



III

Self, Other and the Use and Appropriation of Late Roman Coins in Peninsular India (4th–7th Century CE)

Rebecca Darley¹

The movement of objects across space is one of the fundamental markers used in arguments about connectivity and globalisation in the pre-modern world.² The use of those objects in their final destination, however, reveals the different narratives which global connections could create.³ The use and appropriation of late Roman coins in sacred space in peninsular India from 4th to 7th century CE provides a fertile

¹ I would like to express my thanks in dedicating this essay to Professor Himanshu Prabha Ray for inviting me to present a paper at the Nehru Memorial Museum and Library (NMML) workshop in December 2012; my doctoral supervisors at the University of Birmingham, Professor Leslie Brubaker and Dr Archie Dunn for their invaluable support and critical insight; and the Dumbarton Oaks Research Library and Collection, Washington, DC, where I researched and produced this essay as Junior Research Fellow. All errors, of course, remain my own.

² M. McCormick, *Origins of the European Economy: Communications and Commerce, A.D. 300-900*, Cambridge: Cambridge University Press, 2001, pp. 281–390; R. Tomber, *Indo-Roman Trade: From Pots to Pepper*, London: Duckworth, 2009.

³ A. L. Boozer, 'Globalizing Mediterranean Identities: The Overlapping Spheres of Egyptian, Greek and Roman Worlds at Trimithis', *Journal of Mediterranean Archaeology*, 2012, 25(2): 93–116.

ground for examining the significance of high-value exotica, both for historical societies negotiating local value systems in an interconnected world, and for scholars of the past seeking to track often ephemeral movements of people and goods.

In analysing the use of late Roman coins in sacred landscapes in 4th–7th-century-CE peninsular India, this essay addresses three major areas. First, it examines the way in which scholarship on late Roman (and Roman) coins in India and Sri Lanka has implicitly and explicitly privileged commercial narratives and economic spaces in its explanations for their presence and use in the subcontinent. Second, it re-examines from an economic perspective the spatial context in which many of these coins have been found. This examination highlights the non-economic distribution of such coins and suggests alternative interpretations for the same. Finally, it turns to the question of distribution in ‘sacred landscapes’. By focussing on both coins in the landscape and coins as spaces for micro-representation, it is possible to construct an impression of the use of coins in south India which conforms more closely to ritual than commercial patterns of use and value.

Global historical enquiry not only crosses geographical expanses as they were experienced by past societies; it also crosses the often far less porous regional and disciplinary borders of the academic world. Increasingly, as the conference from which this volume derives gives clear testimony, it is an arena for historical research which generates its own global networks, of scholars and institutions representing distinct traditions and perspectives. The difficulty faced in modern scholarship as the volume of published work increases and as travel and technology facilitate greater interactions, in keeping up with one’s own chosen field, has long been recognised.⁴ This is compounded many times over when considering research into multiple regions.

Trans-regional studies face not only the difficulty of information overload, but also of communication and mutual comprehension. Specialisms within the study of the human past, whether regional or disciplinary, have their own conventions, terminology, and intellectual emphasis and debate. As Helen Parkins reflected in the case of the economic history of antiquity, just as conceptions of antiquity have broadened beyond the Greek and Roman worlds, so too have

⁴ J. R. E., ‘Too Much to Read’, *Annals of Internal Medicine*, 1965, 63(4): 721–23.

the difficulties among specialists in being mutually understood.⁵ This is equally true of the Middle Ages. It, therefore, seems appropriate before opening this examination of numismatic evidence for 4th–7th-century-CE contact between the Mediterranean world and peninsular India to outline the key terminology used in this essay.

The period from 4th to 7th century CE constitute in both south Indian and Roman history, a transitional point, between epochs often considered better known and more worthy of study. This is, perhaps, partly the reason for the coins primarily under discussion here having received comparatively little attention in contrast to Roman coins of 1st–3rd century CE, which have been the subject of quite extensive study.⁶ This also makes a historical and geographical introduction to the present essay even more necessary. In the context of a global historical enquiry and one which situates itself in a period of history often marked by uncertainty over beginnings, endings, periods, and titles, this essay begins with laying out the terms used throughout. Such outlines of imperial and regional history and periodization may be superficial and partially redundant for some readers, but it is hoped that they will facilitate the ongoing debate and discussion and foster consistency in the study which follows.

The Roman/Byzantine/Late Antique Mediterranean

The transition of the Roman Empire from a Latin-speaking polity centred on its capital at Rome, to a Christian, largely Greek-speaking state with its capital in Constantinople marks one of the most significant shifts in the Mediterranean history.⁷ While the empire termed ‘Roman’ uncontestedly exists in the scholarship up to the 3rd century CE, and the term ‘Byzantine’ is used without much demurral from

⁵ H. Parkins, ‘Time for Change? Shaping the Future of the Ancient Economy’, in H. Parkins (ed.), *Trade, Traders and the Ancient City*, London: Routledge, 1998, p. 13.

⁶ P. Berghaus, ‘Roman Coins from India and Their Imitations’, in A. K. Jha (ed.), *Coinage, Trade and Economy*, Nashik: Indian Institute of Research in Numismatic Studies, 1991, pp. 108–21.

⁷ A. Cameron, *The Byzantines*, Oxford: Blackwell Publishing, 2006, pp. 1–39.

around the 9th century CE onwards, the phase of change spans almost perfectly the period, *c.* 300–700 CE, covered in this essay.⁸ Within this period, the terminology of transition can also be felt strongly, with labels of late Roman, late antique and early Byzantine making regular appearances, often with slight differences of meaning or emphasis.⁹ What to call the coins under discussion or the state which produced them is, therefore, no easy decision to make.

In purely numismatic terms, Byzantine coinage is often considered to have begun in 498 CE when Anastasius I reformed the Roman coinage and created a visually distinctive (though structurally not radically different) coinage from that of the later Roman Empire, and also stabilised and modified the relationship between gold and base metal coinage.¹⁰ This division undoubtedly means more to modern numismatists than it did to late-5th-century-CE inhabitants of the eastern Roman Empire, for whom the reform of coinage had constituted a fairly common response to the inflationary difficulties which had beset the empire since the 3rd century CE.¹¹ It certainly makes little sense to divide the coins which are under discussion here as historical markers of movement into two arbitrary categories of Roman (pre-498 CE) and Byzantine (post-498 CE) on the basis of this numismatic convention.

Spatially, the Roman Empire at the start of this in-between period encircled the Mediterranean, east and west, controlled the routes through Egypt to the Red Sea and thence, to the Indian Ocean, and abutted the Sasanian Persian Empire in the east. It was a single political entity, though portions of it might have been administered by different emperors from different capitals. Though Rome remained the historic heart of the empire, its strategic weakness gave opportunities to other cities, including Milan, Antioch and Trier, to serve as capitals.¹²

⁸ R. Lim, 'The Late Roman Empire', in A. Barchiesi and W. Scheidel (eds), *The Oxford Handbook of Roman studies*, Oxford: Oxford University Press, 2010, pp. 547–48.

