Walburg, Reinhold

Coins and tokens from ancient Ceylon: being a critical survey of the coins and coin like objects unearthed on the island based on a thoroughly annotated catalogue of finds, and supplemented by an analytical part dealing with the island's ancient economy and its trade with the western world

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II Material evidence

3 The coins, coin-like objects, and the find containers

3.1 Coins

Many coins of different types have been unearthed in Śrī Laṅkā. Some of them, however, are of hardly any importance for the monetary history of the island. Either they have only been discovered in insignificant numbers or they are definitely not coins at all, although they may have been unjustifiably regarded as such. Even when a number of coins have been discovered on Śrī Laṅkān soil, it is still questionable whether they were originally struck on the island or in India. We only stand on solid ground when dealing with Indian punch-marked coins and their imitations; with small ingots manufactured in Śrī Laṅkā; and with Late Roman æs coins and their locally produced imitations. On the other hand, we can eliminate from Śrī Laṅkā's monetary history the goddess or Lakṣmī plaques, the manless lion tokens, and the so-called 'earliest inscribed coins', as these did not serve as money.

3.1.1 Indian punch-marked coins

Indian punch-marked coins have been discovered at various locations all over the island. Firstly, it seems worthwhile to compile a list in alphabetical order of the known hoards and single finds of punch-marked coins (The names in square brackets are taken from the map in de Silva 2000: 30, which in turn was compiled from Sirisoma / Amarasinghe 1986, published in Sinhalese only):

[Aṁbalangōḍa, Galle Dist., SP][73]

Anurādhapura, Anurādhapura Dist., NCP
6 silver and 3 silver-plated æs
- Abhayagiri
  2 silver
- Jētavanā
  1 silver and 1 silver-plated æs
- Nuwarawewa
  Large hoard (found in pot)
- [Toluvila]
- Vessagiriya
  68 silver, 1 silver-plated æs, and 1 æs

[Bunnehepola, Kurunēgala Dist., NWP]

[Dedigama, Kegalla Dist., Sab.]

Dehigaslande, Hambantoṭa Dist., SP
22 pieces, metal not reported

Embilipiṭiya area, Ratnapura Dist., Sab.
1 silver

Goḍavāya, Hambantoṭa Dist., SP
1 silver and 1 silver-plated æs

Hiripiṭiya, Kurunēgala Dist., NWP
3 pieces, metal not reported

[Jaffna, Jaffna Dist., NP]

Kantarōḍai, Jaffna Dist., NP
unknown number, metal not reported

Kottukachchiya, Puttalam Dist., EP
4 silver, found together

Māntai, Mannār Dist., NP
5 silver

Minuwangōḍa, Gampaha Dist., WP
1,048 pieces, published in Sinhalese only

Mirigama, Gampaha Dist., WP
275 punch-marked coins and 20 small pieces, metal not reported

Mulleitivu, Vavuniya Dist., NP
51 pieces, together with 16 goddess plaques

[Padawiya, Vavuniya Dist., NP]

Pomparippu, Puttalam Dist., NWP
1 silver

Ridiyagama tank, Hambantoṭa Dist., SP
1 silver

Sigiriya, Matalē Dist., CP
8 pieces, metal not reported

Sigiriya dāgoba
6 silver

[73] Abbreviations: CP *Central Province*, EP *Eastern P.*, NCP *North Central P.*, NP *Northern P.*, NWP *North Western P.*, Sab. *P. of Sabaragamuwa*, SP *Southern P.*, and WP *Western P.*

Tissamahārāma, Hambantoṭa Dist., SP
Single finds: 34 silver and 8 silver-plated æs
Hoard: 18 silver
(unearthed before the end of the year 2005)

Trincomalee, Trincomalee Dist., EP
Unknown number of silver-pieces, 16 preserved in The British Museum

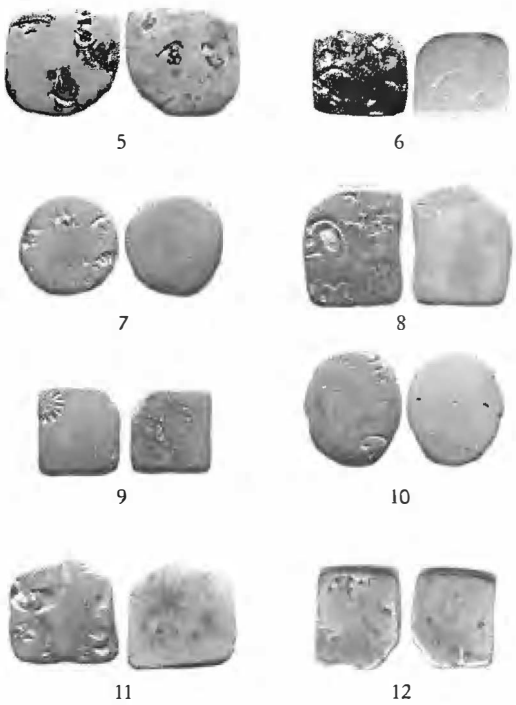
[Uda Walawē, Ratnapura Dist., Sab.]

Vallipuram, Jaffna Dist., NP
2 silver

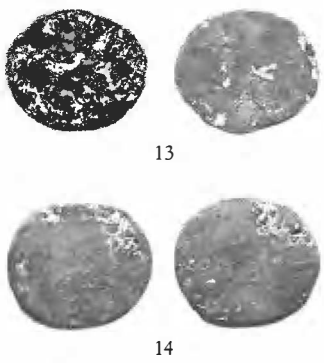
Weuda, Kurunēgala Dist., NWP
2 silver, found together with 3 Sinhalese gold coins of tenth/eleventh century date

East coast
Several pieces from various places between Kurukkalmadam and Kalmunai (perhaps from a single hoard?)

