurydice out of there (v. 41-43).



Figure 10: The region of Essaouira in Morocco, with the Mogador Island and the river Qued Ksob. In this area still live the animal species Barbary stag (left), African golden wolf (*Canis anthus*, in the middle), and Barbary lion (*Panthera leo* - Atlas lion, right).

Since the text of *Argonautica* does not offer any description of the place where Circe lived, we remind the detailed description given by Homer in *Odyssey* (Book 10):

- The area is densely forested (Od.10.150) and the palace of Circe is located in a clearing (Od.10.211). *Odyssey* describes the island as “low, forested, encircled by the sea”. Essaouira is near the foot of the Atlas Mountains and not far from their highest peak (Jebel Toubkal, 4,167 m, being 63 km from Marrakesh and 200 km from Essaouira). The area is actually covered with woods, even today.
- The ship of Odysseus approached and anchored in a deep harbor, as indeed is the bay that exists in the area, since the island Mogador and the edge of the peninsula combine to create a safe place to anchor (Figure 10).
- The ship of Odysseus had anchored near a river, where Odysseus killed a large deer with tall horns; he made a rope from bulrush and chaste trees in order to bind it and take it to the ship, where he offered it to his crew to eat (Od.10.157-165). Indeed, in the area of Essaouira, there is the river Qued Ksob (Figure 10), which is just 2 km from the city. Also in the area still lives a subspecies of a deer, possessing the properties of “large” and “tall-horned”; it is the Barbary stag (*Cervus elaphus barbarus* or *Atlas deer*), which is a subspecies of the red deer (Figure 10).
- In the palace of Circe lived wolves and lions (Od.10.211). Indeed, in the Atlas region lives the African golden wolf (*Canis anthus*) and the Barbary lion (*Panthera leo* - Atlas lion), shown in Figure 10.

Subsequently, the place of the Essaouira peninsula, which was localized on the basis of the *Argonautica Orphica* text as the land of Circe, is in very good agreement with the Homeric description of that position.

7. THE VOYAGE IN THE MEDITERRANEAN SEA

Leaving the land of Circe, the Argonauts sailed towards the “mouth” of Tartessus (v. 1247) and approached the Pillars of Heracles (Strait of Gibraltar) and the “sacred capes” of Dionysus. According to the Liddell-Scott-Jones *Lexicon*, the syntax of the preposition “*ana*” with accusative case denotes ‘a motion from a lower to an upper part’. Therefore, this passage corresponds to a route from Morocco towards the “entrance” of the river of Tartessus (now Guadalquivir in the southern part of the Atlantic coast of Spain), which is given as a reference point for

Gibraltar, from where they entered to the Mediterranean Sea (Figure 11).

After they passed from Sardinia, the Ausonian islands and the Tyrrhenian shores (Italy), the Argonauts reached the *Lilybeum Strait*; this is the strait between Sicily and northern Africa, named after the city of Lilybeum (today's Marsala), i.e. the "city that looks towards Libya". There, they anchored on the shore of the triangular island of Enceladus, which is Sicily. According to the text, Enceladus is prevented by the flame of Mount Etna to escape in the surface, from the interior of the earth (v. 1247-1252). This

reference to "Etna's flame" indicates that the Etna volcano was active during that age. This is in accordance with Beccaluva et al. (1981) which determined an age of 10 million years referring to the dating of stones located to the strait between Sicily and Libya. The studied stones were sampled from relatively small depth in the sea, about 380 m. The results of this study agree with previous reports that in this region *the tectonics are very active*. This leads to the conclusion that the *undersea volcanic activity* is appeared in many places, with strong gas escaping visible on the sea surface.



Figure 11: The route of the Argonauts in the Mediterranean Sea.

