

ARTICLE

# Indian merchants abroad: Integrating the Indian ocean world during the early first millennium CE

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## Abstract

With the rise of post-colonialism during the latter part of the twentieth century, more focus has been given to non-western perspectives (the so-called nativist turn). In the case of Indian Ocean trade during the early first millennium CE, the view that 'Roman' merchants and sailors were the near-exclusive movers of goods, who were also (indirectly) responsible for commercial developments within South Asia, has largely fallen into abeyance. Rightly, the agency of those in South Asia has been acknowledged. The present article goes beyond this basic premise and considers how we can assess evidence demonstrating the role played by sailors and merchants from South Asia. In particular, it is suggested these merchants and sailors played an important role in connecting the Arabian Sea and Bay of Bengal regions.

**Keywords:** ceramics; ships; trade; Indian Ocean; diaspora

The growth of post-colonial discourse during the latter part of the twentieth century encouraged greater interest in non-western perspectives and indigenous agency (the nativist turn) among many historians and archaeologists. This often focused on topics like empire, colonization, and issues of dominance and resistance. However, this perspective was also embraced by some Indian Ocean specialists seeking to challenge earlier notions of the primacy of 'Roman' merchants operating in the (western) Indian Ocean during the early first millennium CE (see below).<sup>1</sup> This is an important first step. However, more work needs to be done on the degree to which the available evidence substantiates the active role played by non-Mediterranean merchants.

The present article addresses this issue by examining the involvement of merchants and sailors from South Asia (alongside those from other regions; see Simmons' article in this Special Issue, henceforth SI) in the movement of goods across the Indian Ocean during the first half of the first millennium CE (roughly corresponding with the latter stage of the so-called 'Classical' or 'Early Historic' period in Indian history). More specifically, the intention is to explore the methodological challenges that arise in assessing this premise. It is argued here that we can establish the presence of Indian (broadly understood) merchants and sailors at 'foreign' sites, as well as the existence of the sailing traditions and shipping technology required to operate in the

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<sup>1</sup>The term 'Roman' is used here as a shorthand for peoples from the Mediterranean world. For the variety of groups that participated, see Matthew A. Cobb, *Rome and the Indian Ocean Trade from Augustus to the Early Third Century CE* (Leiden: Brill, 2018), 61–77.

Indian Ocean. In particular, it is suggested that merchants and sailors from the southern peninsular played a valuable role in connecting the Arabian Sea and Bay of Bengal spheres.

More evidence is coming to light for the study of the ancient Indian Ocean world. This is thanks to a range of new archaeological fieldwork, as well as more epigraphic and numismatic studies, and recent reassessments of existing literary sources. Consequently, it is not possible to provide an exhaustive state of the art in this short article. Rather, four case studies will be examined, along with an historiographic and methodological overview.

### Historiographic developments

Intellectual fashions and the wider socio-cultural context usually inform the historical scholarship produced in a given period, the study of the Early Historic Indian Ocean being no exception. It is perhaps unsurprising that scholarship from the early to mid-twentieth century often viewed this subject through the lens of imperialism, colonialism, and reductive ethno-nationalist assumptions. Warmington, who wrote the seminal *The Commerce Between the Roman Empire and India* (1928), dismissively viewed 'Indian' engagement in this trade as largely reactive and passive, a supposed reflection of their conservative character.<sup>2</sup> This perspective was partially influenced by the wider cultural framework within which he was writing, including the importance of Classics (the study of Graeco-Roman antiquity) in public school and university education within Britain, as well as biases in approaching the available evidence.<sup>3</sup> For Warmington and his contemporaries, while some epigraphic material from the Eastern Desert of Egypt and discoveries of Roman coins in India were available for study, primacy was still given to Graeco-Roman literary sources; notably, the *Periplus Maris Erythraei* (henceforth *PME*) and the writings of Strabo and Pliny the Elder.<sup>4</sup> This 'Classical' bias was exacerbated by the fairly limited engagement with literary and epigraphic material from the Indian Subcontinent.

This conceptual framework persisted, as seen in Wheeler's interpretation of the material and layout of the site of Arikamedu (just south of Pondicherry)—most likely ancient Poduke—during the mid-1940s. He identified the site as a trading-post that developed as a result of Roman trading activity.<sup>5</sup> This perspective was shared among a number of South Asian specialists, who often regarded the impetus for trade as coming from outsiders; a viewpoint that started to change with the rise of post-colonial discourse.<sup>6</sup> This developing discourse roughly coincided with an increase in archaeological fieldwork being undertaken at sites on the Indian Ocean littoral from the 1980s, as well as a lessening dependency on philological and literary analysis.<sup>7</sup> This helped to make way for less Romano-centric perspectives. Notably, during the 1980s and 1990s, Begley reassessed much of the previously excavated material at Arikamedu and conducted new excavations at the site. She demonstrated that the port was already flourishing in the last few centuries BCE

<sup>2</sup>Eric H. Warmington, *The Commerce Between the Roman Empire and India* (Cambridge: Cambridge University Press, 1928), 10-11.

<sup>3</sup>See also the reception of classical antiquity in colonial India: Phiroze Vasunia, *The Classics and Colonial India* (Oxford: Oxford University Press, 2013).

<sup>4</sup>For an overview of the development of the historiographic tradition and material available for scholarly analysis, see Cobb, *Rome and the Indian Ocean Trade*, 8-18.

<sup>5</sup>Mortimer Wheeler, *Rome Beyond the Imperial Frontiers* (London: G. Bell and Sons, 1954). His excavations were shortly followed by the work of Casal: J. M. Casal, *Fouilles de Virampatnam-Arikamedu* (Paris: Klincksieck, 1949). On Poduke, see *PME*, 60.

<sup>6</sup>Himanshu P. Ray, 'Ethnographies of Sailing: From the Red Sea to the Bay of Bengal in Antiquity', in *The Indian Ocean Trade in Antiquity: Political, Cultural and Economic impacts*, ed. Matthew A. Cobb (London and New York: Routledge), 89.

<sup>7</sup>The study of the 'spice trade' is a good example of this shift. James I. Miller's *The Spice Trade of the Roman Empire 29 B.C. to A.D. 641* (London: Clarendon, 1969) was heavily reliant on textual and philological analysis. Work at Myos Hormos (Quseir al-Qadim), Berenike, and Pattanam has allowed for new insights through archaeobotanical research; see René T.J. Cappers, *Roman Foodprints at Berenike* (Los Angeles: Cotsen Press, 2006); Marijke van der Veen, *Consumption, Trade and Innovation* (Frankfurt: JAAMS, 2011); P.J. Cherian, G.V. Ravi Prasad, Koushik Dutta, Dinesh K. Ray, Veerasamy Selvakumar, and K.P. Shajan 'Chronology of Pattanam: A Multi-Cultural Port Site on the Malabar Coast', *Current Science* 97, no. 2 (2009): 236-40.

(debunking the notion that it developed as a result of ‘Roman investment’) and that some material previously thought to be ‘Roman’, like Rouletted Ware (henceforth RW), was in fact produced in South Asia; although we do see Mediterranean finds, notably amphorae and terra sigillata.<sup>8</sup>

Most late twentieth- and twenty-first-century scholarship has avoided the ethno-nationalist prejudices expressed in earlier works, though the primacy of ‘Roman’ merchants is still sometimes implicitly and explicitly expressed, even if the agency of those deriving from South Asia and other regions is not denied. For example, Raschke thought that Roman vessels were more seaworthy; Casson regarded the Romans as being largely concerned with the cross-Oceanic trade in luxuries, with Indians and Arabians trading in bulkier commodities; while more recently McLaughlin has speculated that Indian and Arabian merchants who lacked their own ships chartered space on-board Roman vessels.<sup>9</sup> Nevertheless, most scholarship has tended (rightly) to accept that it is reductive to think solely in terms of Romans trading with India.<sup>10</sup> Instead, there is more recognition that it was a multidirectional trade involving an array of peoples stretching from East Africa, the Mediterranean, Arabia, and the Persian Gulf to South and Southeast Asia. This shift has been helped, as noted, by increased archaeological work at sites in South Asia and elsewhere, as well as formative research by non-western scholars, like Himanshu Prabha Ray.<sup>11</sup> Moreover, a wider range of South Asian literary and epigraphic material is being interrogated, as seen in Evers’ discussion of Indian individuals and associations (*shreni*, *vanji*, *navika*, and *nigamas*) linked to the acquisition or production of various goods, some of which were exchanged via the Indian Ocean.<sup>12</sup>

The late twentieth into twenty-first century also saw an increased interest in applying theories to the study of the Indian Ocean world, to help characterize and analyse the complex connectivities observed. The adoption of World Systems Theory—with its focus on hierarchies and the exploitation of peripheries by a core (see the introduction to this SI)—became popular from the 1980s, notably with the work of Abu-Lughod and then subsequently that of Philippe Beaujard.<sup>13</sup> This includes its application to the ancient world, although sometimes with contradictory results. For Beaujard, the Roman world represented one of the cores, but in the case of Fitzpatrick’s analysis, he inverts this, arguing that the Roman Empire became a periphery in the western Indian Ocean system.<sup>14</sup> More promising, however, is the recent engagement with concepts from globalization.<sup>15</sup> This is welcome since this framework allows us to consider the role played by individuals originating from an array of polities, whose identities manifested themselves

<sup>8</sup>Vimala Begley, ed., *The Ancient Port of Arikamedu*, 2 vols. (Pondicherry: EFEO, 1996-2004).

<sup>9</sup>Manfred G. Raschke, ‘New Studies in Roman Commerce with the East’, *ANRW* 9, no. 2 (1978): 654; Lionel Casson, [commentary and translation of the] *Periplus Maris Erythraei* (Princeton: Princeton University Press, 1989), 15-27 [this is the edition used in this article and cited *PME*]; Raoul McLaughlin, *Rome and the Distant East* (London: Continuum, 2010), 39. Less problematically, Nappo views the Romans as a leading force in the East-West trade post-30 BCE; see Dario Nappo, ‘The Impact of the Third Century Crisis on the International Trade with the East’, in *Crises and the Roman Empire*, ed. Olivier Hekster, Gerda de Kleijn, and Daniëlle Slootjes (Leiden: Brill, 2007), 233.

<sup>10</sup>Julian Whitewright, review of *Rethinking Classical Indo-Roman Trade*, by Rajan Gurukkal (New Delhi: Oxford University Press, 2016), *International Journal of Nautical Archaeology* 46, no. 2 (2017): 463-4.

<sup>11</sup>Notably, Himanshu P. Ray, *Winds of Change* (New Delhi: Oxford University Press, 1994); Himanshu P. Ray, *The Archaeology of Seafaring in Ancient South Asia* (Cambridge: Cambridge University Press, 2003).

<sup>12</sup>Kasper Grønlund Evers, *Worlds Apart Trading Together: The Organisation of Long-distance Trade Between Rome and India in Antiquity* (Oxford: Archaeopress, 2017), 148-72.