⁹ R. T. J. Cappers, *Roman Foodprints at Berenike: Archaeological Evidence of Trade and Subsistence in the Eastern Desert of Egypt*, Los Angeles: Cotsen Institute of Archaeology, University of California, 2006.

¹⁰ P. Grierson, *Byzantine Coinage*, Washington, DC: Dumbarton Oaks Research Library and Collection, 1999.

¹¹ C. H. V. Sutherland, R. A. G. Carson et al., *Roman Imperial Coinage*, London: Spink, 1923.

¹² Lim, 'The Late Roman Empire', pp. 548–56.

In 330 CE, Constantine I officially inaugurated his new city of Constantinople on the site of the Greek settlement of Byzantium. Situated in an economically and militarily strong position between Europe and Asia, this capital increasingly became the gravitational centre of the empire and would come to define its later history.¹³ By the mid-6th century CE, Justinian I (527–65 CE) acceded to an empire reduced largely to its eastern domains owing to the loss of territory to barbarian groups in the west, but fought a series of campaigns to recover the lost Roman territory in Spain, Italy and North Africa. The empire continued to fluctuate in size but remained a single Roman space, now ruled unquestionably by a single emperor from Constantinople.¹⁴ Culturally, the adoption of Christianity as the official religion of the empire over the course of 4th and 5th centuries CE generated major changes in society and material culture.¹⁵

By the 8th century CE, the rise of Islam had caused the empire to lose many of its eastern and African possessions, including access to the Red Sea. Its western provinces had also been lost, permanently. Embattled, diminished and in the process of an administrative restructuring which generated a polity unquestionably distinct from the Roman Empire, *this* empire nevertheless thought of itself as *that* empire. To itself, Byzantium was always the Roman Empire, and as under Justinian I, it was ruled by a single emperor from Constantinople.¹⁶ In scholarly terms, however, the polity which emerged from its initial wars with the first Islamic polity is commonly termed Byzantine.

In this study, making a distinction between the period and body of evidence which have been most often analysed under the rubric of ‘Indo-Roman studies’, and the closely connected but later material does seem necessary. The significance and historiography of Indo-Roman

¹³ N. Lenski (ed.), *The Cambridge Companion to the Age of Constantine*, Cambridge: Cambridge University Press, 2006.

¹⁴ M. Maas (ed.), *The Cambridge Companion to the Age of Justinian*, Cambridge: Cambridge University Press, 2005.

¹⁵ J. Maxwell, ‘Paganism and Christianization’, in S. F. Johnson (ed.), *The Oxford Handbook of Late Antiquity*, Oxford: Oxford University Press, 2012, pp. 849–75.

¹⁶ J. Haldon, *Byzantium in the Seventh Century*, Cambridge: Cambridge University Press, 1990.

studies will be examined more closely later in this essay, but here suffice it to say that it most often refers only to the first three centuries of the Christian era. This is not a universally valid demarcation, but it is hoped that consistency and justification will suffice. Owing to the pre-existing, if implicit, division in the study of Mediterranean contact with ancient India in *c.* 300 CE, the present study adopts the terms 'Roman' and 'late Roman' to refer to the periods before and after this point respectively. All other terminology follows suit, hence the late Roman Empire, the late Roman emperor, etc.

The South Indian 'Dark Age'

In the case of south India in this period, it is necessary to divide the peninsula roughly into two parts along the southern edge of the Deccan plateau (though this rough demarcation could move dramatically with the fortunes of individual states). To the north of the peninsula, a series of kingdoms and empires, comparatively well understood from inscriptions as well as numismatic evidence and some literary sources, competed for dominance, with the Satavahana (or Andhra) and Kushana empires forming two fairly stable blocks of power for the first two-and-a-half centuries of the Christian era.¹⁷ Between them, the Western Kshatrapas (also known as the Western Satraps or Kshaharatas) from the 1st century CE carved out a position of power maintained by continued bellicosity towards their neighbours.¹⁸

Following the collapse of the Satavahana and Kushana realms, after a century of competition between smaller powers, this northern zone came to be dominated by the Gupta Empire, ushering in around 200 years of prosperity and cultural efflorescence.¹⁹ Their authority did not stretch as far south as the majority of the Satavahana imperial territories, and the Deccan came to be dominated by the Pallavas of the

¹⁷ A. M. Shastri (ed.), *The Age of the Satavahanas*, Delhi: Aryan Books International, 1999; B. N. Mukherjee, *Kushana Studies: New Perspectives*, Kolkata: Firma KLM, 2004.

¹⁸ A. M. Shastri, *The Satavahanas and the Western Kshatrapas: A Historical Framework*, Nagpur: Dattsons, 1998.

¹⁹ D. K. Ganguly, *The Imperial Guptas and Their Times*, Delhi: Abhinav Publications, 1987.

east coast and later by the smaller western kingdoms of the Western Gangas and the Kadambas. Throughout this period smaller, ephemeral polities existed alongside these major state structures.²⁰

To the south of the Deccan plateau, the history of the subcontinent becomes considerably more obscure in the period from 4th to 7th centuries CE. K. A. Nilakanta Sastri, in what remains one of the most enduring and important synthetic works on the early history of south India, referred to the period from 3rd to 6th century CE in south India as a ‘dark period’.²¹ The notion of dark ages has become rightly unfashionable in the decades following his publication, with light being shed on many periods across multiple regions once casually cast in the shadow of better documentary sources or greater appeal to scholarship.²² Sastri’s terminology notwithstanding, it cannot be denied that far less is known about the history of southern peninsular India in this period than in the centuries before and after.

The so-called *Caṅkam* era of south Indian history, from around 2nd century BCE to 5th century CE has been reconstructed in some detail on the basis of analysis of the Tamil works of poetry referred to as *Caṅkam* literature, and accompanying numismatic and archaeological evidence. This reconstruction of the *Caṅkam* age is not one which can lay claim to great security. The dating of the *Caṅkam* texts is far from a matter of agreement among scholars, nor is the purpose of the texts and, therefore, their level of historical integrity, versus literary creation,

²⁰ T. V. Mahalingam, *Inscriptions of the Pallavas*, Delhi: Indian Council of Historical Research (ICHR), 1988; A. B. Sheikh, *History of the Western Gangas*, Mysore: Prasaranga, University of Mysore, 1976; B. R. Gopal, and N. S. Thatanatha (eds), *Kadambas, Their History and Culture: Seminar Papers*, Mysore: Directorate of Archaeology and Museums, 1996.

²¹ K. A. Nilakanta Sastri, *A History of South India from Prehistoric Times to the Fall of Vijayanagar*, Oxford: Oxford University Press, 1958, p. 139.

²² The term ‘Dark Ages’, which has recently come under scrutiny, includes the ‘Greek Dark Ages’, c. 1125–700 BCE (e.g., A. Mazaraki Ainian [ed.], *The “Dark Ages” Revisited*, Volos: University of Thessaly Press, 2011); the scientific ‘Dark Age’ of western Europe, c. 500–1500 CE (e.g., J. Freely, *Before Galileo: The Birth of Modern Science in Medieval Europe*, New York: Overlook Duckworth, 2012); and the Byzantine ‘Dark Age’, c. 550–860 CE (e.g., L. Brubaker and J. Haldon, *Byzantium in the Iconoclast Era, c. 680–850: A History*. Cambridge: Cambridge University Press, 2011).

well understood.²³ Amidst the ongoing debate over the date of the texts and their relationship to accompanying archaeological material, most analyses of the Caṅkam period in practice focuses on the period *c.* 200 BCE–200/300 CE, although some texts are considered to post-date this.

