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## Money and Flows of Coinage in the Red Sea

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Trade, Commerce,  
and the State in  
the Roman World

*Edited by*

ANDREW WILSON AND  
ALAN BOWMAN

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## Preface

This volume has its origins, like its three predecessors, in a conference organized as part of the research programme entitled 'The Economy of the Roman Empire: Integration, Growth and Decline', funded by the Arts and Humanities Research Council in 2005–10 and directed by the editors. Fuller information on the aims of the research project can be found in the introduction to the first volume, *Quantifying the Roman Economy: Methods and Problems* (ed. A. K. Bowman and A. I. Wilson, 2009); here it suffices to note that the project aimed to bring together both archaeological and documentary evidence relevant to the nature and performance of the Roman economy in four main diagnostic areas—urbanization and demography, agriculture, trade and commerce, and mining and metal supply—with a particular interest in data that allow some degree of measurement and quantification, and the delineation of trends over time. This volume focuses on the evidence for trade, and, in particular, it explores the relations between commercial activity and regulation, interest (especially as regards customs duties), and involvement on the part of the state. Most of the chapters were originally delivered as papers at a conference on 'Trade, Commerce, and the State in the Roman World' held in Oxford on 1–3 October 2009.

We are grateful to the AHRC for the award of the grant that supported the research programme, and to Baron Lorne Thyssen and the Augustus Foundation, whose support for the project has allowed us to continue the Oxford Roman Economy Project's research programme well beyond the period initially funded by the AHRC. We are grateful also to Dr Gareth Hughes, who, as the project's administrative assistant at the time, assisted with the conference organization; to the staff of the Stelios Ioannou Centre for Research in Classical and Byzantine Studies, where the conference was held; and to all those who contributed to the discussion at the conference. Nichole Sheldrick and Erica Rowan kindly assisted with the preparation of most of the texts; and Angela Trentacoste with obtaining some of the image permissions. The preparation of this volume has, for a variety of reasons, taken longer than any of us could have foreseen or wished, and we thank the authors for their patience during this process.

Andrew Wilson  
Alan Bowman

March 2017

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## Money and Flows of Coinage in the Red Sea Trade

*Dario Nappo*

The commercial relations between the Roman Empire and India have been of great scholarly interest, especially since the time of Mortimer Wheeler, for good reason.<sup>1</sup> Trade between these two areas of the world flourished: from the Far East came silk, spices, ivory, pearls, and many other goods into the Roman Empire. This commerce was usually described by the Romans themselves as a trade in luxuries, a result of the corruption of the *mos maiorum*, especially among the Roman elites.<sup>2</sup> But, in order to comprehend the real nature of such commerce, it is crucial to relinquish any sort of moralistic approach, and rather focus on the actual status among the Romans of these items of trade. Although some of them may indeed be regarded as proper luxury goods, it has been effectively pointed out that in fact many of those objects of trade were necessities for the Roman way of life, and had medicinal or religious applications.<sup>3</sup> The issue of the great value of these 'luxury items' led both ancient writers and modern scholars to wonder about the subject of the costs and the profit connected to the trade with India.

Among the most ancient and probably the most famous statements on the topic are two by Pliny the Elder. In his *Naturalis Historia* he refers several

<sup>1</sup> The first to deal with the subject was Gibbon, in his *The History of the Decline and Fall of the Roman Empire* (1776–89); see also Warmington (1928; 1974). But the turning point for such studies were the excavations made by Wheeler at Arikamedu, in India, that for the first time provided some actual archaeological evidence of the trade between the two areas of the world (Wheeler 1976). Since then, the number of papers and works published on the topic has increased constantly.

<sup>2</sup> See Young (2001) for a full discussion.

<sup>3</sup> The point was first made by Sidebotham (1986: 20–1), and subsequently taken up by most of the later scholars who have dealt with the topic—e.g. Ball (2000: 130); Young (2001: 14–17). Yet the old approach to the Indian trade as merely a trade in luxury items is still present in recent works, e.g. McLaughlin (2010: 7–10).

times to the Eastern trade and gives figures for its value, complaining about the huge amount of money the Empire spent on Eastern luxury goods, assessing a flow of 50,000,000 *sestertii* per year paid by the Empire in order to buy Indian merchandise, and adding that Indian merchandise was sold in the Empire at 100 times its purchase value:

*Digna res, nullo anno minus HS [D̄] imperii nostri exhauriente India et merces remittente quae apud nos centiplicato ueneant.*

(It is an important fact, that in no year does India drain less than 50,000,000 *sestertii* from our empire and send back goods which are sold among us at 100 times the price.)<sup>4</sup>

Pliny returned to the same topic in the twelfth book of his work, again complaining about the excessive amount of money wasted in such a trade:

*Verum Arabiae etiamnum felicius mare est; ex illo namque margaritas mittit. Minimaque computatione miliens centena milia sestertium annis omnibus India et Seres et paeninsula illa imperio nostro adimunt: tanti nobis deliciae et feminae constant.*

(But it is the sea of Arabia that has even a still greater right to be called 'happy', for it is this that furnishes us with pearls. At the very lowest computation, India, the Seres, and the Arabian Peninsula, withdraw from our empire one hundred millions of *sestertii* every year—so dearly do we pay for our luxury and our women.)<sup>5</sup>

Pliny's accounts make two different points. On the one hand, we find a member of the Roman elite complaining about the decadence of Roman *virtus*.<sup>6</sup> On the other hand, we find a somewhat detailed description of the costs involved in the trade with the foreign eastern countries. It is this second aspect of Pliny's account that has generated a rich debate among scholars, and the trustworthiness of his figures has long been discussed: it is obvious that they cannot, in any case, be taken at face value.<sup>7</sup> The fact that they are round

<sup>4</sup> Pliny, *NH* 6.101, trans. Rackham (1942).

<sup>5</sup> Pliny, *NH* 12.84, trans. Bostock and Riley (1855).

<sup>6</sup> A view certainly shared by his contemporaries. See, e.g. Dio Chrysostom, *Orations* 79.5–6: *Ἄρα ἐνθυμείσθε ὅτι πάντες οὗτοι, λέγω δὲ τοὺς Κελτοὺς καὶ Ἰνδοὺς καὶ Ἰβήρας καὶ Ἀραβας καὶ Βαβυλωνίους, φόρους παρ' ἡμῶν λαμβάνουσι, οὐ τῆς χώρας οὐδὲ τῶν βοσκημάτων, ἀλλὰ τῆς ἀνοίας τῆς ἡμετέρας; [...] πλὴν ὅτι λίθους μικροὺς καὶ ἀσθενεῖς καὶ, νῆ Δία, θηρίων ὁσὰ δίδόντες λαμβάνουσι ἀργύριον καὶ χρυσίον, ἀντὶ χρηστῶν ἄχρηστα ἀντικαταλλαττόμενοι* ('Are you aware that all these peoples—the Celts, Indians, Iberians, Arabs, and Babylonians—exact tribute from us, not from our land or from our flocks and herds, but from our own folly? ... They offer tiny, fragile pebbles and, forsooth, bones of wild beasts when they take our silver and gold, exchanging useless things for useful'). Also Tacitus, *Annals* 3.53 (reporting Tiberius' words): *Promiscas viris et feminis vestis atque illa feminarum propria, quis lapidum causa pecuniae nostrae ad externas aut hostilis gentis transferuntur* ('The apparel worn indiscriminately by both sexes, or that peculiar luxury of women which, for the sake of jewels, diverts our wealth to strange or hostile nations').

