

Across the Ocean: Nine Essays on Indo-Mediterranean Trade

Edited by

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BRILL

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Comparative Perspectives on the Pepper Trade

*Federico De Romanis**

This paper aims to elucidate three features related to the importation of South Indian pepper by the Romans in the first to the second centuries CE and by the Portuguese in the sixteenth century: first, the size of the ships required in each era; second, the quantitative dimensions of the import; and third, the dependence of the trade on the ecological and anthropological particularities of the Malabar region in south-western India. It will be shown that the huge pepper production of central Malabar encouraged the deployment of ships with considerable, albeit different, carrying capacities in both eras. Moreover, it will be argued that the remarkable Malabar productivity was largely based on the pepper grown and harvested by the local foraging communities in the foothills of the Western Ghats.

Pepper and Seagoing Ships at the Periyar Delta, in the Sixteenth Century CE . . .

In a letter dated 24 December 1504, Álvaro Vaz, officer of the Portuguese garrison of Cochin, could describe to his king D. Manuel the commercial implications of Portuguese control over the small kingdom of Cochin and the nearby delta of the Periyar River.¹ With a patrol of just a few warships to deter

* This paper benefited enormously from the stimulating environment and facilities of the Italian Academy at Columbia University. I wish to thank Prof. D.A. Freedberg, Director of the Academy, for the invitation, as well as my co-Fellows and the Academy staff.

1 CA III 258: 'Se vosa Senhorja manda aquy amdar d armada as fustas e bragantijns que lhe tenho scrito, que tolhan que nenhuuns çambuquos navegem, com este par de caravelas que qua estam, e, jssso mesmo, se nesta forteleza tem deposito xx ou xxx (mil) cruzados, aja por çerto que xxx (mil) quintaes de pimenta cad ano se podem recolher, d aquy tee coullam,— xx (mil) aquy, e d hy pera çima, e os mais lla [. . .] Ora veja vossa Senhorja quanto proueito se d isto segue, e quanto majs certa estara sempre a carregaçam e seguramça da partida das naaos, a tempo que nam pasem o risco que passou o almjrante [. . .] e, em breue tempo, este rrio de coochy he pera ellas mjlor do mumdo, nem majs seguro, e podem hir per ele açima b e bj leguoas, e meter tamto espamto aos senhores que jazem per ele açima, omde

Muslim traders and funds of 20,000–30,000 *cruzados* to purchase the commodity, His Highness could secure for his ships as many as 30,000 *quintais* (more than 1,500 tons)² of pepper each year—20,000 from Cochin, and the rest from Quilon.³

Very soon, reality surpassed imagination. Tomé Pires, *feitor das drogarias* in Cannanore in 1511, estimated 20,000 *bahar* (c.3,200 tons) as the yearly production of Malabar, coming from the region between Chettuva (c.70 km north of Cochin) and Kayamkulam (c.90 km south of Cochin).⁴ In a letter to D. Manuel dated 31 October 1520,⁵ Nuno de Castro argued that from the region

a pimenta da sserra vem teer, que ajam em booa vemtura nam comsemtjr que nenhuum mouro a compre, senam nos, que, sem jsto, nam pode ser em nenhuia maneira [...] Neste porto de coochy, Senhor, deve vosa Senhorja fazer todo seu fundamento, porque, elle ssoo, abasta mais pera huia carregaçam que todo outro rrestamte; e, depois, em coullam, que sempre ajudaraa com caecoulam muy bem, e asy pollos christãaos, que naquela terra ha majs, virem a perfeito conhecimento de nosa ssamta fee etc.'

- 2 In sixteenth century Portuguese documents, pepper is usually measured either in *bahar* of Cochin and Quilon (166.272 kg) or in *quintais do peso velho* (51.405 kg): Lima Felner 1868, 47; Bouchon 1977, IX.
- 3 Vaz's estimate is echoed by Leonardo da Ca' Masser and Vincenzo Quirini, each of whom, around 1506, foresaw a yearly import from Cochin to Lisbon of as much as 10,000 *bahar* or 30,000 to 35,000 *canatara* of pepper: Da Ca' Masser 33; Quirini 9–10. A similar amount of *espesiaría* is also mentioned by Pacheco Pereira 100.
- 4 Pires II 362 (fol. 129 v.): 'a pimenta avera no Malabar atee vimte mjll bahares E naçe de chatua athee o Reyno De caya coulam E alguuã pouca por coulam por cramganor E cochim he a escala Desta pimenta a mais perto E omde mais ganham a levam aJmda que seja com trabalho [...] a ã nasce no senhorio Do Reino De cochim e melhor.' Very close to Pires' amount are the 60,000 *cantera* (c.3,000 tons) estimated as the Malabar production by Francisco d'Albuquerque (Francesco dal Bocchier) in 1518: Aubin 1973, 194; maybe directly inspired by Pires is the estimate (20,000 *bahar* = 60,000 *quintais*) repeated in a 1569 text, on which see Thomaz 1998, 39.
- 5 CA VII 175–176: 'Senhor nesta terra do Malavar—a saber—de Belymjaom, que he acem de Coulá porto ate ij legoas alê de Cramganor pera Calequt, tenho sabido que se colhe cadano xb (mil) bares de pimenta ate xbj, nõ [contando?] a que lhe fica pera velha de hũ ano pera outro que se gasta per esta maneira—a saber—na mesma terra se gastará ij (mil) ij (mil)^{b^c} bares dela em seus comeres, e se leva pera fora ê boys e nas cabeças ate iij (mil) bares que sã ja grãdes caminhos abertos pera Cale Care e outras partes do sertão e a hy hũ caminho que se chama Putura, e des Belijã a levam a cabeça pera Comorym e asy a mais tres caminhos outros que levam a pimenta ê boys e trazê nele arroz e o retorno ha pimenta dos paraos de Panane, Chatua, Cranganor levarã cadano pera Dio ate b^c bj^c bares dela que vã per longo a costa como ja dyse a V.A. e os nove myll que pode ficar guardã pera velha ij (mil) iij (mil) bares dela, e nesta velha fazê eles a royndade por que tem mais sostamçia que ha verde que logo cõ pouco

between Vizhinjam (c.200 km south of Cochin) and Cranganore (c.30 km north of Cochin), 25,000 or even 29,000 *bahar* (c.4,100 and c.4,800 tons, respectively) were produced.⁶ As Portuguese awareness of Malabar's potential for pepper production deepened, their pepper import to Lisbon also increased: the *quintais* of spices, which in 1504 amounted to only 24,000 (of which 22,000 *quintais* were pepper), grew to 76,000 (of which 56,000 were pepper) in 1519.

se mostra a roçdade nela, e posto que acima diga a V.A. xb (mil) ou xbj (mil) bares, eu tenho sabido per homens da terra que a bẽ sabem e tratam que me diserã que se colherã até xx (mil) bares e parece-me que asy pode ser, por que nam crea V.A. que sam pequenas as sacas da pimenta, asy para Oromuz, como pera Dio, como pera o estreito de Meca aos mouros, como pera Choromãdell etc.'

- 6 Later data show de Castro's estimate to be fairly accurate. The most significant piece of evidence is in the margin of a page of Francisco da Costa's *Relatório sobre o trato da pimenta* (1607); cf. da Costa 315:

Nos tecanqutes em Canharapely	4,000 bares;	(Kanjirappilly)
En Iratepely	1,000 »	(Erattupetta)
Erimamoly	3,000 »	(Erumely)
Zaruquly	5,000 »	(Chalakydy)
Corgeira	3,000 »	(Kodakara)
Paleacate Cheri	3,000 »	(Palakkad Churam)

19,000

São 61 mil 453 quintaes de pezo pequeno.'—The six villages listed are all in central Kerala, but none was inside the so-called 'Pepper Kingdom' (on which, see below). They are credited for a total production of 19,000 *bahar* or 61,453 *quintais* (c.3,158 tons). On the same order of magnitude of de Castro's estimate are the 11,752 *candies* (= c.3,400 tons) recalled by Buchanan II 457 to be collected by the king Marthanda Varma in 1757. Perhaps less reliable is the more general estimate made by *Malavares* and repeated by Francisco da Costa 350–351: 'Pois se sabe por estimação dos Malavares que de Onor atte Travancor nunca ha hum anno por outro menos de cem mil bares de pimenta que são 258 mil quintaes, e destes se levão pera Portugal de vinte atte trinta mil, e a mais se consume nestas boiadas, e em naos de Meca, e outra muita que com castigo executado se pudera remediar.' A hundred thousand *bahar* (here more than 13,350 tons)—more or less ten times the amount yearly exported to Lisbon—would suggest a Malabar production considerably higher than the estimates and data quoted above. However, the round (one *lakh*) figure, already surfacing in a letter of Franz Cron (Fuggerarchiv, MSS Codex no. 46.1. fols. 50–51), and the wide geographic scope of the estimate may inspire scepticism.