²³ The dating of the Caṅkam texts and their purpose ranges widely with interpretations varying from placing the texts at a significantly early date before the Christian era and asserting their absolute accuracy as insights into the social and political life of the Tamil-speaking regions of south India (e.g., A. M. Paramasivanandam, *Tamilnad through the Ages*, Madras: Tamil Kalai Illam, 1960, pp. 11–56), to dating the texts no earlier than the 8th century CE and considering them to be works of intentionally archaizing historical fiction (H. Tiekens, ‘Old Tamil CaEkam Literature and the So-called Caṅkam Period’, *The Indian Economic and Social History Review*, 2003, 40(3): 247–78). In between these two positions, the most common interpretation of the texts is that they were composed and written mainly between the 2nd century BCE and the 2nd century CE, with some later texts dating to the 3rd–5th centuries. They are perceived by this middle-ground scholarship as works of fiction, nevertheless embedded in the realities of their social context, and, therefore, of value for reconstructing the social and political realities of their historical context (Tiekens, ‘Old Tamil Caṅkam Literature’, p. 248, especially n.1, summarises the standard dating and historical use made of the Caṅkam texts). While some scholars acknowledge the possible breadth of the ‘middle-ground’ dating of Caṅkam literature (e.g., Himanshu Prabha Ray, ‘The Yavana Presence in Ancient India’, *Journal of the Economic and Social History of the Orient*, 1988, 31(3): 313), many, in practice, define the Caṅkam period much more narrowly to the final centuries before the Christian era and the first two or three centuries of the Christian era, and then use the literature as evidence for that period accordingly (e.g., R. Krishnamurthy, *Sangam Age Tamil Coins*, Madras: Garnet Publications, 1997, Chapter 1; S. Suresh, *Symbols of Trade: Roman and Pseudo-Roman Objects Found in India*, Delhi: Manohar, 2004, p. 23). This unclear dating of the Caṅkam age becomes more problematic when material culture, such as coin series, come to bear the attribution Caṅkam to denote their social context and date (e.g., R. Krishnamurthy and S. Wiekramasinghe, ‘Sangam age Pandya and Chola Coins from National Museum, Colombo’, *Studies in South Indian Coins*, 2005, 15: 43–52; P. Shanmugam, ‘Sangam Pandya Coins in Sri Lanka’, *Journal of the Numismatic Society of India*, 2004, 66: 36–42; P. Shanmugam, ‘Two Inscribed Coins of the Sangam Age Cheras’, *Studies in South Indian Coins*, 2005, 15: 53–57; T. Sundararaj, ‘A Fresh Look at Symbols on the Sangam Age Tamil Coins’, *Studies in South Indian Coins*, 2006, 16: 121–25).

The following two to three centuries, while sometimes considered part of the Caṅkam age are rarely the object of detailed attention.

Nevertheless, whether the current picture of south Indian history in the first two or three hundred years of the Christian era is accurate or not, wandering into the following centuries of southern peninsular history remains a disconcerting experience. Sastri highlighted the rise, apparent in the literature, of a force called the Kalabhras, who are described as bringing chaos and violence, but little else is known about them.²⁴ Some effort has been made to reclaim the Kalabhras as a force for peasant resistance to the state,²⁵ but this survey is still hampered by the profound lack of evidence for the events or the nature of Kalabhra rule. In contrast to the regional divisions postulated for the earlier period into the territories of Caṅkam monarchs (the Cheras, Pandyas and Cholas), there is only a blank map with the fate of political institutions, cities and people alike unclear. In the 6th century CE, the Kalabhra territory was invaded and divided between the Pallava, Pandya and Chalukya kingdoms, which, in competition with various other smaller powers, dominated much of southern India until beyond the 9th century CE.²⁶

The complexity of dynastic rule in this period, combined with a complex range of more general and sometimes overlapping period-labels, including Stone Age, proto-historical, early historical and ancient, makes navigating the literature on the subject at times extremely challenging.²⁷ In this study, in order to avoid the entanglements of periodization when referring to specifically Indian themes, date ranges are preferred to named periods.

Roman Coins in India = Roman Trade with India?

Moving beyond terminology, this study will now examine how Roman coins in India have been perceived in scholarship. The presence of such

²⁴ Sastri, *A History of South India*, p. 3.

²⁵ R. S. Sharma, 'Problems of Peasant Protest in Early Medieval India', *Social Scientist*, 1988, 16(19): 3–16.

²⁶ D. P. Dikshit, *Political history of the Chalukyas of Badami*, Delhi: Abhinav Publications, 1980; K. A. Nilakanta Sastri, *The Pandyan Kingdom: From the Earliest Times to the Sixteenth Century*, Madras: Swathi Publications, 1972.

²⁷ K. D. Morrison, 'Commerce and Culture in South Asia: Perspectives from Archaeology and History', *Annual Review of Anthropology*, 1997, 26: 93.

coins in India raises various questions. How did these coins arrive in the Indian Ocean region? What did the Mediterranean exchange for them? What was done with these coins in India? How did this 4th–7th-century-CE phase of exchange differ from the far more extensively studied 1st–3rd-century-CE Roman trade with India? In short, what was the ‘global’ system which made it possible for there to be Byzantine coins in Indian museum collections?

There have been significant studies of many of these questions for the 1st–3rd-century-CE period. If one word could summarise the conclusions of this vast, at times inspiring and at times frustrating, body of scholarship it would be ‘trade’.²⁸ This emphasis on commerce is partly a consequence of the surviving Roman sources which mention India as a source of lavish and costly goods. It is also, perhaps, a product of the fact that so many early scholars of Indo-Roman trade were educated in the context of the British Empire with its emphatic association of commerce and imperial power.²⁹

As such, the identification of Roman coins in India naturally confirmed pre-existing assumptions derived from Roman written sources, such as the account of Pliny that Roman trade with India had played a significant economic role and contributed to Rome’s commercial dominance of the ancient world.³⁰ The interpretation of Roman coins in India as traders’ treasure by now has had a long history, as is apparent from a brief chronological survey of literature on the subject. In 1926, in the first major attempt to incorporate Rome’s trade with India, reconstructed with reference to literary and material evidence, into the wider economic history of the Roman Empire, M. Charlesworth noted:

²⁸ V. Begley, ‘Arikamedu Reconsidered’, *American Journal of Archaeology*, 1983, 87(4): 461–81; M. Charlesworth, *Trade Routes and Commerce of the Roman Empire*, Cambridge: Cambridge University Press, 1926; R. Sewell, ‘Roman Coins Found in India’, *Journal of the Royal Asiatic Society*, 1904, 23: 591–637; Tomber, *Indo-Roman Trade*; E. H. Warmington, *Commerce between the Roman Empire and India*, Cambridge: Cambridge University Press, 1928; R. E. M. Wheeler, A. Ghosh, et al., ‘Arikamedu: An Indo-Roman Trading Station on the East Coast of India’, *Ancient India*, 1946, 2: 17–124.