<sup>13</sup>Janet L. Abu-Lughod, *Before European Hegemony: The World System A.D. 1250-1350* (Oxford: Oxford University Press, 1989); Philippe Beaujard, *Les Mondes de l’Ocean Indien*, 2 vols. (Paris: Armand Colin, 2012). More broadly on the popularity of World Systems Theory, see Markus Vink, ‘Indian Ocean Studies and the “New Thalassology”’, *Journal of Global History* 2, no. 1 (2007): 41-62.

<sup>14</sup>Beaujard, *ibid.*; Matthew Fitzpatrick, ‘Provincializing Rome: The Indian Ocean Trade Network and Roman Imperialism’, *Journal of World History* 22, no. 1 (2011): 27-54.

<sup>15</sup>For an example, see Eivind H. Seland, ‘The Indian Ocean and the Globalisation of the Ancient World’, *AW&E* 7 (2008): 67-79; also Tom Hoogervorst, ‘Tracing Maritime Connections Between Island Southeast Asia and the Indian Ocean World’, in *The Routledge Handbook of Archaeology and Globalization*, ed. Tamar Hodos (London and New York: Routledge, 2017), 751-67.

in various (often) complex cultural, linguistic and religious forms, within the wider 'global' context of Indian Ocean activity.

Despite this trend towards counterbalancing the notion of 'Roman' primacy with a more complex sense of multidirectional trade involving various peoples with their own agency and interests, a challenge to this broad consensus has been provided by Rajan Gurukkal. In a provocative (re)statement of the case for viewing the 'Romans' as the primary movers of trade between Egypt and southern India (specifically the Tamilakam region), he suggests that the peoples of the Tamilakam lacked the necessary state structures and economic conceptual framework to have been interested in proactively engaging in long-distance trade (they purportedly merely exchanged cheap spices when 'Roman' merchants turned up).<sup>16</sup> While this view has met with strong criticism, some scholars, such as De Romanis, also express doubts about whether South Indian traders crossed the Arabian Sea on their own ships.<sup>17</sup> It will be demonstrated in this article that this scepticism is unwarranted.<sup>18</sup>

### Approaching the evidence: identity, sailing traditions and merchant diaspora

If it is taken as a starting point that a diverse range of individuals from various South Asian polities actively sailed and traded in the Indian Ocean during the Early Historic period, how do we substantiate this from the evidence? This is no straightforward matter since several interrelated issues must be considered. The first of these is the nature of the evidence and, in particular, problems with representational approaches to the study of material culture.<sup>19</sup> The second issue relates to identity. The third issue concerns shifting theoretical discourse on how to characterize individuals and communities at foreign sites.

First, it is important to stress that South Asia during the Early Historic period was far from homogenous. Different polities rose and fell, annexed and lost territory, and peoples migrated across Central Asia and the Subcontinent.<sup>20</sup> The populations in these regions could be quite diverse and geographic boundaries did not automatically equate to cultural ones. This does not mean we are unable to identify prevailing cultural features within specific geographic areas. A case in point is the Tamilakam region (encompassing Kerala and Tamil Nadu), where the emergence of a distinct Tamil culture has been suggested from epigraphy (notably the use of Tamil-Brahmi script) and literature (such as the Sangam corpus).<sup>21</sup> However, the extent to which a distinct material culture can be linked to a specific Tamil identity has been contested by some;<sup>22</sup> although

<sup>16</sup>Rajan Gurukkal, 'Classical Indo-Roman Trade: A Historiographical Reconsideration', *Indian Historical Review* 40, no. 2 (2013): 181-206; Rajan Gurukkal, *Rethinking Classical Indo-Roman Trade: Political Economy of Eastern Mediterranean Exchange Relations* (New Delhi: Oxford University Press, 2016).

<sup>17</sup>For critiques see, Steven E. Sidebotham, review of *Rethinking Classical Indo-Roman Trade*, by Rajan Gurukkal (New Delhi: Oxford University Press, 2016), *South Asia: Journal of South Asian Studies* 40 (2017): 426-8; Whitewright, review of R. Gurukkal; Cobb, *Rome and the Indian Ocean Trade*, 11-12. By contrast, see Federico De Romanis, *The Indo-Roman Pepper Trade and the Muziris Papyrus* (Oxford: Oxford University Press, 2020), 115.

<sup>18</sup>Despite disputing Gurukkal's main premise, his focus on intra-regional dynamics and the socio-political nature of the Tamilakam is, nonetheless, a welcome additional perspective.

<sup>19</sup>On the problems with representational approaches, see Astrid van Oyen and Martin Pitts, 'What Did Objects Do in the Roman world? Beyond Representation', in *Materialising Roman Histories*, ed. Astrid van Oyen and Martin Pitts (Oxford: Oxbow, 2017), 3-19. On material culture and the (ethnic) identity of groups at the Red Sea ports and in the Eastern Desert region, see Steven E. Sidebotham, *Berenike and the Ancient Maritime Spice Route* (Berkeley, CA: University of California Press, 2011), 68-86; Ross Thomas, 'Port Communities and the Erythraean Sea Trade', *British Museum Studies in Ancient Egypt and Sudan* 18 (2012): 171.

<sup>20</sup>For a broad overview, see Harry Falk, 'The Tidal Waves of Indian History: Between the Empires and Beyond', in *Between the Empires: Society in India 300 BCE to 400 CE*, ed. Patrick Olivelle (Oxford: Oxford University Press, 2006), 145-64.

<sup>21</sup>See Iravatham Mahadevan, *Early Tamil Epigraphy: From the Earliest Times to the Sixth Century A.D.* (London: Harvard University Press, 2013); and Shinu A. Abraham, 'Chera, Chola, Pandya: Using Archaeological Evidence to Identify the Tamil Kingdoms of Early Historic South India', *Asian Perspectives* 42, no. 2 (2013): 207-23.

<sup>22</sup>Abraham, *ibid.*, 207, 210-11, 216-18.

others regard the material culture from sites such as Keezhadi—dated to the ‘Sangam Age’ (broadly corresponding with the Early Historic period)—as reflecting a Tamil identity which can be tied into that expressed in written sources.<sup>23</sup> This debate has important implications, for material culture (along with epigraphy) provides key evidence that can attest to the presence of peoples in locations outside of their homeland.<sup>24</sup>

These difficulties are apparent when considering both production and ownership. For instance, RW, a ceramic fine ware produced at least from the second century BCE, is variously thought to have had its source of production in eastern India, the Ganga Valley, Bengal and southern India/Sri Lanka.<sup>25</sup> The most prevalent concentrations of RW in India seems to be along coastal sites in eastern and south-eastern India, and when inland along river courses.<sup>26</sup> However, Schenk has argued that RW fabric is distinct from most south India wares and so this region is unlikely to be its source of production; rather, she thinks it was principally produced for the southern Indian market.<sup>27</sup>

Of course, its production in either eastern or southern India does not necessarily mean that finds of RW abroad (such as Egypt, Arabia, Southeast Asia) indicate movement of these items by peoples from these regions. Indeed, they could have been carried by others and arrived via intermediary centres (nodes) of distribution. Additionally, we cannot assume an ‘Indian’ ownership of such items at their final point of disposition since it is evident that individuals of different cultural backgrounds acquired such objects. This point is also applicable to other fine wares. For example, a form of Brahmi script appears on a piece of terra sigillata found at Arikamedu, while a Greek graffito appears on a South Arabian vessel at Myos Hormos.<sup>28</sup>

This is not to deny the possibility that the presence of RW may tie into the movements of sailors and merchants from South Asia. Indeed, Magee links the development of RW with its growing prestige among Indian maritime merchants.<sup>29</sup> Its use in religious rituals has been proposed, although this is uncertain.<sup>30</sup> The salient point is that, in isolation, finds of RW (or other

<sup>23</sup>T. Ramaswamy, ‘Archaeological Excavations in Tamil Nadu with Special Reference to Keezhadi - A Review’, *International Journal of Arts, Science and Humanities* 8, no. 1 (2020): 200-2.

<sup>24</sup>Literary evidence can also contribute to highlighting the presence of ‘Indians’ abroad. Such as direct and indirect references to Indians in Egypt and Alexandria in several Graeco-Roman texts (on these, see Cobb, *Rome and the Indian Ocean Trade*, 154-5).

<sup>25</sup>Schenk argues from work at Tissamaharama (Sri Lanka) that RW ceases production in the first century BCE, suggesting that finds in later contexts are residual heirlooms: Heidrun Schenk, ‘The Dating and Historical Value of Rouletted Ware’, *Zeitschrift für Archäologie Außereuropäischer Kulturen* 1 (2006): 123. By contrast, Krishnan and R. Balvally suggest it dates as late as 300 CE: K. Krishnan and R. Balvally, ‘Assessing the Early Historic Indian Ocean Trade through Ceramics’, in *Imperial Rome, Indian Ocean Regions and Muziris*, ed. K.S. Mathew (London and New York: Routledge, 2016), 232-3.

<sup>26</sup>Heidrun Schenk and Hans-Joachim Weisshaar, ‘The Citadel of Tissamaharama: Urban Habitat and Commercial Interrelations’, in *Ports of the Ancient Indian Ocean*, ed. Marie-François Boussac, Jean-François Salles, and Jean-Baptiste Yon (Delhi: Primus Books, 2016), 466; Roberta Tomber, *Indo-Roman Trade: From Pots to Pepper* (London: Duckworth, 2008), 44; Himanshu P. Ray, ‘Inscribed Pots, Emerging Identities: The Social Milieu of Trade’, in *Between the Empires*, 199; Sila Tripathi and Rudra P. Behera, ‘Did Romans Have Direct Maritime Trade Contacts with Odisha on the Eastern Indian Littoral?’, *Current Science* 116, no. 8 (2019): 1392; Sila Tripathi, ‘Seafaring Archaeology of the East Coast of India and Southeast Asia during the Early Historical Period’, *Ancient Asia* 8, no. 7 (2017): 5-7. There are major concentrations along the coast of Andhra Pradesh, Odisha, Pondicherry, Tamil Nadu, and West Bengal and on the banks of the Rivers Godavari, Kaveri, and Krishna.

<sup>27</sup>Schenk, ‘The Dating and Historical Value of Rouletted Ware’, 127, 141.

<sup>28</sup>Cobb, *Rome and the Indian Ocean Trade*, 156; Eivind H. Seland, ‘Networks and Social Cohesion in Ancient Indian Ocean Trade: Geography, Ethnicity, Religion’, *Journal of Global History* 8 (2013): 378.

<sup>29</sup>Peter Magee, ‘Revisiting Indian Rouletted Ware and the Impact of the Indian Ocean Trade in Early Historic South Asia’, *Antiquity* 84, no. 326 (2010): 1052. See also Schenk, ‘The Dating and Historical Value of Rouletted Ware’, 139, on RW as a prestige item that was kept in prolonged use after its period of production.

