

Chapter Title: TRADE IN THE INDIAN OCEAN

Book Title: The Periplus Maris Erythraei

Book Subtitle: Text with Introduction, Translation, and Commentary

Published by: Princeton University Press

Stable URL: <http://www.jstor.com/stable/j.ctt7t6tp.8>

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



## II. TRADE IN THE INDIAN OCEAN

---

### THE SETTING

From at least the beginning of the second millennium B.C. traders were using the seaways of the Indian Ocean. Mesopotamian ships went from ports at the head of the Persian Gulf along the southern coast of what is today Iran and Pakistan to Indian ports at the mouth of the Indus; Indian ships did the journey in reverse.<sup>1</sup> Further west, the Old Kingdom pharaohs sent vessels to the Straits of Bab el Mandeb at the mouth of the Red Sea and possibly as far as Cape Guardafui.<sup>2</sup>

During the subsequent ages such voyaging was continued by Phoenician, Arab, Indian, and perhaps other seaman, continued by them for centuries before Greek vessels appeared in these waters.<sup>3</sup> In the course of these centuries the Arabs and Indians unquestionably learned to exploit the monsoons, those seasonal winds that, in the western Indian Ocean, Gulf of Aden, and Arabian Sea, blow from the southwest during the summer and from the northeast during the winter, thereby ensuring a favorable voyage both ways (App. 3). Somehow they were able to keep this knowledge from Greek seamen so that, when these do start taking part in the trade with Arabia and India, they sailed, as the *Periplus* specifically informs us (26:8.28–29), no further east than Eudaimôn Arabia, where Aden now stands, less than one hundred nautical miles from the mouth of the Red Sea. Here they unloaded whatever cargoes they were carrying and took on what Indian vessels had brought from their home ports (26:8.27–31); Eudaimôn Arabia was truly an entrepôt.

Then came the moment when Greek seamen no longer stopped short

<sup>1</sup> See S. Ratnagar, *Encounters: The Westerly Trade of the Harappa Civilization* (Delhi, 1981).

<sup>2</sup> As early as ca. 2400 B.C., Egypt dispatched expeditions to a land called Punt to bring back myrrh or frankincense (CAH i.2 183 [1971]). Punt is usually taken to be Somalia, although an argument has been offered that it was much nearer, the Ethiopian shore of the Red Sea (K. Kitchen, "Punt and How to Get There," *Orientalia* 40 [1971]: 184–207).

<sup>3</sup> Cf. Solomon's use of Phoenicians for trading down the Red Sea (CAH ii.2 594 [1975]).

at Eudaimôn Arabia but continued all the way to India, when, in other words, they had learned to exploit the monsoons. The *Periplus* attributes the discovery to a certain captain or pilot named Hippalos, without mentioning his date (57:19.2–7). Strabo, on the other hand, mentions a pioneering voyage made by Eudoxus of Cyzicus around 116 B.C. that almost certainly marked the Greeks' first use of the monsoons for getting to India and back. The resolution of the discrepancy is a minor point; what is significant is that, from then on, Greek ships sailed regularly to India (see under 57:19.5–7).

But they did so only in limited numbers, and this remained the case until Augustus made Egypt part of the Roman Empire. That ushered in a new era: from the Augustan Age on, the ships of Roman Egypt plied the route to Arabia and India in greatly increased numbers; we not only have Strabo's word for it<sup>4</sup> but the tangible evidence of quantities of Roman coins and Roman pottery found in India.<sup>5</sup> Within half a century trade in the Indian Ocean had grown so, that the author of the *Periplus* was moved to draw up a handbook for the use of merchants and skippers involved in it.

He begins his work with a short section—about a quarter of the whole; Arabia takes about another quarter and India half—on the African trade route. This too had long been known to other seamen before the Greeks took part in it. Indeed, according to Herodotus (4.42), around 600 B.C. a Phoenician expedition succeeded in circumnavigating the whole continent. At this time the pharaohs were still sending their ships down to the Straits of Bab el Mandeb or beyond.<sup>6</sup> By about 200 B.C. Greek merchants were on the scene, seeking to purchase myrrh in the ports on the southern shore of the Gulf of Aden.<sup>7</sup> They may even have reached Cape Guardafui; certainly by the end of the second century B.C., Greek geographers knew the coast of Africa that far.<sup>8</sup> It was inevitable that Greek seamen sooner or later would become aware that the same monsoons that took voyagers so conveniently to India and back would perform the identical service for them down the east coast of Africa and back. By the time the *Periplus* was written, they had extended their range of trade as far south as Rhapta, somewhere in the vicinity of Dar es Salaam (see under 16:6.4).

<sup>4</sup> He points out (2.118) that in his day 120 vessels sailed, presumably annually, to Arabia and India. Previously less than twenty had (17.798).

<sup>5</sup> Wheeler 137–39 and C. Rodewald, *Money in the Age of Tiberius* (Manchester, 1976), 48–51 (coins); V. Begley in *AJA* 87 (1983): 475 (Arretine were dating from the first quarter of the first century A.D. found at Arikamedu).

<sup>6</sup> Desanges 228–29.

<sup>7</sup> Desanges 299–301.

<sup>8</sup> Strabo 16.774, citing Artemidorus, who wrote ca. 100 B.C.

## BETWEEN ALEXANDRIA AND THE RED SEA

In the days of the *Periplus*, the ships plying the seaways from Egypt to Africa and India left from, and returned to, the ports of Myos Hormos and Berenicê on the Red Sea (see under 1:1.2-4)—but not their cargoes; these had an additional leg at the beginning and end. Some of what was exported in these vessels came from outside Egypt.<sup>9</sup> This merchandise arrived at Alexandria and from there went up the Nile in river craft which stopped at various ports en route to take on export items that Egypt itself produced. The final destination was Koptos, a port set at the point where a great eastward bend of the river brings it closest to the shore of the Red Sea.<sup>10</sup> From Koptos the goods went by camel over the desert to Myos Hormos or Berenicê. What was imported made the trip in reverse—by camel from Myos Hormos or Berenicê over the desert to Koptos and from there down the Nile to Alexandria. Myos Hormos had the advantage of offering a shorter desert crossing—six to seven days as against eleven to twelve from Berenicê. But Berenicê, in turn, had a signal advantage of its own to offer: it lay 230 nautical miles south of Myos Hormos, and this saved homebound vessels that much relief from beating against consistently foul winds. Until the time of the *Periplus*, both ports seem to have been used equally. The records of a transport company that hauled provisions for the use of the merchants and their agents residing at these ports, for example, show the deliveries going to both places, and, in addition, reveal that a few of the shipping companies maintained offices at both places.<sup>11</sup> Strabo's remarks seem to indicate that in his day

<sup>9</sup> E.g., Italian and Laodicean wine (6:2.32-33, 49.16.20-21), tin (7:3.18, 28:9.15, 49:16.21, 56:18.19), saffron (see under 24:8.3a), storax (see under 28:9.16a), coral (see under 28:9.16), orpiment (see under 56:18.21)

<sup>10</sup> Koptos was serving the Red Sea trade at least as early as ca. 2000 B.C. (CAH i.2 491 [1971]).

<sup>11</sup> For the roads from Koptos to Myos Hormos and Berenicê, see under 1:1.2-4. The transport company records, the so-called archive of Nicanor, consists of a group of almost ninety ostraca found at Koptos, dating from 18 B.C. to A.D. 69 (O. Tait 1 P220-304, in 1968-71; *Chronique d'Égypte* 31 [1956]: 356). In them various signatories at Myos Hormos and Berenicê acknowledge receipt, on behalf of themselves or their employers, of goods delivered to them from Koptos by a company belonging to a certain Nicanor and his family. For discussion of the archive, see M. Rostovtzeff in *Gnomon* (1931): 23-25, A. Fuks in *Journal of Juristic Papyrology* 5 (1951): 207-16, Sidebotham 83-92. For recipients with offices in both ports, see Fuks 211. The transport was done by camel (cf. P225 and Fuks 208; transport by camel is also attested in the Vienna papyrus mentioned below [Harrauer-Sijpesteijn 130, line 2]), but transport by donkey as well cannot be entirely ruled out; see R. Bagnall in *Bulletin of the American Society of Papyrologists* 22 (1985): 4.

What was delivered was primarily food and drink, in particular, wheat (38 instances) and wine (18 instances); barley also occurs (5 instances), as does bread (2 instances). The other



Myos Hormos was the more important, whereas statements in the *Periplus* point to the balance having tipped in favor of Berenicê. A third port, Leukos Limên, saw some use in the course of time but apparently never attained the status of the other two.<sup>12</sup>

Once a cargo from overseas was unloaded, there was transport and supervision to arrange and paperwork to go through. The goods were all costly and consequently had to be kept constantly under guard. They were subject to an import duty of twenty-five percent, and this involved much red tape, including delivery to government customs houses. A recently published papyrus from the Vienna collection,<sup>13</sup> dating to the mid-second century A.D., supplies illuminating detail. It contains the text of an agreement between two shippers, whereby one contracts to serve as agent for a cargo belonging to the other that, having originated in Muziris, had apparently just arrived in some Red Sea port. He promises the following:

I will give to your camel driver 170 talents, 50 drachmas, for use of the road to Koptos, and

I will convey [sc. your goods] inland through the desert under guard and under security to the public warehouses for receiving revenues at Koptos, and

I will place [them] under your ownership and seal, or of your representatives or of whoever of them is present, until loading aboard at the river, and

I will load [them] aboard at the required time on a seaworthy boat on the river, and

I will convey [them] downstream to the warehouse that receives the duty of one-fourth at Alexandria, and I will similarly place [them] under the ownership of you or your representatives.

items are a total miscellany: there are five instances of delivery of some drug (called simply *pharmakon*), four of rush mats, two of chaff, and one each of almost a dozen various things (e.g., hides, wallets, tow, rope, tin, clothing). The amounts of food and drink listed are modest. Those of wheat, for example, in 27 of the 38 instances are under 10 artabs, with over half being 4 or less, including one of a single artab; in 6 instances they are between 10 and 16 artabs; there was one delivery of 24 artabs, one or perhaps two of 36, one of 37, and a lone large delivery of 132. Some assume that the deliveries involve trade goods (Fuks 212–13, Sidebotham 86), but the scant quantities and the fact that arrival took place all year round (Fuks 213), not just before the time that ships usually departed, make it far more likely that they were for consumption or use by the local population (cf. Rostovtzeff 23–24; J. Schwartz in *Annales: économies, sociétés, civilisations* 15 [1960]: 29).