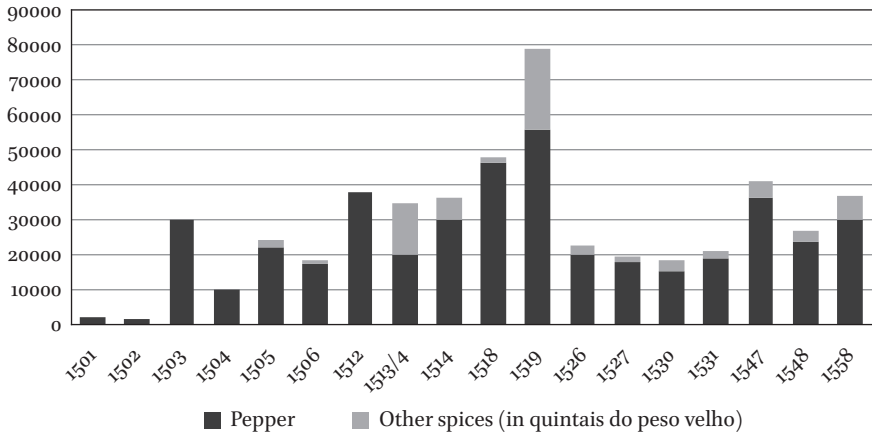


FIGURE 8.1 *Spices exported to Lisbon in some years of the 16th century.*⁷

In a period during which both accomplishments and expectations multiplied every year, it is not surprising to see constant upgrades in the Portuguese transportation system. In a letter to D. Manuel written from Cannanore on 9 October 1512, Afonso de Albuquerque announced his decision to send to Lisbon 38,000 *quintais* (c.1,950 tons) of *pimenta e drogoarias* with only five ‘new ships’, whose carrying capacity—between 7,500 and 8,000 *quintais*—would be enough to accommodate the projected amount. The *Nazaré*, an ‘old’ ship which

7 Sources: 1501: da Ca’ Masser 15; 1502: da Ca’ Masser 16; 1503: da Ca’ Masser 17; 1504: da Ca’ Masser 19 (Aubin 1987, 46–53); 1505: da Ca’ Masser 20; Bouchon 1976; 1506: da Ca’ Masser 23; 1512: CA I 83 (no distinction is made between pepper and other spices); 1513/4: Sanuto XVII 191; XVIII 143; 1514: Sanuto XVIII 409 (I use the aggregate data reported at the beginning, leaving aside the subsequent analytical lists); 1518: Bouchon 1977; Sanuto XXV 594–595 (which I follow for the cargo of the *Madanela*); 1519: Correia II² 561; Sanuto XXVII 641; 1526: Sanuto XLII 453–454; 1527: ANTT CVR 16; 1530: Sanuto LIV 131; 1531: Sanuto LIV 599; LV 63; 1547: Livro das mercês que fez D. João de Castro ff. 59–60v; ANTT Coleção São Lourenço IV ff. 329–330; 1548: Livro das mercês que fez D. João de Castro ff. 62–64v; 1558: Seure 71. I take unspecified *quintais* (as well as Sanuto’s *canteri*) to be *quintais do peso velho* (51.405 kg) when related to pepper and *quintais do peso novo* (58.752 kg) when related to other spices; here and elsewhere in this chapter all the data have been recalculated in *quintais do peso velho*. Most of these documents were already published and/or analyzed by Bouchon 1976; Bouchon 1977; Godinho 1981/1983² III 73–74. As for ANTT CVR 16 and ANTT Coleção São Lourenço IV ff. 329–330, my thanks go to Prof. L.F. Thomaz, who brought them to my attention, and to P. Pinto, who made his transcription of ANTT CVR 16 available to me.

could not carry more than 6,000 to 6,500 *quintais*,⁸ was to be used for other purposes.⁹

Although the convenience of the larger capacities did not result in the abrupt discontinuance of the smaller ships,¹⁰ the trend towards greater tonnages continued. In Andrea Corsali's opinion, of the six ships that arrived at Lisbon in 1518, two had a capacity of 2,000 *botte* and four had capacities of 800, 900, or 1,000 *botte*.¹¹ If the quantities of goods recorded in the *Caderno dos ofiçiaes da India da carreguaçam das naos* do not show a similar disproportion, they make clear that the *Santa Catarina do Monte Sinai* and the *Nazaré*¹²—apparently the two ships whose capacity was evaluated at 2,000 *botte* by Corsali—carried more than 460 tons of pepper each.¹³ It is not known when this *Nazaré* was built; the *Santa Catarina de Monte Synay* was built in Cochin in 1513,¹⁴ and carried at least 1,000 to 1,500 *bahar* more than the 'new' ships of 1512.

8 Fonseca 1989², 232–236.

9 CA I 83: 'acerqua das naos da carga que est ano vieram de portugall, e asy as de dom Garcia, eu tomei por fundamento de irem est ano a vosa alteza xxxbiiij (mil) quintaes de pimenta e drogoarias, que poderiam alojar as cinco naos novas; e porque a nazaré estava hum pouco duvidosa, se poderia a carga seguramente tornar nela, eu mandey a iso mestres, pilotos e carpinteiros ajuramentados, e polo que neles achey, me pareceo voso serviço nam se aventurar a carga nela e que seria millhor ir em hũa nao nova, pois que a nazaré era nao que de necessidade avia de levar mill e quinhentos quintaes de carga menos que a primeira, de maneira que ficava em sete mill e quinhentos até oito mill quintaes, que pouco mais ou menos carregam as naos novas.'

10 On 25 June 1511, D. Manuel ordered the construction of four other ships, again for the Cape Route, of only 460 *toneladas*, which makes them more similar to the old *Nazaré* than to the new ships: ANTT, C.C., p. 1, M. 10, D. 53. A *tonel* is a cask 1.54 m high and 1.027 m wide at its maximum diameter. A *tonel* of pepper weighs approximately 13.5 *quintais*: Costa 1997, 79.

11 Corsali 188: 'Dopo la tornata del Capitan maggiore, non si attende ad altro, che a mettere in ordine nauì sei per Portogallo, le quali si partiranno per tutto questo mese di Gennaio, & di già tre vanno alla vela, & questa sarà la quarta. due d'esse sono ciascuna di dua mila botte, & tutte l'altre di 800. 900. & 1000. & leuano per il Re, 50000. quintali di pepe, & molto giengiouo, cannella, & garofani, gomma, lacca, & seta della Cina, Sandalo vermiglio, oltre a infinite ricchezze d'huomini particolari.'

12 There were several homonymous ships active in those years: Fonseca 1989², 236–237. This *Nazaré* is not the same ship referred to by Albuquerque in the letter quoted above in n. 9: Bouchon 1977, VI–VII.

13 Bouchon 1977.

14 Cf. CA I 121.



FIGURE 8.2 *Tons of spices per ship in some years of the 16th century.*

The chart above represents the average cargo per ship, in tons, of the spices imported by the Portuguese in some years of the sixteenth century, obtained by dividing the weight of the total cargo by the number of ships.

The low values for the years 1519 and 1526 have different explanations. The quantity of spices imported in 1519—56,000 *quintais* of pepper and 20,000 of other spices—is the highest amount ever achieved by the Portuguese in a single year.¹⁵ The relatively high number of ships involved (fourteen) suggests that in order to transfer that exceptional (and perhaps unexpected) cargo size, several ships of lower tonnage had to be loaded in addition to the ‘new’ ships of quite high tonnage. On the contrary, the relatively modest quantity (22,700 *quintais*)¹⁶ of spices carried by the five ships of the 1526 fleet reflects the supply problems of those years more than the limited capacity of the ships of that fleet: the only ship whose cargo Sanuto accurately describes carried a little more than 7,000 *quintais* (6,210 of which were pepper). An even smaller cargo (c.19,300) was sent in 1527, but the ships of that fleet (probably three) were very big and two of them did not sail fully loaded.¹⁷ Only three ships came back in 1530, and their total cargo was a little more than 18,000 *quintais*. The four ships of 1531, whose loading capacity was 500 *tonéis* each (= 6,750 *quintais* of

15 Correira II² 561: ‘cincoenta e seis mil quintaes de pimenta, e vinte mil de drogas; a mór carga que se nunqua fez’.

16 Assuming that pepper was only 20,000 *quintais*, but Sanuto XLII 453 writes: ‘Per quel che si pò comprendere, il cargo di queste navi serà in tutto più di vintimila cantara de piper boni’.