Indeed, to the south of Sicily, next to the Lilybeum Strait, there are numerous *active submarine volcanoes*. It is known as the area of Campi Flegrei Mar Sicilia (Rotolo et al. 2006 and Lodolo et al. 2012), shown in Figure 12, from where, according to the text, passed the Argonauts. This undersea volcanic region consists of the following four areas, where there are several volcanoes (seamounts) and volcanic islets: Graham Bank, Nameless Bank, Pantelleria East and Pantelleria Southeast (Figure 12). The area of Graham Bank lies merely 40 to 50 km from the Sicilian shore, where there is the town of Sciacca, the ancient *Thermae Selinuntinae*, full of thermal spas. Approximately 50 km to the east-southeast of Sciacca there is Agrigento, the ancient Acragas, whose port bears the name of the pre-Socratic philosopher Empedocles (495 - 435 BC), a citizen of Acragas who, according to the tradition, threw himself into Mount Etna (Diogenes Laërtius, *Lives of the Eminent Philosophers*, VIII 69-72). For this reason, the largest submarine volcanic crater of Graham Bank, about 30 km from the shore, also bears his name (*Empedocles volcano*). In the modern age, there have been eruptions that have raised it above sea level, several times before erosion "submerged" it again. In 2016, it remains just 6 m below sea level. This

area was discovered when it rose above sea level after erupting in 1831 and was named Ferdinandea. The island disappeared beneath the waves again in early 1832. Also, volcanic activity in this region had already been reported during the First Punic War (264 to 241 BC) as described by Aissi et al. (2014).

In this region the Argonauts met first Charybdis and then the Sirens. The description given in *Argonautica Orphica* is the following (v. 1254-1263): A wave of hot water came up from the bottom of the sea and flowed around the ship's bow, while the water withdrawn from the bottom and in the form of a boiling wave they fell at the edge of the sail. The ship was immobilized and then it started to rotate over a "cavity on the sea", while it risked going down and being stuck to the muddy seabed. This description fits perfectly a *sea whirlpool* caused by the eruption of a submarine volcano (see in Figure 13, a photograph from a similar eruption of the volcano El Hierro, in Canary Islands).