<sup>12</sup> For the literature on these ports, see under 1:1.2–4. Presumably they had extensive facilities for shipbuilding as well as ship maintenance and repair.

<sup>13</sup> First published in Harrauer-Sijpesteijn; reprinted with emendations and detailed commentary by G. Thür in *Tyche* 2 (1987): 229–45; partially reprinted with emendations and revised interpretation in Casson 1986a.

## THE LINES AND OBJECTS OF TRADE

The prime purpose of the *Periplus* is to describe two major lines of trade, both of which started from the Red Sea ports of Egypt. Upon leaving the Red Sea, the first followed the coast of Africa, while the second went eastward as far as India (App. 3). However, through remarks that the author drops here and there, we are able to discern certain other lines originating from different places and carried on by different casts of characters.

What chiefly interests the author, the *raison d'être* for his handbook, is the trade in luxury goods for the Mediterranean world that was carried on by the merchants of Roman Egypt. That these were, indeed, the merchants involved follows from the fact that the handbook was written in Greek. That they began from, and ended at, the Red Sea ports is made evident by a series of remarks that the author carefully inserts at appropriate points, advising the proper time to depart for the key destinations; these times make sense only if we assume he has a round trip in mind.

REFERENCE	DESTINATION	DEPARTURE TIME
6:3.6-7	Adulis	between January and September, September the best
14:5.7-8	"far-side" ports	around July
24:8.11-12	Muza	around September or even earlier
28:9.20-21	Kanê	a little earlier than for Muza
39:13.12-13	Barbarikon	around July
49:16.31-32	Barygaza	around July
56:18.28-29	Muziris/Nelkynda	around July

In most instances Egypt is specifically mentioned as the point of departure (6:3.5, 14:5.7, 49:16.31, 56:18.28-29), in the others clearly implied. The dates were based on the prevailing winds that vessels leaving from and returning to Egypt would encounter (App. 3). They reveal that some traders went the whole length of a route, all the way down the east coast of Africa to Rhapta or all the way across to India, but that some stopped short, at Adulis or Muza or Kanê (App. 3, note 15). Very likely those that went all the way included stops en route; vessels heading for India put in at Muza or Kanê or both before starting the long run over open water.<sup>14</sup> However, only a handful actually tramped and then only along the coast

<sup>14</sup> The Arabic wine delivered to Barygaza was very likely picked up at Muza and the incense delivered to Barbarikon at Kanê; see below. The author mentions (57:19.7) that Kanê was one of the departure points for the run to India.

of Somalia which lent itself to such trading (14:5.13–14). The rest went out to pick up cargoes for transport back to Egypt.

And they wasted no space in their holds on cheap mundane staples. The shippers for whom the author wrote were, first and foremost, dealers in luxuries. This is patently clear from the items he lists as being available to them in the various regions:

Ethiopian shore of the Red Sea (Ptolemais Thêrôn [3:1.15–16], Adulis [6:3.4]): ivory, tortoise shell, rhinoceros horn

Ethiopian shore of Bab el Mandeb (Avalitês [7:3.20]): a little ivory, tortoise shell, aromatics, a very little myrrh (cf. under 7:3.20)

northern Somalia (Malaô [8:3.30–32], Mundu [9:4.3–5], Mosyllon [10:4.10–12], Spice Port [12:4.27–28], Opônê [13:5.4–5]): myrrh (cf. under 10:4.13), frankincense (cf. under 8:3.30a), cassia, aromatics, drugs, slaves, ivory, tortoise shell

east coast of Africa (principally Rhapta [17:6.18–20]): ivory, tortoise shell, rhinoceros horn, nautilus shell

#### Arabia

Straits of Bab el Mandeb (Muza [24:8.9–10]): myrrh, white marble  
southern shore (Kanê [28:9.19]): aloe, frankincense (Kanê was by government policy [27:9.8–10] the sole port of export for frankincense; some was shipped out of Moscha Limên, but only in exceptional circumstances and by special dispensation of the royal agents [see under 32:11.1–3])

#### India

northwest (Barbarikon [39:13.10–12], Barygaza [48:16.14–19, 49:16.28–31]): costus, bdellium, *lykion*, nard, Indian myrrh (? see under B 49:16.29), indigo, turquoise, lapis lazuli, onyx, agate (? see under 48:16.15), ivory, cotton cloth, fine cotton garments, silk cloth and yarn, Chinese pelts, pepper

southwest and southern (Muziris/Nelkynda [56:18.22–28], Argaru [59:20.2–3]): nard, malabathron, pepper, pearls, ivory, tortoise shell, transparent gems (see under 56:18.26), diamonds, sapphires, silk cloth, fine cotton garments

northeast (Masalia [62:20.21–22], Dêsarênê [62:20.23–24], Gangês [63:21.4–6]): nard, malabathron, pearls, ivory, fine cotton garments (all or most of which was probably picked up by western merchants at Muziris/Nelkynda<sup>15</sup>)

<sup>15</sup> Although Greek vessels unquestionably sailed as far as the mouth of the Ganges (Strabo 15:686), the *Periplus* gives the impression that they did not regularly put in at the Bay of Bengal ports, preferring to pick up east coast products at Muziris/Nelkynda, which maintained constant trade relations with that area; see below under “The Trade with India.”



In sum the African trade route, from the Red Sea down to Rhapta, yielded basically ivory, tortoise shell, frankincense, myrrh, and various grades of cassia (this last was actually of Southeast Asian origin, but its sale to the merchants of Roman Egypt took place in certain of the “far-side” ports; see under 8:3.30–13:5.4). Arabia yielded basically frankincense, myrrh, and aloe. The widest spread of goods was furnished by India: native spices and drugs and aromatics (costus, bdellium, *lykion*, nard, malabathron, pepper), gems (turquoise, lapis lazuli, onyx, diamonds, sapphires, “transparent gems”), textiles (cotton cloth and garments as well as silk cloth and yarn from China), ivory, pearls, and tortoise shell. The last item was particularly sought after, for all the major ports traded in it (see under 3:1.15–16). The finest quality was brought to Muziris/Nelkynda all the way from Malay to be made available to Western merchants (56:18.26–28 and note ad loc.; 63:21.9–10).

These are the items a shipper from Roman Egypt concentrated on, these are what he loaded aboard to carry back to Myos Hormos and Berenice. None of them appears among the imports listed for any of the intermediate ports; clearly none were dropped off, all stayed aboard until the last stop to be put on the market there, some no doubt for consumption in Egypt itself but by far the greater part for distribution all around the Mediterranean. Unlike bulky commodities, such items took up scant space in the hold; thus ships used on the run, which were probably quite large (App. 3), could accommodate cargoes of enormous value,<sup>16</sup> thereby ensuring substantial profits at the end of a voyage—even after the Roman government creamed off its twenty-five percent import duty. One item, shipped out of Barygaza, the author calls “ordinary cotton cloth” (48:16.15–16, 51:17.13; cf. 49:16.29, where it is very likely included under “cotton cloth of all kinds”); it was “ordinary” only in a relative sense, in contrast to the finer textiles with which it is coupled.

The goods imported from southern India were so costly that they far outpriced what Western goods were sold there. The result was a steady flow of cash out of Rome into India; Tiberius grumbled (Tac., *Ann.* 3.53) that “the ladies and their baubles are transferring our money to foreigners,” and Pliny (6.101, 12.84) reviews the figures for the vast amount of coin that the East, but especially India, drained from Rome. As it happens, Rome was merely the first of a long line to fall into this imbalance.

<sup>16</sup> E.g., the Vienna papyrus described above records a shipment from Muziris in India that was probably worth no less than 131 talents and yet represented but a fraction of what the ship it traveled on could have carried; see below under “The Traders: Africa versus India.”

It was inherent in the nature of the products reciprocally offered, and the great trading states of later Europe were to suffer the same fate.<sup>17</sup>

Granted that the author's chief interest is in this line of trade in high-priced goods for the Western world, there is yet apparent in his account a second line that was in every respect the opposite: it was not in luxuries but in commodities, and the merchants of Roman Egypt had no part, or very little part, in it. We are aware of it only indirectly, through examination of the imports, and their sources, that he lists for the various ports. From this it emerges that India was a supplier of textiles, foods, and raw materials to the Persian coast, southern Arabia, and East Africa:

Persian coast (Apologos, Omana [36:12.6–7]): copper, wood (teak, sissoo, ebony)  
 Socotra (31:10.21–22): grain, rice, cotton cloth, female slaves  
 southern Arabia (Moscha Limên [32:11.3]): grain, sesame oil, cotton cloth  
 northern Somalia (“far-side” ports [14:5.10–13]): grain, rice, sesame oil, ghee, cane sugar, cotton cloth, girdles  
 Ethiopian coast (Adulis [6:3.1–3]): iron, steel, lac, cotton cloth, girdles, cloaks, fine cotton garments

Aside from the textiles, all the items above are conspicuously absent from the lists of exports that the author gives for the various Indian ports, lists that were intended for the use of merchants from Roman Egypt; the best explanation for their omission is that they were of no interest to these merchants and hence trading in them was handled by Arabs or Indians.<sup>18</sup> The author of the *Periplus* is witness at many points to the wide-ranging activities of the ships from these lands. He reports, for example, that Socotra's imports, a handful of staples, were brought by “shippers from Muza and also by those sailing out of Limyrikê and Barygaza who by chance put in” (31:10.21–22). He further reports that at the moment Socotra was “leased out”; it could well have been to Arab traders (see under 31:10.24–25). In describing Muza, he remarks on the throng of Arab shippers there and the trade they carried on with African ports and Ba-

<sup>17</sup> Cf. J. Needham, *Science and Civilisation in China* iv.3 (Cambridge, 1971), 518–19; F. Braudel, *Civilization and Capitalism, 15th–18th Century*. iii, *The Perspective of the World* (New York, 1984), 490.

