

And as a sort of coda, this iconic ship appears again in Polybius' account of the build-up to the Third Carthaginian War, preserved in an especially constructed dry dock in Rome, where in 149 BC it was used to incarcerate Carthaginian hostages.⁵¹ Such was the fate of this Macedonian Sixteen, matched, as it were, by that of the kingdom itself at the hands of the new power of Rome. And the later royal barges that we hear of are those of Roman emperors.⁵²

⁵¹ Polyb. 36.5-9.

⁵² Suet. *Calig.* 37.2. Liburnian galleys with gem-encrusted sterns, baths, colonnades, banquet-halls, vines and fruit trees. The two large early imperial pleasure-ships brought up from Lake Nemi in Italy were, unfortunately, destroyed in 1944.

CHAPTER 13

Eudoxus of Cyzicus and Ptolemaic exploration of the sea route to India

Christian Habicht

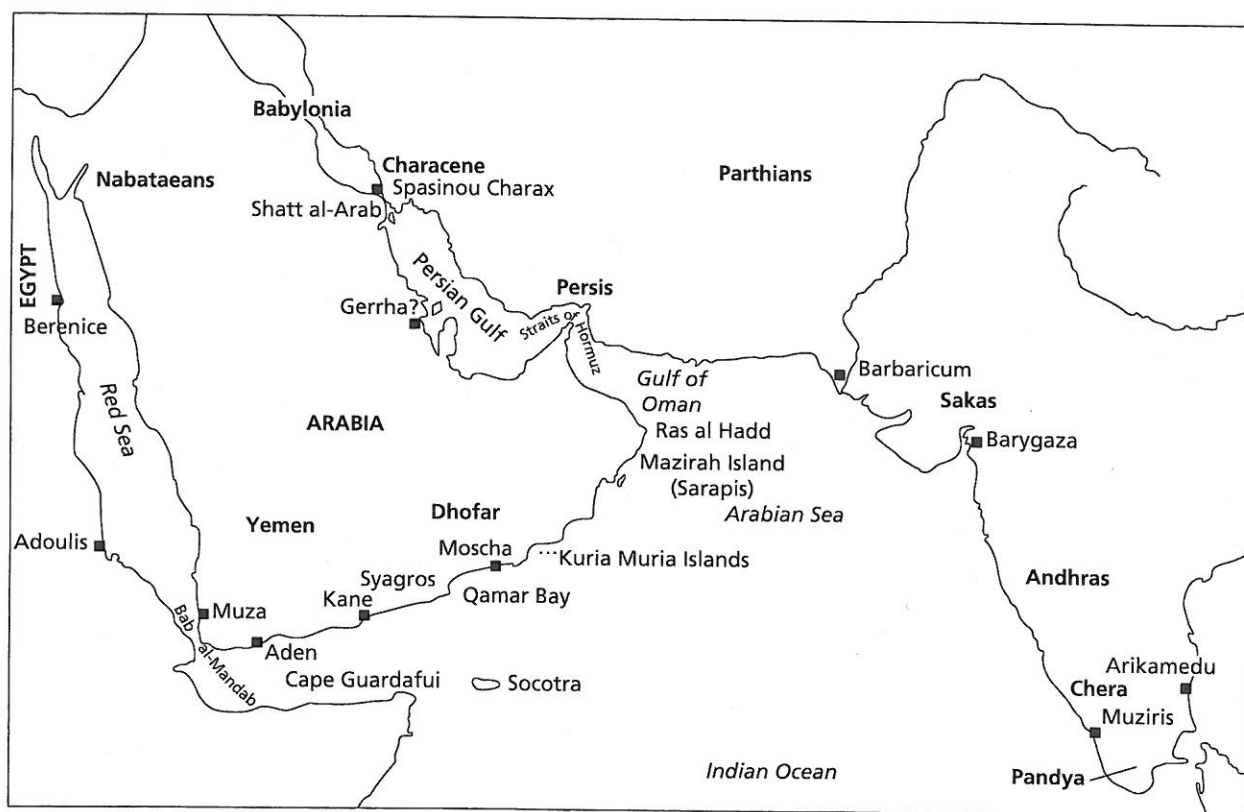
Let me begin with a few words about Cyzicus, the city of Eudoxus, who is the hero of this chapter. The place is far to the north of Ptolemaic Egypt, on the southern shore of the Propontis, the Sea of Marmara. It was founded by the Ionian city of Miletus early in the seventh century BC. The land was fertile, the waters rich in tuna fish, the harbours excellent.¹ Cyzicus was 'a city of merchants and sailors'. Its silver staters, the *Kυζικηνοί*, were for more than 200 years, down to the days of Alexander the Great, one of the three dominant currencies of the Mediterranean, rivalled only by the golden *Δακεϊκοί* of the Great King and the silver tetradrachms of Athens. They have been called 'the most interesting coin series of all times and countries'.² They are found in particularly large numbers in the area of the Black Sea and the Crimea, where some coin hoards contained close to 200 *Cyzicenes*. This reflects the importance of the city as a major place for the grain trade. Another, less well-known feature is its role as a centre of science, especially in mathematics and astronomy, during the later fourth and early third centuries. It was Eudoxus of Cnidus, a namesake of our man from Cyzicus, whose students were active there and in lively competition with Epicurus and his followers based in Lampsacus. The details have been worked out from some *Herculaneum* papyri by David Sedley, who suggests that the work of the astronomers at Cyzicus may even have influenced the great Archimedes of Syracuse about a century later.³

