

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, marched, 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 stems, 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 starters, the *Kυζικηνολ*, 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 *Δακενκοί* 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).

Lucullus. The citizens themselves, however, were convinced that their main goddess, Kore (or Persephone), the daughter of Demeter, had in person come to their rescue.⁴ Somewhat earlier, they followed a model set in 241 by the citizens of Cos for their festival in honour of Asclepius, the *Asclepieia*, and then repeated by other cities such as Magnesia on the Maeander and Teos. They transformed Kore's festival in the early second century from an annual local event into a much more splendid quadrennial festival, the *Koreia*. The entire Greek world was invited to participate.⁵ As had happened in these earlier cases, the change was approved and sanctioned by an oracle of Apollo. It was this festival that set Eudoxus on his path to become the discoverer of the sea route to India and the one and only precursor of Vasco da Gama' (Thiel 1966: 10). The events were recorded by his slightly younger contemporary Posidonius of Apamea, the eminent philosopher, historian and universal scholar. He heard in Gades in Spain about Eudoxus and his adventures. His report, from his work *On the Ocean*, is preserved for us by Strabo in the second book of his *Geography*.⁶ Strabo faithfully copied Posidonius' account and then severely criticised it as a web of lies and fantasies. Modern scholars, however, agree that what Posidonius narrates is basically true, and that Strabo's polemics are mean and of little value.⁷ The story, in Ian Kidd's translation, reads as follows:

In the reign of Ptolemy Euergetes II, Eudoxus came to Egypt as ambassador and herald for the games at the festival of Kore. He joined up with the king and his court, most particularly in his voyages up the Nile, for he was a man most naturally curious of strange places, and not untutored in them. It so happened that an Indian was brought to the king by the garrison of the Red Sea, who reported that they had found him half-dead, shipwrecked and alone; but who he was or where he had come from they had no idea, as they couldn't understand his language. He was handed over to people to teach him Greek. Once he had learned it, his story was that he was sailing from India when he happened to lose his way and ended up safely here after his fellow sailors had died of starvation. He was taken at his word and promised to act as guide for the route to India to a crew selected by the king. Eudoxus was one of them. So he sailed off with presents and returned with a cargo of perfumes and precious stones. . . . But Eudoxus was deceived in his hopes; King Euergetes appropriated the whole cargo.

⁴ Plut. *Luc.* 10.1; App. *Mith.* 75.323–5. ⁵ More in my paper, Habicht 2010: 311–22.

⁶ Posidonius, *FGH* 87 F28.4–5 (F49C Edelstein-Kidd), Strabo 2.3.4–5 (C 98–102). Recent studies: Otto and Bengtson 1938: 194–218, 'Die Aufnahme des direkten Seeverkehrs mit Indien seit der Zeit des 2. Euergetes'; Delbrueck 1935–6: esp. 44–7; Laffranque 1963; Thiel 1966; Fraser 1972: 1, 181–4; 11, 314–17; Dhlle 1974; Desanges 1978: 151–73; 'Les navigations d'Eudoxe de Cyzique'; Dhlle 1978: esp. 346–50; Raschke 1978: esp. 639–61; Casson 1984: 473–9; R. Gray 2002; Tomber 2008.

⁷ F. Jacoby comments on *FGH* 87 F28, p. 176: 'besonders kleinlich und wertlos'; Laffranque 1963: 205–6; Desanges 1978: 151; 'particulièrement étroit'; Kidd 1988: 252–7.

And the account continues with a record of his further voyages.