<sup>18</sup> Warmington (257, 259) correctly inferred that iron, ghee, sugar, and certain other products were handled by merchants from India and Arabia but saw in this an attempt on their part to keep the handling a trade secret, to shut traders from Roman Egypt out. This was certainly true of costly items such as cassia (see under 8:3.30–13.5.4), but hardly of commodities. For merchants making the long voyage from Egypt, the profit was to be found in ivory, tortoise shell, spices, and the like, not iron or ghee.



rygaza (21:7.21–23). Muza was an entrepôt as well, offering for export what it had imported from Adulis (24:8.10–11). So too was Kanê, exchanging goods with the ports in Africa, Omana on the southern coast of Iran, and the northwestern ports of India (28:9.10–12).

The cotton cloth exported to Adulis and northern Somalia were cheap grades (see under B 14:5.11–12) and that exported to Socotra and southern Arabia, in view of the items it is coupled with, almost certainly so. Adulis also took in some finer cotton cloth and a small number of deluxe cotton garments (6:3.3); these could well have been for the foreign colony resident there (6:2.32).

Why does the author bother to include such information? For one, as we shall see in a moment, he aims at a certain comprehensiveness, at giving a total picture. But he may have another reason as well, namely the possible incidental interest of some of the items noted above to skippers from Roman Egypt. If one of these happened to leave India with space still left in his hold, presumably he could, if he chose, fill it with cargo of this cheaper nature to be dropped off en route home.

However, the author reports on certain lines of trade that could have been of no interest whatsoever to a merchant from Roman Egypt. They must have been included simply to round off his account, to present to the reader all forms of maritime traffic that went on in the area. The trade of the Persian Gulf is a case in point. The merchants of Roman Egypt must have been indifferent to it, for the author carries his readers right past the mouth of the gulf: he merely notes the landmarks around the entrance and its width (35:11.27–30), names a port at the head of the gulf (35:11.32–12.1), and then, with the words “after sailing by the mouth of the gulf” (36:12.3), moves on to the coast beyond, where he names another port. Yet he lists the exports of the two ports—low-quality pearls, purple and local garments, wine, dates, gold, slaves—and informs us that these go to Arabia and Barygaza (36:12.9–12). He notes Arabia’s trade with African ports (Malaô [8:3.31–32], the “far-side” ports [21:7.23, 27:9.10–12], Rhapta [16:6.10–11]), and the Nabataean port of Leukê Kômê (19:6.30–31). He has a few words on India’s trade with the Malay Peninsula (60:20.9–10, 63:21.8–10), an area outside the sphere of interest of the traders from Roman Egypt, and he lists Ceylon’s products, although Ceylon was equally outside it (see under 61:20.15–19). He even makes mention of small-scale local trade: between Avalitês and the ports across the Straits of Bab el Mandeb (7:3.18–20), carried on by Barbaroi using rafts and small craft (7:3.15); local deliveries to Kanê by means of buoyed rafts as well as ships (27:9.9–10); trade between the Isle of Sarapis and Kanê in small craft (33:11.18–19); between India’s east and west coast (60:20.6–8), some of which went in large canoes.

Did foreign vessels come to the ports of Roman Egypt? In earlier days they did not, to judge from the author's remark, discussed above, that Indian ships used to stop short of the mouth of the Red Sea, putting in at Eudaimôn Arabia, where they exchanged cargoes with ships from Egypt that had ventured to this point. But by the time he was writing, Western vessels were voyaging as far as India, eliminating that exchange and causing the decline of Eudaimôn Arabia to a mere harbor of refuge and watering station (26:8.23–31). Very likely the reverse was also true, that Indian vessels voyaged as far as Roman Egypt; the author does not mention this but he had no need to since it was something his readers could see for themselves. From at least the early second century A.D. on, there was at Koptos an association of "Palmyrene Red Sea Shipowners" (see below under "The Traders"). Their vessels certainly must have docked at Berenicê or Myos Hormos or other Red Sea ports that Koptos was linked with, and presumably other foreign bottoms did too.

Let us return to the prime line of trade, that carried on by the merchants of Roman Egypt, and review its other side, not the items they came back with but those they took from Egypt to sell abroad. These were a mix of staples and luxuries, the nature of the mix varying according to the region it was intended for.

On the African route the first major stop was Adulis (6:2.23–3.3), which imported not only to satisfy its own needs—these could not have been great, since it was but a modest village (4:2.6)—but also those of the court. Thus it took in some staples, such as tools (axes, adzes, knives), iron, cheap clothing, but in addition a good many items of greater worth: brass for making into personal adornments, bronze vessels both for use and for cutting up into personal adornments, ornamental glass. The only foodstuffs imported were olive oil and Italian and Laodicean wine, probably for the resident foreign colony (6:2.32). The court must have been relatively humble (cf. under 6:2.33–35) for its needs were few and simple: silverware and goldware fashioned in the local manner and inexpensive cloaks. After Adulis came Avalitês and the "far-side" ports, a homogeneous region to judge from the way the author treats it as a whole, listing most of the imports for the first port and referring to that list when he comes to the others (7:3.16–18, 8:3.26–28, 9:4.3, 10:4.8–9, 12:4.26–27, 13:5.3). Here staples were predominant (cheap clothing including some secondhand, grain, wine, iron, ironware, tin), but there were some imports that were more costly (silverware, glassware, drinking vessels). There was no overall monarch in these regions, each port being under a local chief (14:5.14–16), and these chiefs, it would appear, could not afford many expensive purchases.

Arabia too took in staples: clothing, textiles, grain, oil, wine, copper,

tin (24:8.2–6, 28:9.13–15). But it was also a market for a wide selection of drugs or cosmetics: saffron, *cyperus*, fragrant ointments, storax (24:8.3–5, 28:9.16). And in Arabia there were not only royal courts to supply but the courts of the local governors; together they took in a whole range of high-priced items: horses, pack mules, silverware, goldware, bronze-ware, deluxe clothing, statuary (24:8.7–9, 28:9.16–18).

For India the mix tilted decidedly toward the expensive side. Shippers bound there from Egypt loaded only a few staples, such as metals (lead, tin, copper [49:16.21, 56:18.19, 60:20.10–11]), but a whole range of expensive items: drugs and cosmetics (antimony, realgar, orpiment, storax [39:13.8, 49:16.23, 56:18.19–21, 60:20.10–11]), silverware, glassware, coral, multicolored textiles (39:13.8–9, 49:16.21–23, 56:18.19). And the courts of the rulers required fine ointments, vintage wine, deluxe clothing, handsome slave girls for the harem and slave boys trained in music (49:16.25–28). All the exports to India were loaded aboard at Egypt with two exceptions: the incense imported by Barbarikon (39:13.8) and the Arabian wine by Barygaza (49:16.20–21). The wine could have been picked up at Muza, an area that produced a good deal of it (24:8.6), and the incense at Kanê (see under 27:9.8–9).

To sum up. The *Periplus*, on careful analysis, reveals several lines of trade over and above the well-known movement of Eastern luxuries to the ports of Egypt. That was, to be sure, the most important and received the most attention. But alongside it we can clearly distinguish a trade in commodities from India to the coasts of Persia, Arabia, and Africa that had nothing to do with the West; some of it may on occasion have traveled in ships from Roman Egypt but the bulk was handled by Arabs and Indians.<sup>19</sup> We can even distinguish certain local forms of trade, so local that the means of transport was small craft and rafts. From its end, Egypt sent out to Africa, Arabia, and India a mix that ranged from everyday tools and cheap clothing to the costliest of luxuries for the courts of regional rulers.

#### THE TRADE WITH INDIA

Roman Egypt's trade with India was so much more important than that with Africa or Arabia that the author devoted almost half his book to it.

<sup>19</sup> Inscriptions reveal a line of trade that ran from the head of the Persian Gulf to the mouth of the Indus and back carried on by merchants and shippers of Charax Spasinu and other cities in the area; cf. J. Matthews in *Journal of Roman Studies* 74 (1984): 166. The author of the *Periplus* fails to mention it, although he does mention the line to Barygaza (36:12.9–10).



The picture he presents is consequently more detailed, enough so to enable us to identify various sides of India's trade and to discern differences in nature and function of the major ports.

To begin with, he makes abundantly clear that, for the merchants of Roman Egypt, India's west coast was the prime trading area, and the east coast played a distinctly secondary role. And his account reveals that the west coast fell into two spheres, in each of which were two major ports: the northwest with the ports of Barbarikon and Barygaza, the southwest with Muziris and Nelkynda.

Turning first to the northwest coast, we find that its two ports, though they handled a number of the same objects of trade (coral, peridots, storax, and multicolored textiles as imports; costus, bdellium, *lykion*, and silk cloth as exports), were basically dissimilar. Barbarikon was merely a port: all the merchandise that arrived there was forwarded to the royal capital at Minnagar upriver (39:13.5–6). Barygaza, on the other hand, was not only a port but an industrial center as well. This emerges from a comparison of certain of the imports and exports handled by the two places, particularly glass, an item imported at all four of the west coast ports (see under 48:16.15): Barbarikon imported only glassware (39:13.9), Barygaza only raw glass (49:16.23). Barygaza imported such raw materials as copper, tin, and lead (49:16.21); none of these or any other basic raw materials were imported by Barbarikon. In textiles, Barbarikon exported only silk cloth, which had come there from China (see under B 39:13.11), whereas Barygaza exported cotton cloth of all kinds in addition to silk (49:16.29–30); some kinds were supplied by Ozênê (Ujjain) inland (48:16.14–16) but some surely must have been manufactured right in town.<sup>20</sup>

Barygaza seems to have been a somewhat more sophisticated place, to judge from the greater number of luxuries it required. Both it and Barbarikon/Minnagar imported clothing, but the latter was content with merely an adequate number of undecorated garments and a limited number of prints (39:13.7–8), whereas Barygaza received “all kinds of clothing with no adornment or of printed fabric” as well as specially wide girdles (49:16.22–23). Barygaza, but not Barbarikon, imported eye shadow and perfume (49:16.23, 25). And the court at Minnagara, where Barygaza's overlord resided, must have been vastly more luxurious than that at Minnagar, the seat of Barbarikon's. The latter was the recipient of

<sup>20</sup> In later centuries Gujarat was famed for its textiles (M. Pearson, *Merchants and Rulers in Gujarat* [Berkeley, 1976], 11–12; I. Watson in *Indian Economic and Social History Review* 13 [1976]:377), enough of which were manufactured at Broach (Barygaza) to induce the British to set up a “factory” or trading post there (Watson 386). Braudel (op. cit. n. 17 above, 511), in his treatment of India in the fifteenth to eighteenth centuries, talks of “the ‘industrial bloc’ of Gujarat, the most impressive in the Far East.”

all the items unloaded on Barbarikon's docks, but these included nothing to match what used to go to Barygaza's ruler—precious silverware, slave musicians, beautiful slave girls for the harem, fine wine, expensive clothing, choice perfume (49:16.25–28 and see under 49:16.25a).