²⁹ D. K. Chakrabarti, ‘The Development of Archaeology in the Indian Subcontinent’, *World Archaeology*, 1982, 13(3): 328–37.

³⁰ *Natural History* 9.1.101, in H. Rackham, *Pliny: Natural History*, vol. 2, Cambridge, MA: Harvard University Press, 1942, pp. 416–17.

Pliny bewails the vast amount spent upon Eastern luxuries, and though the economical policy of Vespasian and the cutting down of extravagance may have made some difference, the commerce in cotton and industrial goods went on strongly. In Southern India, where the pearls and spices were sold, great quantities of coins of the early emperors have been discovered.³¹

The scale of trade is here perceived as something which had ramifications for the imperial policy. R. E. M. Wheeler, Director of Archaeological Survey of India (1944–48) and excavator of the coastal site of Arikamedu associated with Roman trade, made, perhaps, the clearest association of Indo-Roman trade with the imperial commercial context of more recent times: ‘Indeed, it is fair to envisage Indo-European commerce of the 1st century A.D. pretty closely in terms of that of the 17th century; that is, it was based on mutual advantage, endorsed by western privilege and sufficiently regulated to ensure continuity’.³²

As V. Begley’s reference to the numismatic evidence makes clear, coins continue to be considered primarily, if not exclusively, as evidence for Roman trade with India: ‘Prior to the excavations at Arikamedu, the most important artifactual evidence for Roman trade with South India was the large number of Roman denarii and aurei found in “hoards” since 1775, each containing from one to several hundred coins’.³³

It is not the intention here to deny Roman and late Roman coins in India any value as indicators of economic exchange. However, when the coins themselves become the focus for inquiry, rather than illustrations of classical texts, which often had their own literary agenda, it becomes less clear whether a commercial perspective is the only one which can illuminate their role and significance in the subcontinental history. This is not to ignore economic imperatives in their movement. The forces that moved them across great distances, and in many cases, caused local artisans to produce copies of them in India, were almost certainly the forces of supply and demand and, therefore, commercial in the loosest sense.

³¹ Charlesworth, *Trade Routes and Commerce*, p. 61.

³² R. E. M. Wheeler, *Rome Beyond the Imperial Frontiers*, London: G. Bell and Sons Ltd., 1954, p. 125.

³³ Begley, ‘Arikamedu Reconsidered’, p. 479.

This is not only underscored by the Roman textual evidence citing a Roman desire for spices, silks and other luxury goods, and the Indian consumption of precious metal coinage. It is also a logical conclusion: the movement between the Mediterranean and the Indian Ocean, just as the production of imitation Roman coins, must have been predicated upon mutual benefit. There were no mechanisms of coercion effective across such great distances in the ancient world, nor were there other known reasons, such as pilgrimage, for coins to travel as curios or personal mementos between the Mediterranean and India. Granting that coins moved to India by means of commercial networks does not, however, require that they moved in India simply as markers and facilitators of trade. It is this element of their economic identity which will be subject to further investigation in the essay.

Economic Landscapes

Most interpretations of Roman coins in India have now moved away from the most explicitly commercial explanations for their use, such as that they circulated in lieu of an indigenous currency in south India, or that they were used as a local currency by settled Roman colonists.³⁴ Nevertheless, the persistent efforts first and foremost to see networks of trade in coin finds in south India can be illustrated by the emphasis on trade in explaining the distribution of such coins.³⁵ One mechanism by which to investigate the purely economic role of coins in peninsular India entails landscape studies.

³⁴ For the argument on the use of Roman coins in lieu of an indigenous currency, see P. L. Gupta, 'Coins in Rome's Indian Trade', in A. K. Jha (ed.), *Coins, Trade and Economy*, Nashik: Indian Institute of Research in Numismatic Studies, 1991, p. 125; A. M. Shastri, 'Early Tamil Economy and Currency System', *Numismatic Studies*, 1992, 2: 133–34; S. Suresh, 'Symbols of an Ancient Sea Trade', *Minerva*, 2011, 22(5): 23. For the argument on the use of Roman coins by Roman colonists, see Sewell, 'Roman Coins Found in India', pp. 609–15.

³⁵ S. P. Kandaswamy, 'The Kongu and the Roman Coins', *Journal of the Numismatic Society of India*, 1984, 46: 39–44; Himanshu Prabha Ray, 'Early Coastal Trade in the Bay of Bengal', in J. Reade (ed.), *The Indian Ocean in Antiquity*, London: Kegan Paul International, 1996, pp. 355; R. Sewell, *Lists of the Antiquarian Remains in the Presidency of Madras*, Madras: Government Press, 1881, p. 214; Suresh, 'Symbols of an Ancient Sea Trade', p. 24.

Coins within space

The distribution of Roman coins up to the reign of Constantine I (306–37 CE) has been the subject of a crucial study by Paula Turner.³⁶ Of later coins, there are fewer points to plot, partly because there are fewer coins and partly because the provenance data is extremely limited in most cases, but some clear distinctions do emerge. The pattern of distribution of later coins favours the eastern half of the peninsula more significantly and, with some important exceptions, gravitates towards the south. While Sri Lanka is not the focus of this essay, it is worth noting that finds of copied Roman coins did not begin to mount until the late Roman period on the island either. Indeed, almost all genuine Roman coins from Sri Lanka date from late 4th to 5th century CE, further supporting a general drift of Roman coins southwards over the course of the first five centuries of the Christian era.³⁷