<sup>30</sup>Finds of RW plate with discarded chicken bones (trench 13) at Arikamedu may link it with the consumption of food (either for ritual or merely mundane purposes): Tripathi and Behera, ‘Did Romans Have Direct Maritime Trade Contacts with Odisha’, 1392.

fine wares) may not be sufficient to substantiate the presence of a (temporarily) resident ‘Indian’ (let alone a ‘diaspora’) given such an item’s potential to be less ‘culturally bounded’.

By contrast, I would argue that coarse or domestic/cooking wares are more likely to be culturally specific and narrowly utilized. This is because such objects lack prestige value and can sometimes be connected to particular culinary habits (both in terms of the manner of preparation and style of eating);<sup>31</sup> how food is ‘prepared, served and eaten’ often ties into group identity.<sup>32</sup> These types of finds, in conjunction with Indian fine wares and other complementary evidence, like epigraphic material and certain food remains (like rice), may be more suggestive of Indian merchants temporarily resident in foreign ports (either for the season or semi-permanently). It is still necessary to be cognizant of the issue of the origin of production if we want to narrow down the likely groups that owned these items. In certain cases, like Coarse Red Slipped Wares, this may be possible (discussed below).

Another class of evidence which plays a valuable role in highlighting the movement of Indian sailors and merchants is epigraphy. This is not only for its content—such as some of the Hoq Cave inscriptions revealing information about individuals’ origins and professions—but also for the form of script and language used, such as the Sanskrit inscription at Vo Canh (Vietnam). Nonetheless, as with material culture, it is important to be cautious in rigidly tying certain scripts and languages to specific polities in the Indian Subcontinent.<sup>33</sup> An example of this potential ambiguity comes from a RW sherd with a graffito found on the northern coast of Bali. The graffito has been interpreted as either Kharosthi script (*te sra vi*) or as Brahmi script in a Prakrit language (*m(a) la sa*).<sup>34</sup> Similarly, carnelian beads at U-Thong and Oc Eo have inscriptions bearing (northern Indian) Brāhmī or mixed Kharosthī-Brāhmī script.<sup>35</sup>

In addition, pictorial images can be helpful in attempting to establish the types of vessels plying the Indian Ocean.<sup>36</sup> This is especially true given that most ancient Indian Ocean shipwrecks have had little of their physical structures (e.g. hull) and components (e.g. rigging) survive.<sup>37</sup> However, some recycled timbers, fragments of sails, and rigging are preserved at Myos Hormos and Berenike, as well as the structure of a canoe at Pattanam.<sup>38</sup>

The context, medium (coins, rock-carvings, etc.), and size of the depiction will necessarily delimit how any image can be interpreted. A vessel’s depiction might also be stylized and need not be detailed for the audience to comprehend it.<sup>39</sup> Obviously the more complex the question being

<sup>31</sup>On this issue, see Sidebotham, *Berenike*, 69; Thomas, ‘Port Communities’, 174-80; Cobb, *Rome and the Indian Ocean Trade*, 127-8, 152, 156.

<sup>32</sup>Thomas, *ibid.*, 174.

<sup>33</sup>As Ray notes, a variety of language groups can be connected to trading activity in peninsular India – Tamil, Prakrit/Sanskrit and Old Sinhala – with Brahmi script often being employed (though not exclusively): Ray, ‘Inscribed Pots, Emerging identities’, 121; Ray, ‘The Archaeology of Bengal’, 81.

<sup>34</sup>Tripathi, ‘Seafaring Archaeology’, 6; I. Wayan Ardika, ‘Archaeological Research in Northeastern Bali, Indonesia’ (PhD diss., Australian National University, Canberra, 1991), 53-4.

<sup>35</sup>Bérénice Bellina, ‘Beads, Social Change and Interaction Between India and Southeast Asia’, *Antiquity* 77 (2003), 285-97; Bérénice Bellina, ‘La genèse des échanges à longue distance. Apport de l’étude technologique des parures en roches dures’, *Dossiers d’Archéologie* 302 (2005): 74-7.

<sup>36</sup>For an overview of references to ships, including Indian ships discussed in the *PME*, see Patrice Pomey, ‘À propos des navires de la mer Érythréenne: découvertes récentes et nouveaux aspects de la question’, *Topoi. Orient-Occident* 11 (2012): 111-32.

<sup>37</sup>Indonesia, Sri Lanka and Thailand are the only locations where preserved hull-structures have been found: Anna M. Kotarba-Morley, ‘The Maritime Context of the Trans-Mediterranean-Indian Ocean Trade: Critical Review of Roman Era Vessels of the Red Sea’, in *Human Interaction with the Environment in the Red Sea*, ed. Dionisius A. Agius et al. (Leiden: Brill, 2017), 171-206.

<sup>38</sup>Sidebotham, *Berenike*, 195-205; Lucy Blue, Julian Whitewright, and Ross Thomas, ‘Ships and Ships’ Fittings’, in *Myos Hormos–Quseir al-Qadim*, vol. 2, ed. David S. Peacock and Lucy Blue (Oxford: University of Southampton, 2011), 179-209; Fiona Handley, ‘The Textiles: A Preliminary Report’, in *Myos Hormos–Quseir al-Qadim*, 321-33; Cherian et al., ‘Chronology of Pattanam’, 236-40; Kotarba-Morley, ‘The Maritime Context’, 179-80.

<sup>39</sup>Julian Whitewright, ‘Sailing Rigs of the Western Indian Ocean During the First Millennium AD’, in *Maritime Contacts of the Past*, ed. Sila Tripathi (New Delhi: Delta Book World, 2015), 571.

addressed (e.g. technical aspects of shipping equipment) the greater the challenge in utilizing such evidence. However, for our purposes this is less of an issue, since our primary interest is in attesting to the operation of South Asian vessels, which enabled ‘Indian’ merchants, sailors, and travellers to reach foreign ports.

Textual sources also offer information about vessel types from South Asia that operated, as well as recording the presence of ‘Indians’ abroad. However, the level of specificity in such material can be quite inconsistent. The *PME* offers fairly detailed information about distinct vessels operating in parts of the Indian Ocean, while many Chinese texts often use the term *po* or *bo* (adapted from an Austronesian term) in relation to certain Southeast Asian (more often) and South Asian craft (see below). Furthermore, allusions to ‘Indians’ can be potentially vague and imprecise. A case in point are the references made by various Graeco-Roman authors to ‘Indians’ coming to the Egypt and the Mediterranean for trade, sightseeing, or diplomacy.<sup>40</sup> They rarely indicate a more precise origin within South Asia. Moreover, conceptual distinctions between ‘India’ and other regions like ‘Aethiopia’ could sometimes be blurry.<sup>41</sup> As such, this material needs careful treatment.

The final challenge that must be considered is the terminology used to describe and conceptualize sailors and merchants at foreign ports. Terms such as ‘trading station’ were popular in earlier discourse, such as Wheeler’s notion of a Roman trading station at Arikamedu. However, this term arguably carries too much baggage, recalling early modern ‘factories’.<sup>42</sup> The evidence for the ancient Indian Ocean is too sparse to attest to organized, diplomatically agreed trading enclaves.<sup>43</sup> Instead, more recent discourse has tended to refer to diaspora or social networks. This terminology may be more helpful, since it does not imply overly rigid, formalized, enclaves of merchants and sailors, but still acknowledges that groupings may (organically) form for reasons of shared ‘ethnic’, linguistic, socio-cultural, and religious affinities. These groupings likely helped in establishing trust, mechanism for dispute resolution, information exchange, and social cohesion.<sup>44</sup>

Having set out these methodological and terminological challenges, we can now move to our case studies.

### Case study one: north-western India

The northwest and Gujarat region—territories dominated (and contested) by the Kushana and Western Kshatrapas in the early centuries CE—had long been connected into wider Indian Ocean networks of exchange.<sup>45</sup> Agatharchides reports that as early as the second century BCE merchants from Patala (in the Indus region) were sailing to the Fortunate Islands (almost certainly Socotra), where they would trade with others coming from places such as Persia and Carmania (southern Iran).<sup>46</sup> This pattern was to continue, as is evident from the

<sup>40</sup>The range of references are too extensive to list here, but for a pertinent overview, see Cobb, *Rome and the Indian Ocean Trade*, 154–5.

<sup>41</sup>See Pierre Schneider, *L'Éthiopie et L'Inde: Interférences et Confusions Aux Extrémités du Monde Antique (VIIIe Siècle Avant J.-C. – VIe Siècle Après J.-C.)* (Rome: École française de Rome, 2004).

<sup>42</sup>For early modern European ‘factories’ in the Indian Ocean, see Kirti N. Chaudhuri, *Trade and Civilisation in the Indian Ocean* (Cambridge: Cambridge University Press, 1985).

<sup>43</sup>See Matthew A. Cobb, ‘From the Ptolemies to Augustus: Mediterranean Integration into the Indian Ocean Trade’, in *The Indian Ocean Trade in Antiquity*, 31–2.

<sup>44</sup>On this subject, see Seland, ‘Networks and Social Cohesion’; also, Simmons’ and Cohen’s articles in this SI.

<sup>45</sup>The strongest archaeological, epigraphic, and literary testimony points to such western connections. However, if the allusions in the *Jataka tales* (*terminus ante quem* third century CE) and *Mahāniddesa* (second or third century CE) can be accepted, occasional journeys between northwest India and Southeast Asia occurred. Kang Tai also mentions Yuezhi horses reaching Funan (mainland Southeast Asia). See Bratindra N. Mukherjee, ‘The Maritime Contacts Between Eastern India and Southeast Asia: New Epigraphic Data’, in *Maritime Heritage of India*, ed. Karuna Behera (New Delhi: Aryan Books International, 1999), 201–5.

<sup>46</sup>Agatharchides 5.105a + b = (a) Photius, *Cod.* 250.103, 459b = (b) Diod. Sic. 47.8–9. For a translation of the fragments of Agatharchides, see Stanley M. Burstein, *Agatharchides of Cnidus, On the Erythraean Sea* (Cambridge: Hakluyt Society, 1989).

Hoq Cave inscriptions discussed below. Connections with the Persian Gulf region are also clear from Palmyrene inscriptions which mention voyages to Scythia (Σκυθία) and comments from the *PME* about the port of Barbarikon (at the mouth of the Indus).<sup>47</sup> In the other direction, Kang Tai (third century CE) mentions that from Chia-na-t'iao (western India) one could board a large *po* with seven sails and reach Ta-ch'in (Persian Gulf) in just over a month.<sup>48</sup>

For our purposes, the epigraphic and pictorial evidence deriving from the Hoq Cave is highly valuable for attesting the activities of merchants and sailors.<sup>49</sup> Within this cave-system 192 Brahmi epigraphs (and one Kharosthi epigraph) have been found as well as three representations of ships. These date primarily to the second to fourth centuries CE. Strauch notes that the styles of writings point mainly to people of a Gujarati or Western Kshatrapa origin, coming from varying 'caste' statuses.<sup>50</sup> Usefully for our purposes, one of these Brahmi inscriptions refers to '[t]he captain Visnudhara from Bharukaccha [Barygaza]'. It seems that the term *niryāmaka*, as employed in this context, indicates either a captain, steersman, or pilot. A further inscription records '[t]he son of the captain [*nāvika*] Humiyaka'.<sup>51</sup> Thus, we have explicit testimony to Indians from the northwest operating ocean-going craft to reach Socotra.