Turning now to the southwest coast, we find that, unlike the northwest, its two major ports were so similar that the author lumps them together and treats them as one (56:18.16–29). What these exported was almost totally different from the exports of the northwest—as one would expect, since the regions involved were dissimilar. There are only two items that appear among the exports of both Muziris/Nelkynda and Barygaza, ivory (49:16.29, 56:18.24) and silk cloth (49:16.29–30, 56:18.24). Nard appears in both, but the nard shipped out of Barygaza was the variety that came from Kashmir and its neighboring regions (see under 48:16.16–18), while at Muziris/Nelkynda it was the Gangetic (56:18.25). Both shipped out pepper, but at Barygaza it was long pepper (49:16.30), while at Muziris/Nelkynda it was black pepper (56:18.22) and the quantities were far greater, for pepper was the export par excellence of the Malabar coast (cf. 56:18.16–17). All their other exports were totally different.

The imports reveal that, like Barygaza, Muziris/Nelkynda were industrial centers as well as commercial: they too were importers of such raw materials as copper, tin, lead, and raw glass (56:18.19). They were less sophisticated places than Barygaza, or at least did not live in so high a style,<sup>21</sup> to judge from the reduced emphasis they gave to luxuries. Wine, including varieties from three different areas, stands at the head of the list of Barygaza's imports (49:16.20–21), but is low on the list at Muziris/Nelkynda; there is no indication of the import of different varieties (56:18.20). Barygaza took in all sorts of clothing, Muziris/Nelkynda only undecorated and not much of that (56:18.18–19). Barygaza took in at least some perfume (49:16.25), Muziris/Nelkynda none at all. At Barygaza, as noted above, the author lists a number of highly expensive items “for the king.” Muziris and Nelkynda were ruled by kings too, each by a different one as the author is careful to point out, citing what he takes to be their names (54:17.29 and note ad loc., 54:18.5–6 and note ad loc.). But he does not supply a list of special items for them, nor in his general list of imports are there any that seem intended for a court; even silverware, a standard court item elsewhere (see under 39:13.7–9), is lacking. The rulers, it would seem, lived as simply as their subjects.

<sup>21</sup> But nothing like the exaggerated difference that Raschke thinks he perceives, a difference between a “poorer, less socially and economically developed South” (671) and a North whose areas “with their wealth and high level of culture provided excellent markets for imported Roman manufactured items, particularly luxury goods” (632).



A key difference between the two areas lies in the nature of their commercial communities. At Barygaza it appears that import-export was handled by local merchants; at least there are no indications otherwise. At Muziris/Nelkynda there are unmistakable indications of a foreign colony.

The clearest evidence comes from the *Tabula Peutingeriana* (see under 51:17.15). Next to Muziris this map shows (section 5 of segment xi) a building identified as *Templ(um) Augusti*, “temple to Augustus”; such a building could only have been put up by Roman subjects living there.<sup>22</sup> Almost as clear evidence is provided by the papyrus from the Vienna collection (see above, “Between Alexandria and the Red Sea”). It contains a reference<sup>23</sup> to “loan agreements at Muziris,” agreements between two merchants, one of whom very probably was resident at Muziris. And there is an indication in the *Periplus* itself that points in the same direction. The author states (56:18.21–22) that Muziris/Nelkynda imported grain “in sufficient amount for those involved with shipping, because the merchants do not use it.” The explanation can only be that the merchants “do not use it” because they are natives of the area and hence eat the local rice,<sup>24</sup> whereas “those involved with shipping” are Westerners who prefer to eat what they have been accustomed to even though it means importing it from thousands of miles away.<sup>25</sup> These Westerners, permanently established, served as middlemen between their countrymen who arrived with the cargoes and the local merchants.

To the east coast the author gives short shrift. Indeed, at one point he clearly implies that Western ships went no further than the waters between India and Ceylon (see under 51:17.16). There was good reason for this. The ships that plied between Roman Egypt and Limyrikê (the Malabar coast) were of large size, big enough to brave the waters of the Arabian Sea when the southwest monsoon was blowing its hardest (cf. App. 3). They could not have negotiated the shallow channels between the southern tip of India and the northern tip of Ceylon; they would have had to make the time-consuming voyage all around the island (cf. under 60:20.7–8). Thus it was to the advantage of Western shippers to leave to local craft the forwarding of merchandise from the west coast of India to

<sup>22</sup> Cf. Smith 462; Warmington 18; M. Charlesworth in P. Coleman-Norton, ed., *Studies in Roman Economic and Social History in Honor of Allen Chester Johnson* (Princeton, 1951), 142.

<sup>23</sup> Harrauer-Sijpesteijn 130 (rect, col. ii.12–13) and cf. Casson 1986a.

<sup>24</sup> Cf. Marco Polo 3.17: “No wheat grows in this province, but rice only.”

<sup>25</sup> Grain, to be sure, was available in northern India. The province of Ariakê, for example, produced it (41:14.5) and shipped it overseas (14:5.9–10). However, it obviously did not ship to southern India, where the rice eaters would have no use for it. Westerners resident there must have found it easier to draw from home the small quantities they needed rather than attempt to redirect the normal flow of Indian commerce in grain.

the east coast. As for the goods the east coast had to offer, these regularly went by local craft to Limyrikê (60:20.6–7) and were available for purchase there. Gangetic nard is a good case in point: collected at and shipped out from a port at the mouth of the Ganges (63:21.3–5), it was picked up by the merchants of Roman Egypt at Muziris or Nelkynda (56:18.25). Malabathron followed the same route (63:21.3–5, 56:18.25), and it was a major item in the trade of Muziris and Nelkynda (56:18.17).

There was also some transport between the two coasts by land. Some goods, for example, went from the east coast to Tagara and from there to Barygaza (51:17.11–14 and cf. under 51:17.14).

In the light of the author's manifest secondary interest in the east coast, it is curious that, at Arikamedu some two miles south of Pondicherry, archaeology has brought to light convincing signs of a colony of Westerners, an abundance of Roman pottery, especially Arretine ware, which reveals that its members were active from the early years of the first century A.D. on (see under 60:20.6a). In addition, a passage in a Tamil poem attests to the presence of a colony of Westerners at a port on the mouth of the Kāveri River to the south of Arikamedu (see under 60:20.6).<sup>26</sup> It could well be that the Westerners resident in these places were chiefly engaged in forwarding goods not all the way to Egypt but only to associates stationed in Muziris/Nelkynda, who then sold them to the merchants from Roman Egypt.

Goods went from India's west coast to the east coast as well as in the other direction: the east coast craft that came to Limyrikê were sent back loaded down not only with products that had originated in Limyrikê but also with some that had come to it from overseas (60:20.10–11); thus cash the merchants of Roman Egypt had brought with them found its way to the east coast (60:20.11–12) as payment for east coast goods purchased in Limyrikê. The author mentions only here and there (59:20.2–3, 61:20.19–20) what these products are until he comes to the port of Gangês in the Ganges Delta, where he provides detail. Gangês was an entrepôt: it received goods from inland areas near and far (63:21.5–6: nard and mala-

<sup>26</sup> Contact with resident Westerners may well be responsible for the representations of armchairs in Buddhist reliefs of the second century A.D. found in Andhradesha, the coastal area from the Kistna River north to the Godavari; see *La vie publique et privée dans l'Inde ancienne*, fasc. ii, *Le mobilier (ii<sup>e</sup> siècle av. J.-C.—viii<sup>e</sup> siècle environ)*, by I. Gobert, Publications du Musée Guimet, Recherches et documents d'art et d'archéologie, 6 (Paris, 1976), 126 and cf. pl. 29. There is evidence for the presence in eastern India not only of Western merchants but of their wives as well. A statue found at Dīdārganj (25°59'N, 82°46'E, i.e., a little north-east of Benares) portrays a young girl whose hairdo is strikingly similar to that on busts of Roman women of the Augustan period; see D. Schlumberger, "Coiffures féminines similaires à Rome et dans l'Inde," in R. Chevallier, ed., *Mélanges d'archéologie et d'histoire offerts à André Piganiol* 1 (Paris, 1966), 587–95.

bathron from far away, pearls and deluxe garments from nearby) as well as some by sea from areas further east (63:21.10: tortoise shell, almost certainly shipped to Gangēs, although this is not stated in so many words) and forwarded these to the west coast.

Gangēs also—again, this is not stated in so many words but is practically certain—handled silk, thereby making this one of the very few products<sup>27</sup> that could be acquired in all of the four major exporting regions of India. At Barbarikon in the Indus Delta, silk cloth and yarn were available (39:13.11 and see under B 39:13.11); at Barygaza on the north-west coast, silk cloth and yarn (49:16.30 and under B 49:16.30); at Muziris/Nelkynda on the southwest coast, silk cloth (56:18.24); in the Ganges Delta, silk cloth and yarn and floss<sup>28</sup> (64:21.13–14). And yet in this trade India was solely an intermediary, for the products all came from China.<sup>29</sup>

They made their way to India by a route that went “by land via Bactria to Barygaza” as well as “via the Ganges River back to Limyrikê” (64:21.14–15). The first, the one that went “via Bactria,” was the famed Silk Route that ran from China clean across Asia; from it one or more branches turned off to go down to India. The route began at Loyang or Sian and traveled inside the Great Wall to An-hsi where, to bypass the grim Taklamakan Desert, it split into a northern and a southern loop. These came together at Kashgar, and from there the track snaked through the lofty Pamirs into Bactria. Shipments intended for the Mediterranean market continued westward, while those for the Indian followed a branch that took off perhaps near Balkh and headed southward. On reaching the upper Indus this route split: one branch followed the river down to Barbarikon, while another more to the east followed the well established road that passed through Sialkot and Mathura to Ujjain (cf. under 48:16.16–18) and from there to Barygaza (cf. under 48:16.12–13).<sup>30</sup> There was also a shorter but more difficult route that from Kashgar struck out southward through the Pamirs and, passing by Gilgit, ended in Kashmir.<sup>31</sup>

<sup>27</sup> There were but two, of which the other was nard; see 39:13.10 (Barbarikon), 49:16.28 (Barygaza), 56:18.25 (Muziris/Nelkynda), 63:21.5 (Gangēs).