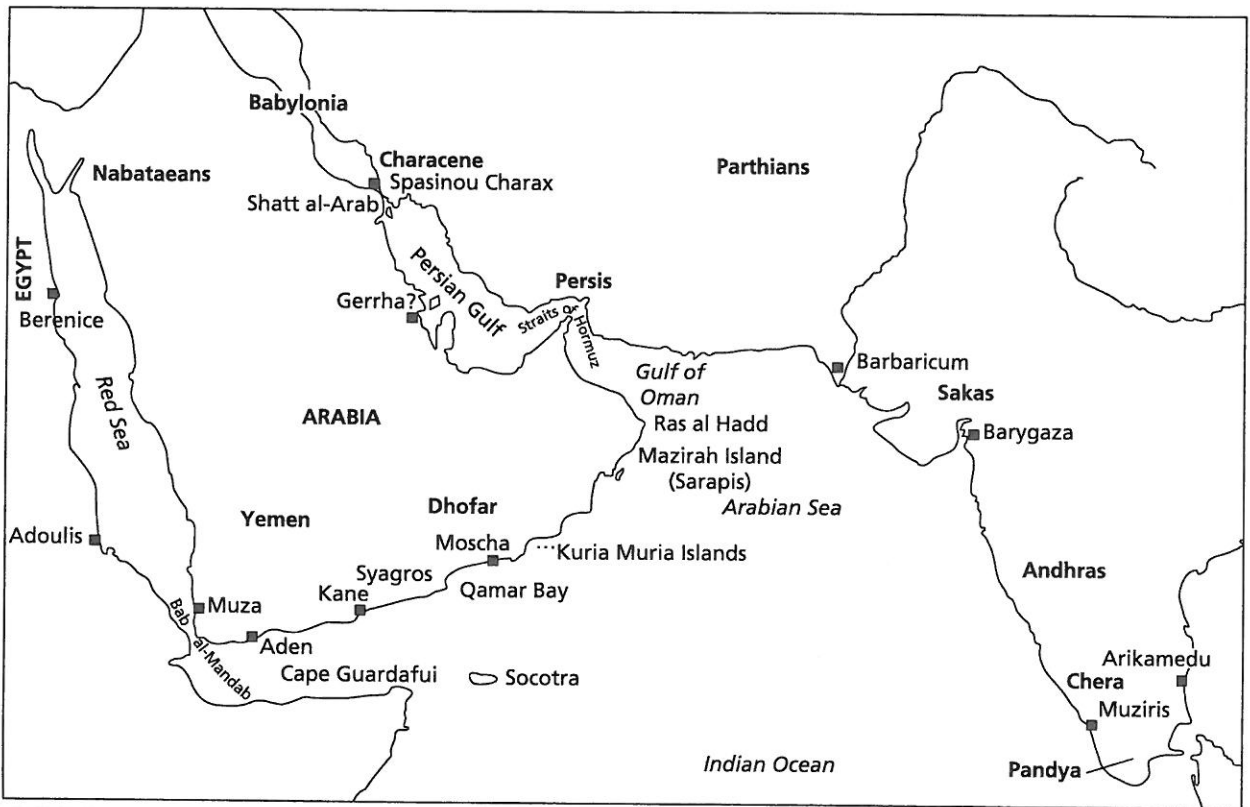
Eudoxus had come as ambassador and herald (θεσπὸς καὶ ὁτιοῦσ-οφόρος) to Alexandria, to announce the upcoming *Koreia* in his home town.⁸ For such an important mission people were elected by their fellow citizens, which means that Eudoxus must have been of mature age and a member of a highly respected and wealthy family of his town. He was, in the words of Richard Delbrueck, 'an independent gentleman, a man of the world, polyglot, with the audacity of a pirate and the knowledge of a highly educated man'.⁹ In his official capacity he was introduced at court, and this event changed not only the direction of his life but also the maritime policy of the Ptolemies, because it so happened that at this time the shipwrecked Indian captain had been found and the king had received intelligence that it might be possible to sail to India and back across the sea, thereby avoiding the usual route along the coast of Arabia, where vessels were plagued by people exacting tolls and by pirates (see Map 13.1). Furthermore, Egyptian merchants did not sail all the way to India, but were met somewhere along the coast by ships of their Indian partners and their cargo.