17 ANTT CVR 16: ‘as naaos qu estauam a caRega serem muy grandes e aviam mester mujta pimemta [...] [a naao] burgalesa e a naao Samta Cateryna [nam estauan de] todo carregadas nem lhe dey majs pimemta’.

pepper), had a total cargo of c.20,800 *quintais*. The fleet that returned in 1547 comprised six ships and carried 40,657 *quintais* (averaging 6,776 per ship), with two of them, the *Burgalesa* and the *São Filipe*, carrying 7,488 and 9,069 *quintais* respectively.¹⁸

The chart does not take into account the exceptional capacity of two galleons, the *São Bento* and the *São João*, which could be loaded (and in 1551 the former seems to have actually been loaded), with as many as 12,000 *quintais* of pepper.¹⁹ The 1552 misfortune of the latter vessel, which after a late departure from India ended up wrecking off the South African coast, may have recommended a more cautious approach towards the size of the *Carreira da Índia* ships. A 1558 *Relatório* shows that by then it had become customary to send five ships, two of which held 750 to 800 *tonéis*, two that held 500, and one that held 600.²⁰ In 1570, D. Sebastião required a more drastic downscaling, prescribing tonnages between 450 and 300 *tonéis*, in India as well as in Portugal.²¹ For the Cape route, however, that upper limit was unrealistically low and the injunction was simply overlooked.²² In the eighties, the ships still numbered five and their tonnage remained approximately 600 *tonéis*.²³ Further proposals to reduce the tonnage and increase the number of ships remained on paper.²⁴

... And in the First–Second Centuries CE

The different commodities that complement Roman and Portuguese pepper cargoes make the changes in the Indian Ocean from Roman to Portuguese

18 De Caminha 85.

19 ANTT C.C. P. I, M. 86, D. 94; Gomes de Brito I 5.

20 ANTT C.C. P. I, M. 103, D. 31: ‘Hus anos per outros comumente pera huã caregua se estimão çimqo naos Duas de VII^o e VIII^o tonés et duas de V^o pouco mais ou menos e ahuã meañ—Amtre e huã grãde e huã piquena q(ue) sera de VI^o tonés.’ In terms of pepper cargoes, these loading capacities correspond to 10,125, 10,800, 6,750, and 8,100 *quintais* respectively. As a matter of fact, the 1558 fleet comprised five ships for a total cargo that included 30,000 *quintais* of pepper and 6,000 *quintais* of other spices.

21 Leis, e Provisões, que Dom Sebastião fez 81.

22 Godinho 1981/1983² III 51: ‘A ordenação de 1570 não foi respeitada; era de prever—o máximo admitido parece demasiado baixo.’

23 Santa Cruz 53: ‘cinco viages’ made by ships of ‘600 toneladas de Portugal que hacen mas que 1200 de Castilla’. The 1585 contract (Mathew 1997, 256–257) foresees an import of 30,000 *quintais* of pepper by six ships, five from India and one from Malaca.

24 Santa Cruz 54: ‘Todas estas cosas se evitarian, y mejorarian, siendo las naos de a 600 toneladas de Castilla, porque las de a 1200 que aora navegan, traen los inconvenientes que he dicho.’

times obvious. While Portuguese pepper cargoes were supplemented with other spices such as ginger, clove, cinnamon, and mace, the heaviest and/or most voluminous commodity after pepper carried by Roman ships was malabathron—leaves of *tamāla*—which was imported from the Ganges valley. The implications of these differences will not be investigated here; instead I shall focus on the common features that Roman and Portuguese trade with South India shared in certain periods. Among them are the deployment of big ships, the pivotal role of pepper, and the harbourage in the Periyar valley and Vembanad Lake regions.²⁵

Although evidence for a history of the Roman Indiamen is meagre,²⁶ the assumption that unusually big ships remained a typical long-time feature of this branch of Roman trade with India is justified by the fact that already by the mid first century CE the author of the *Periplus Maris Erythraei* states that ‘very big ships’ were used to sail to the emporia of the Limyrike²⁷ and that Philostratus (at the beginning of the third century CE) in his albeit largely fictional *Life of Apollonius of Tyana* still vividly describes a gigantic Indiaman that could only have been the successor of the ‘very big ships’ that conveyed pepper in the mid first century CE:

Let us imagine a ship such as the Egyptians construct and launch on our waters, giving Egyptian exports in exchange for Indian ones. There is an old rule of the Red Sea, which king Erythras once laid down when he ruled that sea, that Egyptians may not enter in a warship, but instead must use a single round-bottomed vessel. So the Egyptians construct a ship equivalent to many of those used by others. They seal it with all the joints that hold a ship together, and over these they build hulls and a mast, and make numerous cabins such as those over the benches. There are many captains of this ship, sailing under the command of the eldest and most skilful among them, and many steersmen at the stern, and excellent, nimble sailors who eagerly tend the sails. This ship also carries

25 By contrast, pre-Portuguese trade between Malabar and Arabia was centred on Calicut and conducted with ships of more modest tonnage (1,000 to 1,200 *bahar*: Barbosa 160–161), whose cargoes included a less overwhelming preponderance of pepper. For more on Muslim trade with Malabar, see Prange 2010 and Banaji in this volume.

26 A profile of one of those ‘very big ships’ has been recognized in a two- (or three-) masted Roman vessel portrayed in a potsherd graffito from Alagankulam (Tamil Nadu): Tchernia 2011a.

27 *Peripl. M. Rubr.* 56: πλεῖ δὲ εἰς τὰ ἐμπόρια ταῦτα [sc. τῆς Λιμυρικῆς] μέ<γι>στα πλοῖα. For the correction μέ<γι>στα, cf. De Romanis 1996, 178–180. Limyrike is the Greek choronym for Malabar: De Romanis 2012.

armed men, since the barbarians of the gulf live on the right side of its entrance, and the ship must do battle with them when they attack and try to plunder it.²⁸

Philostratus blends realistic and mythical elements: the description of the ship, modelled on the ‘very big ships’ that sailed to the Limyrike, is real, while King Erythras’ eccentric laws are Philostratus’ personal inventions to account for the actual features of the South India trade in his time.

It is now possible to argue that the Roman pepper carriers were really substantial and that Philostratus’ emphasis on the size of ‘Egyptian’ Indiamen (‘equivalent to several ships at once’) must be taken seriously. The tonnage of a South India-bound ship can be inferred from the data of the fragmentary text on the verso side of the Papyrus Vindobonensis G 40,822 (= SB XVIII 13,167), widely known as the ‘Muziris’ papyrus,²⁹ which gives the monetary evaluation of three-quarters of the cargo of the *Hermapollon*, a ship that was most likely returning from Muziris (the celebrated ancient pepper emporium of South India) sometime around the mid second century CE. The Muziris papyrus, furthermore, gives an example of how the relative weights of pepper and malabathron, the two major commodities imported from the Limyrike emporia,³⁰ could balance each other within the cargo of a Roman Indiaman.

A crucial correction to an earlier misreading by the first editors of the Muziris papyrus led to the identification of the 771 money talents and 4,632

28 Philostr., *VA* 3.35: ‘ὕποκεισθω δὲ ναῦς, οἷαν Αἰγύπτιοι ξυντιθέντες ἐς τὴν θάλατταν τὴν ἡμεδαπὴν ἀφιάσιν ἀγωγίμων Ἰνδικῶν ἀντιδιδόντες Αἰγύπτια, θεσμοῦ γὰρ παλαιοῦ περὶ τὴν Ἐρυθρὰν ὄντος, ὃν βασιλεὺς Ἐρύθρας ἐνόμισεν, ὅτε τῆς θαλάττης ἐκείνης ἦρχε, μακρῶ μὲν πλοίῳ μὴ ἐσπλεῖν ἐς αὐτὴν Αἰγυπτίους, στρογγύλη δ’ αὐτῷ μίαν νηὶ χρῆσθαι, σοφίζονται πλοῖον Αἰγύπτιοι πρὸς πολλὰ τῶν παρ’ ἐτέροις καὶ παραπλευρώσαντες αὐτὸ ἀρμονίαις, ὅποσαι ναῦν ξυνιστάσι, τοίχοις τε ὑπεράραντες καὶ ἰσθμῷ καὶ πηξάμενοι πλείους οἰκίας, οἷας ἐπὶ τῶν σελμάτων, πολλοὶ μὲν κυβερνήται τῆς νεῶς ταύτης ὑπὸ τῷ πρεσβυτάτῳ τε καὶ σοφωτάτῳ πλέουσι, πολλοὶ δὲ κατὰ πρῶραν ἄρχοντες ἄριστοὶ τε καὶ δεξιοὶ ναῦται καὶ πρὸς ἰσθμῷ πηδῶντες, ἔστι δὲ τῆς νεῶς ταύτης καὶ ὀπλιτεύον, πρὸς γὰρ τοὺς κολπίτας βαρβάρους, οἳ ἐν δεξιᾷ τοῦ ἔσπλου κείνται, παρατάττεσθαι δεῖ τὴν ναῦν, ὅτε ληίζοιντο αὐτὴν ἐπιπλέοντες’ (trans. C.P. Jones LCL, 2005).

29 Besides Harrauer/Sijpesteijn 1985, cf. especially Thür 1987; 1988; Casson 1986; 1990; De Romanis 1998; Rathbone 2000; Morelli 2011; De Romanis 2010/2011 [2012]; and, in this volume, the essays of Wilson, Schörle, Nappo, and Aubert.