Several texts also refer to other individuals coming from Bharukaccha, identified as the Barygaza of the *PME* (Siha, Suraganja, Visnudhara, and N. N., son of Aruyani). The diversity of peoples from the northwest is further underlined by a bilingual Brahmi and Graeco-Bactrian epigraph on a piece of broken stalactite which refers to a Humiyaka or (H)umyag. Moreover, several epigraphs mention individuals of Saka (Western Kshatrapa) origin, one of these is specifically dated to the Saka year 154, or 232 CE.<sup>52</sup>

That at least some merchants and sailors from the northwest arrived on this island by use of their own vessels is suggested not only by the aforementioned epigraphs referring to captains, steersmen, or pilots, but also by pictorial representations from the Hoq Cave. Three such graffiti images survive. The most developed of these representations illustrates a vessel with two rudders and what appear to be three masts on the front. The form of the image parallels fifth- to sixth-century CE representations from Ajanta (paintings and a relief at Aurangabad) in the western Deccan. Given its palaeographic context, it seems likely that it was etched by an Indian visitor, as does the fact that multiple masts appear to be less common on Graeco-Roman and Near Eastern vessels.<sup>53</sup> Vessels from western India likewise employed multiple masts, as might be inferred from the coinage of the mid-late second century CE Satavahana ruler Yajna Sri Satakarni. Often these

<sup>47</sup>On Palmyrene connections, see *PAT*, 1403; *PAT*, 2763; perhaps also *PAT*, 0306: Eivind H. Seland, 'Ancient Afghanistan and the Indian Ocean: Maritime Links of the Kushan Empire ca 50-200 CE', *Journal of Indian Ocean Archaeology* 9 (2013): 66-74. On the Barbarikon, see *PME*, 38.

<sup>48</sup>The work of Kang Tai is lost, but he is quoted in the *Taiping yulan* (982 CE); see Johannes L. Kurz, 'The Compilation and Publication of the Taiping Yulan and the Cefu Yuangu', *Extrême-Orient Extrême-Occident*, 2007): 39-76.

<sup>49</sup>On these inscriptions, see Ingo Strauch, ed., *Foreign Sailors on Socotra: The Inscriptions and Drawings from the Cave Hoq* (Bremen: Hempen Verlag, 2012).

<sup>50</sup>Strauch, *ibid.*, 358-60.

<sup>51</sup>Strauch, *ibid.*, 132, 180-1, 346-8. On the similar semantic meaning of the terms *niryāmaka* and *nāvika*, see Ingo Strauch, 'Indian Inscriptions from Cave Hoq at Socotra', in *Ports of the Ancient Indian Ocean*, 88.

<sup>52</sup>For these texts see Strauch, *Foreign Sailors on Socotra*; Strauch, 'Indian Inscriptions', 91; *PME*, 41, 43, 49; Ptolemy *Geography*, 7.1.60 (*Ptolemy's Geography: An Annotated Translation of the Theoretical Chapters*, trans. J. Lennart Berggren and Alexander Jones (Princeton, NJ: Princeton University Press, 2002)).

<sup>53</sup>Hédi Dridi, 'The Archaeological Remains in the Cave Hoq', in *Foreign Sailors on Socotra*, 227-8; Strauch, *Foreign Sailors on Socotra*, 100-1, 364-5; although, it should be noted a three-masted vessel appears as a graffiti representation at Myos Hormos: Pomey, 'À propos des navires de la mer Érythrée', 115-16.

coins depict two masts, but they parallel the two distinct rudders and curved sterns seen from the Hoq and Ajanta images.<sup>54</sup>

The picture presented by these graffiti is supported by the testimony of the *PME* which refers to vessels setting out from Barygaza in order to sail to Dioscuridês Island (Socotra).<sup>55</sup> More generally, this text also provides evidence for wider networks of exchange. Ships coming from what the author calls Ariakê (northwest India) sailed to the port of Muziris (likely modern Pattanam) on the coast of Limyrikê (the Malabar Coast).<sup>56</sup> Federico De Romanis argues that part of passage fifty-six should be amended to 'very big ships' sailing to Limyrikê, which likely refers both to the ships of Ariakê and vessels coming from Roman Egypt.<sup>57</sup> This seems all the more plausible as the author of the *PME* also mentions that the merchants of Barygaza send out big vessels to Omana and Apologos (in the Gulf of Oman and Persian Gulf regions).<sup>58</sup>

Ceramic evidence provides additional indication of these networks of exchange. An example of this is Organic Black Ware (henceforth OBW), a 'coarse black, handmade fabric with very thick walls', likely produced in the Gujarat region (possibly at Kamrej), that seems to have been used in cooking (as suggested by sooted finds).<sup>59</sup> The northerly port of Aila (Gulf of Aqaba), has revealed one sherd of OBW from a fourth-fifth century CE context.<sup>60</sup> It has also appeared at Berenike and Myos Hormos, although in comparatively smaller numbers than wares of a southern Indian origin (see below). Of additional interest is the recent discovery of a bilingual Brahmi-Sanskrit inscription from Berenike (in connection with the temple of Isis) that can be dated to 9 September 248 CE (within the reign of the Roman Emperor Philip the Arab), which could point to further north-western connections.<sup>61</sup> This can be further coupled with the discovery of the so-called Berenike Buddha (carved in Alexandria, and sharing Gandharan and Romano-Egyptian influences), which adds even greater weight to the general premise that people from South Asian were present at the site.<sup>62</sup>

A handmade rice-tempered ware has been identified at the ports of Myos Hormos and Berenike, as well as other sites such as Qana' (probably the Kanê of the *PME*) in Yemen, Ras Hafun (potentially the Opone of the *PME*, though this is disputed) in Somalia, and Khor Rori (ancient Sumhuram/the Moscha Limên of the *PME*) in Oman.<sup>63</sup> The finds from Egypt connect to archaeological sequences suggesting a late-first century BCE to third century CE date. The fact that the vessels frequently show signs of sooting indicates their use as cooking vessels. The concentration of finds in the Gujarat region point to a northwest origin for this ware.<sup>64</sup>

<sup>54</sup>Jean Deloche, 'Iconographic Evidence on the Development of Boat and Ship Structures in India (2<sup>nd</sup> C. B.C – 15<sup>th</sup> C. A.D.) A New Approach', in *Tradition and Archaeology: Early Maritime Contacts in the Indian Ocean*, ed. Himanshu P. Ray and Jean-François Salles (New Delhi: Manohar, 1996), 201-5; Strauch, *ibid.*, 364. Slightly later (ca. fourth century), some Pallava coins found at Kâñchipuram also feature ships (a similar coin type has been unearthed at Khuan Lukpad, Thailand).

<sup>55</sup>*PME*, 31.

<sup>56</sup>*PME*, 41, 54.

<sup>57</sup>Federico De Romanis, 'Comparative Perspectives on the Pepper Trade', in *Across the Ocean: Nine Essays on Indo-Mediterranean Trade*, ed. Federico De Romanis and Marco Maiuro (Leiden: Brill, 2015), 134 fn. 26; *PME*, 56. See also Pomey, 'À propos des navires de la mer Érythré', 114.

<sup>58</sup>*PME*, 36.

<sup>59</sup>Tomber, *Indo-Roman Trade*, 48.

<sup>60</sup>*Ibid.*, 74-5, 80-1; Krishnan and Balvally, 'Assessing the Early Historic Indian Ocean Trade', 256-7.

<sup>61</sup>Buddha statue found at Berenike (Egypt), Polish Centre of Maritime Archaeology (27/04/2023), <https://pcma.uw.edu.pl/en/2023/04/27/buddha-statue-found-at-berenike-egypt/> [accessed 18/6/2023]

<sup>62</sup>*Ibid.*

<sup>63</sup>Anjana Reddy, 'Sourcing Indian Ceramics in Arabia: Actual Imports and Local Imitations', *Proceedings of the Seminar for Arabian Studies* 45 (2015): 262; Roberta Tomber, Caroline Cartwright, and Sunil Gupta, 'Rice Temper: Technological Solutions and Source Identification in the Indian Ocean', *Journal of Archaeological Science* 38, no. 2 (2011): 360; Sunil Gupta, 'Contact Between East Africa and India in the First Millennium CE', in *Early Exchange Between Africa and the Wider Indian Ocean World*, ed. Gwyn Campbell (Cham: Palgrave Macmillan, 2016), 161; Alessandra Avanzini, 'The Port of Sumhuram (Khor Rori): New Data on its History', in *Imperial Rome, Indian Ocean Regions and Muziris*, 200-1.

<sup>64</sup>Tomber, Cartwright, and Gupta, *ibid.*, 360-5.

Perhaps most surprising is the recent unearthing of Early Historic Indian cooking pottery from a store in the Faculty of Archaeology, Leiden. These cooking vessels were originally discovered in Jerusalem and show strong parallels with material from Gujarat.<sup>65</sup> The exact means by which these wares arrived in Jerusalem is unclear, but given their low-value, functional status they were most likely brought as personal possessions by merchants, sailors, or travellers from northwest of India. Maritime transit to the north-western Arabian coast or Gulf of Aqaba (followed by overland transit) is a possible means by which they arrived. The port of Aila became increasingly significant for Red Sea trade by the Late Antique period.<sup>66</sup> While another possible route was via Leukê Kômê (White Village) on the northwest Arabian coast (potentially Aynūnah).<sup>67</sup> The author of the *PME* mentions that this site was connected to the inland city of Petra and frequented by small craft from southern Arabia (it was important enough for the Roman state to impose a garrison and collect a 25% import tax).<sup>68</sup>

Red Polished Ware (henceforth RPW), a thin-walled type of pottery with a smooth surface (from burnishing) and an orange to red slip, has been found in a variety of forms (pots, bowls sprinklers, spouts).<sup>69</sup> Most likely produced in the Gujarat region, RPW has been found at a few sites connected to the southern Arabian Peninsula facing the Gulf of Aden, the Gulf of Oman and the Persian Gulf. This is specifically in late second to fourth century CE contexts at Qana',<sup>70</sup> as well as at Sohar and Ras al-Khaimah (Dubai), though at the latter site they could date as late as the eighth century CE.<sup>71</sup>

Connections with East Africa should also not be overlooked. Links with (northern) India and parts of the East African coast are apparent in the early centuries CE, although the available evidence skews to northeast Africa.<sup>72</sup> The *PME* records a demand for Indian iron and cotton cloth (from Ariakê) in northeast Africa (territory controlled by Zoskales), while demand for Indian copal and *macir* at Malao (on the coast of Somalia) is also mentioned.<sup>73</sup> The movement of goods between northwest India and Axum is further indicated by the presence of Kushana gold coins (ca. 220 CE) at the monastery of Dabre Damo in Axumite territory.<sup>74</sup> Moreover, emeralds from the Eastern Desert were traded with Axum and then exported to India by at least the fifth century CE,

<sup>65</sup>Marike van Aerde, Sam Botan, and Rishika Dhumal, Exploring the Faculty's Depots: 'What's an Indian Type of Cooking Pot Doing in Jerusalem?', <https://www.universiteitleiden.nl/en/news/2019/05/exploring-the-facultys-depots-what-is-an-indian-type-of-cooking-pot-doing-in-jerusalem> [accessed 26/5/2022].