Cyzicus was a strong fortress, withstanding over the course of time several assaults by potent figures. Only once did it come close to being taken, by King Mithridates Eupator of Pontus in 73 BC. It barely escaped, due to its stubborn resistance and the superior strategy of the Roman general

¹ Hasluck 1910; Ruge 1924; Ehrhardt 1988; Avram 2004.

² Regling 1931: 3 ('die interessanteste Münzreihe aller Zeiten und Länder'), quoted with approval by Mildenberg 1993: 1.

³ Sedley 1976. A recent quotation, 'Eudoxe de Cyzique, F 277 Lasserre', should read 'Eudoxe de Cnide...' (Counillon 2007: 42, n. 31).



Map 13.1 The Red Sea and Indian Ocean, after Salles 1993: 497

a third and a fourth voyage, both times on his own account. He sailed out of Gades in Spain and tried to find India by circumnavigating Africa from the west. He did not come very far, but again extricated himself from a mild crash. Somehow he made his way to the court of King Bocchus I of Mauretania, well known from Sallust's *Bellum Iugurthinum* as Jugurtha's father-in-law and ally, who turned traitor and delivered him into the hands of Sulla and his commander, Marius, in 106. Eudoxus was unsuccessful in his efforts to persuade the king to send him out to India. He barely escaped before being deported to a desert island. Nothing is known about Eudoxus' fourth attempt. When Posidonius left Gades in about 100 BC, people still thought Eudoxus might return one day.

The prevailing view of the large majority of scholars is that what the Indian captain revealed to the authorities in Egypt was the use of the monsoon winds, and that Eudoxus was the first Greek to make use of this knowledge. W. W. Tarn, however, was sceptical.¹¹ He said that while it is not stated which way the Indian led Eudoxus to India, it could only have been the way he had come himself, that is, along the coast. But this is arbitrary and seems to me (and to most scholars as well) very unlikely, since the whole story makes sense only if what the Indian revealed was something new to the Ptolemaic side, that is to say, a direct route across the open ocean. It then follows that he guided Eudoxus that same route, only in the opposite direction. This must have happened during the summer months, when the south-west monsoon constantly blows from March to September and brings rain to India.¹² For the return voyage, the north-east monsoon blowing (less heavily) from October to February was used.

So far, so good. Eudoxus, however, is not the only one credited with having been the first to travel to India directly across the ocean. There is also Hippalus. The *Periplus Maris Erythraei*,¹³ written in the middle of the first century AD, says in section 57 that the pilot (κυβερνήτης), Hippalus, guided by his knowledge of the *emporion* and of the formation of the sea (οὐρανία τῆς θαλάσσης), was the first who, supported by the monsoon winds, found the direct route to India, τὸν διὰ πλεόονους ἔσθουε πλοῦν. The author of the *Periplus* adds that the south-west monsoon was for this reason given the name *Hippalus*. At about the same time as the *Periplus*, the elder Pliny to a degree confirms that statement.¹⁴ He gives the itinerary for

¹¹ Tarn 1939: 323–4, reviewing Otto and Bengtson 1938. ¹² Böker 1962: 403–11.