30 Indeed, the bulk import of these two commodities was the reason for using ‘very big ships’, cf. *Peripl. M. Rubr.* 56: ‘πλεῖ δὲ εἰς τὰ ἐμπόρια ταῦτα μέ<γν>στα πλοῖα διὰ τὸν ὄγκον καὶ τὸ πλῆθος τοῦ πιπέρεως καὶ τοῦ μαλαβάθρου.’ The wording of the author is explained by the fact that compared to pepper, dried malabathron leaves were a bulkier but lighter commodity.

drachmas, recorded at col. i, ll. 25–26, as the value of (almost) three-quarters of the pepper imported by the ship.³¹ Federico Morelli argued that this value results from a price of 24 drachmas per mina, and a total cargo of less than 140 tons of pepper; I have suggested instead that only a price of 6 drachmas per mina is compatible with the structure of the text and with other numerical data in the papyrus.

As a matter of fact, if the price of pepper were 24 drachmas per mina, we would not be able to answer the following questions:

- 1) Why the monetary evaluation of three-quarters of the pepper (col. i, ll. 25–26) comes three lines after the weight number on which it is supposedly based (col. i, l. 21).
- 2) Why the malabathron, to be identified with the item evaluated at col. i, ll. 17–19,³² would have a price lower than that of the pepper.³³
- 3) Why, at col. i, ll. 1–3, the weight number minae 58 (l. 2) is inserted between minae 59 (l. 1) and minae 14 $\frac{3}{4}$ (l. 3); if the evaluation of pepper ended with col. i, l. 25, that sequence makes no sense.
- 4) Where to find the other addend ending with three obols. The total of the evaluation (col. ii, l. 29) is an amount of money with no obols attached, but the subtotal of the items evaluated at col. ii is an amount of money ending with three obols. Therefore, the subtotal of the evaluations calculated in col. i must be an amount of money ending with three obols as well. The only addend which can end with three obols is the one in the lost lines at the end of the column, as an evaluation of the quantity specified at col. i, l. 27. As the latter ends with 44 $\frac{1}{4}$ minae, its price per mina cannot be a number of drachmas that is a multiple of four.

Therefore, it seems certain to me that:

- 1) The pepper was evaluated with the same complex procedure followed for tusks and fragments of ivory.
- 2) Both col. i, ll. 1–3 and col. i, ll. 20–29 (and the missing lines below) refer to the evaluation of pepper.

³¹ Morelli 2011; De Romanis 2010/2011 [2012].

³² At col. i, l. 18 I consider certain the reading of 1,800, which implies, for the malabathron, a price of 12 drachmas per mina.

³³ Pliny (*HN* 12.129) gives 60 *denarii* per pound as the price of the *malabathrum* leaves. In fourth century CE documents, the malabathron price either equals (*P.Oxy.* LIV 3731) or far surpasses (*P.Oxy.* LIV 3733; 3766) that of pepper.

- 3) The value for pepper was 6 drachmas per mina.
- 4) At col. i, l. 21 the reading weight talents 1]3,223 minae 2 (c.405 tons) must be restored.

A monetary evaluation based on a price of 6 drachmas per mina implies a total quantity of more than 544 tons of pepper, an amount worth comparing both with the estimated pepper production of the Malabar region and with the Portuguese pepper import in the first part of the sixteenth century.

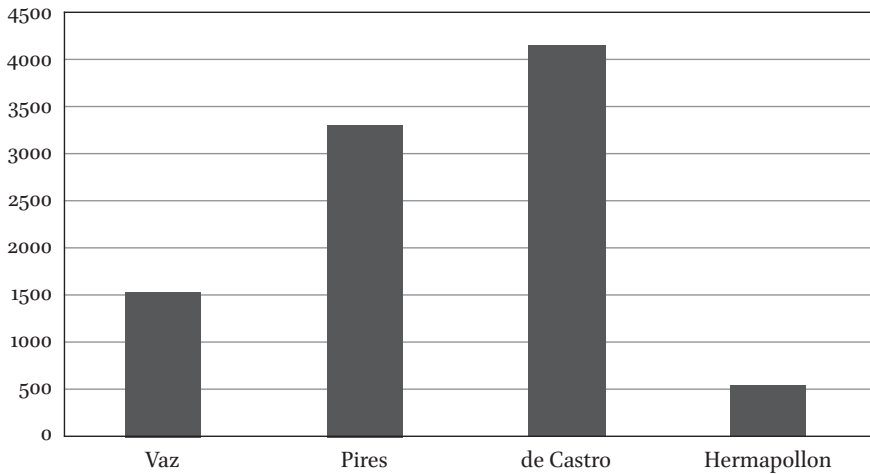


FIGURE 8.3 *Estimated production of Malabar pepper and Hermapollon pepper cargo (in tons).*

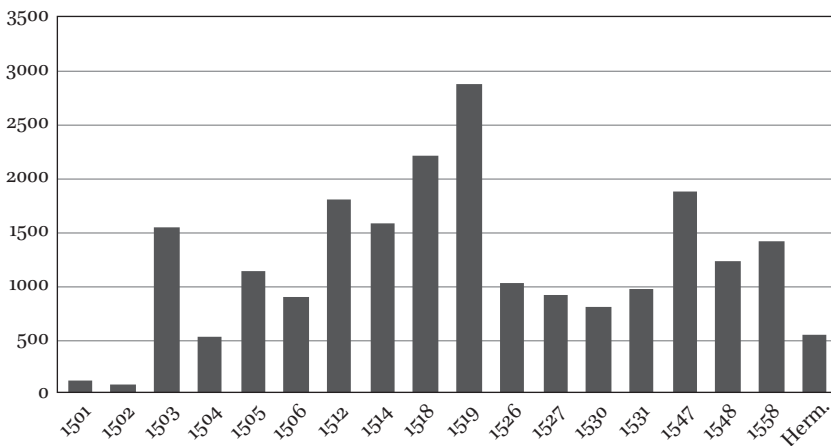


FIGURE 8.4 *Portuguese import of pepper and Hermapollon pepper cargo (in tons).*

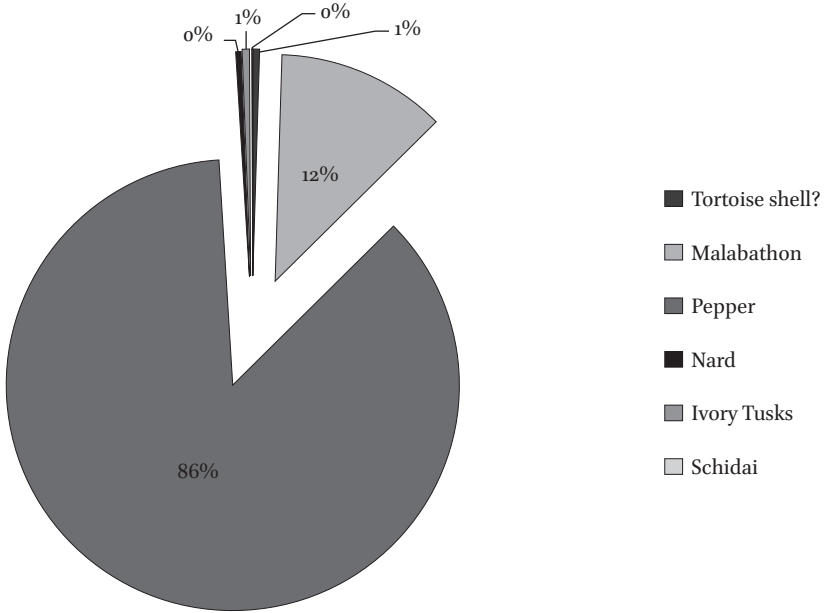


FIGURE 8.5 Hermapollon's cargo (based on De Romanis 2010/2011 [2012]).

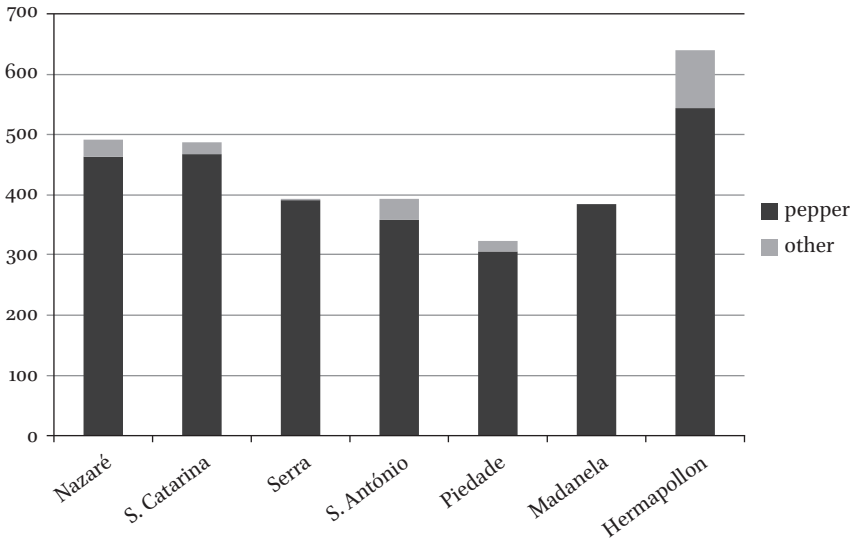


FIGURE 8.6 Cargoes of the 1518 fleet and the Hermapollon (in tons).