<sup>7</sup> Raschke (1978: 604–8).

figures suggests that they are not very accurate. Still, in both passages, Pliny provides us with minimum rather than precise amounts, something that would give a reason for the round figure. They are meant as a rough indication of the scale, rather than a precise evaluation. In one case Pliny seems to estimate a minimum yearly expenditure of 50 million *sestertii* for Indian merchandise only. In the second case, a minimum of 100 million *sestertii* is given for all items coming from Arabia, India, and China.

Despite their vagueness, I think Pliny's figures are a stimulus for economic historians to try and find an answer to questions concerning the costs involved in the trade with India, its profitability, and the actual flows of trade.<sup>8</sup> Since Warmington, Pliny's accounts have often been interpreted as a proof that there was a serious imbalance of trade, draining a huge amount of gold and silver coins out of the Empire to the East, in order to buy expensive merchandise.<sup>9</sup> As later pointed out by MacDowall, such an assumption is faulty, because it ignores the fact that Pliny actually refers to the amount of the expenditure in *sestertii* (the unit of account), rather than *denarii* (the coins actually traded to India), and it is therefore safe to assume that he is referring to the value of all the items exported by Roman traders, rather than to the amount of coins exported.<sup>10</sup>

Still, it has always been assumed that coins were an important part of Roman exports to India, providing the necessary amount of precious metal to buy the expensive Eastern items. The *Periplus Maris Erythraei*<sup>11</sup> offers a quite solid basis for such assumption. In fact, it often refers to exports of money and metals from the Roman Empire to India, but also makes some distinctions. When talking about Roman exports to Barbarikon (north India), the author lists *χρῆμα*<sup>12</sup> (which can be translated as money<sup>13</sup>), and silver plate. At Barygaza (still north India), the metals in demand are copper, tin, lead, antimony, and gold and silver money (*δηνάριον χρυσοῦν καὶ ἀργυροῦν*).<sup>14</sup> At Limyrike (south India), we are told that there is a market for a 'great amount of money' (*χρήματα πλεῖστα*), antimony, copper, tin, and lead.<sup>15</sup> It is thus clear that what is considered our best source on the Roman trade with India during the first century AD explicitly makes mention of coins among the items of trade.<sup>16</sup>

<sup>8</sup> See the interesting discussion of De Romanis (1996) on the topic.

<sup>9</sup> Warmington (1928: 272–318 = 1974: 272–318). The idea of a haemorrhage of coins due to the commerce with India is still quite popular among contemporary scholars: e.g. Young (2001) and De Romanis (2012). See also the last section of this chapter.

<sup>10</sup> MacDowall (2003b: 39). See also recently Cobb (2015b: 199).

<sup>11</sup> For the references to the text of the *PME*, I have used here the version of Casson (1989). For a complete overview on the nature and problems of this text, see now Boussac, Salles, and Yon (2012).

<sup>12</sup> *PME* 39.

<sup>13</sup> Casson (1989: 75).

<sup>14</sup> *PME* 49.

<sup>15</sup> *PME* 56.

<sup>16</sup> A different view is reported by Pausanias, *Descriptio Graeciae* 3.12, 3–4: *Λακεδαιμονίους δὲ κατὰ τὴν ὁδὸν ταύτην ἐστίν, ὡς ἦδη λέλεκται μοι, τὰ ὀνομαζόμενα Βούνηγτα, Πολυδώρου ποτὲ οἰκία τοῦ βασιλέως: ἀποθανόντος δὲ παρὰ τοῦ Πολυδώρου τῆς γυναικὸς ἐπράγτο ἀντιδόντες βοῦς.*

To strengthen the evidence of the *Periplus*, evidence of Roman coins found in India is not rare, confirming that coins were actually exported.<sup>17</sup>

In this chapter I aim to contribute to the discussion triggered by the statements of Pliny on the general issue of the Red Sea trade, analysing what we know about Roman exports to India between the first and the second century AD, especially in relation to the export of coins. Traditionally, the study of taxation has been considered among the best available proxies for reconstructing the circumstances of the trade and the costs and profits related to it. Geographically, the key area for the analysis of such a matter is definitely the Egyptian Eastern Desert, where most of the actual taxation process took place and from where many documents relating to taxation come. The fiscal organization of this area has been studied over the years, and there is agreement on some aspects related to it. It is already well known that this area played an important role as a commercial route connecting the Roman world and the Far East.<sup>18</sup> It has been also demonstrated that the Nile river port of Coptos<sup>19</sup> acted as a hub for organizing the taxation of incoming Eastern goods. Here an *ad valorem* tax of 25 per cent was levied on the foreign items entering the Empire, from the Red Sea. Such a tax, called in Greek the *tetarte* ('quarter tax'),<sup>20</sup> is also attested as operating on other frontiers of the Roman Empire—for example on the border with the Parthian Empire.<sup>21</sup> The very high rate suggests the importance that foreign trade had for the Roman fisc.

Apart from the *tetarte*, a different kind of tax was also levied at Coptos: tolls were charged there on merchants going to the Red Sea via the desert caravan routes.<sup>22</sup> Although many aspects related to the taxes levied upon the

ἀργύρου γὰρ οὐκ ἦν πω τότε οὐδὲ χρυσοῦ νόμισμα, κατὰ τρόπον δὲ ἔτι τὸν ἀρχαῖον ἀντεδίδοσαν βούς καὶ ἀνδράποδα καὶ ἀργὸν τὸν ἄργυρον καὶ χρυσόν: οἱ δὲ ἐς τὴν Ἰνδικὴν ἐσπλέοντες φορτίων φαῖν Ἑλληνικῶν τοὺς Ἰνδοὺς ἀγώγιμα ἄλλα ἀνταλλάσσειν, νόμισμα δὲ οὐκ ἐπίστασθαι, καὶ ταῦτα χρυσοῦ τε ἀφθόρου καὶ χαλκοῦ παρόντος σφίσι ('On this road the Lacedaemonians have, as I have already said, what is called the Booneta, which once was the house of their king Polydorus. When he died, they bought it from his widow, paying the price in oxen. For at that time there was as yet neither silver nor gold coinage, but they still bartered in the old way with oxen, slaves, and uncoined silver and gold. Those who sail to India say that the natives give other merchandise in exchange for Greek cargoes, knowing nothing about coinage, and that though they have plenty of gold and of bronze').

<sup>17</sup> See, e.g. the lists of Roman coins in India provided by Turner (1989) and Suresh (2003).

<sup>18</sup> Sidebotham (1986); De Romanis (1996); Tomber (2008).