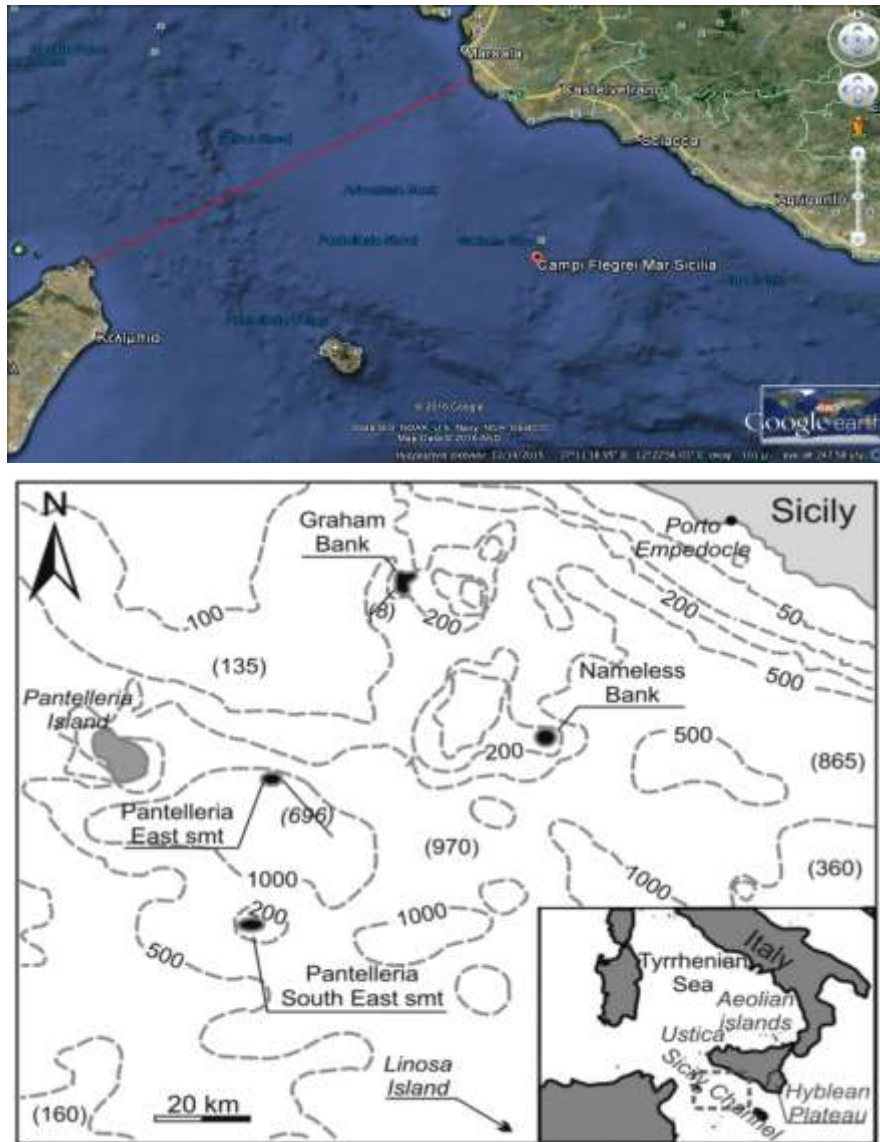


Figure 12: In the upper image is shown the region to the south of Sicily, which hosts several submarine volcanoes. In the lower picture there is a schematic map of the Sicily Channel with four dredge sites: Graham Bank, Nameless Bank, and Pantelleria East and Pantelleria Southeast seamounts. The principal isobaths are also reported (depths are in meters below sea level), according to Rotolo et al. (2006).



Figure 13: The El Hierro submarine volcanic eruption in Canary Islands in 2011 (Spain).

Source: <http://www.crystalinks.com/LaPalmaVolcano.html>

Indeed, the corresponding description of the submarine volcanic eruption in Graham Bank, in 1831, reads as follows: "On 13 July, a column of smoke was clearly seen from St. Domenico. The residents believed it to be a ferry on fire. On the same day, the brig Gustavo passed through the area, confirming a *bubbling in the sea that the captain thought was a sea monster*. We note that the phrase "*bubbling in the sea that the captain thought was a sea monster*" is an exact parallel to the described emergence of the *sea monster Charybdis* met by the Argonauts.

Just it escaped the whirling waters of Charybdis, Argo reached a nearby protruding rock (v. 1264-1265). The word *skopelos* used in the text means, according to the Liddell-Scott-Jones *Lexicon*, "a tall rock or peak, a precipitous shore or promontory." Next to it, there is a precipitous rock, which rises through voids, pressing the sea, while the waves resound among the voids (v. 1265-1268). On the top of this (second) rock sit the Sirens, who emit a "*ligyre*" voice (v. 1268). According to the above dictionary, this word means a 'clear, whistling, acute and intense sound'. The Argonauts left the oars and Argo headed towards the Sirens, who are now described as sitting on a protruding "hill" (v. 1273) and not a precipitous rock as mentioned just a few verses prior. It seems that the rise of the rock evolved to a small islet. This description reminds the emergence of a *volcanic islet* as the result of an eruption of a submarine volcano. A similar phenomenon of enlargement of a volcanic islet was observed in the case of the eruptions of 1831 in the same region, which resulted in a size increase to about 4 km. Later, this island, composed of loose tephra, was easily eroded by wave action, and when the eruptive episode ended, it rapidly subsided, disappearing beneath the waves in January 1832¹³.

The "acute and intense sound" that accompanies the volcanic eruption as a result of turbulent flows and friction by the hot gases, as they accelerate upwards after they leave the crater together with fragments of magma, ash and other solidified particles, could indeed be paralleled to the "*ligyre* voice" of the Sirens. The sounds produced by volcanoes can be extremely powerful, and they can cause loss of hearing and even material damages (Medici et al. 2013, <http://volcano.oregonstate.edu/volcano-sounds-during-eruptions>).

Moreover, it is stressed that Ancaeus directed the ship towards the protruding hill. A reasonable question is how a helmsman can possibly direct the ship towards a certain direction, when the sailors have left the oars. One could imagine that, because of

the deafening sound, the Argonauts left the oars to close their ears with their hands, while Orpheus is presented as covering the sound by playing his phorminx. The ship is left uncontrolled to slide towards the "hill of the Sirens".

Then, from another "skopelos", being described as "snow-covered" (v. 1284), the Sirens emitted a terrible sigh and committed suicide by falling to the sea from the edge of the precipitous rock, being *immediately transformed to small rocks*. The "terrible sigh" presumably expresses the terribly strong sound of the blowing of the volcanic dome. The "Sirens" fell on the sea like discs in other words they fell, while rotating in the air, just like discs thrown by a discus thrower. This description aptly conveys the motion of volcanic bombs, i.e. pieces of viscous molten rock/lava ejected from a crater during a volcanic eruption. If they were human bodies, the text would speak of a vertical fall, because of their weight. The fall of volcanic bombs creates small volcanic islets. The lava flows are connected to the appearance of small rocky islands emerging from the sea.