Moreover, a price for pepper of 6 drachmas per mina and a weight of c.1,860 weight talents (col. i, l. 18) for three-quarters of the malabathron on board would result in a total cargo of more than 620 tons, with pepper representing c.86 per cent of the entire cargo.

A comparison with the cargoes of the six ships from the 1518 fleet shows an even greater proportion accorded to pepper in the sixteenth century.

The cargo of the *Hermapollon* equals the almost 620 tons of pepper that the galleons *São Bento* and *São João* were built to carry. However, while in the sixteenth century the Portuguese ships of the *Rota do Cabo* were usually smaller than the *São Bento* and the *São João*, it is likely that the Roman pepper carriers of the first two centuries, which sailed along a much shorter and safer route than the Portuguese ships, were all about the same size as the *Hermapollon*. If early modern quantitative data offer an approximate benchmark for the volume of the ancient pepper export, and if the *Hermapollon* is representative of the size of the 'very big ships' that imported pepper from the emporia of the Limyrike, then it follows that we cannot imagine hundreds of ships like the *Hermapollon*, each importing 500 tons of pepper every year. This is not a reason to reject Strabo's testimony about the 120 ships sailing to India when Aelius Gallus (26–25 BCE) was prefect of Egypt.³⁴ However, such a large fleet would have included all the ships bound for any of the Indian emporia and, since they were sailing from Myos Hormos, they must have been much smaller than the pepper carriers that eventually would depart from Berenice.³⁵ At the time the geographer made his inquiry, the pattern of trade evidenced by Pliny,³⁶ by the author of the *Periplus Maris Erythraei*, by the Muziris papyrus, and by Philostratus was still to come.

When the author of the *Periplus Maris Erythraei* says that Muziris was 'flourishing thanks to both the ships that come from Ariake and the Greek ones',³⁷ we should visualize less than a dozen 'very big ships', surrounded by several hundred riverboats and small sea vessels that convey commodities to supply them. It is not unlikely that at the beginning of the third century CE when that pattern was coming to an end, only one such 'very big ship' still imported pepper from South India, yet its cargo would have been enough to give five to ten grams of pepper to each inhabitant of the Roman Empire.

34 Strabo 2.5.12.

35 De Romanis 1996, 171–183.

36 Plin., *HN* 6.101–106.

37 *Peripl. M. Rubr.* 54: 'ἡ δὲ Μούζιρις [. . .] ἀκμάζουσα δὲ τοῖς ἀπὸ τῆς Ἀριακῆς εἰς αὐτὴν ἐρχομένοις πλοίοις καὶ τοῖς Ἑλληνικοῖς.'

Mapping the Pepper Trade

The Portuguese never even conceived of having direct control of the foothill areas in central Kerala where pepper grew;³⁸ a pragmatic realism advocated maintaining control only of the mouth of the Periyar River and promoting relations with the *senhores* of the hinterland.³⁹ Nonetheless, information included in da Ca' Masser's and Quirini's reports suggests early explorations of the upstream portions of the Periyar River⁴⁰ and, most importantly, a demarcation of a region where, they maintained, all the Malabar pepper grew. It is described as a rather small mountain zone, 15 leagues (= 45 miles) in circuit (da Ca' Masser); or 50 to 60 miles in length (Quirini). It adjoins Cranganore and Cochin on the west side and the kingdom of Narsi on the east; it is controlled by a 'king', whose name is Mat(h)ac(h)aimal;⁴¹ and it can produce 10,000 *bahar* or 30,000 to 35,000 *cantara* of pepper each year.⁴²

If we turn to the *Livro que trata das cousas da Índia e do Japão*, written in 1548, we get a completely different picture. The third chapter of this work, devoted to the rivers that flow near Cochin or into Vembanad Lake, claims to be based on information by Nycolao Gomçallvez. Obviously, it also refers to the course of the Periyar River and to the lands of the *Mangate kaymal*, through which, however, no pepper is said to be transferred, but only shipmasts, a little angelim wood, and a lot of teak wood.⁴³ What is even more remarkable, though, is that the lord of Vadakkenkur, one of the 'kings' who controlled the rivers through which pepper came to Cochin, is called—in this text as well as in many other more or less contemporary Portuguese documents (even official ones)—*o Rey da pimenta*, 'the Pepper king', a nickname that indicates his prominent role

38 For an accurate description of the Malabar pepper-growing areas, cf. Malekandathil 2001, 40–47.

39 In 1504, Álvaro Vaz thought to overawe them by advancing upstream of the Periyar 5 or 6 leagues from Cochin (cf. *supra*, n. 1); eventually, the *Estado da Índia* established annuities for them (Malekandathil 2001, 46).

40 Labelled *o Rio da Pimenta* in Correia I 1, 418–419. The definition probably goes back to Correia's sources for 1504. This passage was brought to my attention by Prof. L.F. Thomaz.

41 Mat(h)ac(h)aimal is the rendering of *Mangate kaymal*, the title of the lord of Alengad, 'regulo quazy sujeito ao rey de Cochim' (Bocarro II 196). A *kaymal* may have at his command 100 to 10,000 Nairs: Pires II 362.

42 Da Ca' Masser 27; 33; 35; Quirini 9–10. Note that both authors confuse Calangannor with Cannanor.

43 *Cousas da Índia e do Japão* 44: 'De Cramguanor se toma outro rio que vay pera a serra e pasa pelo Manguate e per o Carta da Llua he por Melcatur (Meleatur?), que sam todos estes caymays destes luguares nosos amyguos, e per este rio vem mastos e amgelyns pouquos e tequas muytas; este rio vay pera a serra dez leguoas.'

in the trade. Therefore, while around 1506 Mat(h)ac(h)aimal was believed to control all the Malabar pepper, eventually—by 1546 at the latest⁴⁴—the king of Vadakkenkur was recognized as the one and only ‘Pepper king’. It can be inferred that although most of the pepper was transferred through the Periyar River in the first years of the sixteenth century, eventually, by the second or third decade of the century, more and more pepper reached Cochin through the rivers that flowed into the Vembanad Lake from the land of Vadakkenkur.

Nicolao Gomçallvez was very well informed about the Malabar pepper trade. He mentions the presence of pepper merchants at Belur, neighboring the possessions of the ‘Pepper king’.⁴⁵ He points to the importance of Jumquão Telhado, a customs house and a node for the transfer of pepper to Cochin on the southern shore of the Vembanad Lake.⁴⁶ He says that pepper produced in the nearby region of Tekkenkur was sold at a monthly fair at Kanjirappally and exported to the other side of the Western Ghats;⁴⁷ and finally he records pepper envoys to Cochin from Putamguale, on the Chalakudy River.⁴⁸

This information is extremely important for the histories of both the early modern and ancient pepper trade. The description of the waterways that connect Cochin to its hinterland explains why Tomé Pires’ estimate refers to an

44 It would be important to establish when such a nickname was invented. The earliest document I came across is dated 1546: Carta de Salvador de Leão para D. João De Castro. Cochim, 5 Agosto 1546, DUP VII 289–291. A serious investigation is required.

45 *Cousas da India e do Japão* 46: ‘Defronte desta terra pera a bamda do sul estáa outra ilha que se chama Chembe; esta hé del rey de Pimenta; per aquy vay hum rio pera a serra que vay ter a hum luguar que se chama Belur; neste luguar de Belur morão muytos mercados que tratão em madeyra e em pimemta pera Cochym; este rio vay pera serra dez ou doze leguoas.’

46 *Cousas da India e do Japão* 46: ‘Defronte desta ilha pera a bamda do sull estáa o Jumquão Telhado, que hé de grande remda porque pasa por ele muyta pimemta e madeyra e outras mercadaryas que vão pera Cochym e de Cochym pera a serra e pera outros luguares muytos; neste Jumquão tem parte muytos rios.’ The word *jumquão* means ‘customs house’, cf. Sasseti 145: ‘al luogo di questi rii per la terra stanno regni, che impediscono il passaggio, e lo fanno fastidiosissimo co’ i loro diritti, che domandano giunconi, i quali sono stati dati da’ Signori delle terre ai soldati particolari, perch’ e’ vivano di quello.’