<sup>19</sup> On Coptos and its importance, see Maxfield (1996: 11–12); Rathbone (2002: 180); Bagnall and Rathbone (2004: 280–4).

<sup>20</sup> On this topic, the main source of information is still SB 18. 13167, also known as the 'Muziris papyrus'. See Harrauer and Sijpesteijn (1985: 124–55); Casson (1986: 73–9; 1990: 195–206); Thür (1987: 229–45; 1988: 227–33); Foraboschi and Gara (1989: 280–2); De Romanis (1996: 183–96; 1998: 11–60; 2010–11: 75–101; 2014: 73–90); Rathbone (2001; 2002: 179–98); Morelli (2011: 199–236).

<sup>21</sup> See De Romanis (2006: 6–69).

<sup>22</sup> The toll is attested in the 'Coptos Tariff', OGIS 2. 674; republished in SB 5. 8904. As is now clear from the available evidence, control of the fiscal system in the Egyptian Eastern Desert was in the hands of the arabarchs, whose origin dated to the Ptolemaic period. On the arabarchs and their organization, see Nappo (2007: 273–91).

merchandise entering the Empire have been investigated, relatively little is known about the fiscal organization of the caravan routes themselves and of the ports on the Red Sea, from which ships would depart towards the East. Until the late 1990s almost nothing was known about the taxation on the outgoing merchandise. This gap in our documentation has been reduced, thanks to a number of *ostraka* found at Berenike, a port located in the area of Ras Banas, the southernmost Roman settlement in Egypt and a terminal of the route connecting south India to the Roman Empire. Berenike's general role in the economy of the area has been described in a number of publications<sup>23</sup> and will not therefore be examined here. Analysis will be focused rather on the dossiers of *ostraka* discovered at Berenike and published in two volumes by a team of scholars led by R. Bagnall.<sup>24</sup> These documents can be used to shed a considerable amount of light on the dynamics of taxation on trade as applied in the Egyptian port and on the desert routes at large, and on the actual items exported,<sup>25</sup> but here I will focus only on those aspects connected to the process by which goods and their transporters passed through the customs gate at Berenike. These documents served as *laissez-passer* orders for goods going through the customs station of Berenike, on their way to being loaded on ships voyaging from there to locations along the African or Indian coast. Although some of these goods could have been used for personal consumption by the crew of the ships, most were in fact export wares.<sup>26</sup> These receipts of *laissez-passer* orders were issued somewhere on the Nile–Berenike route (most likely Coptos) and received by the officials in charge of the customs gate in Berenike; this would mean, according to the editors, that 'the amounts due were collected in the valley [i.e. at Coptos], with the goods then free to pass through the gate in Berenike'.<sup>27</sup> The first point worth stressing is that these documents for the first time attest unequivocally the presence of a customs post at Berenike. Although the taxes were paid elsewhere, the last step of the fiscal control took place at Berenike, before the outgoing goods left the Empire to the East.

The structure of the *ostraka* allows us to shed some light on the organization of this control. Generally speaking, we can summarize the structure of the documents as follows:

NN to NN, *quintanensis*, greetings; please, let pass for NN a X amount of some item.

<sup>23</sup> Sidebotham and Wendrich (1995; 1996; 1998; 1999; 2000; 2007); Sidebotham (2002; 2011).

<sup>24</sup> Bagnall, Helms, and Verhoogt (2000; 2005). The documents cited from these two volumes are hereafter referred to as *O. Berenike*.

<sup>25</sup> So far 260 *ostraka* have been published, and most of these documents come from a Roman dump dated to the first century AD: Bagnall, Helms, and Verhoogt (2000: 3).

<sup>26</sup> Bagnall, Helms, and Verhoogt (2000: 8).

<sup>27</sup> Bagnall, Helms, and Verhoogt (2005: 5).



This general pattern includes a writer who addresses an officer to request a *laissez-passer* for people carrying some quantities of items (most commonly wine, but also oil and vinegar). The addressees are often qualified by their name and the title of *quintanensis*, but exceptions to this rule do exist. Here I report three different examples of these receipts, to give reasons for the possible variations in the structure (*italika* = ‘Italian amphorae’; *rhodia* = ‘Rhodian amphorae’):

1. *O. Berenike* 51, from the dossier of Andouros (*O. Berenike* 50–67):

Ἀνδουρωι κουντ(αησίωι)· πάρες  
Τιβεριού Κλαυδ(ίου) [[Ἀχιλλέωσ]] Δωρίωνος  
Παουῶτι Παούτος ἰταλικά  
δέκα, (γίνεται) ἰταλ(ικά) ι.

(To Andouros, *quintanensis*, let pass of Tiberius Claudius [Achilleus] Dorion, for Paouos son of Paouos, 10 *italika*, total 10 *ital(ika)*.)

2. *O. Berenike* 11, from the dossier of Sosibios (*O. Berenike* 1–35):

Σωσίβιος Ἀνδουρω(ι) χα(ίρειν) πάρες Ἀνδουρω(ι)  
Παχ( ) οἴνου ἰταλικά) σ.

(Sosibios to Andouros, greetings. Let pass for Andouros son of Pach( ) 6 *italika* of wine.)

3. *O. Berenike* 36, from the dossier of Robaos (*O. Berenike* 36–49):

[Ρ]οβαος τοῖς ἐπὶ τῇ πύλῃ χα(ίρειν)  
πάρετε Ἀρνώθῃ [εἰς]  
[ἐ]ξαρτισμὸν ῥόδ(ια) η.

(Robaos to those in charge of the customs gate, greetings. Let pass for Haryothes for outfitting, 8 *rhodia*.)

As a close look at the examples provided can prove, the slight differences in the structure of the documents do not imply any difference in the use and the meaning of these documents. For instance, the *quintanenses* of the first example are the ‘people at the customs gate’ of the third one. As pointed out by the editors,<sup>28</sup> the phrase ‘people at the customs gate’ was used by a writer who did not know the name of the officer he was addressing, and allows us to understand, on the one hand, that the *ostraka* were used by the merchants as *laissez-passer* to go through the customs gate at Berenike, and, on the other hand, that the officer in charge of controlling this process was called a *quintanensis*.

<sup>28</sup> Bagnall, Helms, and Verhoogt (2000: 8–12).

The last group of documents I would like to analyse here is in fact the dossier of Sarapion—that is, *O. Berenike* 153–83. The reason why this group of documents deserves its own analysis depends not on its structure,<sup>29</sup> but rather on the texts of the *ostraka*. It is immediately evident that Sarapion’s *laissez-passer* are composed of two different subgroups. We in fact have a number of documents (*O. Berenike* 153–7, 164, 167, 168, eight in total) in which the writer, Sarapion, always addresses the *quintanensis* Andouros to request a *laissez-passer* for people carrying wine, as it is possible to see in the following example (*O. Berenike* 153):

Σαραπίων Κασίου  
Ἀνδουρωι χα(ίρειν)· δι(απόστειλον) Ψενο-  
σίρις Πακοίβω(ς) οἴ-  
νου λαδικ(ηνοῦ) κερ(άμια) β. σεση(μείωμαι).