<sup>28</sup> On this term, see under 64:21.13–14.

<sup>29</sup> Barbarikon received shipments of Chinese furs as well as of silk products (39:13.11). Although India had a silk industry of its own (see L. Gopal in *JESHO* 4 [1961]: 61–64), the *Periplus's* references are all to the Chinese import (cf. 64:21.13–15).

<sup>30</sup> For the Silk Route, see J. Thomson, *History of Ancient Geography* (Cambridge, 1948), 177–81, 306–12; W. Watson in *CHI* iii 544–45 (map), 547–48 (1983); Needham (op. cit. n. 17 above) i 181–82 (1954), iv.3 17–18 (details of the routes around the Taklamakan Desert); Wheeler 156 (branch to India).

<sup>31</sup> See Moti Chandra, *Trade and Trade Routes in Ancient India* (Delhi, 1977), 177; Wheeler 155, and, for a detailed review of the various routes from Kashgar through the Pamirs, Sir



The route that went "via the Ganges River" very likely is the same as that described by Ptolemy (1.17.4) as going "to India by way of Palimbothra [Pātaliputra]." It probably followed the line of travel just described as far as Mathura and, from there, the main road that led eastward via Pātaliputra (Patna) to Tāmralipti (Tamluk) in the Ganges Delta.<sup>32</sup> From the delta coastal craft carried the shipments "back to Limyrikê," i.e., westward again to the Malabar coast.

There is always the possibility that some silk may have come to the Ganges Delta by sea. Against it, however, is the fact that, although at the time of the *Periplus* there was regular traffic across the Bay of Bengal (see under 63:21.1), for the next leg from Indonesia to China, the first good evidence for seaborne trade dates as late as the fifth century A.D.<sup>33</sup>

We have some indications of what merchants gave to China in exchange for her silk products. A Chinese account mentions that in "the ninth year of the Yen-hsi period, during the emperor Huan-ti's reign . . . the king of Ta-ts'in, An-tun, sent an embassy which, from the frontier of Jih-nan [Annam], offered ivory, rhinoceros horns, and tortoise shell."<sup>34</sup> Ta-ts'in is the Chinese name for the Roman Empire, and An-tun is Antoninus, the family name of Marcus Aurelius, and the date works out to A.D. 166. The embassy most likely was not an official body but a group of Western merchants trying to buy silk directly from the Chinese instead of through Indian middlemen.<sup>35</sup> What they offered in exchange—ivory, rhinoceros horn, and tortoise shell—were all available in India.

#### THE TRADE IN METALS

The information provided by the *Periplus* on metals presents difficulties. It lists certain places as importers of one or more of the following: iron,

---

Aurel Stein, "On Ancient Tracks Past the Pamirs," *The Himalayan Journal* 4 (1932): 1–24. K. Gardiner in S. Mukherjee, *India: History and Thought, Essays in Honour of A. L. Basham* (Subarnarekha, 1982), 53–54, cites evidence from the Chinese sources.

<sup>32</sup> See Chandra (op. cit. n. 31 above) 5 (the Mathura-Tāmralipti road) and under 63:21.4 (possible identification of Tāmralipti with Gangês). Needham (op. cit. n. 17 above, i 182) prefers to take it as a route that went over some Himalayan pass more or less directly to Pātaliputra. There was yet another route, much less important, from Szechuan through Yunnan to Burma to Assam (Needham i 173–74).

<sup>33</sup> So O. Wolters, *Early Indonesian Commerce* (Ithaca, 1967), 35. According to Needham (op. cit. n. 17 above, i 179), Indonesian ships were sailing to China by the second century A.D. and, by the fourth century A.D., Chinese ships to Indonesia, although in no great numbers.

<sup>34</sup> F. Hirth, *China and the Roman Orient* (Shanghai, 1885), 42 (reprinted in Schoff 276)

<sup>35</sup> Cf. Hirth (op. cit. n. 34 above) 173–78.

lead, tin, and copper. Yet, for some of these places, the metals they are said to import were available from sources in the near or at least not too distant vicinity.

Iron offers no problems. The merchants of Roman Egypt shipped it to Adulis (6:2.29) as well as to Malaô and the other “far-side” ports (8:3.28, and presumably included under the term “the aforementioned” in 9:4.3, 10:4.8, 12:4.27, 13:5.3). Adulis used this iron for the manufacture of points for hunting and war spears (6:2.29–30) and, in addition, imported Indian iron and steel, no doubt for purposes requiring the finer grades that India could furnish (6:3.1 and see under 6:3.1a).

Lead offers what at first sight seems to be a problem. The *Periplus*’s lists of objects of trade reveal that the sole market for Western lead was India: shippers delivered it to Barygaza (49:16.21) on the northwest coast and to Muziris/Nelkynda on the southwest (56:18.19). Conformably, Pliny states categorically (34.163) that India has no lead. This is not so: she has ample deposits of it; as an authority cited by Watt (iv 602) puts it, “there is probably no metal of which the ores have been worked to so large an extent in ancient times, excepting those of iron.” But there is a plausible explanation why Pliny thought otherwise and why we find India importing lead: the commonest lead-bearing ore there is galena, and, as Watt suggests, it may well have been worked solely for the silver it contained.

Tin presents a somewhat similar problem, but in this case there is no ready explanation. Tin was a commodity much in demand in ancient times for, alloyed with copper, it forms bronze. Western tin found a market in Avalitês (7:3.18) and the “far-side” ports (presumably included under the term “the aforementioned” in 8:3.26–27 and the passages noted above), in Kanê (28:9.15), and in two places in India, Barygaza (49:16.21) and Muziris/Nelkynda (56:18.19). It so happens that just across the Bay of Bengal, there are rich deposits in Burma, Thailand, and Malay (Watt vi 4 57–60), some of which recent archaeological discoveries indicate were exploited in very early times.<sup>36</sup> The *Periplus* makes it clear that India had trade contacts with these places (see under 63:21.1), and perhaps she did fill part of her requirements from them; if so, one wonders why she did not fill all her needs from so convenient a source.

The greatest puzzle is presented by copper. Western copper was shipped to Kanê (28:9.15) and, like tin and lead, to Barygaza (49:16.21) and Muziris/Nelkynda (56:18.19). Again there is a statement from Pliny

<sup>36</sup> See R. Smith and W. Watson, eds., *Early South East Asia* (New York, 1979), 25, where D. Bayard affirms that current evidence supports a date prior to 2000 B.C. for the first appearance of bronze in mainland Southeast Asia, and 37–38, where I. Selimkhanov argues not only for the use of local tin but for its exportation to the Near East. On India’s scanty tin resources, cf. J. Muhly in *AJA* 89 (1985): 283.



(34.163) to support this: India lacked copper, he asserts, as well as lead. But India does have copper: there are deposits near Ajmer in Rajasthan that, if worked in ancient days, would have been convenient for transport to Barygaza, and deposits near Madras that would have been convenient for Muziris/Nelkynda (Watt ii 647).<sup>37</sup> What is more, there is clear evidence that either these or other deposits were worked: Strabo lists a series of objects that he characterizes as being made of "Indian copper."<sup>38</sup> Indeed, the *Periplus* itself reports that Barygaza—the very place that took in shipments of copper from the West—sent out shipments to Apologos at the head of the Persian Gulf and to Omana, a port passed en route there (36:12.6). Schoff asserts (151) that this was Western copper that was re-shipped; possibly, but there is absolutely no way to prove it or to explain why Barygaza resorted to imported copper for this trade rather than native copper. In a word, our information about Indian copper is contradictory, and attempts to resolve the problem are mere guesswork.

#### BARTER AND PURCHASE

In his lists of imports for the various ports of trade, the author every now and then includes money.

In three instances he specifies "Roman money" (*dénarion*). The first is in connection with Adulis (6:2.32). He recommends "a small quantity" and adds the reason for its inclusion: "for [sc. dealings with] the resident foreigners," presumably the Greco-Roman traders settled there. The second instance is in connection with Malaô (8:3.28–29) and, by implication in the words "the aforementioned" (see the passages cited above), with the other African ports around to Opônê; again only a small quantity is involved and, although he vouchsafes no further information, it no doubt was for the same purpose, for dealings with the local foreign colony. The third instance is Barygaza, and here too there is a particular reason: Ro-

<sup>37</sup> Further east there are copper deposits at Chota Nagpur, a district west of Calcutta, and these seem to have been worked well before the Christian Era; see F. Allchin in *JESHO* 5 (1962): 196. Ptolemy (7.2.20) reports the existence of copper mines in more distant India, beyond the Ganges.

<sup>38</sup> 15.718 (tables, thrones, drinking cups, and bath basins of "Indian copper"). On the other hand, there is archaeological evidence that India imported bronzeware of this sort: at Brahmapuri (17°33'N, 75°34'E), some one hundred miles northeast of Goa, a group of Roman bronze items was found that included a jug and basin as well as a statuette of Poseidon; see K. Khandalavala in *Lalit Kala* 7 (1960): 56–62 and cf. Wheeler 151. Most of them date from the first half of the first century A.D. and were probably manufactured in Campania (R. De Puma in *AJA* 91 [1987]: 292).

man money “commands an exchange at some profit against the local currency” (49:16.23–24 and note ad loc.).

In three other instances he states merely “money” (*chrêma*, *chrêmata*): Barbarikon (39:13.9); Muza (24:8.5), where he recommends “a considerable amount”; and Muziris/Nelkynda (56:18.18), where he heads the list of imports with the words “mainly a great amount of money.” Finally, for Kanê (28:9.17), money is included among the gifts to be given to the king of the land. In this passage, however, it may be the result of scribal error; see under B 28:9.17.