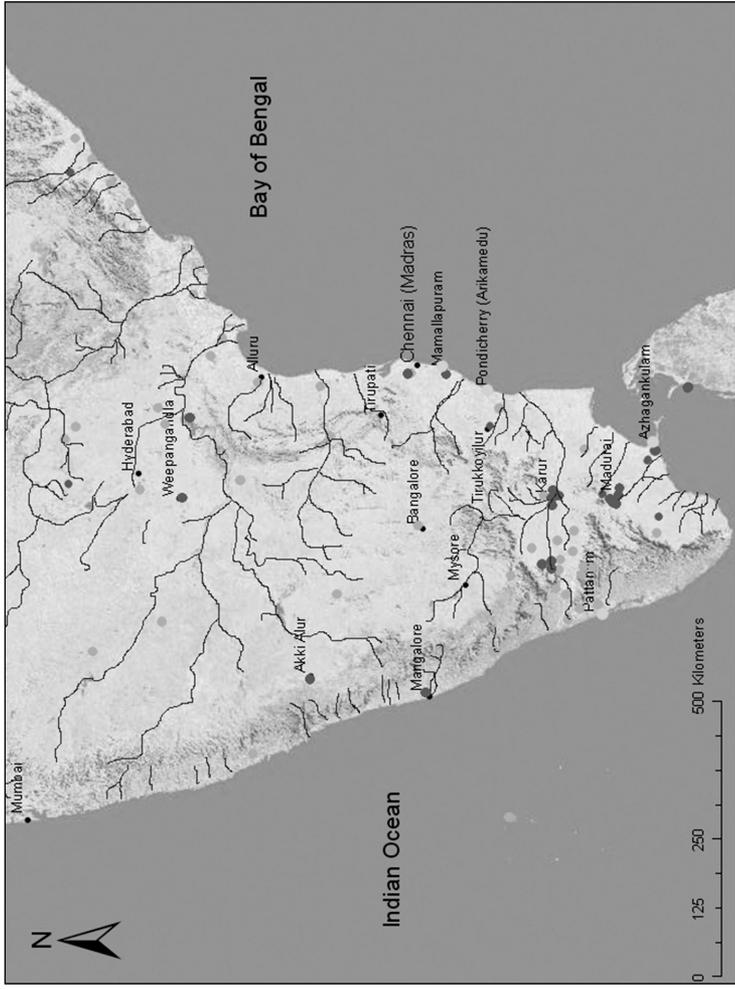
Determining economic function in landscape is, inherently, a difficult task, but two aspects of distribution might plausibly (though not necessarily) be taken to suggest economic activity, in the broadest sense. First, the coincidence of find spots and rivers may be taken as an indication that coins were moving along the main arteries of communication in the pre-modern landscape of south India. This is certainly not a foolproof indication of commerce. Riverine routes connected networks of every sort, from royal peregrination to pilgrimage as well as commerce. It may be a starting point, however. The second is a correlation between identified port sites and coin finds. Were coins circulating and being lost in spaces in the landscape which have been independently identified as serving commercial purposes?

As Map 3.1 clearly shows, while there is some coincidence of coins especially at the cities of Karur and Madurai, both located on navigable rivers, there is also a marked incidence of finds not occurring along known routes of transportation. It is also worth noting here that the large concentration of finds in these cities is a reflection primarily of the discovery of large quantities of late Roman copper coins in the

³⁶ P. Turner, *Roman Coins from India*, London: Royal Numismatic Society, 1989.

³⁷ R. Walburg, *Coins and Tokens from Ancient Ceylon*, Wiesbaden: Reichert Verlag, 2008, p. 84.

Map 3.1 Roman (green) and Late Roman (Red) coin finds Mapped Alongside Excavated Ports (Yellow) and Major Rivers in South India



Source: © Rebecca Darley, 2012.

riverbeds there. While these finds are significant, they also represent a distinct pattern from the gold coinage, which make up the majority of find spots.³⁸ Thus, factoring out these groups for a moment, the correlation between coin finds and river sites, especially for late Roman coins, seems particularly weak.

While landward routes are even harder to determine and theorise given the lack of data for south India in this period, it is also worth noting the presence of many Roman coins along the Palghat Pass, the only major route through the Western Ghats which bisect the peninsula. This may reasonably be considered one of the most important natural routes across the subcontinent, and it is striking that late Roman coins are no more common along its length than they are along water routes.³⁹

From the perspective of mapping trade by coin finds, the lack of apparent correlation between port sites and coins is even more striking. It should be borne in mind that locating port sites due to coastal change and their possibly ephemeral physical remains constitutes a severe difficulty, especially along the west coast of south India.⁴⁰ Nonetheless, in the four cases highlighted here, which have all been the subject of some excavation, the most interesting common feature is the paucity of coin finds recovered. The red spot at Mamallapuram represents 15 late Roman copper coins found on the site, representing the highest concentration of late Roman coins from any coastal site, and in at least two cases, associated directly with temple buildings.⁴¹ The Azhagankulam excavation yielded three specimens: of emperors Valentinian II (375–92 CE), Arcadius (395–408 CE) and

³⁸ R. Krishnamurthy, *Late Roman Copper Coins from South India: Karur, Madurai and Tirukkoilur*, Chennai: Garnet Publishers, 2007.

³⁹ Kandaswamy, 'The Kongu and the Roman Coins', p. 41.

⁴⁰ V. Selvakumar, P. K. Shajan and R. Tomber, 'Archaeological Investigations at Pattanam, Kerala: New Evidence for the Location of Ancient Muziris', in R. Tomber, L. Blue and A. S. Abraham (eds), *Migration, Trade and Peoples*, part 1: *Indian Ocean Commerce and the Archaeology of Western India*, London: The British Association for South Asian Studies, 2009, pp. 31–32.

⁴¹ S. Badhreenath, 'Mamallapuram: the Port of the Pallavas', paper presented at the Centre for Archaeological Studies and Training, Eastern India, Kolkata, 24 February, 2011; Walburg, *Coins and Tokens*, p. 269.

Theodosius II (408–50 CE).⁴² A handful of coins have been recovered from Arikamedu, but their general scarcity has been noted by scholars.⁴³

Again, Sri Lanka is not the focus here, but offers a valuable comparative study. It is impossible to draw positive conclusions about coin finds and port structures, since no site has conclusively yielded port structures datable to the Roman or late Roman period. But it is possible to state that in places where coin hoards have been discovered further investigation has not resulted in the discovery of port structures.⁴⁴ An alternative to a purely rational economic understanding of coins in the landscape has, however, been proposed in the case of Sri Lanka, responding precisely to (among other factors) the difficulty of non-correlation between coin finds and sites showing any further commercial identity.

This argument has been made at some length by Reinhold Walburg, who shows convincingly that the distribution pattern of coin hoards around the coast of Sri Lanka has some connection to ritual deposition, both from the composition and creation of the hoards and from their distribution in the landscape.⁴⁵ The pattern of coin finds in Sri Lanka is radically different from that in south India. While almost all Sri Lankan examples are low-grade, local copper imitations of late Roman coins, usually discovered in hoards, often in containers, India has yielded far larger numbers of genuine late Roman coins. Copper coins tend to be found in riverbeds rather than hoards. Gold coins, which are not found in any significant number in Sri Lanka, are usually found singly or in small hoards in India and are most often datable to late 3rd–5th century CE.⁴⁶

⁴² T. S. Sridhar, 'Ancient Ports and Maritime Trade Centres in Tamilnadu and Their Significance', paper presented at the Society of Marine Archaeology, National Institute of Oceanography, Panaji, Goa, 6 October 2005, p. 10.

⁴³ P. Berghaus, 'Three Denarii of Tiberius from Arikamedu', in D. W. MacDowall, S. Sharma and S. Garg (eds), *Indian Numismatics, History, Art and Culture: Essays in Honour of Parmeshwari Lal Gupta*, vol. 1, New Delhi: Agam Kala Prakashan, 1992, pp. 95–98; Begley, 'Arikamedu Reconsidered', p. 479.

⁴⁴ J. Carswell, 'The Excavation at Mantai', in J. Reade (ed.), *The Indian Ocean in Antiquity*, London: Kegan Paul International, 1996, pp. 501–15.

⁴⁵ Walburg, *Coins and Tokens*, pp. 42–108.

⁴⁶ *Ibid.*, p. 84.