(Sarapion son of Kasios to Andouros, greetings. Dispatch for Psenosiris son of Pakoibis 2 jars of Laodicean wine. Signed.)

The documents belonging to this first subgroup show no difference from the ones already analysed. In the documents of the other subgroup, instead, the writer addresses the *quintanensis* Pakoibis, not Andouros, and this time he asks for a *laissez-passer* for people carrying *μαρσιπ* (...), as shown in the following example (*O. Berenike* 162):

Σαραπίων Κασίου  
Πακοίβι χα(ίρειν)· δι(απόστειλον) Ἀν-  
τωι Τχαλιου μαρσίπ(πια)  
σλε. σεση(μείωμαι).

(Sarapion son of Kasios to Pakoibis, greetings. Dispatch for Antos son of Tchalios 235 bags. Signed.)

The first conclusion that it is possible to infer from this difference is that the dossier of Sarapion proves that the customs at Berenike probably had a complex articulation, with different ‘offices’ according to the different merchandise the traders needed to export. So when Sarapion needs to export wine, he sends his merchants to Andouros, whereas when he needs to export *μαρσιπ*(), he sends them to Pakoibis. For a complete understanding of this process, it is crucial to solve the abbreviated word *μαρσιπ*(). The editors interpreted it as an abbreviation for *μαρσίππια*.<sup>30</sup> The Greek word *μάρσιππος* is well attested in the papyri, and its diminutive (*μαρσίππιον*) appears in the *ostraka* from Mons Claudianus.<sup>31</sup> It means ‘a (carrying) bag, a container’, something to transport items. So we can interpret *μαρσίππιον* as a bag, but in no case in the text is the content of these bags specified, as is clear in the

<sup>29</sup> In terms of structure, the dossier of Sarapion can be considered as an example of what I listed as group 2.

<sup>30</sup> Bagnall, Helms, and Verhoogt (2005: 63).

<sup>31</sup> *O. Claud.* 227; 231; 248.

Table 17.1. Attestation of *μαρσίππια* in *O. Berenike*

| Text | Number of <i>μαρσίππια</i> |
|------|----------------------------|
| 159  | 56                         |
| 160  | 160                        |
| 162  | 235                        |
| 163  | 112*                       |
| 165  | 97*                        |
| 166  | 160*                       |
| 170  | 73                         |
| 172  | 160                        |
| 173  | 21                         |
| 174  | 68                         |
| 177  | 119*                       |
| 185  | 5                          |

Note: \* = *διπ(λᾶ)*, 'double'.

example provided. The quantities of *μαρσίππια* involved in the texts from Berenike are very high, as can be seen in Table 17.1.<sup>32</sup>

The quantities marked with a \* are qualified in the *ostraka* with *διπ(λᾶ)*, 'double', which suggests that the word *μαρσίππιον* stands as a standard unit of measurement. So we can say that the *μαρσίππια* were used to transport items in standard packages and dispatched in very large quantities, given the amounts of *μαρσίππια* attested in the documents.

I would suggest that coins would be a perfect content for *μαρσίππια*. This interpretation is supported by the papyrological evidence. In fact in the papyri the word *μαρσίππιον* is often used as the equivalent of the English purse, a bag of coins.<sup>33</sup> When used with this meaning, it is sometimes attested in the phrase *μαρσίππιον ἐσφραγίσμενος*,<sup>34</sup> 'sealed *marsippion*', which might give a new hint to understand the nature of the documents we are dealing with.

This suggestion may become clearer when one thinks of how the actual system for transporting merchandise and coins over the desert worked. The cargoes would leave Alexandria, the big *emporion* on the Mediterranean, to be conveyed to Coptos on the Nile and from there overland to Berenike. As far as we know, merchants would borrow the money for their commercial expeditions from wealthy people willing to finance such trade, reaping huge profits from these loans.<sup>35</sup> It is reasonable to imagine that these financiers would also

<sup>32</sup> As pointed out by the editors (see Bagnall, Helms, and Verhoogt 2005: 64, n. 6), the median of the quantity of *marsippia* falls between 112 and 117, a huge amount, if compared to the median of *ladikena* of wine, which falls between 4 and 6.

<sup>33</sup> See, e.g. *P. Sarap.* 55; *P. Tebt.* 337; 797; 1151; *P. Mert.* 113; *P. Oxy.* 1670; 2728; *P. Cair. Zen.* 59010; 59069; *P. Petr.* 107.

<sup>34</sup> Attested, e.g. in *P. Mert.* 3, 113; *P. Oxy.* 2728; *P. Cair. Zen.* 59010; 59069.

<sup>35</sup> This practice is attested in SB 18. 13167. See also the bibliography cited at n. 20.

have provided the merchants with the coins to trade in India. At this point it is worth remembering that Roman coins found in India are mostly *denarii* or *aurei*<sup>36</sup>—that is, types of coins of officially forbidden circulation in Roman Egypt.<sup>37</sup> In fact, although the excavations at Berenike yielded Roman bronze coins and Ptolemaic *tetradrachmai*, not a single *denarius* or *aureus* was found. However, as the Roman *denarii* found in India did indeed arrive from Egypt, we are confronted with a seemingly insoluble contradiction. The answer to such a puzzle is, in my opinion, represented by the *μαρσίππιον ἐσφραγίσμενος*. The coins necessary for the trade with the Indians would be collected in sealed bags with a standard amount of coins (and, consequently, of standard weight). This would guarantee both the financier and the merchant: the financier would be sure that the traders could not open the bags and try to steal some coins, and the traders would be able to count the coins more quickly (they could be counted bag by bag, rather than one by one). Comparative examples for this hypothesis do exist. The first one is the so-called 'tesoretto di Rimigliano',<sup>38</sup> discovered in 2002 off the shores of Italy. The 'tesoretto' ('treasure', or 'hoard') comes from a wreck in the Tyrrhenian Sea, and is composed of a group of silver coins (overall c.3,600, mainly *antoniniani*, but also a few *denarii*). Because of oxidation, the coins are still in the position they were in when the ship wrecked. They form a block of vaguely spherical shape, which led the editors to think that the coins were originally kept in a basket. The coins also appear to have been divided into smaller globular packages, small leather bags put into the basket. The small bags contain a standard amount of silver coins, split into groups of ten units, in order to facilitate the process of counting them. The 'tesoretto' has been interpreted as an example of the standard way of transporting coins on the Roman ships. Its structure can easily be compared with the one proposed for the *μαρσίππια* attested in the Berenike *ostraka*.

Another piece of evidence supporting this interpretation comes from the soil of India itself. Unfortunately, unlike the 'tesoretto di Rimigliano', the circumstances of the find are not reported in much detail. In 1847, hundreds of excellently preserved *aurei* were found on the slope of a hill by the sea at Kottayam, in the region of Tamilnadu. The coins were all from a hoard unearthed by local villagers, and unfortunately most of them were dispersed, never to be found again. The exceptional nature of this find lies not simply in its size (hoards with hundreds of Roman coins are not extremely rare in India), but rather in the quality of the coins themselves and in the way they had been concealed in the ground. Captain H. Drury was the first to report

<sup>36</sup> Turner (1989). <sup>37</sup> Harl (1996: 117–24).