Of unknown origin
117 silver



Figs. 5–12. Indian silver punch-marked coins unearthed in Śrī Laṅkā.



Figs. 13–14. Indian forged silver-plated æs punch-marked coins unearthed in Śrī Laṅkā.

Well-founded statements can only be given in those cases where I was able to examine the coins personally. Most of these came from the Tissamahārāma excavations [**179** ff.], some from excavations in Anurādhapura [2ff.], two from the Goḍavāya excavations [**176**], and single, stray finds from the Ridiyagama tank [**169**] and probably from the Embilipiṭiya area [**170**]. Although all the coins are – at least roughly – identifiable with the help of Gupta/Hardaker 1985, the dates given in that work for the different series have not been adopted here. The discussion on the dating of punch-marked coins has recently received new impetus (Errington 2003: esp. 87f.) so that it now seems appropriate to date the coins examined only generally from the third to second century BC. Following Gupta / Hardaker (1985: 28), the silver-plated æs punch-marked coins are interpreted as private forgeries of the mid 3rd century BC (Figs. 5–14).

Concerning the current debate on the original standard weight intended for Indian punch-marked coins, the specimens unearthed in recent archaeological excavations in Śrī Laṅkā are of little help. Their weights are generally below the c. 3.4 g which is generally presumed to be the original standard weight (Allan 1936: clxii [3.3–3.4 g]; Gupta / Hardaker 1985: 2 [3.3–3.5 g]). For the coins discovered in Śrī Laṅkā, a medium weight of 2.9 g is given (Sirisoma 1987: 3) which is most probably based on the often heavily worn pieces discovered. Of the coins recently excavated, mainly at Tissamahārāma, only one single example exceeds 3 g (3.13). The low weight of the specimens, which go down in some cases to 1.5 g, is due to their worn state, resulting from several hundred years of circulation. In many cases only faint traces of the punch-marks are discernible. The low weight of the Śrī Laṅkān specimens is in accordance with that of many pieces in the collection of The British Museum, which range in the lower order from 2.4 g to 1.9 g (Allan 1936: *passim*).

The use of punch-marked coins and/or ingots (see below) in fifth to sixth century Śrī Laṅkā is attested by a stone carving from Anurādhapura (von Schröder 1990: 330/331, fig. 95D). The panel shows the god of wealth, Kubera, sitting between his two favourite attendants. From the left or right shoulder of each flows a stream of coins. These coins are all depicted in square or rectangular form, and no round specimens can be seen. This clearly demonstrates that in the fifth to sixth century, square and rectangular coins were the most easily recognisable signs of 'wealth', intelligible to everybody. Further proof for the late use of punch-marked coins and / or ingots can be gleaned from a jar containing two coins unearthed at Tissamahārāma (see Fig. 53). This kind of kaolin ware started to appear for the first time around the end of the fifth century[74].

3.1.2 Imitation punch-marked coins

That imitation punch-marked coins had indeed been manufactured in Śrī Laṅkā became clear with the discovery of two terracotta moulds apparently unearthed at Tissamahārāma[75] and another excavated at Anurādhapura. The visible square and rectangular impressions in the Tissamahārāma items, as well as their size and form, leave no doubt that imitation coins had been cast with the help of such moulds. This also explains why, when describing the moulds from Tissamahārāma, the authors stated that the symbols, i. e. the supposed punch-marks on the coins, were illegible. Obviously, heavily-worn punch-marked coins had been pressed into the soft clay to make moulds for casting new pieces. The results were 'punch-marked coins' of the type shown below.

a b

Fig. 15 a and *b*. Śrī Laṅkān cast silver imitations of punch-marked coins.

Indeed, these small and clumsy coins, unearthed at Tissamahārāma, do not show the typical cut edge(s) of the original punch-marked coins, but rather the smooth rounded edges of a casting from an open, i. e. one-sided, mould. This becomes evident from the fact that one side of these coins is absolutely flat while the other is slightly convex. Furthermore, they are discernibly thicker than original punch-marked coins. On the flat 'obverse', faded traces of three to four punches are discernible. The Anurādhapura example [**12.5**], for casting round, square, and oblong specimens, is roughly datable to the first two centuries.

Similar moulds to those discovered in Anurādhapura and Tissamahārāma have been discovered in South India, unearthed during the course of excavations at Kondapur and at Kanchipuram (Raman / Shanmugam 1991; Mitchiner 1998b: 72). Likewise, at Śiśupālgarh (Orissa) two moulds for manufacturing punch-marked coins have been excavated, and can be dated to about the end of the third century (Pradhan 1992: 27). Furthermore, in Karūr, three dies for striking imitations of punch-marked coins have been discovered. Engraved into these dies are the five punches that were normally stamped individually onto the silver pieces, so that with one strike all the five punches, or at least traces of them, could be applied to the blank[76].

3.1.3 Ingots

It is admittedly very difficult to distinguish between heavily worn punch-marked coins (which had obviously been in circulation for several centuries), their locally cast imitations, and ingots without any design. These small ingots of square, rectangular, or round form look at first sight like punch-marked coins. In fact, however, they bear no punches except occasional minute, solitary marks (Figs. 16–17).