<sup>66</sup>Walter D. Ward, 'Aila and Clysmā: The Rise of Northern Ports in the Red Sea in Late Antiquity', in *Natural Resources and Cultural Connections of the Red Sea*, ed. Janet Starkey, Paul Starkey, and Tony Wilkinson (Oxford: BAR, 2017), 161-71.

<sup>67</sup>*PME*, 19. The location of Leukê Kômê has been long debated: Casson, *Periplus*, 143-4; and Gary K. Young, *Rome's Eastern Trade* (London: Routledge, 2001), 94, have suggested Khuraybah-Aynūnah. Hélène Cuvigny, 'Introduction', in *Le route de Myos Hormos*, 2 vols., 2nd edition, ed. Hélène Cuvigny (Cairo: IFAO, 2006), 28-9; and Dario Nappo, 'On the location of Leuke Kome', *Journal of Roman Archaeology* 23 (2010): 335-42, have proposed al-Wajh. The Saudi-Polish team involved in recent excavations at Aynūnah argue that the topography matches closely with the description of Leukê Kômê given in the *PME* (19): Michał Gawlikowski, Karol Juchniewicz, Abdullah al-Zahrani ed., *Aynuna: A Nabataean Port on the Red Sea* (Warsaw: PCMA, 2021), 19-22.

<sup>68</sup>Cobb, *Rome and the Indian Ocean Trade*, 135.

<sup>69</sup>Derek Kennet, 'The Pottery', in *Excavations at Paithan, Maharashtra*, ed. Derek Kennet, J. Varaprasada Rao, and M. Kasturi Bai (Berlin: De Gruyter, 2020), 107-8; Krishnan and Balvally, 'Assessing the Early Historic Indian Ocean Trade', 249.

<sup>70</sup>Additionally, an Indian bronze statue and a coin of Kanishka (ca. second century CE) have been found at Qana'.

<sup>71</sup>Krishnan and Balvally, *ibid.*, 250-1; Kennet, 'The Pottery', 108.

<sup>72</sup>For example, connections with the Swahili coast become more demonstrable archaeologically from the seventh century CE: Jason Hawkes and Stephanie Wynne-Jones, 'India in Africa: Trade Goods and Connections of the Late First Millennium', *Afriques: Débats, méthodes et terrains d'histoire* 6 (2015): doi.org/10.4000/afriques.1752 [accessed: 23/5/2022].

<sup>73</sup>*PME*, 6, 8.

<sup>74</sup>Dibishada B. Garnayak, Manjil Hazarika, and Kulbhushan Mishra, 'Cultural Interaction Between Ancient Abyssinia and India: Archaeological Sources from 1st to 7th century CE', *Journal of Indian Ocean Archaeology* 10-11 (2014-15): 139.

if not earlier.<sup>75</sup> The evidence for Indian merchant diasporas in southern Red Sea sites and along the Horn is more difficult to establish than with sites further north—notably Myos Hormos and Berenike, where a combination of ceramics (especially coarse ware), epigraphs, and archaeobotanical remains make a strong case for it. Nonetheless, the likelihood that Indian merchants and sailors visited East African sites remains high (it is worth noting here the claim that a carnelian with putative Indian script was found at Adulis).<sup>76</sup>

### Case study two: the western Tamilakam

The Tamilakam region corresponds with a large part of southern India, including the Malabar and Coromandel coasts. The former coastal area seems to be the region that the author of the *PME* referred to as Limyrikê, with its port of Muziris, in the kingdom of Kêprobotos (probably a reference to the Chera), and Bakarê-Nelkynda, in Pandion's kingdom (likely an allusion to the Pandya).<sup>77</sup> Recent excavations at Pattanam (Muziris) have demonstrated that this port had links with the Mediterranean world, southern Arabia, the Persian Gulf-Mesopotamia, southern China, and other regions of India.<sup>78</sup> The *PME* also noted that both Muziris and Bakarê-Nelkynda offered various products from the hinterland of Limyrikê, as well as from further east, like Gangetic nard (i.e. from northeast India) and tortoiseshell from Chrysê Island (Southeast Asia).<sup>79</sup> This maritime and hinterland exchange is attested in Tamil poetry, with the king of Muciri (Muziris) being lauded for his generosity in bestowing gifts that came from the mountains and the sea (he acted as 'mediator between the two' spheres).<sup>80</sup>

The evidence demonstrates that the peoples of the region were not passive recipients of these wider networks of exchange. The author of the *PME* mentions that some vessels sailed out from Limyrikê to the island of Dioscuridês.<sup>81</sup> This may primarily refer to vessels returning to Roman Egypt, but it cannot be completely ruled out that some local vessels also sailed to the island.<sup>82</sup> In any case, there is evidence to suggest that people from this region potentially reached various parts of the Arabian Sea, Gulf of Aden, and Red Sea regions.<sup>83</sup> For example, Tamil-Brahmi documents and graffiti have been found at some Red Sea ports and at Sumhuram (Khor Rori). A potential name, 'Panai Ori' (alternatively interpreted as 'pot (suspended in) a rope net'), appears twice on opposite sides of the rim of an Indian storage jar from Myos Hormos.<sup>84</sup> Furthermore, on a sherd of

<sup>75</sup>Epiphanius *De XII gemmis* 19–21; Olympiodorus, *fragment* 1.37 (= Photius *Bib. cod.* 80 p. 62a9–26); Cosmas *Christian Topography* 11.339. For translations of these texts, see Tormod Eide, Tomas Hægg, Richard H. Pierce, and Laszlo Tørök, ed., *Fontes Historiae Nubiorum*, vol. 3 (Bergen: University of Bergen, 1998).

<sup>76</sup>Garnayak, Hazarika, and Mishra, 'Cultural Interaction Between Ancient Abyssinia and India', 143.

<sup>77</sup>*PME*, 47, 51, 53–4, 56. On comments about the region in the *PME*, see Eivind H. Seland, *Ports and Political Power* (Oxford: BAR, 2010), 57–66.

<sup>78</sup>See Cherian et al., 'Chronology'; P.J. Cherian, ed., *9th season Pattanam Excavation Report 2015* (Kerala: KCHR, 2015); Seland, *ibid.*, 57–8.

<sup>79</sup>*PME*, 54. For Chrysê, see also Pliny, *HN*, 6.54–55 (Pliny the Elder, *Natural History*, trans. W. H. S. Jones, with A. C. Andrews (Harvard: Loeb Classical Press, 1956)); and Ptolemy, *Geog.*, 7.2.17; Casson, *Periplus*, 235.

<sup>80</sup>Seland, *Ports and Political Power*, 61–2.

<sup>81</sup>*PME*, 31.

<sup>82</sup>De Romanis, *The Indo-Roman Pepper Trade*, 76, assumes this mainly refers to returning 'Roman' vessels.

<sup>83</sup>A recent discovery has been made of a Chera coin in an early-mid second century context at the fortlet of Dios (Abu Qurayyah) in the Eastern Desert of Egypt, though obviously there is no sure indicator of who brought it to the site: Shailendra Bhandare, Thomas Foucher and Hélène Cuvigny, 'An Indian Coin in the Eastern Desert of Egypt', in *Networked Spaces: The Spatiality of Networks in the Red Sea and Western Indian Ocean*, ed. Caroline Durand, Julie Marchand, Bérangère Redon, and Pierre Schneider (Lyon: Archéologie(s) 8, MOM Éditions, 2022): 507–12.

<sup>84</sup>Roberta Tomber, David Graf, and John F. Healey, with contributions from Christiane Römer-Strehl and Grzegorz Majcherek, 'Pots with Writing', in *Myos Hormos–Quseir al-Qadim*, 74.

Dressel 2–4 amphora from Berenike is inscribed a reference to ‘Korran, the chieftain’.<sup>85</sup> In Arabia a Tamil-Brahmi inscription has been discovered on a first-century CE reused amphora potsherd (the only one so far found in the region); on it is written *nantai kiran* which appears to be a personal name.<sup>86</sup>

It cannot be definitively proven that these individuals (or their associates) were present at these sites. But there are reasons for thinking that these epigraphs reflect the presence of south Indian merchants in Egypt and Arabia. One reason is that the presence of foodstuffs can arguably be connected to a South Asian diet, like finds of rice (including de-husked finds), mung beans, coconuts, and gooseberries at Myos Hormos and Berenike.<sup>87</sup> Perhaps even more significant is the presence of certain coarse wares which, as has already been suggested, are likely to be more culturally restrictive personal possessions. For example, a type of pottery known as Coarse Red Slipped Wares (henceforth CRSW) appears in both Egypt (Berenike, Myos Hormos, and Koptos), Arabia (Sumhuram/Khor Rori), and Pattanam in Kerala. These specific CRSW ceramics still have visible bamboo marks suggesting they shared a common source of production in southwest India (these internal wipe marks are distinctive to this area).<sup>88</sup> The sites of Qana’ (Yemen) and Ras al-Khaimah (United Arab Emirates) have also revealed CRSW.<sup>89</sup> However, it is important to note that this type was not exclusive to southwest India.<sup>90</sup> Two vessels of Megalithic Red-and-Black Ware (a ware generally considered to precede the Early Historic CRSW) have been found at Myos Hormos, which opens up the possibility for early (possibly Ptolemaic era) connections with South India.<sup>91</sup> In general, the Egyptian Red Sea ports have so far revealed a greater prevalence of ceramics deriving from southern India compared to other regions of the Subcontinent.<sup>92</sup>

### Case study three: the eastern Tamilakam

Shifting attention to the Coromandel Coast, this region appears to have been well-connected. The author of the *PME* comments that the chief ports of the region of Argaru (roughly corresponding with the southern part of the Coromandel Coast) were Kamara (Poompuhar?), Podukê (Arikamedu), and Sôpatma (Marakkanam?). They received goods from the west, including money from Egypt (χρημα τὸ ἀπ’ Αἰγύπτου).<sup>93</sup> Indeed, these ports are noted for their links with Limyrikê. It is stated in the *PME* that vessels sailing from Limyrikê and the north called at these ports, while *sangara* (double canoes joined by a deck-platform) facilitated the movement of goods between these regions.<sup>94</sup> Additionally, Pliny the Elder provides details of local amphidromous boats, with bows at the front and back (easier for navigating narrow canals) which could operate in the shallow straights. He states that they were of 3,000 amphorae capacity (ca. 75 tons), i.e. they

<sup>85</sup>Mahadevan, ‘Pottery Inscriptions’, 291; Mahadevan, *Early Tamil Epigraphy*, 49; Iravatham Mahadevan, ‘Tamil-Brâhmi Graffito’, in *Berenike 1995*, ed. Steven E. Sidebotham and Willeke Z. Wendrich (Leiden: CNWS, 1996), 205-8; Tomber, *Indo-Roman Trade*, 73-4.