47 *Ibid.* 47: ‘Destas casas del rey vay hum rio que vay ter a terra del rey de Tequa Amquete; nesta terra há muyta pimemta e pela terra demtro dez leguoas há hum luguar que se chama Quanhara Pee e se faz cada mes húa feyra homde se guasta muyta pimenta que se leva em boys pela terra demtro. Desta feyra a Cochym averá vymtee duas ou vymte e tres leguoas; per este rio não há madeyra nenhũa.’

48 *Ibid.* 45–46: ‘Pela bamda de leste desta terra de Parau vay outro rio que tambem torna pera o norte e vay ter a hum luguar de crystãos que se chama Putamguale, e este rio vay seys ou sete legoas pela terra demtro, e daquy vem a Cochym muyta pimenta, e tambem há madeyra d’angelym; este luguares são del Rey de Vyamper.’

area spanning from Chettuva to Kayamkulam. It also helps to explain why in the first century CE the export of Malabar pepper was split between two major emporia: Muziris, at the delta of the Periyar,⁴⁹ and Becare-Nelkynda, located on a river that flowed less than 500 *stadioi* south of Muziris,⁵⁰ pointing to a place in the southern part of Vembanad Lake. Behind the dualism of the ancient emporia Muziris and Nelkynda lies the corresponding dualism of the pepper waterways that also structured the sixteenth century pepper trade: on one side, the Chalakudy/Periyar waterways and, on the other side, all the rivers flowing into the southern part of the Vembanad Lake: Meenachil, Manimala, Pampa, and Achankovil.

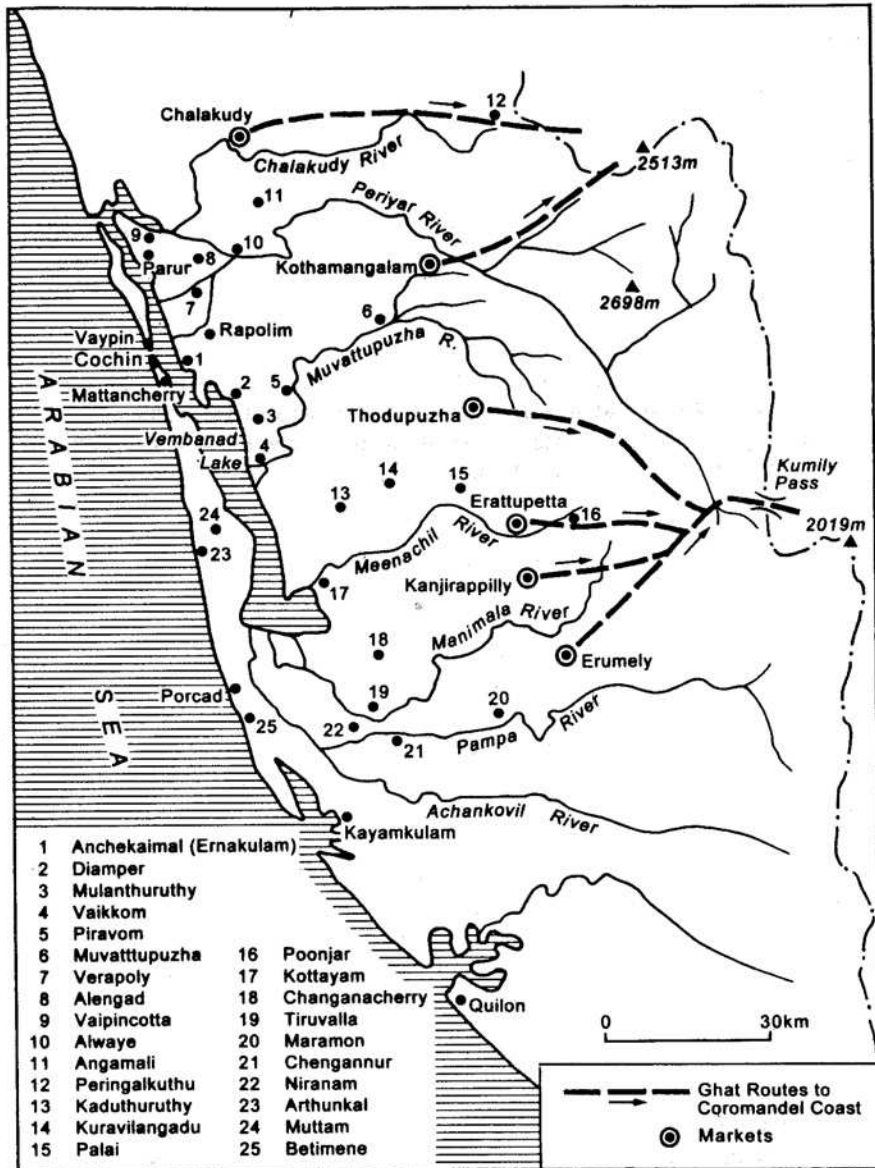
Ancient literary evidence suggests that Roman trade in the first century CE had an evolution similar to that of the Portuguese in the first decades of the sixteenth century. Pliny labels Muziris as ‘the first trade centre of India’, but he then adds that it was not plentiful in supplies and that another port was ‘more useful’.⁵¹ This contradiction can be understood by assuming that, just like the Portuguese in the sixteenth century, Roman traders must have first become familiar with the resources of the Chalakudy/Periyar valley, then eventually realized that the real ‘pepper kingdom’ was farther south. Both the author of the *Periplus Maris Erythraei* and Pliny make special mention of *Kuṭṭanādu*—Κοτταναρική/*Cottonara regio*, the lowlands close to the southern part of Vembanad Lake—the former as the land where pepper grows abundantly and the latter as the region from where pepper is conveyed.⁵² Neither

49 Very likely, it included the area of the Pattanam archaeological site, whose excavations have revealed Roman pottery and artifacts: Shajan, Tomber, Selvakumar, and Cherian 2004. Nearby, at Valluvally, a considerable mid 2nd century CE hoard of Roman gold coins has been found: Sathyamurthy 1992.

50 *Peripl. M. Rubr.* 54: ‘ἡ δὲ Νέλκυνδα σταδίου μὲν ἀπὸ Μουζίρειως ἀπέχει σχεδὸν πεντακοσίους, ὁμοίως διὰ τε ποταμοῦ καὶ διὰ θαλάσσης.’ Less important was Tyndis (= Tamil Toṇḍi = Ponnāni?), located some 500 *stadioi* north of Muziris, and Naoura (= tamil Naṛavu), presumably further north. The estimated distances of Nelkynda and Tyndis from Muziris suggest that the pepper emporia of the mid 1st century CE extended in latitude just a little less than the region delimited by Tomé Pires—from Chettuva to Kayamkulam—for his estimate of the Malabar pepper production. The distances indicated by the *Periplus* recommend not locating Nelkynda near Varkala; Banaji’s arguments to the contrary in this volume are dubious.

51 Plin., *HN* 6.104: ‘inde vento hippalo navigant diebus XL ad primum emporium Indiae Muzirim [...] alius utilior portus gentis Neacyndon, qui vocatur Becare.’

52 *Peripl. M. Rubr.* 56: ‘φέρεται δὲ πέπερι μονογενῶς ἐν ἐνὶ τόπῳ τούτων τῶν ἐμπορίων γεννώμενον πολὺ, τῇ λεγομένῃ Κοτταναρική’; Plin., *HN* 6.105: ‘regio autem, ex qua piper monoxylis linitibus Becaren convehunt, vocatur Cottonara.’



Cartography: H. Nischk

MAP 8.1 Cochin region in the 16th century (from Malekandathil 2001).

of them shows any awareness that the enormous amounts of pepper came mostly, if not entirely, from the highlands. Nycolao Gomçallvez knew better: pepper was collected and traded farther upstream, in the foothill regions, at Putamgale (Peringalkuthu), Belur (?), and Quanhara Pee (Kanjirappally)—all several dozen miles away from the coastal area.

Pepper, Forests, and the ‘Tribe of Monkeys’

How was pepper produced in the highlands? What was the impact of production on that ecosystem? These problems have been investigated based on two very different initial assumptions and leading to two very different solutions. Jan Kieniewicz assumed that ‘up to the end of the eighteenth century, pepper was exclusively grown in gardens’, and ‘predominantly grown by each household for its own consumption’. He posited, however, that ‘at the same time’ pepper ‘could always be sold’, since its seeds would have been ‘treated as currency’ and used to ‘purchase foodstuffs’. This mode of production would have required the ‘felling of tropical forests’ in the mountain regions and the ‘planting of gardens on terraces’ provided with ‘fine soil and sufficient irrigation’.⁵³

A different perspective has been proposed by Kathleen D. Morrison, who frames the pepper production in an ecological and anthropological context characterized by the tropical forests of the Western Ghats and the communities of hunters and gatherers who lived there. Moreover, she sees its trade as the major propellant for the upland-lowland exchange, the intensity of which would have been sensitive to the stimulus provided by the external demand for pepper.⁵⁴

Unless Nuno de Castro was grossly mistaken in estimating 25,000 or even 29,000 *bahar* as the total production of Malabar and only 2,000 to 2,500 *bahar* as its domestic consumption,⁵⁵ pepper was hardly grown chiefly for local household consumption in the sixteenth century. The size, cargo, and number of ships sailing to the Limyrike imply a comparable imbalance in the mid first century CE. How could that overproduction denote garden cultivation with felling of tropical forests, terraces, and irrigation?