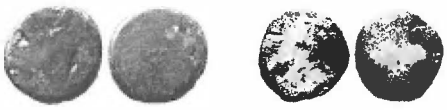
They are made of silver, (sometimes apparently of inferior quality[77]), silver-plated copper or copper only. In the last case, it is impossible to decide whether these pieces were intended to be of copper only or whether they are just the cores of what would originally have been silver-plated specimens. They are fre-

[74] Personal communication from H.-J. Weisshaar.

[75] Bopearachchi / Wickremesinhe 1999: L.2 and L.3. The objects on pl. 25 are not figured in correct scale: L. 2 is too large and L.3 does not correspond in any way with the measures given in the catalogue section.

[76] Mitchiner 1998b: 57.1, obviously first mentioned by Ramaswami / Boluvampatti 1992 and Shastri 1993: 102, n. 27.

[77] A specimen unearthed at Tissamahārāma is composed of c. 325/1000 silver: Walburg 2001: no. [29].



16 17

Figs. 16–17 Śrī Laṅkān æs ingot (originally silver-plated?) with only some minute punches on one side (left), and silver ingot (right).

quently discovered in Śrī Laṅkā, and an Indian provenance is somewhat doubtful, although it cannot be definitively excluded[78]. These ingots are the logical consequence of the method of manufacture. Originally, worn punch-marked coins had been used as patterns for casting imitations. They were pressed into soft clay to produce moulds for casting. The products of this casting process were in turn used again as patterns for the preparation of a new mould. By this time, the sharpness of the original punches had steadily decreased, resulting in the total smoothness of the ingots. It is hard to decide whether the ingots discovered in Śrī Laṅkā had all been manufactured locally or were partly imported from India. Therefore, in the catalogue section, the region of origin is given as 'India or Laṅkā', but stressing the latter as the more probable.

Their date of manufacture and the period of circulation for the ingots are as obscure as can be imagined. Reliable archaeological data hardly exist. Altogether, there are only two stratified specimens, both originating from Tissamahārāma. The first one was discovered in a phase f 1 layer (c. first half of the fourth century), while the second was unearthed in a phase g layer (450 – seventh century). A third piece from this site unfortunately comes from an unstratified context. Although the base for a detailed chronology of these specimens is admittedly still far too small, one may on a trial basis suggest that the ingots were in use from the late third century to the fifth century, and perhaps beyond.

3.1.4 Excursus: The *kahāvaṇa*

The Sanskrit word *kārṣāpaṇa* (Pāli *kahāpaṇa*, Sinhalese *kahavaṇa*) is a central term in the numismatic history of the Indian Subcontinent. Although originally the Pāli *kahāpaṇa* denoted a square copper coin, the name was transferred over the course of time to include other metals and/or coin types, depending on time and region. Modern authors often like to identify the *kārṣāpaṇa* vaguely as the 'standard coin of the time'. However, these problems do not affect the present study and therefore need not be discussed here[79]. I will focus only on the Śrī Laṅkān version, the *kahāvaṇa*.

Before entering into this discussion, the description of a philological approach to explain the term seems worthwhile. In 1877, when writing on the "Ancient Coins and Measures of Ceylon", Rhys Davids suggested that the corresponding Sanskrit word *kārṣāpaṇa* derived from *karsha*, "the name of a small weight" (Rhys Davids 1877: ch. 5). With the second part of the word however, Rhys Davids had some problems. Thinking of *paṇ* = to barter or bet, he tried to explain the second *ā* by proposing *āpaṇa* = market, but thought himself that this explanation was not entirely satisfactory. Accepting these considerations, we are left with an expression meaning something like, 'a small weight of metal used in mercantile transactions'. This, on the other hand, would imply that these pieces of metal were originally used only as weighted metal and not, strictly speaking, as coins. Another developed hypothesis leads in the same direction. Here, the word *paṇa* is translated as 'to purchase' and the term *paṇya* is quoted with the meaning of 'trade' or 'an article of trade'[80]. An astonishing parallel may be quoted from ancient Persia. In economic texts of the fifth century BC, the term *karsha* also occurs, as it does too in Aramaic documents of the same century, discovered on the island of Elephantine in Egypt. In both cases, it was concluded that *karsha* denoted payments made by weighted

[78] Mitchiner 1978: 627, quotes Elliot 1886: 58, as proof for the occurrence of silver and base silver ingots in currency hoards from Peninsular India, but this quotation is not correct. Elliot only describes some very few round and square copper pieces without any design, confessing that these are too limited in number to say anything definite about the system they belonged to. Krishnamurthy 1996a: 4, makes mention of about ninety silver and base silver ingots in his collection, collected from the bed of River Amarāvati near Karūr. Mitchiner 1998b: 56–58, however, who describes very minutely the coins discovered at Karūr, does not mention this kind of pieces.

[79] For a comprehensive treatment of ancient Indian coinage and its puzzling nomenclature, see for example Sircar 1968: ch. IV; Agrawal / Rai 1994: ch. IV; Chakraborty 1986: 6f. and 20.

[80] Mukherjee 1989: 43. Cunningham 1891: 45, thinks of kārsha "weight" and āpaṇa "custom or use".

units of metal and not by coins (Naster 1970; Mukherjee 1995: 27). More generally speaking: "The term Karshapana, means etymologically (something) related to the Karsha, by which all commercial objects can be procured" (Mukherjee 1995: 27). However, as I am not in the position to decide, still less to prove, that there is any linguistic link between the two Indo-Arian languages of Old Persian and Sanskrit, and the Semitic Aramaic, the use of the same term in different regions to describe the same factual situation can only be stated. Interestingly, a twelfth century source states that: ' "Kahápaṇa" is a business term equal to (lit. made of) a karísa of silver: "karísápaṇa" money, goods, a kind of wealth made of silver a karísa in amount'[81].