The inference to be drawn from all this is that the merchants whom the *Periplus* addresses must have bartered at times and at times purchased, depending upon the region.

In Africa they did some business with the resident foreign traders for which they had to have a small amount of Roman currency; perhaps the traders insisted on a certain number of sales in cash because they needed the money for buying in goods from the Arabian or Indian ships that called at their ports. Since these were the only sales in cash, it follows that all other trading was through barter, the merchants of Roman Egypt exchanging the tools, clothing, metals, etc., that they brought from home for the ivory, tortoise shell, aromatics, etc., that they took back. They dealt with the natives as well as resident foreign traders; indeed, in Azania they distributed gratis no small amount of wine and grain among them just to gain their favor (17:6.16–17).

In Arabia a certain amount of purchase was involved as well as barter. The author advises bringing “a considerable amount of money” to Muza; its chief product was myrrh and this, being expensive, must have required cash over and above the exchange of the clothing and textiles that were Muza’s chief imports (24:8.2–6). One would expect to find the same situation at Kanê, where the merchants of Roman Egypt traded for frankincense, but the author does not list money there as he does at Muza. The explanation may lie in the relative cheapness of frankincense. Its price was almost half that of myrrh (see under 7:3.20 and 27:9.8–9), so Western trade goods alone might have sufficed to meet its cost.

India’s exports, too, involved purchase as well as barter, particularly in the south. At Barbarikon the author recommends bringing money without stating any amount. In other words, some goods had to be paid for in cash, and these could well have been the Chinese furs and silks available there (39:13.11), items that surely cost a great deal. At Barygaza, however, he mentions money solely in connection with turning a profit on foreign exchange values, so the implication is that there barter was the order of the day. The one region where there was little bartering and much buying was the Malabar coast. The *Periplus* makes this absolutely

clear. As noted a moment ago, the author recommends bringing there "mainly a great amount of money," and this ties in with a statement of his that manifestly implies that vessels arrived at the Malabar coast with cargoes far lighter than those they took away (see under 55:18.9-10). Other sources confirm that there was little bartering and much buying. A Tamil poem describes Western merchants as "arriving with gold and departing with pepper" (App. 5), and over 6000 silver denarii and gold aurei, mostly in the form of coin hoards, have been found in southern India.<sup>39</sup> A celebrated passage in Pliny<sup>40</sup> laments the vast amount of cash that India drained from Rome; the hoards are ample witness to what he was talking about.

On the other hand, the north of India has yielded but a mere handful of Roman coins.<sup>41</sup> One explanation offered is that in the north Roman coins were melted down and remade into native currency whereas in the south they circulated.<sup>42</sup> Another is that the coins gravitated from north to south, particularly to the Coimbatore region (in which by far the largest number of hoards have been found), because that was where geographical features permitted transpeninsular traffic and where brigandage and other factors favored the planting of hoards.<sup>43</sup> But the *Periplus's* statements strongly suggest that few coins have been found in the north because few were spent there, that the merchants from Roman Egypt got their Indian products from Barygaza in exchange for the goods they brought, whereas at Muziris/Nelkynda they had to pay cash.<sup>44</sup>

### THE TRADERS

Who were the people involved in the trade that Roman Egypt carried on with Africa, Arabia, and India?

The most precise information we have dates from an earlier period, the first half of the second century B.C. A papyrus document drawn up probably at Alexandria contains the text of a loan agreement to finance a trading venture to the "spice-bearing land," most likely the coastal area of

<sup>39</sup> See Raschke 665; Rodewald (op. cit. n. 5 above) 48-51; the maps in Wheeler 138, 144.

<sup>40</sup> 6.101; cf. Warmington 274.

<sup>41</sup> See Raschke 665; Rodewald 48.

<sup>42</sup> Warmington 292.

<sup>43</sup> Wheeler 143-45.

<sup>44</sup> Cf. Raschke 671. The cash was reckoned by the value of its metal, not its face value. The locals treated it as bullion: a mass of coins of a given weight would be exchanged for a given amount of pepper or cotton or gems, etc.; see Wheeler 140-41 and, in greater detail, Wheeler in W. Grimes, ed., *Aspects of Archaeology in Britain and Beyond, Essays presented to O.G.S. Crawford* (London, 1951), 361-65.



Somalia where the *Periplus's* "far-side" ports lay (cf. under 7:3.10–11). A veritable international consortium was involved. The borrowers, five partners, all have Greek names; one came from Sparta, another from Massilia, ancient Marseilles. The lender's name is Greek. The banker who handled the funds was probably a Roman. Repayment was guaranteed by five sureties, of whom four were in the army and the fifth was a traveling merchant; the merchant was Carthaginian and, of the soldiers, one came from Massilia, another from Elia in southern Italy, a third from Thessalonica. As it happens, they were acting as private individuals; there is not the least hint of governmental connections.<sup>45</sup>

The Vienna papyrus mentioned above unfortunately provides no names, although it makes clear that the trading venture it deals with, a shipment of goods from Muziris to Alexandria, was a matter of private enterprise.<sup>46</sup> In a papyrus containing the poll-tax register of the town of Arsinoe for the year A.D. 72/73, one Arsinoite, a certain "Gaiôn, also called Diodôros," is reported as being away in India;<sup>47</sup> he could well have been resident there, as one of the parties in the Vienna papyrus probably was. The records mentioned above, of a transport company that hauled supplies from Koptos to Myos Hormos and Berenicê, reveal that wealthy families of various extractions resident in Egypt maintained agencies at these ports, almost certainly for handling the family interests in overseas trade. Thus a Gaius Norbanus, no doubt a member of the Norbani, a prominent Roman family with holdings in Egypt, had an agent at Myos Hormos, while Marcus Julius Alexander, very likely of the immensely rich Alexandria-based Jewish family to which the renowned Philo belonged (Marcus was probably his nephew and brother to the Tiberius Julius Alexander who became prefect of Egypt), had agents at both Myos Hormos and Berenicê.<sup>48</sup> And let us not forget the author of the *Periplus* himself; he was a Greek from Egypt who had personally made the voyage to the major ports of trade in Africa, Arabia, and India and must have been in the business of exporting to and importing from those places.<sup>49</sup> The funding for the merchants in this trade need not have been drawn

<sup>45</sup> U. Wilcken, "Punt-Fahrten in der Ptolemäerzeit," *Zeitschrift für ägyptische Sprache und Altertumskunde* 60 (1925): 86–102 at 90 (text = SB 7169), 91 (date), 92 (provenance), 92–93 and 96–98 (parties).

<sup>46</sup> Harrauer-Sijpesteijn and cf. Casson 1986a. There has been general agreement all along that Rome's trade with the East was a matter of private enterprise; cf. M. Rostovtzeff, *The Social and Economic History of the Roman Empire* (Oxford, 1957<sup>2</sup>), 576–77; Warmington 310–11.

<sup>47</sup> *P. Lond.* ii 260 = *Stud. Pal.* iv, pp. 72–79, p. 74, line 549.

<sup>48</sup> On Norbanus, see M. Rostovtzeff in *Gnomon* (1931): 24 and, on the Norbani, *op. cit.* (n. 46 above) 293; on Marcus Julius Alexander, see A. Fuks in *Journal of Juristic Papyrology* 5 (1951): 214–16.

<sup>49</sup> See above, Text and Author: The Author and His Work.

solely from investors living in Egypt; it could well have been supplemented by the local agents or representatives of wealthy individuals off in Rome or other great centers who were on the lookout for profitable ventures in which to place spare cash.<sup>50</sup>

Though these merchants were private individuals, in business for themselves or the investors behind them, the people they dealt with were very often government officials. The *Periplus* frequently lists goods recommended for sale to the local rulers (see under 24:8.7–9); such sales would have been negotiated with employees of the court. Adulis, the chief port on the African side of the Red Sea, was an *emporion nomimon*, i.e., a port where all commerce was handled through the government (App. 1). The same was true of Muza, the chief port on the Arabian side of the Red Sea and the sole place where Arabian myrrh could be purchased. Arabian frankincense was available only at Kanê and, being a monopoly of the temple and state, only through royal agents.<sup>51</sup> At Barbarikon in northwest India, all imports were forwarded upriver “to the king” (39:13.5–6); it follows that their sale would have been arranged with the king’s agents.

The situation finally changes at India’s west coast. At Barygaza, though there was a towing service furnished by the crown (44:15.4–7), trading, with the exception of course of the items destined for the court, seems to have been in private hands. This was almost certainly the case at Muziris/Nelkynda, where indeed there may well have been a resident colony of Westerners.<sup>52</sup>

<sup>50</sup> For investment in trade by high-level Romans through agents and representatives, see J. D’Arms, *Commerce and Social Standing in Ancient Rome* (Cambridge, Mass., 1981), 39–47 (late Republic), 152–53 and 158 (early Empire). For investment by wealthy members of the urban elite, see H. Pleket, “Urban elites and business in the Greek part of the Roman Empire,” in P. Garnsey, K. Hopkins, C. Whittaker, eds., *Trade in the Ancient Economy* (Berkeley, 1983), 130–44, esp. 137. M. Crawford, “Economia imperiale e commercio estero,” *Tecnologia economia e società nel mondo romano*, Atti del Convegno di Como 27/28/29 settembre 1979 (Como, 1980), 207–17 at 215–17, offers a provocative argument that some of the merchants who traded with southern India may have been financed by members of the imperial family. It has long been recognized (cf. Raschke 666) that the coin finds from southern India consist overwhelmingly of issues from Tiberius’s reign and the last years of Augustus’s, all in fine condition; the best explanation, argues Crawford, is that they came there through the mediation of people who had direct access to the mint at Rome, and that points to members of the imperial family.

<sup>51</sup> This is the natural inference from the author’s statement (29:9.28–29) that the labor was supplied by royal slaves and convicts and from the fact that at Moscha Limên sales were handled by royal agents and no loading aboard ship could take place without royal permission (32:11.2–6). Moscha Limên was a port of export only in exceptional cases; see under 32:11.1–3.

<sup>52</sup> The Vienna papyrus (Harrauer-Sijpesteijn) involves a loan agreement drawn up at Muziris for a shipment from there. For the foreign colony, see above, “The Trade with India.”