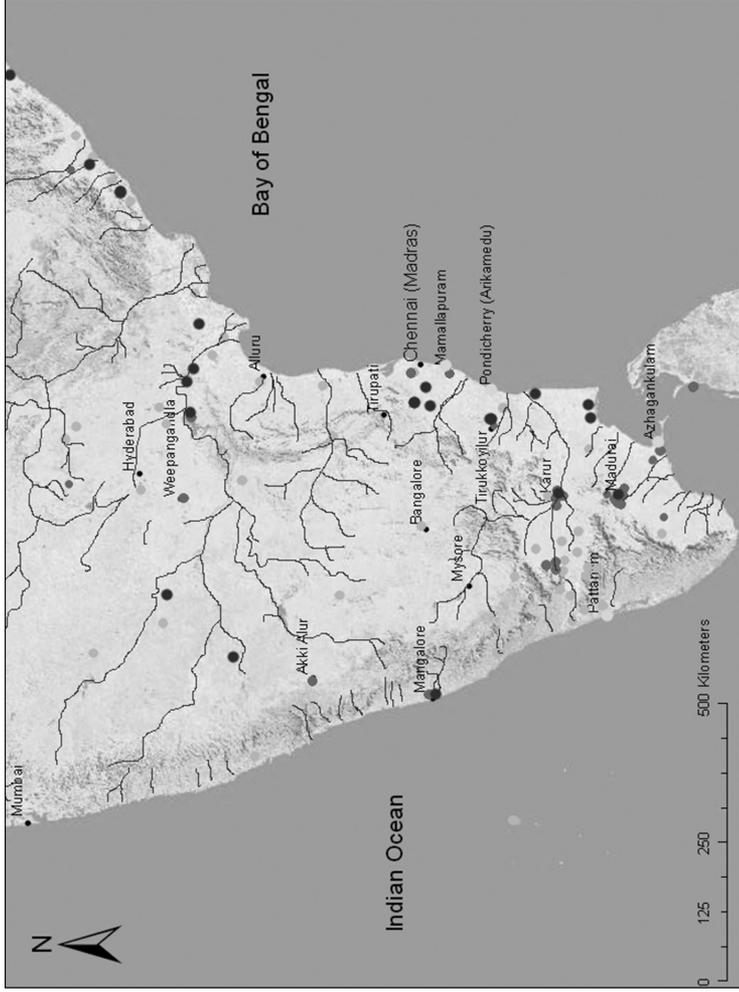
‘Sacred Landscapes’

While emphasising the different patterns of numismatic evidence from south India and Sri Lanka, both sets of coin finds share an apparently unclear relationship to ‘economic topography’. It is, therefore, worth considering Walburg’s hypothesis for the Sri Lankan finds (that they represent ritual rather than commercial activity) in relation to south Indian landscapes. What happens if the exercise attempted earlier for the economic landscape of coins in south India is repeated using what might be called ‘sacred’ landscapes? Here this represents a cautious mapping of sites with excavated Buddhist remains datable to 4th–7th century CE, since Buddhist sites in south India have been more extensively excavated and dated than any other category of contemporaneous religious site. It is not an exhaustive map, but seeks to highlight sites of great significance in the Buddhist landscape of south India.

As Map 3.2 indicates, in cases where the provenance is known, the distribution pattern of late Roman coins in the landscape of south India shows some overlap with sites of Buddhist significance. This is again, not conclusive, and rests on less evidence than would be ideal, owing in part to the great difficulty in identifying the find spots of many coins. The large groupings of copper coins around Karur and Madurai must, once again, be flagged as anomalous. These two sites, representing as they do a confluence of river routes, probable urban centres in the period under study, sacred sites of various traditions, and high concentrations of late Roman copper coins, must be regarded as unique. Nevertheless, it does seem that late Roman coins have a closer relationship to sacred sites in the landscape than Roman coins of the first three centuries of the Christian era.⁴⁷ This argument remains a tentative one, owing to the small amount of evidence. Close analysis of the coins themselves, however, tends to support this interpretation. Focusing in from the landscape to the microcosm, the evidence from south India suggests the construction of late Roman coins into sacred space in extremely tangible ways.

⁴⁷ The association of Roman coins with Satavahana sites in the western Deccan, demonstrated by Himanshu Prabha Ray (*Monastery and Guild: Commerce under the Satavahanas*, Delhi: Oxford University Press, 1989, p. 141) indicates that an increasing emphasis on the ritual use of Roman coins may have had antecedents in the first three centuries of the Christian era.

Map 3.2 Roman (Green) and late Roman (Red) Coin Finds Mapped Alongside Excavated Ports (Yellow), Major Rivers and significant Buddhist Sites (Brown) in South India



Source: © Rebecca Darley, 2012.

Coins as spaces for representation

Coins may not only be mapped onto landscapes in order to explore their importance in south Indian society. It is also possible to see ritual mapped onto the coins. The most noticeable feature of late Roman gold coin finds in India is the enormously high incidence of piercings.⁴⁸ Distinctive double-piercings (see Figure 3.1), always emphasising the imperial portrait on the obverse, may have been to enable coins to be hung on a chain, but the double holes may also have been used to facilitate attaching the coins to fabric. These, then, were not circulating as coins, but functioned as adornment. This is exclusively a feature of gold rather than copper coins and occurs more commonly on late Roman than on earlier Roman coins. Earlier examples also show a far higher incidence of single holes for suspension, or the creation of an attached loop or frame and loop for the suspension of coins.⁴⁹

It is not necessary to push the argument too far that coins worn for decoration or used in ritual contexts were divested of any economic value: the fuzzy distinction between economic, ritual and social in the Middle Ages may be one of the most interesting trans-regional commonalities of the period. Ostentation in ritual contexts undoubtedly functioned as an assertion of economic and social status, yet the continued use of coins in India, especially in marriage contexts, and the presence of coins in large quantities in temple treasuries certainly strengthens the argument that the public consideration at play was ritual, even if ritual in many cases mediated economic exchange.⁵⁰

⁴⁸ Berghaus, 'Roman Coins from India', p. 111.

⁴⁹ M. Alram ('Coinage, Prestige and Identity: From Rome to Persepolis and China', in S. Bhandare and S. Garg [eds], *Felicitas: Essays in Numismatics, Epigraphy and History in Honour of Joe Cribb*, Mumbai: Reesha Books International, 2011, pp. 46–47) provides excellent images of Roman or imitation Roman coins from the Kushan Empire looped for suspension. The Akki Alur hoard highlights the difference in treatment between the three Roman coins in the hoard (probably of the Severan dynasty), two of which are looped for suspension, and the late Roman examples, of which 22 are double-pierced (R. Day, 'A Tale of 'Four' Hoards [or Unpicking Akki Alur]', *Journal of the Oriental Numismatic Society*, 2011, 211: 7).

⁵⁰ J. Halpern, 'The Secret of the Temple: The Discovery of Treasure Worth Billions of Dollars Shakes Southern India', *The New Yorker*, 30 April 2012, pp. 48–49.