The circumstances that led to Eudoxus' first voyage to India certainly sound somewhat fanciful, but the main event, the direct crossing to India, is well attested. The king who had sent him on his way seized the luxury goods that he brought back; he may have exercised a right of monopoly. Furthermore, it had been a royal mission, not a private enterprise. That happened no later than 116, the year during which the king died. The king's widow, Cleopatra III, then prepared another expedition on a larger scale and sent Eudoxus out again. On the way back he was carried round Cape Guardafui (the northern tip of Somalia) and stranded on the coast, somewhere between the Cape and Zanzibar. When the ship got free, he made it back to Alexandria, where now Cleopatra's son was reigning, probably Ptolemy Soter II. If so, Eudoxus' return happened in 107 at the latest.¹⁰ Once again, the king, a different one this time, confiscated all the goods brought back from the expedition; Eudoxus may have violated the deal he had struck before leaving. During the following years he briefly returned to his native city and sold all his possessions before undertaking

⁸ Strabo 2.3.4 (C 98); the same designation again in 2.3.5 (C 101).

⁹ Delbrueck 1935–6: 46: 'ein unabhängiger Herr, welt- und sprachkundig, mit dem Wagemut eines Piraten und dem Wissen eines hochgebildeten Mannes'.

¹⁰ Eudoxus' return before 107 is favoured by Fraser 1972: 1, 183 and Desanges 1978: 152–3. For a later date, see Laffranque 1963: 207. It is difficult to see what led Dhlle to say that Eudoxus returned from his second voyage to India precisely in 102 (Dhlle 1965: 45).



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 Maurerania, 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.¹² 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.¹³ 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*,¹⁴ written in the middle of the first century AD, says in section 57 that the pilot (κυβερνήτης), Hippalus, guided by his knowledge of the *emporía* 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 πλεόλυτος ἔθηκε 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.¹⁵ He gives the itinerary for

¹² Tarn 1939: 323–4, reviewing Otto and Bengtson 1938. ¹³ Böker 1962: 403–11.

¹⁴ Casson 1989. A date of c. AD 45 is favoured by Groom 1995.

¹⁵ Plin. HN 6.101–6, speaking of sailing to India in the time after Alexander the Great: *postea ab Syagro Arabiae promunturio [Ras Farak] Patalen, funonia, quem hippalum [hippalum] ita 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 Okeles took fifty days. Okeles, known as the 'monsoon-harbour', is Bab el Mandeb, where the Red Sea opens into the Gulf of Arabia. He continues: from Okeles to Muziris in south-western India the ships sail *vento 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 B.C.¹⁶ The author of the *Periplus* adds that this route was used from that time on until now' (ἀπ' οὗ μέχρη 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 B.C. 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 B.C. contributed to this. Already in the time of Aelius Gallus, the Roman prefect of the country in 25 B.C., 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, ἱππὶ (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 *stratēgos*, and in charge of the [Red Sea and Indian] Ocean' (ὁ συγγενής καὶ στρατηγὸς καὶ ἱππὶ 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 Boker 1968: 2299, lines 22–40.

¹⁶ Delbrück 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: 50; Moortzen 1972: 132–3 (possibly?); Desanges 1978: 158–9; Huß 2001: 618. Against: Güngerich 1950: 29–30, n. 48; Fraser 1972: 1, 83; Raschke 1978: 661. Undecided: Dhile 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 B.C. at Tarragona, in 20 on Samos and another from King Ptolemaios 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 Sidebotham 1986: 20–4 for Roman imports from India and 24–32 for goods exported from Rome to India. See also Casson 1989: 39–43.