<sup>38</sup> It was found in 2002 near Livorno, in Tuscany. See De Laurenzi (2004).

such a discovery. His account, although deficient in some details, is long and interesting, and I reproduce the most relevant bit of it:

A most interesting discovery of a large quantity of ancient Roman gold coins has lately been made in the neighbourhood of Cannanore on the Malabar coast, not only remarkable for the numbers found (amounting to some hundreds) but also for their wonderful state of preservation. Many appear almost as fresh as on the day they were struck: the outline of the figures is so sharp and distinct, and the inscriptions so clear and legible. With very few exceptions, they are all of gold, and of the age of Imperial Rome from Augustus downwards, several of them being coeval with the earliest days of the Christian era. . . . The purity of the gold, especially attracted the notice of the jewellers and the wealthier natives, who purchased them for the purpose of having them melted down for trinkets and ornaments, and many, it is to be regretted, have been, irretrievably lost in this way. . . . It now appears that they were accidentally discovered in the search for gold dust by the gradual clearing away of the soil on the slope of a small hill in the neighbourhood of Kottayem, a village about ten miles to the eastward of Cannanore. A brass vessel was also found, in which many of the coins were deposited. For a length of time the numbers appear to have been very great, and it has been stated that no less than five cooly-loads of gold coins were dug out of the same spot. It is impossible to make any correct calculation as to the numbers which have actually been found, but it might be mentioned that about eighty or ninety have come into the possession of His Highness the Baja of Travancore, and a still greater quantity has been collected and preserved by General Cullen, Resident in Travancore, while even after the lapse of more than a year from their first discovery they are still procurable from the natives in the neighbourhood of Tellicherry and Calicut.<sup>39</sup>

For the present discussion, the most interesting elements of Drury's report are that some of the coins were in a brass vessel, and that with a few exceptions they were all of gold, amounting to no less than 'five cooly-loads'.<sup>40</sup>

Some years after the discovery, another account of the find was written, pointing out how the coins seem to have reached India in some sort of bags:

Agreeably to my last note, I now beg to furnish you with the information of the discovery of gold coins here. About three years ago certain Syrians residing at Keelaloor Dashom in Palashy Amsham of the Cotiacum taluk were in the habit of collecting gold from the bed of the river Vanienkudavoo (by taking the sand and sifting it), which was between Keelaloor Dashom and Vengador. One day, whilst they were engaged in digging the bed of the river, a number of gold coins were found in a part where there was a mixture of sand and mud. These were lying

<sup>39</sup> Drury (1852: 371–87).

<sup>40</sup> Note that Turner (1989: 8) suggests that this would mean not fewer than 8,000 coins. (A 'cooly load' varied in British India, by region and over time, between 40 and 72 lb weight; five 'cooly loads' would therefore weigh a minimum of 200 lb, or 90.8 kg.)

buried in the ground, but not in a vessel. A great quantity was taken, but nobody knows how many. Some suppose that these might have been buried here in bags, which have been destroyed.<sup>41</sup>

The Kottayam hoard, although the accounts of it are not very detailed, seems to present some similarities with the structure of the 'tesoretto di Rimigliano'. The area of the find is significant: Kottayam is situated on the west coast of Kerala, near Cochin. Recent archaeological excavations have identified in this area the ancient port of Muziris.<sup>42</sup> The presence of such a big hoard near the ancient large entrepôt should mean that it was probably buried soon after its arrival in India, therefore representing a unique sample of how a group of coins was shipped to India. The size, fine condition of the coins, and the possibility that the hoard was buried in a Roman brass vessel (mentioned by Drury but not by Thurston), all suggest that the hoard may be a deposit made by a western trader, rather than a local trader's collection of goods.<sup>43</sup>

I would suggest that the 'tesoretto di Rimigliano' and (possibly) the Kottayam hoard can be used to understand what is behind the word *μαρσίππια* of the *ostraka*. The dossier of Sarapion, if the proposed interpretation is correct, sheds new light on the organization of trade in the Eastern Desert, telling us how the delivery of the Roman coins to India was actually organized.

If the speculations made so far are sound, then we can proceed to a further step in this analysis, trying to deal with the issue of the presence of Roman coins in India and their significance to understand the flows of the trade. The subject has excited the interest of many scholars over the years, who have put forward various hypotheses to use this kind of evidence as a proxy to understand the development of Roman trade with India.<sup>44</sup>

Generally speaking, we can safely say that coins are among the most impressive archaeological evidence of Roman contacts with India. Around 7,000 silver and gold coins, dated between the Republican age and the beginning of the reign of Caracalla, have been recorded on the Indian subcontinent.<sup>45</sup> The bulk of the coins were found in the southern regions of the country, in the area around the Coimbatore district. Most are silver coins, and their chronological distribution shows a predominance of early imperial coinage, especially from the reigns of Augustus and Tiberius.

Some authors have drawn conclusions directly from the chronological distribution of coins in the hoards to the intensity of the Roman trade with India. Sewell, Gupta, Turner, and Suresh supposed that there was a major

<sup>41</sup> Drury (1852: 382) = Thurston (1894: 12–13).

<sup>42</sup> Cherian (2007; 2008; 2009); Cherian et al. (2009).

<sup>43</sup> Turner (1989: 8–9).

<sup>44</sup> See, e.g. Turner (1989); Suresh (2003); MacDowall (2003a, b); De Romanis (2012).

<sup>45</sup> Although biased with several defects, the catalogues provided by Turner (1989) and Suresh (2003) are still the best available ones so far on the subject. Also, see now De Romanis (2012: 180–3), although his catalogue encompasses only the period between Augustus and Nero.

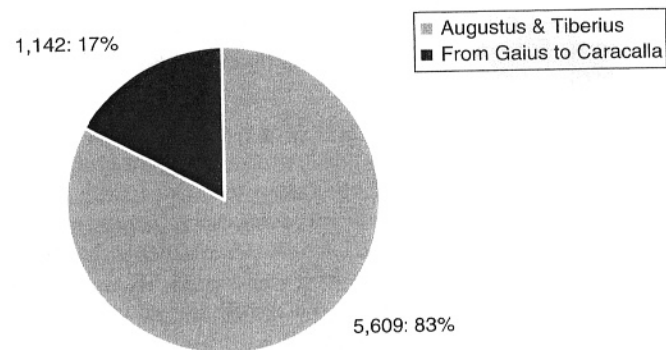


Fig. 17.1. Proportions of Roman coins found in India struck in the reigns of Augustus and Tiberius compared to those struck from Gaius to Caracalla; total = 6,751

thrust of trade in the later part of Augustus' reign.<sup>46</sup> According to them, even before the reign of Nero, Indian traders began to lose confidence in the *denarius*, because of the reform of the coinage promoted by the emperor, and the *aureus* took over in the exchange, definitively after AD 64. In the second century AD the trade continued, but on a smaller scale. According to Turner, the period of great volume of trade from India to the Roman Empire was restricted in time to the earlier part of the first century AD.<sup>47</sup>

Before questioning such an interpretation, it is worth underlining that the sample of Roman coins found in India is rather limited. As said before, we can rely only on a corpus of fewer than 7,000 coins issued between the reigns of Augustus and Caracalla—that is, over almost 250 years, which works out an average of fewer than 30 coins per year. That preliminary statement should always be kept in mind when trying to use this kind of evidence to infer anything about Roman trade with India.