Plate 3.1 A Probable Imitation of a Solidus of Zeno (474-5 and 476-91) with Visible Double Piercing Emphasising the Imperial Bust and Pierced from Obverse to Reverse



Source: © Rebecca Darley 2010 (no. 17). Used with permission of Dr T. S. Sridhar and the Madras Government Museum

A second feature worthy of notice carries less weight because it is an undated phenomenon which may reflect significantly later usage. It is worth noting, however, that many late Roman coins found in south India bear distinctive red marks on them, which may be the remains of *puja* dust from use in Hindu ritual contexts. No tests on this substance have been published to confirm whether the content of these marks conforms to ingredients used in *puja* dust.⁵¹ Such ethereal traces of past use, like ephemeral structures of docks and wharves on the coastal landscape of India, provide clues difficult to contextualise but tantalising when arrayed against more secure evidence.

In this case, mapping the late Roman coins found in south India and Sri Lanka against the backdrop of topographical features, sacral environments, and the dynamic, trans-regional space provided by the coins themselves begins to paint a picture of objects defined for use less by economic imperative than by the mental and physical geography of ritual. The significance of coins in this ritual landscape is almost certainly connected to wealth and the public evergetism which

⁵¹ I am grateful to Dr Robert Bracey of the Department of Coins and Medals, British Museum, for pointing out this possible origin of red residue frequently found on Roman and late Roman coins found in India (pers. comm. 2010).

constituted elite behaviour in south India in this period, as evidenced by epigraphic data dealing with lavish bequests to monasteries and shrines.⁵² Why foreign coins should have acquired such importance in this public behaviour, however, is less clear.

Conclusion

Coins are one of the most powerful archaeological traces of past movements of objects precisely because they are portable and durable: they cross space often without being transformed or annihilated by it, in the way that people or organic products may be. People may assimilate them into existing cultures or syncretise them in ways which make individual migrations archaeologically misleading or invisible. Organic products, especially before the advent of sophisticated archaeobotanical investigation in only very recent studies, are usually destroyed by the passage of time, leaving no tangible trace of their passing.⁵³ Coins, by contrast, may be marked and modified by travel (as in the case of piercings on late Roman coins in India), but they remain for the most part recognisable. The extent to which coins might be melted for bullion must not be forgotten and certainly has contributed to the loss of numismatic evidence throughout history. It remains to be observed, though, that coins move with a freedom and resilience true of very few other readily identifiable artefacts of the ancient and early medieval periods.

Yet, coins are inherently spatial artefacts. They are designated by a community as having currency and defined in their utility as a medium of exchange by their geographical limits. A coin is only currency within the region of its issuing authority. Beyond those limits coins, nevertheless, usually retain spatial specificity: they can be traced to their source more effectively than many other artefacts of metal or stone which, with some exceptions, are too difficult to pinpoint to a time or place of origin. Many coins contain spatial information, such as mint mark or the name of the area in which they were produced, or can be traced by comparison with known coin series. The possibilities for

⁵² F. De Romanis, 'Aurei after the Trade: Western Taxes and Eastern Gifts', in F. De Romanis and S. Sorda (eds), *Dal Denarius al Dinar: l'oriente e la moneta Romana*, Rome: Istituto Italiano di numismatica, 2006, pp. 69–73.

understanding movement in the pre-modern world using numismatic evidence are considerable. By seeking to place coins in a variety of landscapes, not only using them to map modern notions of trade and commerce, their evidentiary capacity increases significantly.

Select References

- Alram, M., 'Coinage, Prestige and Identity: From Rome to Persepolis and China', in S. Bhandare and S. Garg (eds), *Felicitas: Essays in Numismatics, Epigraphy and History in Honour of Joe Cribb*, Mumbai: Reesha Books International, 2011, pp. 35–51.
- Badhreenath, S., 'Mamallapuram: The Port of the Pallavas', paper presented at the Centre for Archaeological Studies and Training, Eastern India, Kolkata, 24 February 2011.
- Begley, V., 'Arikamedu Reconsidered', *American Journal of Archaeology*, 1983, 87(4): 461–81.
- Berghaus, P., 1991. 'Roman Coins from India and Their Imitations', in A. K. Jha (ed.), *Coinage, Trade and Economy*, Nashik: Indian Institute of Research in Numismatic Studies, 1991, pp. 108–21.
- , 'Three Denarii of Tiberius from Arikamedu', in D. W. MacDowall, S. Sharma and S. Garg (eds), *Indian Numismatics, History, Art and Culture: Essays in Honour of Parmeshwari Lal Gupta*, vol. 1, New Delhi: Agam Kala Prakashan, 1992, pp. 95–98.
- Boozer, A. L., 'Globalizing Mediterranean Identities: The Overlapping Spheres of Egyptian, Greek and Roman Worlds at Trimithis', *Journal of Mediterranean Archaeology*, 2012, 25(2): 93–116.
- Brubaker, L. and J. Haldon, *Byzantium in the Iconoclast Era, c. 680-850: A History*. Cambridge: Cambridge University Press, 2011.
- Cameron, A., *The Byzantines*, Oxford: Blackwell Publishing, 2006.
- Cappers, R. T. J., *Roman Foodprints at Berenike: Archaeological Evidence of Trade and Subsistence in the Eastern Desert of Egypt*, Los Angeles: Cotsen Institute of Archaeology, University of California, 2006.
- Carswell, J., 'The Excavation at Mantai', in J. Reade (ed.), *The Indian Ocean in Antiquity*, London: Kegan Paul International, 1996, pp. 501–15.
- Chakrabarti, D. K., 'The Development of Archaeology in the Indian Subcontinent', *World Archaeology*, 1982, 13(3): 324–44.
- Charlesworth, M., *Trade Routes and Commerce of the Roman Empire*, Cambridge: Cambridge University Press, 1926.
- Day, R., 'A Tale of 'Four' Hoards (or Unpicking Akki Alur)', *Journal of the Oriental Numismatic Society*, 2011, 211: 5–14.
- De Romanis, F., 'Aurei after the Trade: Western Taxes and Eastern Gifts', in F. De Romanis and S. Sorda (eds), *Dal Denarius al Dinar: l'oriente e la moneta Romana*, Rome: Istituto Italiano di numismatica, 2006, pp. 55–82.