Śrī Laṅkān inscriptions dating from the third century BC up to the ninth century almost exclusively use the term *kahāvaṇa*, or its plural. Several centuries later, it reappears in its Pāli form *kahāpaṇa* in a chapter of the Cūlavaṃsa (Clv. 77.102) describing the reign of Parakkamabāhu I (1153–1186): "He introduced into the country <i. e. the South Indian Pāṇḍyan kingdom> everywhere for trade kahāpaṇas which were stamped with the name of the Ruler Parakkama". In epigraphic records from this century (Codrington 1924: Appendix D 50, and D 51), we now read the Sinhalese *kahāvaṇu*. For reasons of logic, we can follow Mitchiner (Mitchiner 1979: nos. 832–834) in ascribing the 1/8 *kahāvaṇu* pieces exclusively to Parakkamabāhu I, supplemented by further minor fractions representing probably 1/24 and 1/32 *kahāvaṇu* pieces[82]. The coins introduced for internal trade were thus of small value, as was also the case with the introduction of coinage in general. The first coins of the ancient world were thirds, while halves and full denominations only appeared later. The kings following Parakkamabāhu I increased the weight and value of the *kahāvaṇu* eightfold and exclusively struck these new pieces without any fractional or multiple denominations. Therefore, the term *kahāvaṇu* was easily applicable to the new coins without causing confusion. At the beginning of Śrī Laṅkā's numismatic history however, the situation is much more confusing. Here we still have only the term *kahāvaṇa*, but there are a multitude of coins to which it can be ascribed. Accepting hypothetically the sequence of coins given by Codrington 1924, we have the following candidates with their – where known – attested periods of use or manufacture:

- *eldlings* (= punch-marked coins)
  third/second century BC (or earlier) to fifth/eighth century
  Anurādhapura and Tissamahārāma excavations (catalogue section of this study)

- [single-die coins]

- *Buddhist cakram type*
  second/first century BC
  Anurādhapura excavations
  (Coningham 1991a: 173, 4.3)

- *elephant & swastika*

- *horse & swastika*

- *lion & swastika*
  first century BC
  Tissamahārāma excavations
  (catalogue section of this study)

- *tree & swastika*
  - second/first century BC
    Anurādhapura excavations
    (Coningham 1991a: 173, 4.3)
  - first century BC to first century
    Tissamahārāma excavations
    (catalogue section of this study)

- *rectangular bull type*

- *maneless lion type*
  struck c. 344–362

- *goddess plaques*
  second century BC to seventh century
  Anurādhapura and Tissamahārāma excavations (Coningham 1991a: 173 and this study)

- *Roman coins and their imitations*
  used and imitated from about the middle of the fifth century
  Tissamahārāma excavations

The single-die coins probably have to be eliminated from the list of 'genuine' coin types. They combine the usual, separately-incised punches of the punch-marked coins into one

[81] Time of Parakkamabāhu I (1153–1186): Codrington 1924: 192.9, 15.10 with n. 1 and the supplement to this section on p. 249.

[82] Bartonischek 1993, ascribing these pieces to Parakkamabāhu II.

single die. Such dies have been discovered in Karūr, South India. The four specimens known to Codrington[83] might have been struck with such a die, and may be regarded as a kind of 'forgery'. If we take for granted that the rest of the cited types were all used as money, then we have a hard problem to solve. In contrast to the later time of Parakkamabāhu I and his successors, we must here presume an overlap, i. e. that two or more types were in circulation simultaneously; perhaps only for a short time – but undoubtedly so. Consequently, from a period of seven centuries, there should be some inscriptions specifying the type of *kahāvaṇa* used. However, there are only two lithic records giving a definition of the *kahāvaṇa*, and another with a doubtful reading of a word accompanying the term *kahāvaṇa*. These will be discussed later at length, as they do contain data of some importance, but not of the kind needed in the present context.

Therefore, can we exclude all but one item from the above-mentioned list as non-monetary? Starting with the last entry, we can observe that, according to the geographical distribution of finds, Roman coins were confined mainly to the southern and south-western coastal regions, as were their imitations. Concerning the genuine Roman coins, we have finds from within the ancient capitals of Anurādhapura and Sigiriya, but they cannot be compared in number to those from the south. The Nāimana imitations are confined to the territories of ancient Rohaṇa and Māyāraṭṭha. Both Roman and imitation coins were unearthed either as hoards – some very large – or as single finds in, or nearby, religious buildings and, more generally speaking, at places of religious importance:

- Tissamahā vihāra (Tissamahārāma)
- Māṇik vihāra (Tissamahārāma)
- Gal vihāra (Kosgoḍa)
- Various places in Anurādhapura
- Turuwila temple
- Sigiriya dāgoba

To begin with, one may therefore deduce a usage of these coins in connection with religious sites. A comparable situation is known from Iron Age Europe (Haselgrove / Wigg-Wolf 2005) and from ancient China, where Sāsānian silver coins – presumably of fourth to early seventh century date – have been discovered in "temples and Buddhist *pagodas*" (Kang 2002: 135).