The interpretation put forward by Turner is clearly based on a very noticeable feature of the corpus of Roman coins found in India: as can be seen in Fig. 17.1, the number of coins struck under the emperors Augustus and Tiberius is simply overwhelming compared to the coins struck between the reigns of Gaius and Caracalla. The Augustan and Tiberian coins constitute in fact 83 per cent of the total. They are mostly *denarii*, generally in mint condition, mainly belonging to two numismatic types: CL CAESAR (Augustus) and PONTIF MAXIM (Tiberius).<sup>48</sup>

The first possible objection to a simplistic deduction from coin numbers over time would be to point out that, as stated by our literary sources, coins were not the only item used by the Roman traders to buy Indian goods. Wine,

<sup>46</sup> Sewell (1904); Gupta (1961); Turner (1989); Suresh (2003).

<sup>47</sup> Turner (1989: 20–5). <sup>48</sup> De Romanis (2012: 170–1).

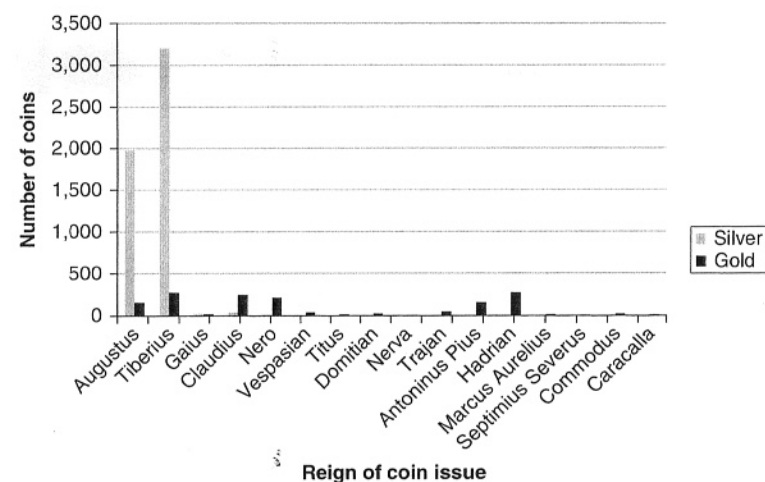


Fig. 17.2. Chronological distribution, by reign of issue, of numbers of Roman gold and silver coins found in India

oil, textiles, and glass at least are also featured among the most common Roman exports to the Indian subcontinent.<sup>49</sup> For this reason, a reduced number of coins over the post-Tiberian period does not necessarily mean a diminished level of exchange with India. But I think that there is a second, more telling, objection concerning the nature of the coin finds themselves. As stated above, most of the Augustan and Tiberian coins come from a relatively small area, around the district of Coimbatore, so it might be argued that for some accidental reason the coins that arrived in that region were hoarded, whereas most of those distributed in the rest of the Indian peninsula were melted down.<sup>50</sup>

As I will show in the last section of this chapter, regardless of the way in we choose to interpret the numismatic evidence from India, the idea of using coins to prove a decline in trade after the period of Tiberius is wrong. In fact, even just limiting our analysis to the dating of the coins, it is possible to draw a rather different picture of Roman trade with India from the one proposed by Sewell, Gupta, Turner, and Suresh. In order to do so, I will first analyse the coins according to the emperor who struck them, distinguishing between silver and golden issues, as shown in Fig. 17.2. The chart clearly underlines the striking difference in the amount of coins from the Augustan and Tiberian period, compared with those of the following emperors. This seems to confirm the traditional interpretation suggested by many scholars. Nevertheless, I am

<sup>49</sup> See, e.g. the part of the text of the *PME* referred to, p. 559.

<sup>50</sup> As suggested by MacDowall (2003b: 41–3).



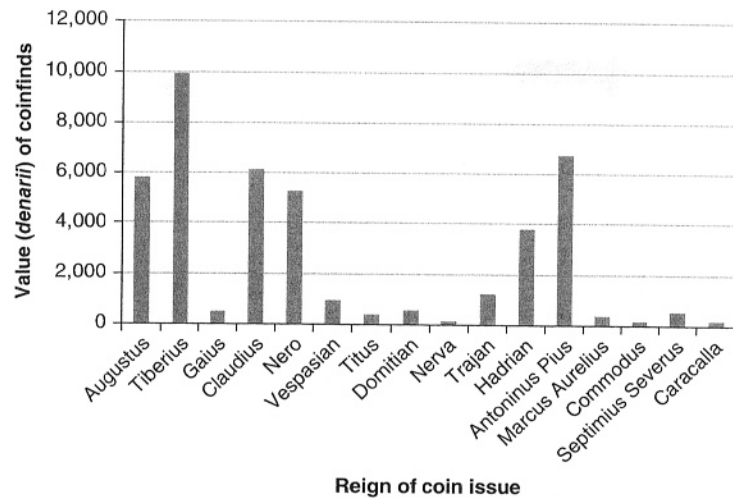


Fig. 17.3. Chronological distribution, by reign of issue, of the total face value (in *denarii*) of Roman coins found in India

not convinced this is indeed the only or the best way to look at the evidence. If we try to measure the level of trade simply by counting the coins, irrespective of their intrinsic value, we would suppose that under the first two emperors of the Julio-Claudian dynasty there was a surge in commerce unmatched in the following era. The problem with such an argument is that it is dangerously misleading, because it does not recognize any difference between silver and gold coins as indicators for the trade.

We cannot simply analyse silver and gold coins as though they were the same. It is necessary to bear in mind an obvious but still underestimated detail: in the Roman world the value of a gold coin (*aureus*) was twenty-five silver coins (*denarii*). So, if we are not interested in merely counting coins, but rather in measuring Roman investment in trade, we need to treat the evidence in an appropriate way.

In Fig. 17.3 I show the same data as used for Fig. 17.2, but this time I have reported the value (expressed in *denarii*) of the coins found in India, again grouped by emperor. As we can easily see, the scenario changes significantly. We still have a peak in the time of Tiberius, but the value of exports under Claudius and Nero is at the same level as under Augustus. The chart then shows a decline under the Flavian dynasty, followed by a clear recovery from the age of Trajan, which reaches its peak under the reign of Antoninus Pius, showing an overall value higher than that under Augustus.