- Dikshit, D. P., *Political History of the Chalukyas of Badami*, Delhi: Abhinav Publications, 1980.
- Freely, J., *Before Galileo: The Birth of Modern Science in Medieval Europe*, New York: Overlook Duckworth, 2012.
- Ganguly, D. K., *The Imperial Guptas and Their Times*, Delhi: Abhinav Publications, 1987.
- Gopal, B. R. and N. S. Thatanatha (eds), *Kadambas, Their History and Culture: Seminar Papers*, Mysore: Directorate of Archaeology and Museums, 1996.
- Grierson, P., *Byzantine Coinage*, Washington, DC: Dumbarton Oaks Research Library and Collection, 1999.
- Gupta, P. L., 'Coins in Rome's Indian Trade', in A. K. Jha (ed.), *Coins, Trade and Economy*, Nashik: Indian Institute of Research in Numismatic Studies, 1991, pp. 122–37.
- Haldon, J., *Byzantium in the Seventh Century*, Cambridge: Cambridge University Press, 1990.
- Halpern, J., 'The Secret of the Temple: The Discovery of Treasure Worth Billions of Dollars Shakes Southern India', *The New Yorker*, 30 April 2012, pp. 48–49.
- J. R. E., 'Too Much to Read', *Annals of Internal Medicine*, 1965, 63(4): 721–23.
- Kandaswamy, S. P., 'The Kongu and the Roman Coins', *Journal of the Numismatic Society of India*, 1984, 46: 39–44.
- Krishnamurthy, R. and S. Wiekramasinghe, 'Sangam age Pandya and Chola Coins from National Museum, Colombo', *Studies in South Indian Coins*, 2005, 15: 43–52.
- Krishnamurthy, R., *Sangam Age Tamil Coins*, Madras: Garnet Publications, 1997.
- , *Late Roman Copper Coins From South India: Karur, Madurai and Tirukkoilur*, Chennai: Garnet Publishers, 2007.
- Lenski, N. (ed.), *The Cambridge Companion to the Age of Constantine*, Cambridge: Cambridge University Press, 2006.
- Lim, R., 'The Late Roman Empire', in A. Barchiesi and W. Scheidel (eds), *The Oxford Handbook of Roman studies*, Oxford: Oxford University Press, 2010, pp. 547–63.
- Maas, M. (ed.), *The Cambridge Companion to the Age of Justinian*, Cambridge: Cambridge University Press, 2005.
- Mahalingam, T. V., *Inscriptions of the Pallavas*, Delhi: Indian Council of Historical Research (ICHR), 1988.
- Maxwell, J., 'Paganism and Christianization', in S. F. Johnson (ed.), *The Oxford Handbook of Late Antiquity*, Oxford: Oxford University Press, 2012, pp. 849–75.
- Mazaraki Ainian, A. (ed.), *The "Dark Ages" Revisited*, Volos: University of Thessaly Press, 2011.

- McCormick, M., *Origins of the European Economy: Communications and Commerce, A.D. 300-900*, Cambridge: Cambridge University Press, 2001.
- Morrison, K. D., 'Commerce and Culture in South Asia: Perspectives from Archaeology and History', *Annual Review of Anthropology*, 1997, 26: 87-108.
- Mukherjee, B. N., *Kushana Studies: New Perspectives*, Kolkata: Firma KLM Pvt. Ltd., 2004.
- Paramasivanandam, A. M., *Tamilnad through the Ages*, Madras: Tamil Kalai Illam, 1960.
- Parkins, H., 'Time for Change? Shaping the Future of the Ancient Economy', in H. Parkins (ed.), *Trade, Traders and the Ancient City*, London: Routledge, 1998, pp. 1-15.
- Rackham, H., *Pliny: Natural History*, vol. 2, books 3-7, Cambridge, MA: Harvard University Press, 1942.
- Ray, Himanshu Prabha, 'The Yavana Presence in Ancient India', *Journal of the Economic and Social History of the Orient*, 1988, 31(3): 311-25.
- , *Monastery and Guild: Commerce under the Satavahanas*, Delhi: Oxford University Press, 1989.
- , 'Early Coastal Trade in the Bay of Bengal', in J. Reade (ed.), *The Indian Ocean in Antiquity*, London: Kegan Paul International, 1996, pp. 351-64.
- Sastri, K. A. Nilakanta, *A History of South India from Prehistoric Times to the Fall of Vijayanagar*, Oxford: Oxford University Press, 1958.
- , *The Pandyan Kingdom: From the Earliest Times to the Sixteenth Century*, Madras: Swathi Publications, 1972.
- Schwartz, J. J., *Lod (Lydda), Israel: From Its Origins through the Byzantine Period, 5600 B.C.E.-640 C.E.*, Oxford: British Archaeological Reports, International Series 571, 1991.
- Selvakumar, V., P. K. Shajan and R. Tomber, 'Archaeological Investigations at Pattanam, Kerala: New Evidence for the Location of Ancient Muziris', in R. Tomber, L. Blue and A. S. Abraham (eds), *Migration, Trade and Peoples*, part 1: *Indian Ocean Commerce and the Archaeology of Western India*, London: The British Association for South Asian Studies, 2009, pp. 29-41.
- Sewell, R., *Lists of the Antiquarian Remains in the Presidency of Madras*, Madras: Government Press, 1881.
- , 'Roman Coins Found in India', *Journal of the Royal Asiatic Society*, 1904, 23: 591-637.
- Shanmugam, P., 'Sangam Pandya Coins in Sri Lanka', *Journal of the Numismatic Society of India*, 2004, 66: 36-42.
- , 'Two Inscribed Coins of the Sangam Age Cheras', *Studies in South Indian Coins*, 2005, 15: 53-57.
- Sharma, R. S., 'Problems of Peasant Protest in Early Medieval India', *Social Scientist*, 1988, 16(19): 3-16.

- Shastri, A. M., 'Early Tamil Economy and Currency System', *Numismatic Studies*, 1992, 2: 123–38.
- , *The Satavahanas and the Western Kshatrapas: A Historical Framework*, Nagpur: Dattsons.
- (ed.), *The Age of the Satavahanas*, Delhi: Aryan Books International, 1999.
- Sheikh, A. B., *History of the Western Gangas*, Mysore: Prasaranga, University of Mysore, 1976.
- Sridhar, T. S., 'Ancient Ports and Maritime Trade Centres in Tamilnadu and Their Significance', paper presented at the Society of Marine Archaeology, National Institute of Oceanography, Panaji, Goa, 6 October 2005.
- Sundararaj, T., 'A Fresh Look at Symbols on the Sangam Age Tamil Coins', *Studies in South Indian Coins*, 2006, 16: 121–25.
- Suresh, S., *Symbols of Trade: Roman and Pseudo-Roman Objects Found in India*, Delhi: Manohar, 2004.
- , 'Symbols of an Ancient Sea Trade', *Minerva*, 2011, 22(5): 22–24.
- Sutherland, C. H. V., R. A. G. Carson et al., *Roman Imperial Coinage*, London: Spink, 1923.
- Tieken, H., 'Old Tamil CaEkam Literature and the So-called CaEkam Period', *The Indian Economic and Social History Review*, 2003, 40(3): 247–78.
- Tomber, R., *Indo-Roman Trade: From Pots to Pepper*, London: Duckworth, 2009.
- Turner, P., *Roman Coins from India*, London: Royal Numismatic Society, 1989.
- Walburg, R., *Coins and Tokens from Ancient Ceylon*, Wiesbaden: Reichert Verlag, 2008.
- Warmington, E. H., *Commerce between the Roman Empire and India*, Cambridge: Cambridge University Press, 1928.
- Wheeler, R. E. M., *Rome Beyond the Imperial Frontiers*, London: G. Bell and Sons Ltd., 1954.
- Wheeler, R. E. M., A. Ghosh, et al., 'Arikamedu: An Indo-Roman Trading Station on the East Coast of India', *Ancient India*, 1946, 2: 17–124.