So much for the Roman subjects involved in the trade with Africa, Arabia, and India. What about foreigners? That they had a share is beyond question. At Koptos, the key port on the Nile for handling trade goods from the Red Sea, from at least the early second century A.D. on there was a foreign colony of Palmyrene businessmen—an association of Palmyrene merchants, an association of “Palmyrene Red Sea Shipowners” (i.e., who sailed the Red Sea, Gulf of Aden, and western Indian Ocean), and some Palmyrene organization that had its own clubhouse; one of the shipowners was sufficiently wealthy and sufficiently well disposed towards Koptos to pay for the erection of a number of public buildings. A merchant from Aden is attested at Koptos as well. Indians, some of whom were merchants, were to be seen at Alexandria.<sup>53</sup> These are but straws in the wind, yet enough to indicate that foreigners were by no means shut out of the trade.

#### THE TRADERS: AFRICA VERSUS INDIA

As noted at the outset, the *Periplus* treats two major trade routes, one that ran along the eastern coast of Africa and another that crossed the water to the western coast of India. These involved very different sailing conditions—and, as a consequence, very different kinds of traders.

Along the African route sailing conditions were excellent, the chances of meeting trials at sea minimal. Thus it could be traversed by small craft as well as big, even by craft indifferently maintained. This meant it was open to small-scale merchants, those whose funds extended only to buying in a very modest supply of trade goods and chartering space at bargain rates on some unprepossessing freighter. The route to India, on the other hand, was just the opposite: the outbound voyage took place when the southwest monsoon was blowing its hardest, always strong and fre-

<sup>53</sup> For the Palmyrenes, see Sidebotham 95 (clubhouse); *l'Année épigraphique* (1912) no. 171 = *ESAR* II no. 235, improved text by J. Bingen in *Chronique d'Égypte* 59 (1984): 356 (dedication by an association of Palmyrene merchants, chartered by Hadrian, in honor of a fellow countryman, a member of the “Palmyrene Shipowners of the Red Sea,” who had paid for a propylaeum and three stoas as well as other benefactions; there is no evidence for an organization of “Palmyrene shippers and merchants,” as is often asserted [cf. Sidebotham 95; Schwartz (op. cit. n. 11 above) 32; H. Ingholt in *Mélanges de l'Université Saint-Joseph* 45 (1970): 198–99]). For the merchant from Aden, see the inscription published by G. Wagner in *Bulletin de l'Institut français d'archéologie orientale* 76 (1976): 278. For Indians, see Dio Chrys. 32.40 (Indians among the spectators at games in Alexandria), Xenophon Ephes. 3.11.2 (an Indian rajah in Alexandria “for sightseeing in the city and for the business of trade”).

quently increasing to gale force. Skippers of later ages waited until it had lost its bite before venturing forth during its period, but not the Greeks or Romans, thanks to the nature of their ships. For these were built in the special fashion favored by ancient shipwrights, one that guaranteed a hull of massive strength, and they carried a rig that not only was conservative but allowed quick and efficient reefing.<sup>54</sup> No doubt the ships were big as well as safe.<sup>55</sup> To charter space on such vessels and fill it with the spices and other costly items that India exported called for amounts of capital that only large-scale merchants could come up with, men who, as suggested above, might have had the backing of wealthy Roman financiers, even of members of the royal family. The Vienna papyrus gives us an idea of the sums that were required. On the portion preserved (the document is incomplete) there is listed<sup>56</sup> a shipment that consisted of at least 700 to 1700 pounds of nard (see under 56:18.25), ca. 4700 pounds of ivory,<sup>57</sup> and ca. 790 of textiles,<sup>58</sup> in other words a total weight of at most 7190 pounds, little more than three and one-half tons. Yet the cost of this modest tonnage was just short of 131 talents.<sup>59</sup> If the ship it had been loaded on was, say, a 500-tonner—no very great size by Roman standards<sup>60</sup>—there could well have been over 150 times that amount aboard with an aggregate value of 20,000 talents, a great sum indeed.<sup>61</sup> Even though the cargo aboard any one vessel almost certainly consisted of dozens of consignments, each belonging to a different merchant, the funds each merchant had to command must have been considerable.

#### A ROMAN ECONOMIC POLICY?

We have reviewed the trade that the merchants of Roman Egypt carried on with Africa, Arabia, and India. Did the emperors take measures that affected it? In other words, was there an imperial economic policy?

<sup>54</sup> For details of the sailing conditions along the two routes, the ships used, and the construction and rig of Greco-Roman craft, see App. 3.

<sup>55</sup> Cf. App. 3, n. 22.

<sup>56</sup> Harrauer-Sijpesteijn 132, lines 1–21.

<sup>57</sup> Line 4: 78 tal., 54½ mnas.

<sup>58</sup> Line 16: 13 tal., 9¼ mnas.

<sup>59</sup> The nard was valued at 45 tal. (line 3), the ivory at 76 tal. 4500 dr. (line 10), the textiles at 8 tal. 4290 dr. (line 21). The total shipment had a value of over 1154 talents (lines 27–29)

<sup>60</sup> *SSAW* 172.

<sup>61</sup> It would be the equivalent of 30,000,000 denarii (20,000 talents = 120,000,000 drachmas, and the denarius was usually reckoned as the equivalent of a tetradrachm). This is, e.g., a third more than one of the distributions Augustus proudly proclaimed he gave to the populace of Rome (*Res Gestae* xv.iii.15–17: 60 denarii each to 320,000 people, a total of 19,200,000 denarii).

Under the Ptolemies it is clear that the government was very much concerned with what went on in the Red Sea and beyond and figured directly in its commerce. Ptolemy II and Ptolemy III founded the ports that lined the western shore of the Red Sea. Ptolemy VII organized and dispatched the pioneering voyage to India in which Eudoxus took part (Strabo 2.98; cf. under 57:19.5–7). And, though the trading itself was left in the hands of private individuals, the spices and aromatics they brought back became crown property, purchased at rates fixed by the government.<sup>62</sup>

When Egypt came under Roman rule, the number of ships that sailed from there to Arabia and India, as noted above, increased dramatically. They were still privately owned, carrying the goods of individual merchants (see above, “The Traders”). But, unlike Ptolemaic times, the government no longer exercised a direct control over these goods. As the Vienna papyrus cited earlier reveals, they remained in the names of their shippers even after entering the customs house at Alexandria. The government, however, was by no means left out in the cold: it took over, by way of customs duty, no less than a quarter of all that was brought in.

In the early part of this century there was a school of thought that attributed to the Roman emperors a much greater involvement in the trade of the Indian Ocean than the mere levying of a customs duty. It ascribed to them a far-reaching economic policy aimed at keeping such trade in Roman hands, even to the extent of securing control of key ports along the way.<sup>63</sup> This has since been shown to be little more than theorizing with nothing solid to support it;<sup>64</sup> indeed, it is doubtful if the emperors even conceived of their realm as an economic unit.<sup>65</sup> Yet there are some who still see the emperors’ hands at work in the area. They are impressed by the numerous embassies that the rulers of the trading nations of Arabia and India dispatched to Rome.<sup>66</sup> They feel that these were connected with imperial policy, with measures the emperors had in mind to abet or protect Rome’s trade.<sup>67</sup>

<sup>62</sup> M. Rostovtzeff, *The Social and Economic History of the Hellenistic World* (Oxford, 1941), 389; Desanges 300–301.

<sup>63</sup> Résumé by J. Anderson in *CAH* x 880–81 (1934).

<sup>64</sup> Cf. M. Charlesworth in *CQ* 22 (1928): 92; J. Anderson in *CAH* x 881–83; Desanges 321–23.

<sup>65</sup> Crawford (op. cit. n. 50 above) 208.

<sup>66</sup> Embassies from Arabia, see *Periplus* 23:7.29–30, Pliny 12.57. Embassies from India, see Raschke 1045, n. 1623; Charlesworth (op. cit. Text and Author, n. 16 above) 140, note 22; Sidebotham 129.

<sup>67</sup> Charlesworth (op. cit. n. 66 above, 141) confidently asserts that “they had the definite purpose of arranging for the protection and the safety of members of the nations involved,” and this view has been repeated by B. Mukherjee, *An Agrippan Source* (Calcutta, 1969), 9, n. 38. W. Schmitthenner, in *Journal of Roman Studies* 69 (1979): 104, sees them as diplomatic



It is worthwhile to examine the evidence for embassies in some detail. To begin with, those from Arabia. The *Periplus* reports (23:7.29–30) that Charibaël, ruler of the state that comprised the southwestern corner of the peninsula, sent them continuously in order to cement his friendship with the emperors. Pliny (12.57) mentions embassies that must have come from the kings of the neighboring state in the Hadramaut;<sup>68</sup> no doubt they had the same purpose. We must first bear in mind that the initiative came from Arabia, not Rome. Second, in 26 or 25 B.C.<sup>69</sup> Augustus had undertaken a full-scale invasion of Arabia that penetrated deeply before it was turned back<sup>70</sup> and either then or later an attack was mounted on the port of Eudaimôn Arabia that was successful, although its ultimate effects appear to have been of small consequence (see under 26:8.31–32). In the light of all this, there is manifest political motivation to explain Charibaël's efforts to be the Roman emperors' friend: it was a way of lessening the likelihood of their repeating Augustus's attempt. He no doubt had the very considerable commercial consequences well in mind, but these were totally dependent upon the political developments.<sup>71</sup>

moves whose aim was "to serve the re-establishment and protection of the maritime connections with India." Charlesworth's argument that Rome and India sought to effect the necessary protection by creating "treaty ports" is based on a misunderstanding of the *Periplus*'s terminology; see App. 1. Schmitthenner's views on Rome's military efforts to protect trade are pure speculation; cf. Rostovtzeff (op. cit. n. 46 above) 577, where he rightly points out that "after Augustus very little was done to protect it [sc. maritime trade with the East]. We see no serious attempts to occupy the Arabian coast or fight the growing kingdom of Axûm or even to maintain any military fleet in the Red Sea. The trade was carried on by the merchants at their own risk."

<sup>68</sup> See under 23:7.29–30. In a discussion of frankincense, Pliny refers to an embassy that had brought a gift of incense; it must have come from the "frankincense-bearing land," to use the *Periplus*'s terminology.