<sup>86</sup>Avanzini, ‘The Port of Sumhuram (Khor Rori)’, 201.

<sup>87</sup>For a summary, see Cobb, *Rome and the Indian Ocean Trade*, 151-2.

<sup>88</sup>Tomber, *Indo-Roman Trade*, 47-8, 50, 74-5; also Schenk and Weisshaar, ‘The Citadel of Tissamaharama’, 475.

<sup>89</sup>Krishnan and Balvally, ‘Assessing the Early Historic Indian Ocean Trade’, 250. Avanzini, ‘The Port of Sumhuram (Khor Rori)’, 199.

<sup>90</sup>Tomber, *Indo-Roman Trade*, 46.

<sup>91</sup>*ibid.*, 74-5.

<sup>92</sup>Roberta Tomber, ‘Indo-Roman Trade: The Ceramic Evidence from Egypt’, *Antiquity* 74, no. 285 (2000): 624-30.

<sup>93</sup>*PME*, 58-60; Casson, *Periplus*, 47, 218, 226; Seland, *ibid.*, 59.

<sup>94</sup>*PME*, 60; Casson, *Periplus*, 228-9. De Saxcé argues that the *sangara* should be understood as ships with outriggers: Ariane de Saxcé, ‘Local Networks and Long-distance Trade: The Role of the Exchanges Between Sri Lanka and India During the Mediterranean Trade’ in *Imperial Rome, Indian Ocean Regions and Muziris*; Casson, *Periplus*, 65, gives the translation ‘sangara . . . are very big dugout canoes held together by a yoke’.

were decent ‘medium-sized’ vessels, thus indicating the quite important role this area had in connecting eastern and western India.<sup>95</sup>

The small to medium-sized vessels described in the *PME* and by Pliny were well-suited to sailing over Adam’s Bridge (Rama Setu), a chain of shoals stretching between India and Sri Lanka along the northern stretch of the Gulf of Mannar (parts of this area are particularly shallow). They not only played a role in rounding peninsular India, but likely also connected south-eastern India (around the Palk Strait) with northern Sri Lanka to judge from the appearance of Brahmi script on sherds at Jaffna, Anuradhapura, and Tissamaharama, as well as the potential spread of Tamil to parts of northern Sri Lanka (an inscription from Jaffna has been identified as Tamil-Brahmi).<sup>96</sup> Indeed, the author of the *Pattinappalai* (ca. second century CE) alludes to links between Chola territory and Sri Lanka (as well as the Ganges and Kalagam, on the Malay peninsula),<sup>97</sup> while other works such as the *Mahāvamsa* and *Indica* of Megasthenes reveal connections stretching back into the last few centuries of the first millennium BCE.<sup>98</sup>

Besides coastal and South Asian interregional sailing activity, it is also clear that cross-oceanic voyages took place. Gurukkal had questioned the suitability of Indian vessels for trans-oceanic voyaging, especially in relation to boats from southern India; although, as Whitewright notes, this is a misapprehension, since such vessels were often capable of both coasting and trans-oceanic voyaging.<sup>99</sup> A point underscored by the exchange of shipbuilding techniques between Indian and Southeast Asia.<sup>100</sup> Of relevance here is the reference in the *PME* to a specific class of very large ships called *kolandiophōnta* which cut-across (i.e. over) the ocean (the Bay of Bengal) to reach Chrysê and the Ganges region.<sup>101</sup> This picture is seemingly confirmed by later Chinese authors (Faxian, visiting India around 399–414 CE, and Xuanzang, ca. 600–654 CE) who describe crafts using the currents and winds to sail down the east coast before cutting-across the Bay of Bengal to Southeast Asia, often via the Andaman and Nicobar islands (where water could be collected).<sup>102</sup> These *kolandiophōnta* were potentially large sewn-plank ocean-going ships similar to *kun lun po*.<sup>103</sup> On this point, it is worth noting that at Alangkulam an image of a (probably) three-masted ship has been found on a first- to second-century graffito.<sup>104</sup>

The archaeological record and literary texts alluding to the spread of Buddhism (see Cohen’s article, this SI) give the impression that merchants and sailors from south-eastern/eastern India

<sup>95</sup>Pliny, *HN*, 6.24.82-3; Pomey, ‘À propos des navires de la mer Érythrée’, 125-6.

<sup>96</sup>*PME*, 51, 59-61; Casson, *Periplus*, 214, 226-9. On these inscribed sherds see Mahadevan, *Early Tamil Epigraphy*, 48, 62, 64; P. Pushparatnam, ‘Tamil Brahmi Inscription Belonging to 2200 Years Ago, Discovered by German Archaeological Team in Southern Sri Lanka’, *Proceedings of Jaffna University International Research Conference* (2014): 541-5; Robin Coningham, F. Raymond Allchin, Cathy Batt, and D. Lucy, ‘Passage to India? Anuradhapura and the Early Use of the Brahmi script’, *Cambridge Archaeological Journal* 6, no. 1 (1996): 73-97. Sinhala-Prakrit (Old Sinhalese) may be the language on some of the inscribed sherds recovered from the Iron Age levels: Ray, ‘Inscribed Pots, Emerging Identities’, 122.

<sup>97</sup>*Pattinappalai*, 212-24; Seland, *Ports and Political Power*, 61.

<sup>98</sup>The *Mahāvamsa* mentions large Tamil fleets, while Megasthenes describes large vessels used to transport elephants from Sri Lanka to southern India: Megasthenes F15b = Aelian, *Historia Animalium* 16.18. For translation of the fragments of Megasthenes, see Richard Stoneman, *Megasthenes’ Indica: A New Translation of the Fragments with Commentary* (London and New York: Routledge, 2021).

<sup>99</sup>Gurukkal, *Rethinking Classical Indo-Roman Trade*, 194-9; Whitewright, review of R. Gurukkal, 464. See also Kotarba-Morley, ‘The Maritime Context’, 200; Seland, *Ports and Political Power*, 59.

<sup>100</sup>See, notably, Manguin on the Ajanta ships: P.J. Manguin, ‘The Southeast Asian Ship: An Historical Approach’, *Journal of Southeast Asian Studies* 11, no. 2 (1980): 266-76.

<sup>101</sup>*PME*, 60, 63-4. The text challenges Gurukkal’s assumption that these vessels merely coasted.

<sup>102</sup>Sila Tripathi, ‘Ancient Maritime Trade of the Eastern Indian Littoral’, *Current Science* 100, no. 7 (2011): 1076; Sila Tripathi, ‘Early Users of Monsoon Winds for Navigation’, *Current Science* 113, no. 8 (2017): 1618; Tripathi, ‘Seafaring Archaeology’, 14-15; Rila Mukherjee, ‘Routes, ports and networks in Bengal: China connection’, in *Ports of the Ancient Indian Ocean*, 330. In this vein, it is worth noting the references in Chinese court histories to embassies from Huangzhi (Kanchi, in 2 CE), Tianzhu (Northern India, in 159 and 161 CE) and Shize (Sri Lanka, in 405, 430, 435 CE).

<sup>103</sup>Kotarba-Morley, ‘The Maritime Context’, 197-8.

<sup>104</sup>See Pomey, ‘À propos des navires de la mer Érythrée’, 116, although he interprets it to be a Roman vessel.

frequently came to Southeast Asia.<sup>105</sup> The spread of bead-working techniques in Southeast Asia, which parallel what is seen at Arikamedu, may further point to these connections;<sup>106</sup> although, it is perhaps better to understand this in terms of glocal adaptation, rather old diffusionist ideas.<sup>107</sup> Various types of glass and gemstones from southern India and Sri Lanka also found their way to Southeast Asia, such as onyx beads found at Tabon Caves site of Palawan (Philippines).<sup>108</sup> These movements were not unidirectional, a fact demonstrated by the presence of stamped ware (widespread in East/Southeast Asia, but unusual in most parts of India) at sites in eastern India like Arikamedu (Tamil Nadu), Kottapatnam and Motupalli (Andhra Pradesh), and Jaugada (Odisha).<sup>109</sup>

In terms of more tangible material, the appearance of RW and other fine wares (notably Wheeler's Arikamedu types 10 and 18) at sites across Southeast Asia certainly demonstrate these links, though not necessarily the presence of South Asian merchants at specific sites, for as we have noted, these items are less 'culturally bounded'. A type of red glass bead known as *mutisalah*, which is found at Arikamedu (but rare in northern India), and appears in north-eastern Bali and other sites across Southeast Asia (such as Oc Eo, Kuala Selinsing and Pengkalan Bujang), seems to support the notion of specific Southeast Indian and Southeast Asian connections.<sup>110</sup> The same is the case with similarities between the RW seen at Sembiran and Pacung I and that from Arikamedu, Karaikadu (ca. 30 kilometres south of Pondicherry) and Anuradhapura.<sup>111</sup> A third- to fourth-century CE oblong-shaped polished stone with the Tamil-Brahmi legend 'the (touch) stone of Perumpattan' (*perum pataṅ kal*)—possibly used for testing the purity of gold—found at Khuan Luk Pat in Thailand adds further colour to this picture.<sup>112</sup>

#### Case study four: north-eastern India

This region, which includes modern-day Odisha, Bengal, and Assam, also had strong links with Southeast Asia.<sup>113</sup> Linguistic analysis increasingly points to South and Southeast Asian interaction.<sup>114</sup> Mukherjee suggests that Kharosthi-Brahmi, which evolved in Bengal, had by the

<sup>105</sup>On the literary references see *Arthasastra*, 2.11.59; *Jatakas*, 3.360, 4.442; Himanshu P. Ray, *The Winds of Change: Buddhism and the Maritime Links of Early South Asia* (Oxford: Oxford University Press India, 1994). For a wider discussion of these connections see Tom Hoogervorst, *Southeast Asia in the Ancient Indian Ocean World* (Oxford: BAR, 2013).

<sup>106</sup>Peter Francis Jr., 'Beads and Selected Small Finds from the 1989–92 Excavations', in *The Ancient Port of Arikamedu*, 1: 450–79, 502, 513–14.

<sup>107</sup>Some proponents of 'diffusion' had assumed it typically led to greater cultural homogenization. However, as Roudometof notes, this fails 'to capture the reality' of how 'local' communities respond to 'global' influences: Victor Roudometof, *Glocalization: A Critical Introduction* (London and New York: Routledge, 2016), 63.

<sup>108</sup>Laure Dussubieux, 'L'apport de l'ablation laser couplée à l'ICP-MS à la caractérisation des verres' (PhD diss., Université d'Orléans, Orléans, 2001); Laure Dussubieux and Bernard Gratuze, 'Glass in Southeast Asia', in *50 Years of Archaeology in Southeast Asia*, ed. Bérénice Bellina et al. (Bangkok: River Books, 2010), 247–59.