The odd description of the second rock as "snow-covered" denotes probably the white constituents of volcanic matter, such as perlite and pumice that covered this *skopelos*. However, there is actually such a rocky area in southern Sicily, only 5 km away from Porto Empedocles, the popular among tourists site Scala dei Turchi which is a rocky cliff on the coast of Realmonte. The Scala is formed by marl, a sedimentary rock with a characteristic white color. It lies between two sandy beaches and is accessed through a limestone rock formation in the shape of a staircase, hence the name. The rock is a pelagic marl (the local name is "trubi"); this formation marks the sudden invasion of the Atlantic Ocean waters through a newly breached gateway (now the Strait of Gibraltar), and the restoration of deep-sea conditions in the Mediterranean region. The particular formation of the Scala dei Turchi is very important, because it marks the beginning of the Pliocene (5.33 million years ago) after the "Messinian Salinity Crisis. This area, it was an equally conspicuous feature during the time of the Argonauts' arrival.

Therefore, we conclude that Charybdis and the Sirens mentioned in *Argonautica Orphica* are metaphorical descriptions of a submarine volcanic eruption that occurred to the south of Sicily, on Graham Bank (Empedocles Volcano).

8. THE VOYAGE IN THE GREEK SEAS

After the Argonauts departed from Sicily, they sailed southwest of the Gulf of Taranto, suffering

¹³ Prévost, L.C. (1835) Notes sur l'île Julia: pour servir à l'histoire de la formation des montagnes volcaniques,

Mémoires de la Société Géologique de France, 1ère série, tome II, mémoire n° 5, F.-G. Levrault. Paris; Strasbourg.

from a strong wind and large waves, and continued eastward to Corfu Island, in which Phaeacians live, ruled by king Alcinous and queen Arete (v. 1291-1296). It seems that the Argonauts avoided the dangerous Libyan Sea by not aiming at the southern capes of Peloponnese and preferring a route along the coast (Figure 15). However, at the same time the Colchian fleet arrived to Corfu (v. 1301-1305). It seems that they waited for the Argonauts, at the south of the island, in the Ionian Sea, because if they were in the north, they would have intercepted them before they could reach Corfu. Maybe they had anchored and found shelter in Paxi Islands and followed Argo when they saw her. After reaching an agreement with the Colchians, the Argonauts sailed south, towards the Ambracian Gulf.

The narration from that point on becomes concise, we could even say abridged. The Argonauts encountered an extremely strong wind when they were near the entrance of the Ambracian Gulf and heading south, which pushed them across the

Mediterranean, to the African Gulf of Sidra. Rescued, they headed towards Crete, where the metallic giant Talos did not allow them to disembark. They struggled with the large waves of the Sea of Crete trying to reach the “Melantian Rocks”. According to Strabo, these Rocks are located between the islands of Mykonos and Icaria (*Geographica*, XV, 1, 13, 3), relatively close to Delos Island. This is in accordance with the myth that Paeon (the god Apollo) threw an arrow from Delos (his birthplace) to point to the Argonauts as a shelter from the storm, a new island, at the center of the ancient Sporades Islands (the modern Cyclades). Because that island *anefani* (reappeared) out of the darkness and the tempest, it was named *Anafi* (v. 1363-1384). However, from the geography of the region (Figure 1) it is evident that Anafi lies far to the south of Mykonos; it actually lies nearer to Crete. Consequently, they could not have overtaken it. Then, probably the Melantian Rocks are the two rocky islets (nowadays known as Pacheia and Makra), just to the south of Anafi.



Figure 15: The return route of the Argonauts, from Sicily to Iolcos. In the inset are shown the two rocky islets (Melantian Rocks), nowadays known as Pacheia and Makra, located to the south of Anafi.

Yet, Jason could not disembark, because he was “uncleanness” and thus the angry sun-god Helios would not allow it. Thus, by rowing, the Argonauts arrived finally at Cape Maleas of southern Peloponnese. There Orpheus, following the advice of Circe, disembarked and climbed to the Tainaron hill, where there was an entrance to Hades, and performs the cleansing of Jason. The Argonauts continued their voyage to Iolcos, while Orpheus, after finishing the ritual, returned to “Thrace” (v. 1369-1376), that is at the foothills of Mount Olympus.