The so-called goddess (or Lakṣmī) plaques and examples of the 'maneless lion' type have already been definitively identified as votive plaques/amulets and as tokens respectively. The remaining types were obviously imported from South India, as the locations of their discovery are confined to the northern part of the island except for a very few pieces found at the capital city of Anurādhapura. They are generally very few in number and could not have formed a standard currency (Codrington 1924: 17–31). The frequency described by Codrington has, up to now, been confirmed by the results of recent excavations in the south (Tissamahārāma) as well as in the north (Māntai). What remains is the first entry on the list – the eldling or, in other words, the punch-marked coin[84]. I will try to prove that this type of coinage was the only real medium of exchange in Śrī Laṅkā throughout the centuries, and that the *kahāvaṇa/kahāpaṇa* of the written sources exclusively refers to the (silver) punch-marked coin, or rather to its local imitation in the shape of the small, blank ingot.

Two specifications of the *kahāvaṇa* occur in inscriptions[85]. The first one was published by Müller (Müller 1883: no. 58) and again by Codrington (Codrington 1924: Appendix D 21, and pp. 12 and 14). It was discovered at V(W)ēragala, "5 miles north of the 18rth milestone on the road from Anurādhapura to Puttalam" (Müller 1883: 41). According to Müller, it can be dated only very roughly to the first four centuries, while Codrington argues for a fourth century date (Codrington 1924: 14–15). Besides the normal expression, *kahāvaṇa*, used in the first line of the inscription, we also come across the mysterious *male kahāvaṇa* (Codrington: *mala kahāvaṇa*), written in the second line. Müller, in discussing the inscription, does not give any explanation for the word *male*. It might be helpful therefore to collate the possible interpretations of this word:

[83] Codrington 1924: 17f., first published by him already some years earlier (Codrington 1916).

[84] For the same conclusion gained by different considerations see already Codrington 1923.

[85] See Perera 2001: 176, who quotes the inscriptions but does not discuss their meaning. Likewise does Senanayake 2002: 4, who dates both inscriptions without any explanation "to the post 6th Century A.D".

Sinhalese	*mal*	=	flower
	mala	=	dirt
Pāli	*mālā*	=	garland, wreath, flower
	māla	=	(doubtful meaning)
	mala	=	anything impure, a stain, dirt, mostly denoting impurities
Sanskrit	*mālā, mālikā*	=	garland

We have no reason to believe that in this inscription the Sinhalese *kahāv(w)aṇa* is accompanied by anything other than a Sinhalese explanatory expression. Therefore Codrington's opinion that, "*mala* must mean 'wreath', 'flower' " has to be rejected, as he resorts to a Pāli or Sanskrit term to explain the whole expression. Additionally, the starting point of his argumentation is definitely wrong. Conjecturing that the punch-marked coins = *kahāpaṇas* had ceased to be used by the fourth to fifth century, he argues that this term must have been transferred to other coins. However, from the results of the recent archaeological excavations at Tissamahārāma and Anurādhapura it becomes evident that punch-marked coins remained in circulation at least up to the fifth century, and perhaps even to the seventh or eighth century. Returning to his train of thought, Codrington then links the alleged philological origin of the word to the coinage design, with the reverse picture of the Late Roman 'cross within wreath' type; presuming that the term *kahāpaṇa* was used throughout the centuries for each standard currency of a given period. This is untenable for more than one reason. Firstly, we have strong evidence that the fourth century *folles* unearthed in Śrī Laṅkā were shipped to the island in the fifth century, as part of the currency of Egypt and Syria / Palestine / Phoenicia at this time. Secondly, even supposing that Roman coins found their way to Śrī Laṅkā during the fourth century, the wreaths cited are so small[86] that they could hardly have been responsible for the characterisation of the coin type mentioned in inscriptions. Other coins with a wreath design have either been discovered in comparatively small quantities (*vota* coins) or are of fifth century date (the cross within wreath type). Finally, why should only one particular type be mentioned explicitly?

Leaving this train of thought aside, if the expression does not refer to the design of the *kahāvaṇa* it must consequently denote another feature of the coin. This could either be a hint to its weight, form, or metal, or to its appearance in general. Help is provided by another expression quoted by Codrington: *kāla kahāpaṇa*, mentioned in the commentary to a Jātaka (Codrington 1924: 14). Meaning 'dark' or 'black', *kāla* describes the colour of the pieces resulting from their alloy. A high percentage of base metals cause a silver alloy to patinate much easier and more rapidly than an alloy with a high silver content, i. e. it will become dark or black very quickly. This corresponds perfectly with the supposed meaning of *mala* as 'dirty' or 'impure'. Both terms can therefore be used as synonyms for some type of *kahāvaṇa* with a low silver content. Maybe these pieces can be identified with Buddhaghosa's bad or counterfeited *kahāpaṇas* mentioned in the fifth century (Codrington 1924: Appendix A 33 and supplement to chapter III, p. 16). It is not necessary to believe that, "the whole passage may well have been embodied by Buddhaghosa from tradition or from some much older book" (Codrington 1924: 249). Actually, he simply describes the current situation in the fifth century. Because of their unsettled weights, the punch-marked coins must have been handled only as bullion[87].

As stated by Buddhaghosa in his Visuddhimagga, composed in Anurādhapura (?) during the reign of King Mahānāma (458–480), only goldsmiths were able to distinguish between good, bad and counterfeit coins. The existing *kahāpaṇas* were of rectangular, square, or round shape. The good ones were of precious metal (= silver), the bad were of half precious and half base metal (= silver/copper alloy) and the counterfeit coins must consequently have been the silver-plated copper pieces. Later commentaries on Buddhaghosa's writings mention the Pāli term *nīla kahāpaṇas*. This *nīla* has the same meaning as *kāla*, i. e. 'blue-black'[88].