¹³ Casson 1989. A date of c. AD 45 is favoured by Groom 1993.

¹⁴ Plin. *HN* 6.101–6, speaking of sailing to India in the time after Alexander the Great: *postea ab Sogdo Arabiae promuntorio [Ras Fartak] Paralen fauonia, quoniam Hippalum [Hippalus] ibi vocant, peti certissimum videbatur*: the south-west monsoon is called *Hippalus* by the locals.

the monsoon routes and notes the various stages of such a voyage and their duration. From Iuliopolis, the harbour of Alexandria, to Okelis took fifty days. Okelis, known as the 'monsoon harbour', is Bab el Mandeb, where the Red Sea opens into the Gulf of Arabia. He continues: from Okelis to Muziris in south-western India the ships sail *venio Hippalo*, 'with the wind called Hippalus', and reach their destination in forty days.¹⁵ The whole voyage amounted to ninety days.

Nothing is known about the person and the date of Hippalus. The name is not uncommon in Ptolemaic Egypt and is found, for instance, for some high-ranking officials in the first half of the second century BC.¹⁶ The author of the *Periplus* adds that this route was used 'from that time on until now' (ἀπ' οὗ μέχρι καὶ νῦν), a remark that suggests a very long time, which would bring Hippalus way back from Pliny's own time, perhaps close in time to Eudoxus. Both could well be called 'first', if they travelled different routes, if, for instance, Hippalus found soon after Eudoxus a new and even shorter way across the sea. There were various routes; those discovered first led to places close to the mouth of the Indus river, but after a while shorter ways were found to places further south. The possibility, however, that Hippalus antedates Eudoxus cannot entirely be ruled out.¹⁷ Some scholars have even tried to harmonise the seemingly contradictory statements: they make Hippalus the pilot of Eudoxus, putting both men in one and the same boat. Others disagree, with good reason in my opinion, since such a conciliatory approach seems methodologically unsound.¹⁸

The result so far is that shortly before 116 BC Eudoxus returned from the first direct passage to India and some years later from the second. Since that time major Egyptian merchants or state fleets could make use of the direct route for the trade with India, whereas trade on a smaller scale continued the old way along the coast, described in precious detail by the *Periplus*. For about a century trade remained limited: Strabo says that under the Ptolemaic kings only very few dared to cross over the ocean to India, and in another context that annually barely twenty ships made the trip, a statement which may have minimised the actual volume.¹⁹ Trade in any

case exploded in the period of Augustus and flourished in the time of Pliny and the *Periplus*. The Roman annexation of Egypt in 30 BC contributed to this. Already in the time of Aelius Gallus, the Roman prefect of the country in 25 BC, 120 ships were sailing annually from Myos Hormos in the Red Sea en route to India.²⁰ In this respect, the well-known fact must be mentioned that during the reign of Augustus several embassies from Indian kings came to see the Roman Princeps, as Augustus himself states in his *Res Gestae*.²¹ The imports to Egypt were always of much higher value than the exports to India. Perfumes and precious stones made up much of what was brought from India, and also cinnamon and pepper.²² Apart from genuine and so-called 'luxury goods', there were also some for medical purposes, such as Indian spices against infections, and other expensive items used for religious ceremonies, such as frankincense and myrrh. Luxury goods included silk, which came from China by land to India, and besides the gemstones and perfumes came ivory and tortoise shell.²³ A good deal of the profit went to the coffers of the Ptolemies and, later, to the emperor's *fiscus*.