<sup>109</sup>Tripati and Behera, 'Did Romans have Direct Maritime Trade Contacts with Odisha', 1393.

<sup>110</sup>Tripati, 'Seafaring Archaeology', 10. On Arikamedu's wider trade links, see Ray, 'Inscribed Pots, Emerging Identities', 120; Ardika, *Archaeological Research in Northeastern Bali*, 127.

<sup>111</sup>Ardika, *ibid.*, 67–8. It is worth noting that besides RW, Sembiran has also revealed glass beads similar to those from Arikamedu and a shard with a black slip bearing a line of Kharosthi characters.

<sup>112</sup>Mahadevan, *Early Tamil Epigraphy*, 51.

<sup>113</sup>By contrast, links with the Mediterranean appear sparser to judge from the dearth of material found in these areas. For an overview, see Cobb, *Rome and the Indian Ocean Trade*, 173; Tripati and Behera, 'Did Romans Have Direct Maritime Trade Contacts with Odisha', 1391–5. Nonetheless, some Mediterranean objects found their way to the northeast as indicated by the appearance of sandwiched glass beads (likely from Egypt) at Wari-Bateshwar, a clay tablet with a Greek inscription at Tildah (Bengal), and Roman clay bullae, amphorae and (imitation) coins at Sisupalgarh and Manikapatna (Odisha).

<sup>114</sup>On linguistic connections, see Waruno Mahdi, 'Linguistic and Philological Data Towards a Chronology of Austronesian Activity in India and Sri Lanka', in *Archaeology and Language IV*, ed. Roger Blench and Matthew Spriggs (London and New York: Routledge, 1999), 160–242.

third century CE spread to Oc Eo in Fu-nan and U-Thing in Thailand.<sup>115</sup> A collection of fifth-century CE Buddhist inscriptions in Kedah on the Melay Peninsula further indicate strong connections, a process that is suggestive of sustained interactions and exchange.<sup>116</sup>

Tangible material evidence also points to even earlier engagements. The site of Ban Don Ta Phet in Thailand has revealed high-tin bronze Knobbed Ware (fourth-second centuries BCE), most likely originating from the northeast India (it has been primarily found in Odisha, northern Andhra Pradesh, Bengal, and Assam).<sup>117</sup> The presence of a lion pendant, beads, and cotton cloth may also point to links.<sup>118</sup> Likewise the site of Khao Sam Kaeo on the Kra Isthmus (southern Thailand) has revealed Knobbed ware (as well as RW), with the site appearing to have different foreign and indigenous quarters.<sup>119</sup> This ware may have originally connected to ritual use and certainly the appearance of imitations of this type of ware in Southeast Asia, suggests it was not culturally bounded and that its presence does not necessarily connect to 'Indian' merchants or sailors.<sup>120</sup> However, Bellina has suggested that 'Khao Sam Kaeo's morphology, location and type of fortifications find more pertinent comparisons amongst Indian cities than contemporary South-East Asian settlements.'<sup>121</sup> Thus, it would be unsurprising to see evidence of Indian diaspora communities at this site since the Thai-Malay Peninsula was an important nodal point facilitating the flow of goods between the Bay of Bengal and the South China Sea (the area was also attractive for its metals: tin from the Malay peninsula, gold from Sumatra and Kalimantan).<sup>122</sup>

## Concluding discussion

In this article, I have sought to go beyond simply asserting the active agency of individuals and groups from South Asia in the Early Historic Indian Ocean trade but tried to assess how this might be demonstrated from the evidence. In doing so, it has been necessary to face the dilemma of avoiding being too absolutist in ascribing cultural habits to individuals and groups, but at the same time connecting the appearance of archaeological material and epigraphic evidence (among other sources) with the presence (temporary or long-term) of 'Indians' at foreign sites. This is, ultimately, with the goal of achieving a more nuanced understanding of the role played by merchants and sailors from South Asia in this wider 'global' activity.

The ability to demonstrate this active engagement has important implications for our theoretical discourse. The counter example of Southeast Asia offers a salutary indicator of why. Earlier notions of the Indianization of Southeast Asia in the first millennium CE are being increasingly questioned.<sup>123</sup> Nevertheless, as Hoogervorst notes, establishing Austronesian activity and agency through the movement of material items and establishment of connected

<sup>115</sup>Mukherjee, 'Routes, Ports and Networks in Bengal', 338.

<sup>116</sup>Ray, 'Ethnographies of Sailing', 85.

<sup>117</sup>Tripati, 'Ancient Maritime Trade of the Eastern Indian Littoral', 1082; Tripati, 'Seafaring Archaeology', 10, 17.

<sup>118</sup>Bérénice Bellina and Ian Glover, 'The Archaeology of Early Contacts with India and the Mediterranean World from the Fourth Century BC to the Fourth Century AD', in *Southeast Asia, From Prehistory to History*, ed. Ian Glover and Peter Bellwood (London and New York: Routledge, 2004), 68-89; Judith Cameron, 'The Archaeological Textiles from Ban Don Ta Phet in Broader Perspective', in *50 Years of Archaeology*, 140-151.

<sup>119</sup>Bérénice Bellina, 'The Inception of Transnational Processes Between the Indian Ocean and the South China Sea from an Early City-state on the Thai-Malay Peninsula (fourth-second centuries BCE)', in *Ports of the Ancient Indian Ocean*, 490-503.

<sup>120</sup>On this, see Praon Silapanth, 'Knobbed Ware from Archaeological Sites in Thailand: An Evidence of Early Exchange Between South Asia and Southeast Asia', *Thammasat Review* 21, no. 1 (2018): 131-51.

<sup>121</sup>Bellina, 'The Inception of Transnational Processes', 472.

<sup>122</sup>For a discussion of the Malay Peninsula, as well as the straits of Malacca and Sumatra, as intermediary hubs, see Sunil S. Amrith, *Crossing the Bay of Bengal* (London: Harvard University Press, 2013), 14.

<sup>123</sup>See, for example, Peter G. Johansen, 'Recasting Foundations: New Approaches to Regional Understandings of South Asian Archaeology and the Problem of Culture History', *Asian Perspectives* 42, no. 2 (2003): 192-206.

infrastructure (often made from perishable materials) is challenging, since it is frequently easier to identify ‘Indian’ material, while the literary sources also tend to focus on the latter.<sup>124</sup>

In order to further move away from the Romano-centric lens through which Indian Ocean activity (particularly in the Arabian Sea) had been viewed by some earlier scholars (and reasserted by some more recent scholars), it is necessary to not merely proclaim the active agency of those from South Asia, but to demonstrate it from the evidence. Additionally, the greater utilization of concepts from globalization—with its emphasis on movement, connectivity and the interplay between local and global forces—can better allow us to articulate what we see from this body of material (see the introductory article in this SI).

### **Evidence and Methodology**

By establishing a methodology for identifying and analysing material linked with the presence of ‘Indians’ at foreign sites and the complex and varied shipping tradition which existed, we can also nuance our discussion of Early Historic Indian Ocean trade. We can go beyond macro discussions of different regions or ‘cores’ (to use World Systems terminology) and identify more complex multidirectional networks between different communities or polities.

In reviewing our case studies, it appears that the epigraphic, pictorial and literary testimony strongly demonstrate the existence of an indigenous north-western shipping tradition that connected merchants and sailors with Socotra and the Persian Gulf area. The ceramic evidence (notably coarse wares) seems to widen the scope of this activity, suggesting that some merchants and sailors from this region also sailed to ports in Southern Arabia and the Red Sea (and perhaps other parts of East Africa). In the case of southern India, ceramic and epigraphic evidence clearly points to the presence of merchants and sailors at ports in the southern Arabian Peninsula and the Egyptian Red Sea coast. With regards to southeast India, there is the attestation in the *PME* of large vessels sailing to Southeast Asia from the ports of Kamara, Podukê, and Sôpatma. More generally, it is possible to see the socio-cultural impacts of eastern Indian and Southeast Asian networks of exchange in the spread of Buddhism and the glocal adaptation of linguistic and scriptural elements from India. Almost certainly merchants and sailors from southern and north-eastern India travelled to Southeast Asia (and vice versa), although we need to remain cognizant of the fact this cannot not always be straightforwardly attested from the material culture. For example, RW and Knobbed Ware may reflect wider connectivity, but their occurrence (due to potential cultural ‘boundary crossing’) does not, in isolation, confirm the presence of ‘Indian’ merchants or sailors at particular ‘foreign’ sites.

### **Connecting East and West**

The evidence so far discussed points to the expected: sailors and merchants connected to western India operating in the Arabian Sea (including the Persian Gulf and Red Sea) and along parts of the East African coast, with those connected to eastern India operating in the Bay of Bengal and sailing to Southeast Asia. Indeed, those operating within particular circuits—Abu-Lughod identified three interlocking circuits (Arabian Sea, Indian Ocean, and South China Sea) and Chaudhuri six seas—was evidently a prevalent feature of the pre-modern Indian Ocean.<sup>125</sup> That said, we do see some exceptions like the voyages of Persian and Arab merchants to Guangzhou (Canton) in the late first millennium CE.<sup>126</sup>

<sup>124</sup>Hoogervorst, ‘Tracing Maritime Connections’, 751.

<sup>125</sup>Abu-Lughod, *Before European Hegemony*, 251-3; Chaudhuri, *Trade and Civilisation*, 126-8, 133. The ‘circuits’ outlined by these authors could be critiqued for underplaying the role of East Africa in Indian Ocean exchange. See Hawkes and Wynne-Jones, ‘India in Africa’.

<sup>126</sup>Touraj Daryae, ‘The Persian Gulf Trade in Late Antiquity’, *Journal of World History* 14, no. 1 (2003): 1-16.