An interesting parallel in nomenclature can be traced in the Sāmānid state many centuries later (Fedorov 2001: esp. 7). According to Arab

[86] Like Victory or two Victories holding wreath. Even on well preserved pieces these small objects are sometimes difficult to identify.

[87] See Still 1907a: 197, for the hoard of seventy pieces discovered in Anurādhapura [23] and the weights given there.

[88] Sircar 1968: 100, denies the synonymous meaning of the two words but the commentaries in PTS are unequivocal.

geographers of the ninth and tenth centuries, no less than four different kinds of *dirhems* were in use there, including three types of 'black *dirhems*', viz. Mussayabī, Muhammadī and Ghitrīfī. The fourth type, called Ismā'īlī and of good silver, was used in the external trade of the state, while the other three were reserved for internal trade. These have been identified as 'high-standard subærati' (plated with a silver coat of about 50–69 % fineness); 'low-standard subærati' (about 20–40 % silver); and æs coins, which might have been silver-washed. All three kinds circulated as *dirhems*, but in different areas. In Egypt, up to AH 622 (AD 1225/26), the Fatimid and Ayyubid rulers issued coins called 'black *dirhems*' (*dirham aswad* or *dirham waraq*), having a silver content of only about 30 % (Balog 1980: 36ff.). In 1722, a certain *mohar* minted by Ranajit Malla of the Nepalese kingdom of Bhatgaon for circulation in Tibet was called by the Tibetans *Nag-tam*, i. e. 'black tangka', because these coins soon became black because of their low silver content (Gabrisch 1990: 73).

The solution given seems convincing but there is still one problem to be resolved: Why should a donor give such an explicit indication of the inferiority of his gift? Either this expression and its associated meaning were known and generally accepted, (i. e. that *kahāvaṇa*s with a low silver content were normal and not demeaning in those days), or the interpretation of *mala* as 'dirt' must be rethought. If we transfer a positive meaning to the words *mala* and *kāla*, no longer being 'dirty' and 'black' because of their inferior metal composition but rather as a hint to the rich, dark patina caused by long circulation, then we might identify them with the good, old, authentic Indian silver punch-marked coins still in use.

In the second inscription, dated to the twentieth year from the coronation of King Mahānāma (458–480) and discovered at Veragodagala, another expression occurs: '*[da]ma kahavana*'. This is thought to have had either a similar meaning to the above-mentioned *mala* – here Codrington is obviously thinking of the Pāli term *dāma* – or as a hint to Pāli *dhamma* 'doctrine' or Sanskrit *dramma* '*drachma*' (Codrington 1924: Appendix D 24 and discussion on pp. 14 and 15). Codrington's conjectural reading of *[da]ma* is proved correct by another inscription which shows this word clearly. This inscription of c. third century date was discovered in Murutāngē (Kurunēgala District, NWP) and it: "Records the gift of three hundred damakahavanu for the work (of cutting the steps <leading to the ancient dāgoba>) by an elder named Saṅghatissa" (Paranavitana 1928–1933: 18 and 22 [inscription 381]). Although at first sight hard to explain, this word is in fact quite unequivocal compared to the afore-mentioned expression. Pointing explicitly to Brāhmī inscriptions where this phenomenon is regularly found, Geiger (Geiger 1938: § 36.1) gives examples of the de-aspiration of the aspirates, including DAMA for *dhamma*. In his next chapter, Geiger argues that *dhamma* is another form of *daham* = righteousness. The two donors therefore used a type of coin that was specified as righteous, in other words as good. It seems more than a mere coincidence that twenty coins of this special kind, *dama kahāvaṇa*, were given in the twentieth year since the coronation of the great King Mahānāma, i. e. exactly one coin for each year. Unfortunately we are not told who the donor was, or the recipient. *Mala*, *kāla (nīla)*, and *dama kahāvaṇa* might therefore indicate that these donors chose superior, old punch-marked coins of perhaps exceptionally good quality instead of contemporary, partly inferior, or even counterfeit pieces (Buddhaghosa). Alternatively, or more generally, these expressions may simply suggest the quality of the *kahāvaṇa*s used.

In this context, the obscure term *100 huna-kahāvaṇa*s – which occurs in an inscription discovered near 'Burrows Pavilion' in Anurādhapura, and is allegedly datable from the second half of the sixth to the first half of the seventh century – should be mentioned (Paranavitana 1943a: 140f.; Mudiyanse 1990: 129). This expression has not yet been explained in a satisfactory manner, either in Sinhalese, Pāli, or Sanskrit. A numismatic-etymological approach led Codrington to the suggestion, "that the *huna* was the largest gold coin of the period or a coin of account of the same value" (Codrington 1943a: 48). This seems unlikely however when we compare the sums mentioned in the eight short inscriptions from this site:

I : two persons gave 100 *kahāvaṇa*s
II : one person gave 100 *kahāvaṇa*s
III : three persons gave 2,000 *kahāvaṇa*s
IV : one person gave 100 *huna-kahāvaṇa*s
V : three persons gave 100 *kahāvaṇa*s
VI : one person gave 1,000 *kahāvaṇa*s
VII : one person gave 100 *kahāvaṇa*s
VIII : four persons gave 100 *kahāvaṇa*s

Seven of the sums (I–IV and VI–VIII) mentioned were intended to be used for the maintenance of slaves. In four cases, 100 *kahāvaṇa*s were given for this purpose, while in another the additional word *huna* has been added. It is highly improbable that the same amount would consist in four cases of silver and in one case of gold. An admittedly speculative and unproven but alternative solution to the problem requires a conjectural reading of the term in question. Instead of *huna* we may consider *hīna*, which in Pali has the meaning of "inferior, low, poor, base" (PTS 732). This does not seem too improbable as the general character of these inscriptions is very careless regarding orthography and syntax, and they are additionally of inferior craftsmanship (Paranavitana 1943a). Thus we may presume that this is another expression, supplemental to those just discussed, denoting the quality of the *kahāvaṇa* used.