The development of such an important trade route (see Map 13.2) has been connected with an innovative element in the Ptolemaic administration: the appearance of a new high-level office, that of the commander in charge of the Red Sea and the Indian Ocean, ἑνὶ (or στρατηγὸς) τῆς Ἐρυθρῆς καὶ Ἰνδικῆς θαλάσσης. The position was open to courtiers of the highest ranks, since the incumbent always carried the title of 'kinsman (of the king)', συγγενής. Otto and Bengtson identified the year 110/109 as the first in which the new post is attested.²⁴ This is in an inscription from Coptus, one of the places on the way from Egypt to India and back. The text is published as SB V 8036 = *IlPortes du désert* 49. A person, whose name is lost, appears as 'kinsman and *strategos*, and in charge of the [Red Sea and Indian] Ocean' (ὁ συγγενής καὶ στρατηγὸς καὶ ἐνὶ τῆς Ἐρυθρῆς καὶ Ἰνδικῆς θαλάσσης), and the date is given as 'year eight'. That seems clear enough, but, alas, it is not, in fact. Otto and Bengtson take it as year eight of the joint rule of Cleopatra III and Ptolemy Soter II, that is, 110/109.

¹⁵ Baker 1968: 2299, lines 22–40.

¹⁶ Delbrueck 1955–6: 45 suggests that he might have been a high-ranking Ptolemaic commander. For persons of that name in Ptolemaic Egypt, see *Prosopographia Ptolemaica*.

¹⁷ Raschke 1978: 661.

¹⁸ Otto and Bengtson 1938: 202. In favour: Thiel 1966: 90; Mooren 1972: 132–3 ('possibly'); Desanges 1978: 158–9; Hult 2001: 618. Against: Güngerich 1950: 29–30, n. 48; Fraser 1972: 1, 83; Raschke 1978: 661. Undecided: Dihle 1974: 7.

¹⁹ The two statements by Strabo are, respectively, 2.5.12 (C 118) and 17.1.13 (C 798). On these, see Raschke 1978: 662; Young 2001: 19.

²⁰ Strabo 2.5.12 (C 118).

²¹ Embassies arrived in 25 BC at Tarragona, in 20 on Samos and another from King Ptolemy at Antioch in Syria. The numerous literary testimonies are conveniently listed in the editions of the *Res Gestae* by Volkmann 1969 and Scheid 2007 in their notes to chapter 31.

²² See Sudebotham 1986: 20–4 for Roman imports from India and 24–32 for goods exported from Rome to India. See also Casson 1989: 39–43.

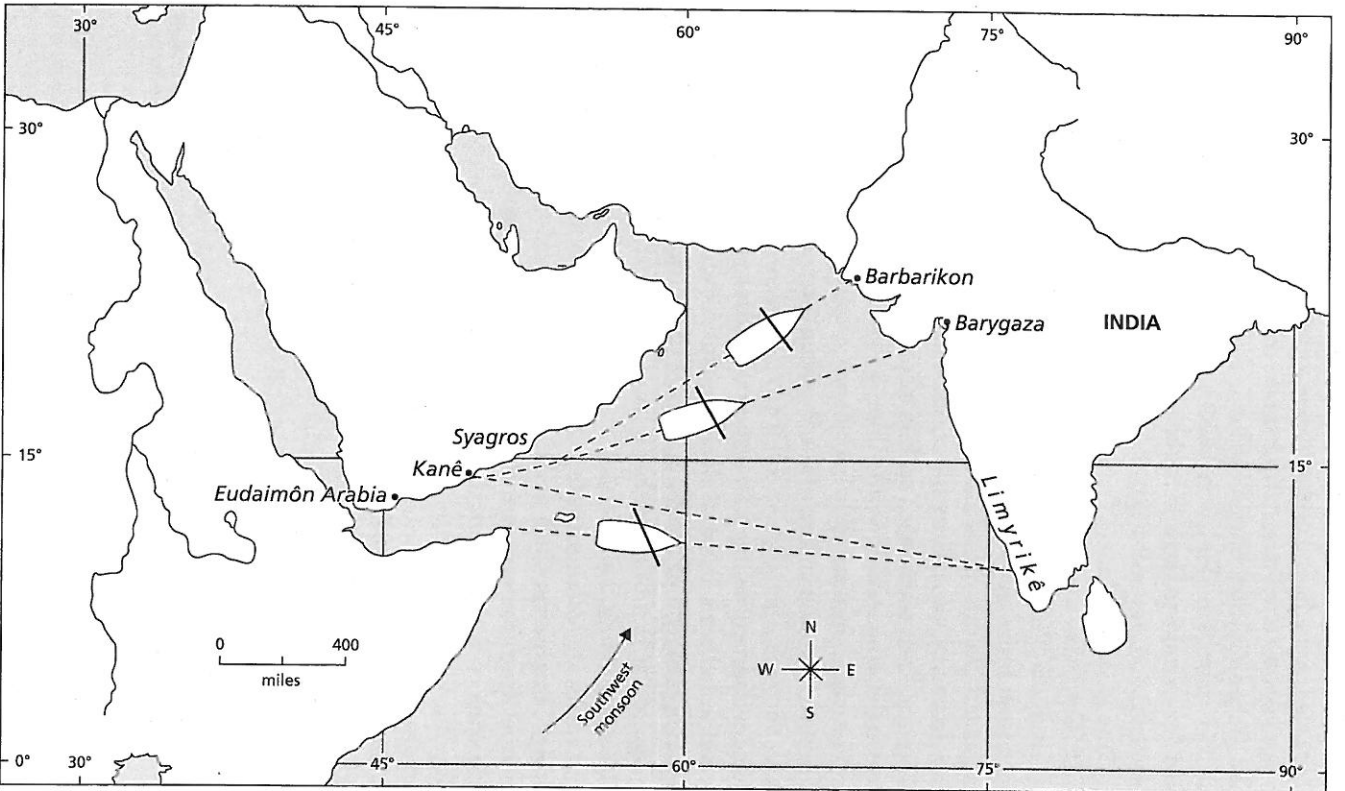
²³ Young 2001: 14–18.