In this regard, the role of southern India as a conduit for the flow of peoples, objects, and (more abstractly) ideas between the Arabian Sea and Bay of Bengal spheres becomes apparent. This has already been alluded to with the availability of goods from the Ganges area and Southeast Asia at western Indian ports like Muziris, the explicit attestation of links between western and southeast Indian ports in the *PME* (and evident from some material finds), and the operation of boats like *sangara* that could sail via Adam's Bridge (Rama Setu).<sup>127</sup>

It also apparent from the Godavaya shipwreck (off the southern coast of Sri Lanka) that South Asian ships could circumnavigate the island.<sup>128</sup> Items from its cargo include BRW, metal bars, and purified glass ingots. The wreck dates to the period around the late second century BCE to the first century CE based on radiocarbon analysis, though the typological analysis of the BRW could suggest a second-century BCE date.<sup>129</sup> The graffiti marks on the BRW show parallels with Kodumanal (Tamil Nadu), Ridiyagama, and Kelaniya (Sri Lanka), while analysis of the glass may point to connections with Manikollai and Appur (Tamil Nadu).<sup>130</sup> Additionally, the production of a mixed soda-potash glass at Giribawa on Sri Lanka's western coast (frequently exported to south-eastern India) similarly points to South Asian shipping which could circumnavigate the island.<sup>131</sup>

In light of this, it seems eminently feasible that the large *kolandiophônta* operating from ports in south-eastern Indian could have circumnavigated Sri Lanka and entered into the Arabian Sea region, just as the testimony of Strabo and Pliny indicates that a few 'Roman' vessels entered the Bay of Bengal region.<sup>132</sup> Support for this supposition comes from two inscribed sherds found at Myos Hormos (Quseir al-Qadim) which record the names Kanan and Cātan. These are names that appear also at Arikamedu and which show strong parallels to this area in the type of Brahmi script used.<sup>133</sup> Indeed, the appearance of the name Kanan on a jar rim from Arikamedu led Begley to suggest that it refers to one-and-the-same Kanan.<sup>134</sup> Additionally, an *ostrakon* from this same port records the name of three individuals called Halaka, Nakada (possibly Nagadatta), and Vinhudala (likely Visnudatta). They are mentioned alongside a list of possible supplies (meat, oil, wine). Salomon argues that its script is comparable to the Brahmi used in sites as Nagarjunakonda and Amaravati around the second to third centuries CE, suggesting they originated from the Deccan.<sup>135</sup> In this regard, it should be noted that Nagarjunakonda and Amaravati are much closer to the eastern coast of the Deccan. Indeed, Amaravati is conveniently situated by the Krishna River which leads into the Bay of Bengal. Consequently, it is not inconceivable that Halaka, Nakada, and Vinhudala came to Egypt originally having set out from the eastern coast of the Deccan.

<sup>127</sup>See also the use of the Palakkad Gap for overland links between south-western and south-eastern India: Sethuraman Suresh, *Symbols of Trade: Roman and Pseudo-Roman Objects Found in India* (Delhi: Manohar, 2004), 30-1, 153-4.

<sup>128</sup>Osmund Bopearachchi, Senarath Disanayaka, and Nimal Perera, 'The Oldest Shipwreck in the Indian Ocean', in *Ports of the Ancient Indian Ocean*, 421.

<sup>129</sup>Deborah N. Carlson and Ken Trethewey, 'Exploring the Oldest Shipwreck in the Indian Ocean', *INA Quarterly* 40, no. 1 (2013): 8-14; Rasika Muthucumarana et al., 'An Early Historic Assemblage Offshore of Godawaya, Sri Lanka: Evidence for Early Regional Seafaring in South Asia', *Journal of Maritime Archaeology* 9 (2014): 41-58; Bopearachchi, Disanayaka, and Perera, *ibid.*, 411-28.

<sup>130</sup>Bopearachchi, Disanayaka, and Perera, *ibid.*, 421-5.

<sup>131</sup>De Saxcé, 'Local Networks', 61.

<sup>132</sup>Strabo, 15.1.4 (Strabo, *Geography*, trans. Horace L. Jones (Harvard: Loeb Classical Library, 1932)); Pliny, *HN*, 6.24.82.

<sup>133</sup>Iravatham Mahadevan, 'Pottery Inscriptions in Brahmi and Tamil-Brahmi', in Begley, *The Ancient Port of Arikamedu*, 1: 291; Mahadevan, *Early Tamil Epigraphy*, 49; Donald Whitcomb, 'Trench Summaries', in *Quseir al-Qadim 1978 preliminary report*, ed. Donald Whitcomb and Janet Johnson (Cairo: University of Chicago, 1979), 18; Janet Johnson, 'Inscriptional Material', in *Quseir al-Qadim 1980 Preliminary Report*, ed. Donald Whitcomb and Janet Johnson (Malibu: University of Chicago, 1982), 263-4.

<sup>134</sup>Begley, *The Ancient Port of Arikamedu*, 1: 23-4.

<sup>135</sup>Richard Salomon, 'Epigraphic Remains of Indian Traders in Egypt', *Journal of the American Oriental Society* 111, no. 4 (1991): 731-5.

Such connections might also be tentatively suggested from the material record. The Chicago team, who conducted the first set of excavations at Myos Hormos, identified cooking ware that parallel finds from Arikamedu.<sup>136</sup> At Berenike there are finds of cooking ware that, although not precisely equating to parallels from Arikamedu, nevertheless show clear South Asian origins (including Wheeler Types 24, 25, and 28-29). This is in addition to the six table-ware vessels, three of which are bowls of Arikamedu Fine Ware 1 and another bowl, similar in design but of poorer quality.<sup>137</sup> Moreover, the appearance of RW and Paddle Impressed Wares (henceforth PIW – mostly deriving from eastern India) at Berenike, paralleling finds at Arikamedu and Khor Rori, may point to (indirect) trade links with Arabia and southeast India in the second and first centuries BCE (prior to the ‘Roman period’).<sup>138</sup> A date for the production of RW from the second century BCE onwards might seem to support this notion.

In summation, this activity, historically interesting in its own right, has an even broader significance when placed within the context of wider Indian Ocean maritime history. It seems to represent a major phase of sustained integration between the Arabian Sea and Bay of Bengal spheres (and potentially also the South China Sea; see the article of Jiun-Yu Liu in this SI). It is quite telling that material like RW occurs in regions from Egypt and Southern Arabia to Southeast Asia, as is the increased appearance of Mediterranean material at sites in Mainland Southeast Asia and the availability of Southeast and East Asian goods in the Mediterranean (in both instances, likely typically arriving at these end points via intermediaries).<sup>139</sup> Merchants from southeast India are certainly not wholly responsible for this, but they clearly played an important part in the development of this widespread connectivity.

### **Wider Implications**

In this final section, I wish to briefly consider the implications of this research on our broader understanding of socio-cultural, religious, and political developments in South Asia in the early centuries CE, as well as tying it into key themes discussed in the other articles in this SI. Beyond more fully recognizing the role played by South Asian merchants and sailors in the wider Indian Ocean trade, it is clear that numerous individuals were directly and indirectly implicated in this activity, from landowners to organizers of craft activities and owners of vessels, among others.<sup>140</sup> In this situation, the greater mobilization of resources and ships will have been aided by increasingly complex socio-political systems in South Asia.<sup>141</sup> In addition to powerful merchants and local elites, the development of Buddhist institutes and a ritual economy likely spurred maritime activity during the early centuries CE (on the association with trade networks and the spread of Buddhism, see Cohen’s article in this SI). It is notable that wealthy merchants and political elites often acted as patrons to Buddhist *sangha* in this period. These institutions in turn lending out money as part of

<sup>136</sup>Donald Whitcomb, ‘Roman Ceramics’, in *Quseir al-Qadim 1980*, 67.

<sup>137</sup>Roberta Tomber, ‘Trade Relations in the Eastern Mediterranean and Beyond: The Egyptian-Indian Connection’, in *Trade Relations in the Eastern Mediterranean from the Late Hellenistic period to Late Antiquity: The Ceramic Evidence*, ed. Maria B. Briese and Leif E. Vaag Briese (Odense: University of Southern Denmark, 2005), 226; Steven E. Sidebotham and Iwona Zych, ‘Excavations’, in *Berenike 2008–2009*, ed. Steven E. Sidebotham and Iwona Zych (Warsaw: PCMA, 2011), 49–50; Strauch, *Foreign Sailors on Socotra*, 371.

<sup>138</sup>Alessandra Avanzini, ‘The Port of Sumhuram: Recent Data and Fresh Reflections on its History’, in *Ports of the Ancient Indian Ocean*, 117–18, 122. With regards to PIW, Tomber notes that most diagnostic sherds of this ware suggest an origin in eastern India: Tomber, *Indo-Roman Trade*, 76.

<sup>139</sup>On this, see Cobb, *Rome and the Indian Ocean Trade*.

<sup>140</sup>Ray, ‘Ethnographies of Sailing’, 84–90.

<sup>141</sup>See Seland, *Ports and Political Power*. Nonetheless, we can still recognise the role of small-scale fishing communities in helping to develop maritime activity: Ray, *ibid*.

their endowments, potentially facilitating and perpetuating this activity.<sup>142</sup> Occasionally Buddhist *sangha* could even be involved in the collection of harbour duties.<sup>143</sup>

With the potential for greater financing and the backing of Buddhist institutional structures, it is possible that this cyclically facilitated the development of more complex forms of trading activity. In addition to seasonal or itinerant traders, some of the 'Indian' presence at 'foreign' ports may relate to the established of longer-term merchant diaspora, which maintained links with associates back in the 'homeland'. As Simmons notes (this SI), this enabled the development of longer-term social and business relationships between suppliers and buyers (building up trust), potentially helping to lower transaction costs, gain more familiarity with the political situation (and legal requirements), and reduce uncertainty.

Another fundamental driver was the appreciation for a range of imported goods. Many of these appear to have been genuinely popular in parts of India, like Mediterranean wine and red coral, as well as offering a means of conspicuous consumption and possibilities for gift-giving, loans, and patronage (notably seen with some Roman coins).<sup>144</sup> This was a phenomenon that was potentially stimulated by increasing urbanization in this period, especially in peninsular India.<sup>145</sup>

Ultimately, growing urbanization in various parts of India, the important nexus between Buddhist institutions and merchant patronage, and the adaptation of an array imported goods into various socio-cultural practices seem likely to be causative factors for the active engagement by Indian merchants (among others) in the increasingly complex Indian Ocean networks of exchange that developed in this period.

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<sup>142</sup>On donations to Buddhist institutes, see Himanshu P. Ray, *Beyond Trade: Cultural Roots of India's Ocean* (New Delhi: Aryan Books, 2015), 106 – *Jatakas*, book 21, no.539. On the role played by Buddhist *sangha* in Sri Lanka in acquiring and administering resources from trade, see Coningham et al., 'Discussion', in *Anuradhapura: Volume III: The Hinterland*, ed. Robin Coningham (Oxford: BAR, 2013). For political endowments to religious communities in the Tamilakam and Deccan, see Evers, *Worlds Apart Trading Together*, 230-3.

<sup>143</sup>Ray, 'Ethnographies of Sailing', 81. For textual references to loans, see Simmons article in this SI.

<sup>144</sup>For an overview of these goods, see Cobb, *Rome and the Indian Ocean Trade*, 218-71. See also Federico De Romanis, 'Aurei after the Trade: Western Taxes and Eastern gifts', in *Dal denarius al dinar.*, ed. Federico De Romanis and Sara Sorda (Rome: Istituto Italiano di Numismatica, 2006), 55-87.

<sup>145</sup>On urbanization in the Deccan and southern India in this period, and how trade may tie into this, see R. Champakalakshmi, 'Urbanisation in South India: The Role of Ideology and Polity', *Social Scientist* 15, no. 8-9 (1987): 67-117; Kathleen D. Morrison, 'Trade, Urbanism, and Agricultural Expansion: Buddhist Monastic Institutions and the State in the Early Historic Western Deccan', *World Archaeology* 27, no. 2 (1995): 203-21.

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