An interesting interpretation of the word *mala* in the Vēragala inscription has been proposed by Paranavitana (Paranavitana 2001: 242):

"As the donation has been made by a personage who came from the Malay regions, or who had at least connections with those regions we are justified in equating mala in this word with Malaya and to take mala-kahavaṇas as coins that were in circulation in the Malay regions, or were specially coined for the trade with those regions".

This version seems a little too conjectural to be possible, though there may well have been contacts with the Malay Peninsula in the fifth century.

Apart from their use as donations, the *kahāvaṇa*s were secular media of exchange. The multiplicity of *kahāvaṇa*s in circulation, showing different features in regard to their silver content, suggests two explanations. In the first, the specimens were regarded as credit coins and prices were expressed in the number of coins. In the second, they were used by weight. In both cases, it was irrelevant which kind of coins were used in mercantile transaction. They may have been of one kind only or of different categories – the main factor was the correct number of pieces or the total weight of metal agreed. This practice, of course, could only work in a closed economic system in which all individuals and groups involved were subject to the same procedure. The fraudulent manufacture and use of the debased and silver-plated punch-marked coins, as well as of the ingots, is unlikely due to the prevailing number of these specimens. Likewise, the discovery of moulds for casting punch-marked coins in Anurādhapura, i. e. in the capital, is in favour of this interpretation.

Comparable data are evident from India. In Andhra Pradesh, the Veerapuram excavations yielded silver punch-marked coins, silver-plated æs punch-marked coins, and a "PMC Mould". All these objects were discovered in layers datable to the Mauryan (c. 321–185) or even post-Mauryan period (Kamalakar / Veerender 1991: 8 and 43 [fig. of the mould]; Bai 1991). Another terracotta mould from Andhra Pradesh datable to the Sātavāhana period (first century BC to third century) was discovered in an archaeological context at Dhulikatta in the Karimnagar region. It shows impressions for round, square and oblong specimens (Sastri 1995: 60 and fig. 2). The use of 'genuine' punch-marked silver coins in India during the first century BC is attested by the results of the Bairāt excavations in Rājasthān. A mixed hoard consisting of punch-marked coins and silver coins of Greek and Indo-Greek kings was discovered there in 1935/36. The closing date of this hoard is fixed by a coin of Hermaios[89]. Moulds for casting punch-marked coins are also reported from the Pallava capital at Kanchi (Raman 1991: 15) and from Śiśupālgarh (Lal 1949: 99) on the east coast of India, south of the Mahanadi River. The latter moulds are datable to about the end of the third century and prove that punch-marked coins were still in use there at this time. In India, as in Śrī Laṅkā, the presence of moulds seems to indicate a shortage of the old punch-marked coins. The relative scarcity of old Magadhan and Mauryan punch-marked coins in Śrī Laṅkā is also to be observed in South India. Here, specimens discovered in post-Mauryan contexts, i. e. after the first half of the second century BC, are almost exclusively confined to religiously motivated usage (Sarma 1987: *passim*, esp. 101).

Imitation on a grand scale is known from another Indian region. Tens of thousands of moulds have been discovered in northern India for casting Yaudheya (Punjab) coins. There is

[89] Sahni 1999: 42f. and 66–68 (detailed list of the coins). The dates given by various scholars for the reign of Hermaios range from c. 70 to c. 1 BC.

disagreement among scholars as to whether the moulds had official approval or were forgers' equipment (Shastri 1993). However, the number of moulds makes it highly improbable that these were used solely by forgers. In both Śrī Laṅkā and India, a semi-official character can best be ascribed to them.

Only one group of coins within this broad range of types discovered in Śrī Laṅkā can almost certainly be identified as deliberate forgeries. These are the Indian silver-plated æs-punch-marked coins of which only a few specimens have been unearthed at Tissamahārāma during the course of the recent excavations (Gupta / Hardaker 1985: 28 [fig. 13d] type). These forgeries of Mauryan silver punch-marked coins commenced during the Mauryan period and are perhaps ascribable to, "deceitful mint workmen with access to the punches" (Gupta / Hardaker 1985: 28).

3.1.5 Roman and other western coins

The material for discussion here is as unattractive as can be imagined. We are dealing exclusively with small to the smallest æs coins in all states of preservation: weakly struck and off centre, worn, corroded, or all of these together. In many cases these factors naturally make an identification difficult or even impossible, the more so when taking into consideration the multitude of possible candidates of roughly the same size: Greek, Greek Imperial, Late Roman (including unstruck coin blanks and plain lead pieces), Early Byzantine, Vandalic and proto-Vandalic, Aksūmite (both genuine and Egyptian cast imitations), Sāsānian, Nāimana struck imitations, and South Indian specimens.

Besides the original coins still available for study in the various public collections, the starting point for compiling a list of reliable published finds is naturally Codrington 1924. He listed almost all of the Roman coin finds known to him up to this date. Verifying his entries, however, inevitably leads us back to the pioneering work of Still 1907, on which Codrington based his section on Roman coin finds. Generally, researchers of this era were conscientious in their work and their trustworthiness is exemplary in regard to the finds themselves. However, their numismatic skill was autodidactic and this has led to occasional misinterpretations, although these are less serious than those of some modern authors. Looking forward in time from Codrington 1924, we can see that scholars during the subsequent decades were content to rely on and refer to this standard work.