²⁴ Otto and Bengtson 1938: 1–22 and 197, followed by Tarn 1939: 324: 'more probable'; Volkmann 1999: 1009 and Fraser 1972: 1, 182.

Leon Mooren, however, the specialist in Ptolemaic court titles, disagrees and finds that the titles of this man and of his brother Apollodorus mentioned before him point to a later date. The possibilities are 74/73, year eight of Ptolemy XII Auletes, or 45/44, year eight of the famous Cleopatra VII.²⁵

Another holder of that office, Callimachus, held the position for almost thirty years and is attested as the incumbent in five inscriptions from various places in Egypt, namely for the years 79, 75, 62 (twice) and 51. The post may have existed as early as 110/109, but it existed in any event in 79 BC. Either way, these dates are compatible with those for the two voyages of Eudoxus in c. 118 to 110. It is another question whether the designation of the office means what is generally believed: control over the trade with India. Does the expression Ἰνδικὴ θάλασσα really mean the ocean between Arabia and India? Etienne Bernard, in his edition of the inscriptions from Philae in Egypt, points out in his comments on one of the Callimachus texts that Indian elephants (ἐλέφαντες Ἰνδικοί) in the Adoulis inscription of Ptolemy III are Ethiopian beasts, not Indian, and are also called in that same inscription Τρωάλοδυτικοὶ καὶ Αἰθιοπικοὶ, that is, Nubian and Ethiopian elephants. It may therefore be that Indian Ocean (Ἰνδικὴ θάλασσα) here means in fact the sea off the coast of Somalia and Ethiopia.²⁶ Even so, the connection with the Indian trade would still exist, since Cape Guardafui on the coast (this is the spice post called Ἀπόδορα) was an important station in this trade.

I must once again return to Hippalus. We have seen that he and Eudoxus were most certainly not partners on one and the same boat and cannot share the credit of being the first to have reached India across the open ocean. One or the other has to be our choice – unless those scholars are right who claim that the pilot Hippalus is nothing but a myth. This view was expressed by Santo Mazzarino in a paper of 1987.²⁷ Mazzarino observes that the manuscript reading in Pliny (*HN* 6.100) was rather *hypoalus* and that this does not designate a person, but the wind that carried the sailors from the coast of Arabia to India. He identified that wind as blowing from the sea (rather than from under the sea), *ἄνεμος ὑποαῖος*. He concludes that the pilot Hippalus is the result of a wrong etymology which used the well-known personal name Hippalus. If there was no person Hippalus, that would explain why Posidonius does not mention him when he speaks of Eudoxus. This view has recently gained some momentum; it was supported



Map 13.2 The sea routes to India, after Casson 1989: 225

²⁵ Mooren 1972: 127–33. He and Raschke 1978: 661 are both inclined to accept the date of 74/73.