If we divide the value of the coins by the years of reign of each emperor, we find a different picture again. From Fig. 17.4 we see that the value of coins

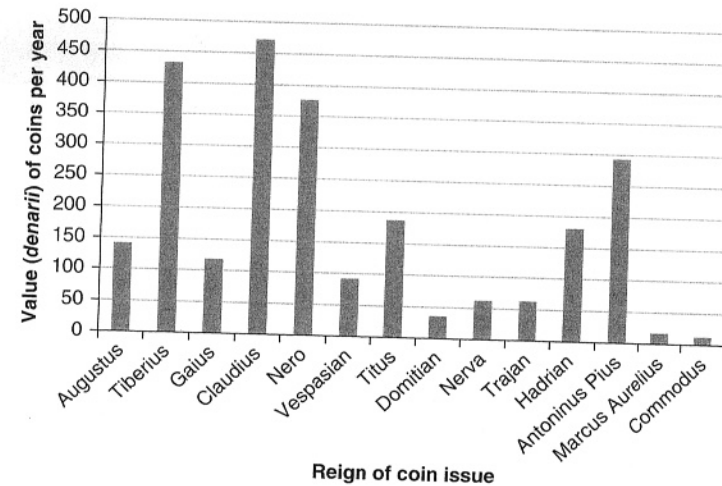


Fig. 17.4. Chronological distribution, by reign of issue, of the face value (in *denarii*) of Roman coins found in India, divided by the number of years of each reign

‘exported’ to India remains fairly stable between the reigns of Tiberius and Nero. If we take into account that for numismatic statistics Tiberius and Gaius are usually taken together, the stability of this period is even more evident.

The evidence offered by the charts can provide some insights into Roman trade flows with India. Summing up, we can make the following numismatic points from Figs 17.1–17.4:

1. Post-Tiberian *denarii* are extremely rare (Fig. 17.1).
2. The presence of Roman coins (at face value) seems to be relatively stable between the age of Tiberius and the age of Nero (Figs 17.3–17.4).
3. The presence of Roman coins (counted at face value), after a decline under the Flavians, seems to recover from the age of Trajan, increasing up to Antoninus Pius (Fig. 17.3).

This evidence has been discussed to some extent by contemporary scholars; I will briefly summarize the main points put forward so far, and then offer my own interpretation of the evidence. The first to deal with the subject in a detailed manner was S. Bolin: he started from the fact that most of the *denarii* found in India and dated from the reigns of Augustus and Tiberius were in mint condition, and that they were of only two types, the CL CAESAR (Augustus) and the PONTIF MAXIM (Tiberius). Bolin therefore postulated that the coins exported to India had never previously circulated in the Roman market. Roman traders would have obtained them either ‘direct from the mint or from money-changers with large stocks of newly minted *aurei* and *denarii*

and taken on board and shipped to India'.<sup>51</sup> A similar opinion was later expressed by M. Crawford, who pushed Bolin's idea further, suggesting that only members of the imperial family would have regular access to freshly minted coins and the Eastern trade must have been controlled by them.<sup>52</sup> Both these interpretations have been undermined by the lack of die linkages among the Roman coins recovered so far in India.<sup>53</sup>

Subsequently, D. MacDowall reprised the subject in a number of works. His main points may be summarized as follows:<sup>54</sup>

- I. The composition of hoards of *denarii* in India is different from that of hoards from inside the Empire.
- II. The *denarii* in the 'Indian' hoards were carefully selected, which can be inferred from the fact that most of them have the same reverse.
- III. There are few Republican *denarii*, and those that are found mainly come from hoards in India dated to the second century AD, when Republican *denarii* disappear from hoards inside the Empire.

Starting from these points, MacDowall claims that Julio-Claudian *denarii* arrived in India only in the Flavian period and that the worn Republican *denarii* arrived after Trajan's debasement in AD 107. MacDowall's thesis is also based upon a detailed analysis of hoards of the period across the Roman world.

Nevertheless, his theory seems to be too rigid. In fact, we have evidence of Republican *denarii* that arrived well before the second century AD: Suresh cites the recent discovery of unworn Republican coins from Ajaigadh, Krishnagiri, and Tiruppur to support such a claim.<sup>55</sup>

In recent years, F. De Romanis suggested a new interpretation of the monetary evidence from India. According to him, the best way to understand it would be to contrast it to the numismatic evidence from the area of Pompeii and Vesuvius, in Campania. De Romanis points out that the types of *denarii* most scarce in Pompeii are the pre-AD 64 reform ones, which also happen to be the most abundant ones in the Indian hoards. The author goes further to try to establish a connection between the two facts, declaring that the pre-64 reform *denarii* were scarce in the Vesuvian area, given the abundance of traders living there who were involved in commerce with India, and who would have used them to trade abroad.<sup>56</sup> Such a hypothesis, albeit intriguing, does not seem entirely convincing.<sup>57</sup>

<sup>51</sup> Bolin (1958: 73).

<sup>52</sup> Crawford (1980: 207–18). It should be noted that his idea of a significant involvement of the imperial entourage in the trade is in general confirmed by the documentary sources.

<sup>53</sup> MacDowall (1996: 83).

<sup>54</sup> MacDowall (1996: 2003a; b).

<sup>55</sup> Suresh (2003: 29).

<sup>56</sup> De Romanis (2012).

<sup>57</sup> For a more traditional interpretation of the Pompeian evidence, see Lo Cascio (1980).

I personally think that De Romanis is certainly right in remarking that the exports of Roman coins to India might have affected the amount of currency circulating inside the Empire,<sup>58</sup> but in my opinion the connection he makes between the Vesuvian area and India is too contrived. Both MacDowall and De Romanis make very interesting points in their reconstructions, but I would disagree with the final conclusions of both of them.

In my view, the key to understanding the whole functioning of the system is a crucial sentence of the *PME*. The author, when writing about Barygaza and the items that it is possible to trade there, says that Roman traders bring there *δηνάριον χρυσούν καὶ ἀργυρούν, ἔχον ἀλλαγὴν καὶ ἐπικέρδειάν τινα πρὸς τὸ ἐντόπιον νόμισμα* ('gold and silver Roman coins, which command an exchange at some profit against the local currency').<sup>59</sup> This sentence has been studied by MacDowall, who remarkably put it in context with an Indian inscription dated to year AD 42,<sup>60</sup> which would indicate that at the time the exchange ratio between gold and silver in western India was 1:10.<sup>61</sup> In the same period, in Rome, the gold:silver ratio was 1:12. This means that Roman traders could make a good profit using silver (rather than gold) as a metal for trade in India. And it also gives the reason why, until the reform of Nero, Roman traders used mostly *denarii* rather than *aurei* for their business in India. It was simply much more profitable.

The reforms of Nero and later Vespasian changed the gold:silver ratio first to 1:11 and then to 1:10, exactly the same as in India. That made the old pre-reform *denarii* a much more valuable currency (for their intrinsic value) than the new *denarii* (which still had the same face value). It is easy to understand that at this point the use of the old pre-AD 64 *denarii* was no longer attractive for transactions within the Empire: the best way to make use of them would be either to melt them down or to export them somewhere where they could still be appreciated for their intrinsic value, such as India.