If we leave aside the accounts of early European travellers about pepper cultivation in the coastal plain,⁵⁶ where production was never commercially

53 Kieniewicz 1986, 1–2.

54 Morrison 2002.

55 CA VII 175, cit. *supra* n. 5.

56 Near and even in the cities of Kollam and Calicut: Marco Polo, *Mil.* 176; *Div.* 180; Marignolli 496; Varthema 115; 125.

significant and had different modalities from the foothills, the evidence is scant. In his chapter on Cochin, fifteenth-century Chinese voyager Ma Huan mentions what is translated as (pepper) ‘gardens’, and people who cultivate them for a living; in the section on Calicut, he says that in the ‘mountainous countryside’ pepper is ‘extensively cultivated.’⁵⁷ Portuguese sources of the sixteenth century evoke *lavradores* (‘farmers’) as suppliers of the pepper merchants.⁵⁸ All this information, however, is of little help in clarifying what exactly those ‘gardens’ were, how they were cultivated, and by whom.

Kieniewicz was inspired by the farmers of the southern division of British Malabar described by Buchanan, with their very small pepper gardens around their houses and their pre-harvest sales to itinerant traders from the nearby Calicut.⁵⁹ However, in the regions that supported, via Muziris and Cochin, Roman and Portuguese demand, pepper must have been cultivated quite differently.

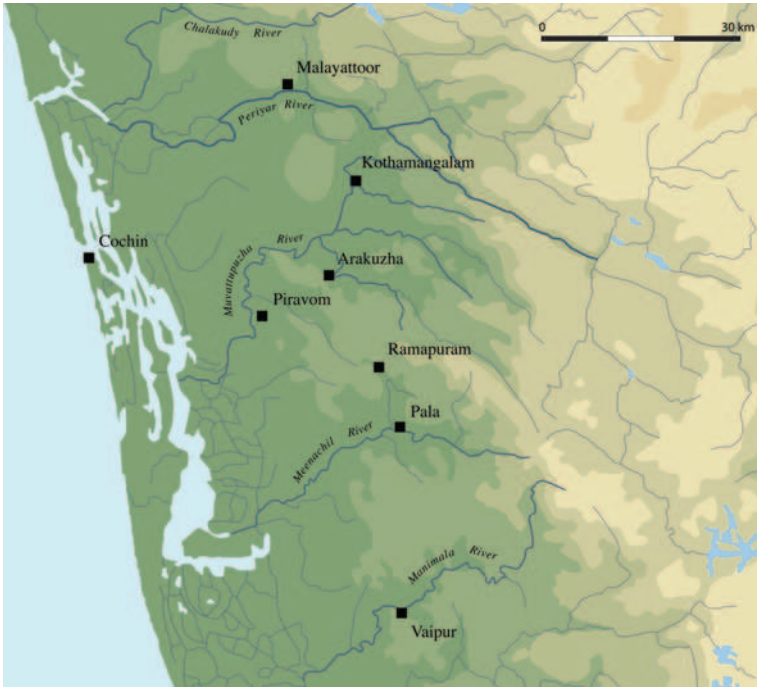
The testimony of Johann Philipp Wesdin, also known as fra Paolino da San Bartolomeo, carries the authority of thirteen years (1776–1789) spent in Malabar, as well as his mastery of Malayalam and Sanskrit, and his travels to the interior. In his 1796 *Viaggio alle Indie Orientali*, he hints that pepper vines were planted at the bottom of trees, which means that they were cultivated. But he labels as *boschi* (woods)—the English edition has ‘large forests’—the vast spaces occupied by the pepper-producing areas in places like *Aragoshe* (Arakuzha), *Porròta* (Piravom), *Palàya* (Pala), *Vaypur* (Vaipur), *Collam* (Kollam), *Muhatuge* (?), *Ràamapurata* (Ramapura), and all along the foothills of the Western Ghats.⁶⁰

57 Ma Huan 135; 143; cf. also 118, regarding Pasai (Sumatra). I wish to thank Dr. Donatella Guida, who pointed out to me that in all three passages (Ma Huan, *Yingya shenglan jiaozhu*, 29, 41, 47) basically the same terms (*zhi yuan* or *zhi yuanpu*) occur and that they mean ‘to establish, prepare, arrange gardens’. The last passage (related to Calicut) specifies that pepper is ‘widely’ or ‘in large quantity’ cultivated (*duo zhong*).

58 CA III 394; Barbosa 148. *Lavradores* of pepper appear also in DUP I 70.

59 Buchanan II 455: ‘All the gardens are small, and all the cultivators have other property. In June, July, or August, the traders go round to the cultivators, and advance them money, on condition, that in January or February the cultivators shall deliver their pepper at a given place’; 463: ‘I here [sc. Tirurangadi] examined the cultivators concerning the manner of raising the pepper vine. They say, that it does not thrive where planted close together; and therefore every man, in the garden near his house, has five or six trees only, which are intended as supports for this valuable plant.’

60 Fra Paolino 116: ‘Il pepe nero piccolo è una elera che si pianta appiè de grand'alberi. Vi sono boschi intieri di pepe in *Aragoshe*, a *Porròta*, a *Palàya*, a *Vaypur*, a *Collam*, e da per tutto appiè delle montagne *Ghattes*, ove il terreno è grasso, nero, argillaceo, focoso’; 356: ‘La pianta del pepe è un ellera, o vime, che si pianta presso gli alberi grandi per farla salire,



MAP 8.2 Location of pepper forests and/or Maler encounters per fra Paolino.

Fra Paolino's description of the pepper woods both vindicates Odorico da Pordenone's statement that pepper grew in a forest that was a good eighteen days' journey wide and identifies the venue of the overproduction of Malabar.⁶¹ Moreover, the words *elera che si pianta* and the density of the pepper plants in the woods (*boschi interi di ellere di pepe*) leave no doubt that fra Paolino was referring to a form of pepper cultivation that did not transform a wooded area into a garden.⁶² Where these woods were close to villages, one may wonder if the nearby pepper was grown and collected by villagers. Otherwise, the

come le viti nella Marca. In *Aragoshe, Muhatuge, Ràmapurata, Vaipur*, ed altri luoghi del Malabar si trovano boschi interi di ellere di Pepe'. In the English edition (London 1800) only the first passage is found, p. 163: 'The small black pepper is a kind of ivy, planted for the most part at the bottom of trees, the trunks of which are tall. Large forests of it may be found at *Aragoshe, Poròtta, Valaya, Vaypur*, and every where at the foot of the Gauts, where the soil is black, rich, argillaceous, and hot'.

61 Odorico 439: 'nemus enim in quo nascitur ipsum piper continet in se bene 18 dietas et in ipso nemore sunt due civitates, una nomine Flandrina, altera vero Çinglin.'

62 Cultivation is also implied by Odorico 439: 'In hac contrata autem habetur piper per istum modum: nam primo nascitur in folia de elere, que folia iuxta magnos arbores plantantur, sicut hic nostre ponuntur vites.'

pepper was likely exploited by the *Maler* ('people of the hills') described by the same fra Paolino:

I *Maler*, che abitano le montagne di *Ghattes* sono uomini silvestri, che non comunicano cogli altri Malabari, se non una volta l'anno, quando vengono a comprare le provisioni. Io ne vidi varj a *Maleatur*, a *Codamangalam* e a *Vaypur*. Essi vanno ignudi uomini e donne, ma queste si coprono le parti con un solo foglio di *Banana*, attaccato ad un cordone, che fa il giro delle reni. Si dice, che esse si vergognano più nella loro società di mostrare il seno che questa parte, perchè dicono, che il petto cresce tardi, e che colli altri membri uno nasce dal ventre della sua madre: Quindi girano affatto ignude nei boschi, e il foglio sudetto si attacca quando vengono alli borghi sulle pianure. Gli uomini raccolgono il mele, la cera, il cardamomo, il pepe, varie erbe medicinali, il *Bezoar* dell'Antilope. Essi dormono sopra gli alberi, per non essere assaliti dalle tigri quando girano per le montagne. Le donne partoriscono sole senza assistenza delle Commari. Nei loro tugurj hanno una pietra, che rappresenta l'anima dei loro parenti defunti, hanno un Re o Capitano che chiamano *Malenràgiàva*, cioè, *Re dei Montagnoli*. Essi non hanno nè culto pubblico, nè Sacerdoti.⁶³

Fra Paolino's *Maler*—collectors and sellers of honey, wax, cardamom, pepper, medical herbs, *bezoar*—embody the forager-traders of Morrison's model. They live in the forests of the Ghats, sleep in the trees, and come to sell their commodities in villages like Malayattoor, Kothamangalam and Vaipur. These villages were at the foothills of the Western Ghats⁶⁴ and close to forests⁶⁵ and navigable rivers—the Periyar River, the Muvattupuzha River, and the Manimala River, respectively.