²⁷ Mazzarino 1982–7: VII–XIV.

in the 1990s with new arguments by A. Tchernia²⁸ and by Mazzarino's pupil Federico de Romanis,²⁹ although it was rejected by Jehan Desanges.³⁰ None of these authors, strangely enough, mentions the fact that in 1913 Emil Kiessling had already categorically stated that the famous pilot Hippalus was just a fiction.³¹ He noted that the geographer Ptolemy attests a *mare Hippalum*, πέλαιος Ἰππάλου,³² in the area of the Somali coast, and Pliny a promontory *Hippalum* or *Hippalumi*.³³ Kiessling concluded that the wind got its name from the promontory (Hippalus is the wind that blows from the promontory Hippalum) and that the author of the *Periplus* invented the person Hippalus as the eponym of that wind. From another angle Kiessling came to the same conclusion as Mazzarino much later: that the pilot Hippalus is a myth, a fiction.³⁴ If this is correct (and it has at least a chance to be), then Eudoxus remains the only one who is credited as having been the first to have crossed the ocean to reach India. He had the right idea (as against the view of Eratosthenes), that India could be reached by circumnavigating Africa from the west (as Vasco da Gama eventually did in 1497). But, unfortunately, he was stranded twice in his attempts to prove it. In all probability, the second attempt cost him his life.

²⁸ Tchernia 1995: 991–1009. ²⁹ De Romanis 1997: 671–92.

³⁰ Desanges 1999: 339–43, and in his Budé edition of Pliny, *HN* 6.75–6, n. 172.

³¹ Kiessling 1913.

³² Prol. *Geog.* 4.7.41: Τὸ δὲ ἀπ' ἀνατολῶν τῶν νήσων τοῦτον πέλαιος Ἰππάλου Ἰππάλδος (ἁ), πέλαιος (X) καλεῖται, ὃ συνάττει ἀπ' ἀνατολῶν τὸ Ἰνδικόν πέλαιος μετὰ ἀνατολῶν.

³³ *HN* 6.172: *hinc Azanum mare, promunturium quod aliqui Hippalum* (Detlefsen; Mayhoff: *Hippalum* codd.) *scribere*.

³⁴ Schmitthenner 1979: 103 came very close to this conclusion when he called Hippalus, referring to Tarn 1951: 369, a 'semi-mythical figure'.

CHAPTER 14

Timosthenes and Eratosthenes: sea routes and Hellenistic geography

Francesco Prontera

The relationship between knowledge and power runs right through world history. In classical antiquity this relationship can most easily be charted in Egypt under the first Ptolemies, not only because the expansion of the kingdom gave a new impetus to the development of geographical knowledge, both in theory and practice, but mainly because we know a fair amount about the activities and work of the protagonists. In fact, the ancient literary sources offer a great deal of information on the relationship between Ptolemaic politics and geography, while such information is missing for imperial Rome in the second century BC, for the era of Pompey the Great, or even for that of Augustus. We know very little about the world map of Agrippa, but we can reconstruct the geometric structure of the world map of Eratosthenes; and, what is more important, we can see the close bonds between the cartographic pattern and the network of the land and sea routes. The historical and cultural context in which Timosthenes, Eratosthenes, Ptolemy II and Ptolemy III operated might even remind us of some more recent experiences (such as France in the seventeenth century). The comparison is obviously anachronistic; however, it can give us an idea of how peculiar the relationship was between monarchic power and geographical science in Hellenistic Egypt, a relationship which has no parallel in the ancient world.

The activity of Timosthenes¹ as an admiral of Ptolemy II precedes the appointment of Eratosthenes (c. 245 BC) as the head of the Library in Alexandria. We have no information about the career of Timosthenes before he was appointed admiral. His city of origin, Rhodes, offered the environment most suited to naval activities in the ancient Mediterranean. His experiences – among which some diplomatic missions for the

¹ Still fundamental is Gisinger 1937; see further Fraser 1972: I, chap. 10; II, 521–2, esp. 751, n. 13; Prontera 1992; Hauben 1996; Meyer 1998.