<sup>69</sup> The campaign is usually dated 25–24 B.C. (Desanges 308); S. Jameson in *Journal of Roman Studies* 58 (1968): 77 argues for 26–25.

<sup>70</sup> Strabo 16.780–82; thoughtful résumé in G. Bowersock, *Roman Arabia* (Cambridge, Mass., 1983), 46–49.

<sup>71</sup> The Arabian expedition seems to have been part of a widespread program of territorial aggrandizement that Augustus had set in motion; see Jameson (op. cit. n. 69 above) 82; Bowersock (op. cit. n. 70 above) 46. But Augustus was well aware of the commercial advantages: as Strabo reports (16.780), he had heard the rumors of Arabia's lucrative sales of aromatics and gems and he hoped to end up "either treating with wealthy friends or holding sway over wealthy enemies." Just as the conquest of Egypt had put in Rome's lap an annual tribute of thousands of tons of grain, so the conquest of Arabia would add an annual tribute of precious myrrh and frankincense. Charibaël, anxious to have his kingdom's yield of myrrh to sell rather than give up as tribute, had a good case to present. By maintaining friendship with him Rome received, at no expense whatsoever, one quarter, collected by way of customs duty, of all the myrrh and frankincense that crossed the frontiers of the empire, and the more the trade flourished, the greater would be Rome's take; tribute, to be

Next, the embassies from India. They are mentioned by Augustus in his own account of his reign (*Res Gestae* xxxi.v. 50–51), where he emphasizes their frequency and that he was the very first Roman commander to whom India had ever dispatched any. As it turned out, he was the first of many emperors to receive them.<sup>72</sup> Our sources dwell chiefly on the gifts that were brought,<sup>73</sup> but for one embassy sent to Augustus by Porus, probably a king in northwestern India, we have some indications of its purpose. Strabo (15.719) reports that the members brought a written communication from Porus in which he offered Rome the right of passage through his realm and his cooperation in “suitable ventures.” Dio Cassius (54.9.8) states of the same embassy that the members, after negotiations at some earlier date, at this time concluded a treaty of friendship. It sounds as if Porus was trying to increase his diplomatic stature. In any case, there is not the slightest hint that commercial matters were discussed, and the same is true of all the subsequent embassies.

A recent study emphasizes the care the emperors lavished on maintaining and guarding the roads in Egypt’s eastern desert that linked the Nile with the ports on the Red Sea, arguing that this reflects imperial interest in the trade that used those ports.<sup>74</sup> But there are other ways of explaining the concern for these roads. For one, they served the mines and quarries in the area, both of which belonged to the crown.<sup>75</sup> For another, the goods that moved over them paid customs duties, which were a lucrative source of income for the imperial treasury; the flow of that income depended upon the flow of goods, and this certainly was aided by well-maintained and safe roads.

---

sure, would produce a far higher take, but only at the cost of policing a remote people inhabiting a forbidding terrain. Cf. T. Frank in *ESAR* v 21, where he emphasizes Augustus’s interest in port dues.

<sup>72</sup> From Claudius to Constantine; see Charlesworth (op. cit. n. 66 above) *ibid*.

<sup>73</sup> Either prized products, such as gems and pearls, or exotic curiosities, such as pythons and tigers; see Warmington 35–37.

<sup>74</sup> Sidebotham 48–68, 176. He connects the care for the roads with “direct imperial involvement in and profit from the Erythraean Sea trade. . . . A slave of Tiberius operated a business for his imperial master at Berenice for at least two and one-half years” (136; cf. 89). His basis for this statement is chiefly four ostraca (*O. Tait* 1 P237–39, P242) in the archive of Nicanor (see n. 11 above) that are receipts, signed by an imperial slave, acknowledging modest amounts of food and drink, such as four artabs (roughly four bushels) of wheat or six jars of wine. The signer, far from being director of an import-export company owned by the emperor, seems rather to be the commissary clerk of some local government office accepting supplies for the feeding of the staff, like those who, in other receipts in the archive (P280, P285, P288, P291), acknowledge receipt of modest amounts of barley “for the public granary”; cf. Rostovtzeff (op. cit. n. 11 above) 24. The emperors may well have had some stake in the Red Sea trade, but the evidence Sidebotham offers does not prove it.

<sup>75</sup> Cf. *ESAR* ii 241–42.

In short, the historical record reveals no measures taken by the emperors which unquestionably were part of a policy for promoting maritime trade with the East.<sup>76</sup>

## Nature of the Objects of Trade (Numbers = Chapters)

### FOOD AND DRINK

#### From Roman Egypt to Overseas Ports

olive oil 6  
unripe olives 7  
grain 7, 17, 24, 28, 56  
wine 6, 7, 17, 24, 28, 39, 49, 56; fine grade for the court 49

#### From Overseas Ports to Roman Egypt

none

#### From India to Ports Other than those in Roman Egypt

grain 14, 31, 32  
rice 14, 31  
sesame oil 14, 32  
ghee 14  
cane sugar 14

#### From Arabia, Persis, Gedrosia to Ports Other than those in Roman Egypt

wine 36, 49  
dates 36

### TEXTILES, CLOTHING

#### From Roman Egypt to Overseas Ports

##### ORDINARY QUALITY

clothing 39, 49, 56  
clothing: for the Barbaroi 6, 7  
clothing: for the Arabs 24, 28  
cloaks (*abollai*) 6, 24  
cloaks (*kaunakai*) 6  
cloaks (*sagoi*, used) 8  
wraps (*stolai*, from Arsinoe) 6

<sup>76</sup> Sidebotham's long chapter, "The Genesis and Evolution of Roman Policy in the Erythra Thalassa" (113-74), offers argument and conjecture but no cogent proof.



tunics 8  
girdles 24  
girdles, multicolored 49  
double-fringed items (*dikrossia*) 6  
linens 6  
purple cloth 24  
(wool?) cloth 24  
multicolored textiles (*polymita*) 39, 56  
EXPENSIVE QUALITY  
clothing for the court 24, 28, 49  
purple cloth, fine quality, 24

From Overseas Ports to Roman Egypt

ORDINARY QUALITY  
cotton garments 48, 51, 59  
cotton cloth 48, 49, 51  
garments of *molochinon* 48, 51  
cloth of *molochinon* 49  
EXPENSIVE  
Chinese pelts 39  
silk cloth 39, 49, 56  
Gangetic cotton garments 63

From India to Ports Other  
than those in Roman Egypt

cotton garments 6  
cotton cloth 6, 14, 31, 32  
garments of *molochinon* 6  
girdles 6, 14  
cloaks (*kaunakai*) 6

From Arabia, Persis, Gedrosia to Ports  
Other than those in Roman Egypt

purple cloth 36  
clothing 36

HOUSEHOLD ITEMS, TOOLS

From Roman Egypt to Overseas Ports

glassware 6, 7, 17, 39  
copper honey pans (?) 6, 8  
copper drinking vessels 6  
drinking vessels 8

## INTRODUCTION

---

ironware 10  
axes 6, 17  
adzes 6  
knives 6, 17  
awls 17  
blankets 24

### EXPENSIVE

copperware for the court 24  
silverware 10  
silverware for the court 6, 24, 28, 39 (probably), 49  
goldware for the court 6, 24  
statuary for the court 28  
slaves for the court 49  
horses for the court 24, 28  
pack mules for the court 24

### From Overseas Ports to Roman Egypt

slaves 8, 13

### From India to Ports Other than those in Roman Egypt

slaves 31

### From Arabia, Persis, Gedrosia to Ports Other than those in Roman Egypt

slaves 36

### RAW MATERIALS

### From Roman Egypt to Overseas Ports

brass 6  
iron 6, 8  
tin 7, 28, 49, 56  
lead 49, 56  
copper 28, 49, 56  
raw glass 49, 56

### From Overseas Ports to Roman Egypt

white marble 24

### From India to Ports Other than those in Roman Egypt

iron and steel 6  
copper 36  
teak 36

## INTRODUCTION

---

sissoo 36  
ebony 36

### From Arabia, Persis, Gedrosia to Ports Other than those in Roman Egypt

none

## COSTLY MATERIALS, GEMS

### From Roman Egypt to Overseas Ports

precious stones 10  
coral 28, 39, 49, 56  
peridot (?) 39, 49, 56

### From Overseas Ports to Roman Egypt

tortoise shell 3, 6, 7, 10, 13, 17, 30, 56  
ivory 3, 6, 7, 10, 17, 49, 56  
rhinoceros horn 6, 17  
nautilus shell 17  
turquoise 39  
lapis lazuli 39  
onyx 48, 49, 51  
agate (?) 48, 49  
pearls 56, 63  
transparent gems 56  
diamonds 56  
sapphires 56

### From India to Ports Other than those in Roman Egypt

none

### From Arabia, Persis, Gedrosia to Ports Other than those in Roman Egypt

pearls 36  
gold 36  
tortoise shell 31

## SPICES, AROMATICS

### From Roman Egypt to Overseas Ports

none

### From Overseas Ports to Roman Egypt

aromatics 7, 10  
myrrh 7, 8, 10, 24



## INTRODUCTION

---

frankincense 8, 10, 11, 12, 28  
cassia 8, 10, 12, 13  
*duaka* (gum resin?) 8  
*kankamon* (gum resin?) 8  
*mokrotu* (incense) 9, 10  
bdellium 39, 49  
pepper 49, 56

From India to Ports Other  
than those in Roman Egypt

none

From Arabia, Persis, Gedrosia to Ports  
Other than those in Roman Egypt

frankincense 32, 36, 39

## DRUGS, DYES

From Roman Egypt to Overseas Ports

saffron 24  
*cyperus* 24  
unguent 24, 49; fine quality for the court 49  
storax 28, 39  
yellow clover 49  
realgar 49, 56  
sulphide of antimony 49, 56  
orpiment 56

From Overseas Ports to Roman Egypt

*makeir* 8  
aloe 28  
cinnabar 30  
costus 39, 49  
nard 39, 49, 56, 63  
indigo 39  
*lykion* 39, 49  
malabathron 56, 63

From India to Ports Other  
than those in Roman Egypt

lac dye 6

From Arabia, Persis, Gedrosia to Ports  
Other than those in Roman Egypt

none