It is remarkable that fra Paolino does not depict them as exclusively or even predominantly pepper sellers. It would seem that the *Maler* were selling pepper in quantities comparable to other forest products, which is odd considering the alleged density of pepper-rich wooded zones all along the foothills of the Western Ghats. It has to be borne in mind, however, that by the time fra Paolino witnessed the *Maler* trading in those villages of central Kerala, their role in the pepper trade must have been undermined by both the expansion of pepper cultivation into new areas and the propagation of the plantation

63 Fra Paolino 182. This passage cannot be found in the German (Berlin 1798), English (London 1800), or French (Paris 1808) edition of fra Paolino's work.

64 Fra Paolino 116.

65 Ibid. 80; 154.

system. Pepper production in the northern part of the country, insignificant in the sixteenth century, had by the late eighteenth century boomed. In the mid eighteenth century some 4,350 tons are recorded as the local annual production⁶⁶—more than the Portuguese ever exported, and more than Marthanda Varma collected from his dominions in 1757. Moreover, in his 1800–01 travel across the British province of Malabar, Francis Buchanan saw plantations—in Tellicherry as well as in Palighat—from which he could report the exact number of pepper vines: 17,529 (7,930 productive) in Tellicherry; 13,316 (4,365 full bearing) in Palighat.⁶⁷

Along the road, Buchanan was able to learn about the trade conducted by the *Malaya-pudy*—literally the ‘hill-village-man’, who was granted by the rajah of Mysore the privilege of collecting medicinal drugs—with both the *Cadar*, a community in the hills of Ani-malaya (Anaimalai), and neighboring groups from the adjacent Travancore kingdom such as the *Visuar* or *Coravan*, *Vucamar*, and *Munnan*.⁶⁸ The *Cadar* supplied ginger, turmeric, honey, wax, resins, barks, juices, and ivory; the other tribes offered the same items along with cardamom. After describing at length the cardamom swidden cultivation of the Travancore tribes, Buchanan casually adds: ‘Wild black-pepper is also found in these hills; but is of a bad quality’.

The triumph of the plantation system recast the relationships between the people of the forests and the agriculturalists of the plains. Tamil poets of the first centuries CE were well aware that the Muziris trade was based on a commercial interaction between the coastal area and the mountain hinterland.⁶⁹ The interdependence between the Malabar highlands and the coastal plains is visually represented in the *Tabula Peutingeriana*, where Muziris and a lake (probably, Vembanad Lake) are depicted next to a range of mountains labelled *Mons Lymodus* (most likely, the Western Ghats), where the ‘elephants are born’.⁷⁰

66 Buchanan II 530: ‘Before the invasion of *Hyder*, in the Malabar year 940 (1764/5), the country now called the province of Malabar produced annually about 15,000 *Candies* of 640 lb.’

67 Buchanan II 365; 526.

68 Ibid. II 334–337.

69 Puranānūru 343, 1–10: ‘like Muciri (= Gr. Mouziris; Lat. Muziris), of the sea which roars like a drum, which belongs to the *Kuttuvan* with the golden garland, who offers toddy as if it were water to those who come to pour there the goods from the mountains and those from the sea (*malait taramum kaṭal taramum*), to those who bring ashore in the lagoon boats the “gifts” of gold brought by the ships, and to those who crowd the port in the turmoil created by the sacks of pepper piled up in the houses, and finally to those who return home having sold the fish and having heaped the paddy on the boat.’

70 On Muziris’ ivory trade, see De Romanis 2014.



MAP 8.3 *Tabula Peutingeriana seg. XI*

The only ancient western text that situates the collection of pepper in a mountain setting is, again, a passage of Philostratus' *Life of Apollonius*. If one reads it while keeping in mind fra Paolino's and Buchanan's descriptions of hill people, it may be taken as a manipulated ethnographic account:

In the folds of the mountain, however, grow tall frankincense trees and many other kinds too, including pepper-bearing trees that are harvested by monkeys. Since the party did not fail to note what the tree looks like, I shall describe it. The pepper tree looks like the Greek willow in every respect, down to the clusters of fruit, except that it grows on precipices where it is inaccessible to humans. But they say that a tribe of monkeys lives there in the clefts and hollows of the mountain out of reach of men, and the Indians value them so highly that, when the animals are harvesting the peppers, they use dogs and weapons to keep lions away from them. [...] But the method used for the peppers is this. The Indians make their way to the trees lower down, pick the fruit, and after making little clearings around the trees collect the peppers in them, as if they were dumping it as garbage of no use to humans. The monkeys watch from their inaccessible places above, and when night comes they imitate the actions of the Indians by tearing the clusters of fruit from the trees and

bringing them to be dumped in the clearings. At dawn the Indians carry off the piles of spice that they have gotten with no effort at all, in fact at their ease and during sleep.⁷¹

There are elements in this passage that may be assumed to be Philostratus' own colourful additions, such as the references to frankincense trees and lions, neither of which can be connected with India—though this may not be the case with the characterization of the pepper collectors as 'monkeys', which may have been inspired by Indian epics and folklore, whose *vānaras* show how the distinction between men and monkeys may blur in the forests. Unlike the story repeated by Isidorus of Seville,⁷² Philostratus' tale did not aim to make pepper more valuable—quite the opposite. Moreover, Philostratus knew too much about India for us to presume that he invented from scratch the story of the pepper-collecting monkey.⁷³ He is more likely to have included in his novel a piece of Indian folklore popularized by Western traders—the same traders who used to sail with the very big ships that he so well describes.

The accounts of Philostratus and of fra Paolino support each other and make clear that the pepper trade that characterized Malabar history from Antiquity up to the early modern age was not only prodigious in quantity, requiring large seagoing vessels, but also relied in no small part on the contributions of the forest dwellers of the Western Ghats.

71 Philostr., *VA* 3.4: 'ἐν δὲ τοῖς κρημνοῖς τοῦ ὄρους λίβανοί τε ὑψηλοὶ πεφύκασι καὶ πολλὰ εἶδη ἕτερα καὶ τὰ δένδρα αἱ πεπερίδες, ὧν γεωργοὶ πίθηκοι, καὶ οὐδὲ ᾧ εἴκασται τοῦτο, παρεῖται σφισιν, ὃν δὲ εἶρηται τρόπον, ἐγὼ δηλώσω· τὸ δένδρον ἢ πεπερις εἴκασται μὲν τῷ παρ' Ἑλληνισιν ἄγνω τὰ τε ἄλλα καὶ τὸν κόρυμβον τοῦ καρποῦ, φύεται δὲ ἐν τοῖς ἀποτόμοις οὐκ ἐφικτὸς τοῖς ἀνθρώποις, οὐ λέγεται πιθήκων οἰκίην δῆμος ἐν μυχοῖς τοῦ ὄρους καὶ ὅ τι αὐτοῦ κοῖλον, οὐς πολλοῦ ἀξίουσιν οἱ Ἴνδοι νομίζοντες, ἐπειδὴ τὸ πέπερι ἀποτρυγῶσι, τοὺς λέοντας ἀπ' αὐτῶν ἐρύκουσι κυσὶ τε καὶ ὄπλοις [...] τὰ γὰρ πραττόμενα περὶ τὰς πεπερίδας ὧδε ἔχει· προσελθόντες οἱ Ἴνδοι τοῖς κάτω δένδρεσι τὸν καρπὸν ἀποθερίσαντες ἄλλως ποιοῦνται μικρὰς περὶ τὰ δένδρα καὶ τὸ πέπερι περὶ αὐτὰς ξυμφοροῦσιν οἶον ῥιπτοῦντες, ὡς ἄτιμόν τι καὶ μὴ ἐν σπουδῇ τοῖς ἀνθρώποις, οἱ δὲ ἄνωθεν καὶ ἐκ τῶν ἀβάτων ἀφεωρακότες ταῦτα, νυκτὸς γενομένης ὑποκρίνονται τὸ τῶν Ἰνδῶν ἔργον καὶ τοὺς βοστρύχους τῶν δένδρων περισπῶντες ῥιπτοῦσι φέροντες ἐς τὰς ἄλλωσιν, οἱ Ἴνδοι δὲ ἅμα ἡμέρᾳ σωροὺς ἀναιροῦνται τοῦ ἀρώματος οὐδὲ πονήσαντες οὐδὲν, ἀλλὰ ῥάθυμοι τε καὶ καθεύδοντες' (trans. C.P. Jones LCL, 2005, with modifications).

72 Isid., *Etym.* 18. 8. 8, on which Freedman 2005.

73 For the *asvamedha*, cf. Goossens 1930.

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