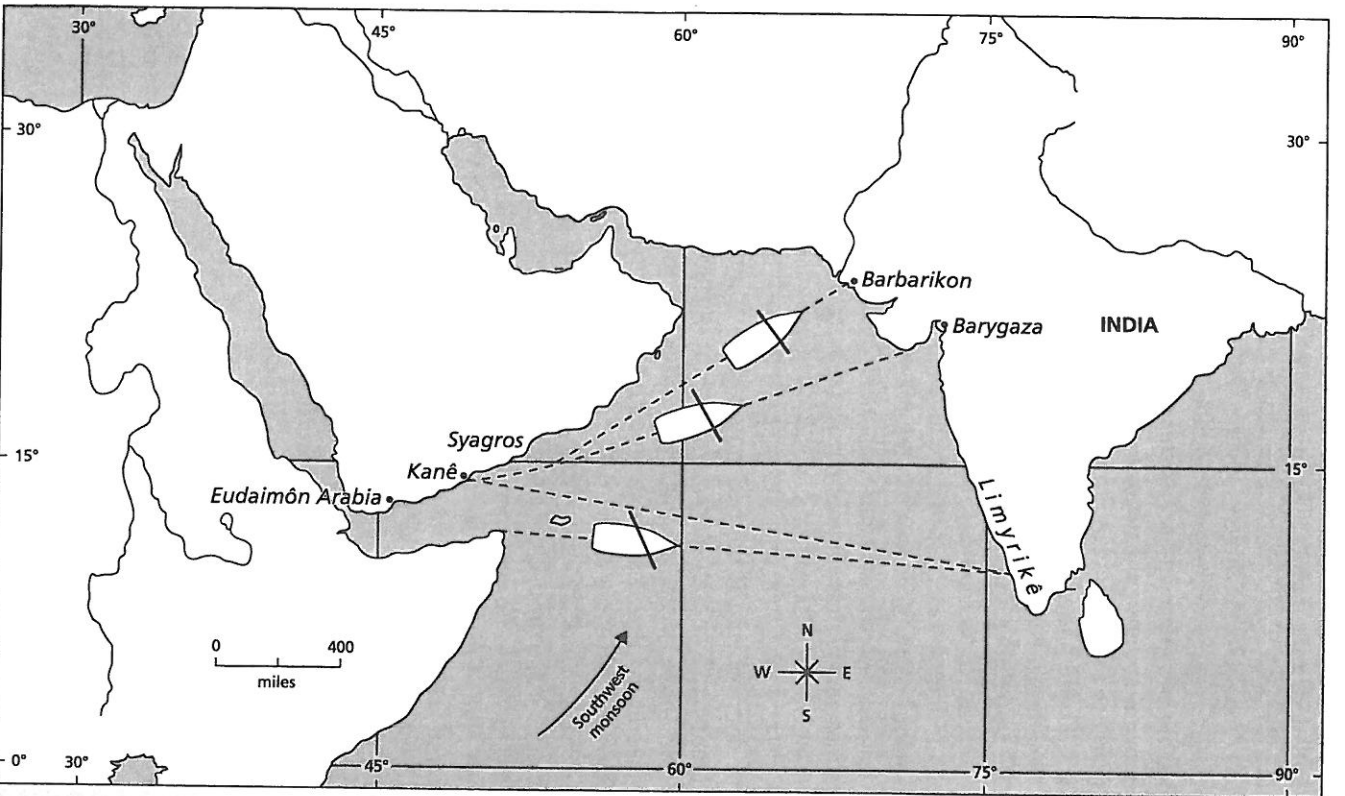
²³ Young 2001: 14–18.

²⁴ Otto and Bengtson 1938: 1–22 and 197, followed by Tarn 1939: 324; 'more probable'; Volkmann 1939: 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 Bernand, 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 *Ἰνδοῦ λαοδυντικοί καὶ Αἰθιοπτικοί*, 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 *Ἀρόμυρα*) 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), *ἀνέμος ὑπὸ θαλάσσης*. 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: 66f 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 ἱππάλου,³² in the area of the Somali coast, and Pliny a promontory *Hippalum* or *Hippalum*.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 *Plol. Geog.* 4.7.41: Τὸ δὲ δῆτ' ἀνατολῶν τῶν νῆσων τοῦτον πέλαιος ἱππάλου (ἱππάλος X) καλεῖται, ὃ οὐκ ἄντι δῆτ' ἀνατολῶν τὸ ἰδικὸν πέλαιος μέγας ἀνατολῶν.

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

³⁴ Schmitthenner 1979: 103 came very close to this conclusion when he called Hippalus, referring to *Tam* 191: 366, 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: 1, chap. 10; 11, 521–2, esp. 751, n. 13; Prontera 1992; Hauben 1996; Meyer 1998.