9. DISCUSSION & CONCLUSIONS

The Argonautic expedition is narrated in two long epic poems from the antiquity. The one was written by Apollonius of Rhodes (3rd century BC), while the other is attributed to Orpheus¹⁴, who allegedly participated in that expedition, which has taken place one or two generations before the Trojan War of 13th century BC (Papamarinopoulos et al. 2012). This latter account was written down by a team of scholars under Onomacritus, during the period of the Peisistratid rule (6th century BC). It is noticeable that

¹⁴ This Orpheus, as he himself states, lives under the Olympus Mountain (northern-central Greece). However, artfully inserted into the text there is a reference to some

other Orpheus, apparently an older one, who was king of Vistonis, near the Cicones (Thrace, NE Greece).

the return voyage follows a markedly different route according to each one of these two poems. In the present study, we traced and analyzed the voyage of Argo according to the second poem, known as *Argonautica Orphica*.

It seems that the ancient mariners had the knowledge required to do such a voyage. They knew how to sail in the large navigable rivers of Europe, and to cope with the currents of the Atlantic Ocean, which is mentioned in the text as "Atlantic Sea" (*pelagos*). The Argonauts exited into the Cronian Sea and sailed in the open Atlantic in order to reach the Pillars of Heracles (Gibraltar), which are also named as such, indicating that Heracles had passed from there before the Argonauts. Additionally, the ancient Tartessus (now Cadiz) was already present near Gibraltar, as it is also mentioned. It seems that others before them had traced the same itinerary, since Ancaeus the helmsman apparently knew the route he had to follow, and Lynceus identified the island that was "outside" of Gibraltar in order to turn the ship towards the Mediterranean Sea.

By following the described itinerary, we identified the land of Circe as Essaouira and the Mogador Island (Morocco). The Homeric description of the flora and fauna for the Aeaean cherson is in an absolute agreement with the particular location.

The encounter of the Argonauts *first* with the sea monster Charybdis (a metaphor for a sea whirlpool) and immediately *afterwards* with the Sirens (found on rocks and rocky cliffs, from where they fell on the sea like "rotating discs" and became small rocks) took place in the Lilybeum Strait, south of Sicily, a region full of active (from the antiquity) submarine volcanoes. It seems that the passing of the ship coincided with an undersea volcanic eruption, which occurred near the shores of Sicily, where, for example there is the crater of the submarine volcano Empedocles. The whole description fits with phenomena that accompany such a volcanic eruption.

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A necessary note is that the corresponding Homeric descriptions of Charybdis and the Sirens, as well as the location of these "sea monsters", differ from the account of *Argonautica Orphica*. Odysseus (Ulysses) meets *first* the Sirens in grassy meadows, and *afterwards* Scylla and Charybdis, all these quite near the island of Circe. Charybdis in the *Odyssey* is described as the phenomenon of tides (three times per day) and not as a sea whirlpool. Also, in *Argonautica Orphica*, besides the opposite sequence of the events, there is no mention of Scylla. Moreover, the *Planktai* Rocks of the *Odyssey* are related with the Cyanean Rocks or *Symplegades*, which the Argonauts encountered at the entrance of the Black Sea and not near the Island of Circe.

The Cimmerians in *Argonautica* are placed near the Hyperborean *Macrobians*, more than 15 days of sea voyage from the land of Circe, while in the *Odyssey* they are close to the island of Circe. It should be noted that at the age the *Argonautica Orphica* was written down (6th century BC), the Cimmerians were living throughout the shores of the Euxinus Pontos (Black Sea) and the Maeotis "lake" (the Sea of Azov).

However, from the detailed account of the tribes met by the Argonauts in these regions, it can be deduced that the Cimmerians appear in the Black Sea shores much later, in agreement with the reference by Herodotus that the Cimmerians populated this region in the 7th and the 8th century BC.

Finally, the Argonauts meet the Phaeacians in Corfu Island, while Odysseus meets them in the *distant* Scheria. Intriguingly, however, the same royal couple appears (Alcinous and Arete) after the decades that intervened between the two voyages as they were described.

All these points discussed above deserve further study, which will be the object of a future research.

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