If this hypothesis is sound, the implication is that for the first century of the trade between the Roman Empire and India coins (mostly silver) played a key role, not just as a means of exchange, but as a financial tool to make some profit by speculation. This means that they were steadily used between the age of Augustus and Nero. Under the latter, and even more under Vespasian, there was a major export of *denarii* to India, in response to the new monetary reforms promoted by these two emperors. In subsequent years, coins were likely to have lost their role as a key export product. Only occasionally, at the time of new reforms of the monetary system, was it again convenient to export them, as, for example, under Trajan.<sup>62</sup>

<sup>58</sup> An interesting point is the connection with Tacitus' text reporting a speech of the emperor Tiberius (see n. 6).

<sup>59</sup> *PME* 49; trans. Casson (1989: 81). Note that the Greek text has the word *denarion*, which Casson (with reason) takes as meaning generally 'Roman coin'.

<sup>60</sup> *Epigraphia Indica*, 8. 82. MacDowall (1991: 151–2).

<sup>61</sup> MacDowall (1996: 92).

<sup>62</sup> I entirely agree here with MacDowall (2003a: 11–12).

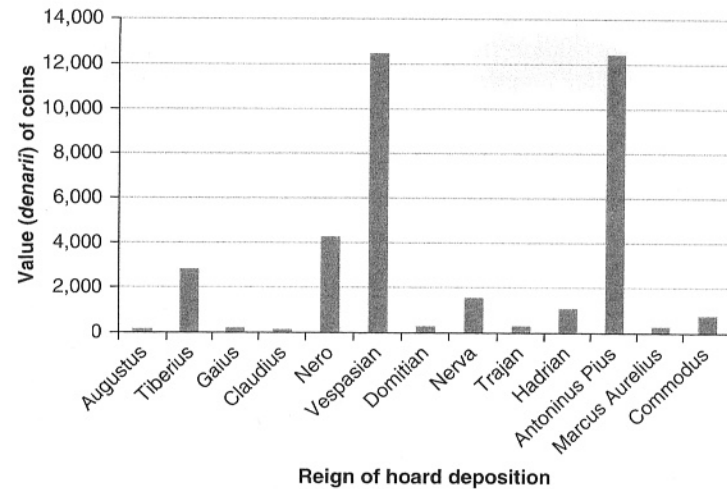


Fig. 17.5. Chronological distribution, by reign of hoard deposition, of the total face value (in *denarii*) of Roman coins found in India

This trend is clearly visible in Fig. 17.5, which takes into account the date of the hoards of the coins. Although I think that the picture is too schematic (hoards could have been assembled with coins coming to India over a long period of time), it agrees with what I have tried to argue so far.

Overall, I think that the analysis of the available numismatic evidence is crucial—not to determine any fluctuation in the general volume of trade over the first two centuries AD, but rather to understand the existence of economic and financial tools that shed a good deal of light on the functioning of the Roman economy and market. It is possible to see from Figs 17.3–17.5 that the export of coins kept going well into the second century AD (contrary to any idea of decline of such commerce after Nero, based on the numismatic evidence). Instead the second century AD itself is a period for which we have significant literary, archaeological, and documentary evidence that the trade between Rome and India was not just continuing, but probably entering into a phase of expansion.<sup>63</sup>

<sup>63</sup> Nappo (2015). Recently, Cobb (2015a) argued that the numismatic, archaeological, and literary evidence shows the second century AD to have been a period of shrinking of the trade between Rome and India. Cobb bases his theory largely on the analysis of the numismatic evidence from India and the chronology of the foundation of most of the forts along the caravan routes in the Eastern Desert. While the latter provides only a *terminus post quem* for a new phase of exploitation of the route, what I have argued so far (and at least in part what is also argued by both De Romanis and MacDowall) shows that placing too much emphasis on the Roman coins found in India and dated to the period of the Flavians misses the main point of the whole trade—that coins were only one of the many items exported to India and that their main importance lies

Finally, one more comment on Roman coins from India during the later period, from the fourth century onwards. It is well known that for this period we have a considerable amount of copper alloy coins, found mainly in Sri Lanka. Along with proper Roman coins, large numbers of imitations of fractional currency are present. They are all imitations of Roman *nummi*, or *folles*, and this has often been used as a proof that trade between the Late Roman Empire and India was still flourishing.<sup>64</sup> A recent re-examination of the available evidence from Sri Lanka has led Walburg to reassess the actual amount and significance of the Late Roman coins and their imitations found in the region. As he pointed out, even with a very optimistic calculation, including in the corpus many dubious specimens, we could work out a total of around 35,000 copper alloy coins found in Sri Lanka, of Roman provenance. As large as this number may seem, this would mean a value of merely 5 to 9 *solidi*, depending on the actual size of the coins, and a total weight of around between 40 and 90 kg, again depending on the size of the coins.<sup>65</sup> Walburg is certainly right to underline the modest purchase value of those specimens, and therefore deny them any value as a proof of flourishing commerce between the Late Roman Empire and India. Still, this would mean that the presence of such denominations in Sri Lanka has to be explained otherwise. The most tempting hypothesis would be to postulate that those coins were used as fractional currency for everyday purchases by Western traders and/or the local people. While intriguing, such a hypothesis needs further review.

Although the analysis of Roman coins in India raises perhaps as many questions as it answers, what is clear is that our analysis needs to consider the effects of deliberate selection of coins for export, resulting in a chronological offset between the coinage circulating in the Empire and that exported to India; and to assess separately the face values, and not just the quantities, of the different kinds of gold, silver, and copper alloy coins found in India.

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in the fact that they help us to reconstruct the functioning of the Roman economic system, rather than indicating chronological fluctuations in the international trade. See also Cobb (2015b).

<sup>64</sup> See, e.g. Salles (1999: 512). <sup>65</sup> Walburg (2008: 54–5).

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## 18

## The Port of Qana', a Junction between the Indian Ocean and the Mediterranean Sea

Barbara Davidde

### INTRODUCTION

This contribution reflects on the political situation in Yemen during Roman imperial times through the analysis of historical and numismatic evidence, as well as the evidence from underwater archaeological survey. After a summary of the political situation of the South Arabian kingdoms in this historical period, and of what their numismatic issues indicate about their relations with Rome and the development of maritime trade, it focuses on the harbours and mooring places situated along the Yemenite coast, in particular the harbour of Qana', and the ceramic evidence for its trading relations with other regions, especially the Roman Mediterranean.<sup>1</sup>

### POLITICAL AND TRADING RELATIONS IN THE ICONOGRAPHY OF ARABIAN COIN TYPES

From ancient authors we learn that South Arabian kingdoms—Saba', Ma'in, Qatabân, Ḥaḍramawt, and, later, Ḥimyar—based their wealth and power on agriculture and on the export of incense and other aromatics so much appreciated in the ancient world (Fig. 18.1). These authors also provide

<sup>1</sup> The data I publish in this chapter are a synthesis of the papers published with Roberto Petriaggi between 1996 and 2005 and David Williams in 2004. For previous bibliography, see Davidde (1997); Davidde and Petriaggi (1998; 2000a; b; 2005); Davidde, Petriaggi, and Williams (2004).