Neither Still nor Codrington were aware – and in fact, they could not have been – of the need for a detailed hoard publication. As they only summarised the contents of each hoard, we only know today the emperors and coin types represented within each lot. Nevertheless, this provides us with a reliable overview of the hoards of Late Roman æs coins in Śrī Laṅkā *(Fundlandschaft)*. A fresh attempt at the documentation and interpretation of these hoards was made in 1985, when I published those coins I had examined personally following the regulations of the *Fundmünzen römischer Zeit in Deutschland* (FMRD); describing each identifiable piece to guarantee verification of the overall conclusions deduced from the coins. The subsequent two decades have been characterised by a mixture of methods; the detailed, and the cursory. Of the latter, O. Bopearachchi is the chief representative, impressing readers repeatedly with enormously large unpublished hoards, while I have continued with a piece-by-piece publication of the Mātara hoard and of the coins unearthed during the course of archaeological excavations. Thus, scholars wishing to write on the monetary and economic history of ancient Śrī Laṅkā are free to choose which basis they would like to found their studies upon. On the one hand, there are sound large numbers of coins, easy to work with while on the other, the more puzzling results of the piece-by-piece method. Perhaps the latter will help to eliminate misinterpretations derived from the difficult to analyse material and which have led to simplifications such as: "The Romans and Egyptians remained active in the 4th century and later, as evidenced by the thousands of Roman coins found in Sri Lanka" (Salles 1999: 512). Such a statement is only possible when credence is given to the reported discovery of huge hoards of Late Roman coins, allegedly containing several (ten-) thousands of pieces; reports which started to appear in the late 1980s. Being sometimes highly dubious, the data offered is reminiscent of a phenomenon mentioned by Laser, when compiling finds of Roman and Early Byzantine coins made in the territory of the former German Democratic Republic: namely, fictitious hoards invented by local patriotism, for personal fame or esteem, to 'substantiate' fictitious historical events, or

merely to hoax the scientific community[90]. Most conspicuous is the appearance of extremely large hoards – previously unknown in these sizes – at short intervals. The reporting of these hoards began in 1992, the list being increased yearly: Pidurangala [**91**] 25,000 (1986?); Goḍavāya [**175**] 30,000 (1987 or 1988); Tissamahārāma [**202, 203**] 30,000 (prior to 1992) and 10,000 (between 1988 and 1993); Ahangama [**141**] 8,000 (between 1988 and 1993); Hungama [**162**] 20,000? (1990?); and Bēragama [**172**] 75,000 (1980). In addition, some of these hoards became progressively larger over the course of time (Bēragama and Lunama). In comparison, the largest hoards known before this period are those from Nāimana [**150**] 3,000, Debarawewa [**195**] 2,828, Polommaruwa [**158**] c. 2,000, Rekawa [**161**] 1,588, Watapuluwa [**109**] 1,500, Kuliyapiṭiya [**115**] 1,396, and Galkaḍawala [**75**] 1,040, as well as Perumamarakkaladuwa [**133**] 5,800 and Lunama [**163**] 2,800 to 3,000 (both calculated). In this context, the known occurrence of the creation of a 'new' hoard must be mentioned again. By simply adding the numbers of coins from four smaller finds unearthed at Sīgiriya, a 'new' large hoard of 605 pieces was generated (for details see the end of chapter 2.2).

It is interesting that the majority of the very large hoards are reported from an area of only c. 20 × 10 miles in the extreme south of the island, extending from Hungama in the west to Tissamahārāma in the east (Hungama, [Lunama], Goḍavāya, Bēragama, and Tissamahārāma). At exactly the same time as the alleged large hoards started to appear in the late 1980s, local traders in antiques began to travel around in the territory of ancient Rohaṇa. They were looking for coins and other valuable items dug up by villagers in their search for gems. These traders even paid for small copper coins that had formerly been regarded as valueless.

The discrepancy between the dubious large hoards and those of moderate but ascertained size is evident and hard to explain. Perhaps this phenomenon of partly-mysterious large hoards is a result of the presence of western and native archaeologists in this area. The same holds true for Pidurangala [**90, 91**], close to the famous site of Sīgiriya, which was then being explored by German archaeologists. An unequivocal invention, for example, is part of an alleged hoard presented fifteen (!) years after its discovery at Bēragama [**172**] to a German scholar excavating near this village. The composition of this lot of 804 coins makes it completely impossible that they were part of a single hoard (see the relevant commentaries in the catalogue). Estimations based on this uncertain ground reach a misleading and calamitous climax when an apparently authoritative final sum is given: "According to my estimations there are more than 200,000 published and unpublished Roman "third brass" and their "Indo-Roman" imitations which have been found on the island" (Bopearachchi 1995a: 387, 2001a: 106, and, once again, 2006: 193). Not only is the island in general treated in this way; some specific sites where coins have been unearthed share its fate. The material from Sīgiriya [**76**ff.], for example, which holds a key position concerning Śrī Laṅkā's numismatic history and thus requires a particularly careful study, becomes valueless when scholars accept unreliable, generalised data: "Sigiriya a produit jusqu'ici plus de 3000 monnaies, toutes romaines ou indo-romaines"[91]. The precise account reads somewhat differently: 261 Roman coins, twenty-nine Nāimana imitations and six Roman or imitation pieces are definitely attested from Sīgiriya. Even when we add the number of coins which have been reported with a relative degree of certainty as having been discovered at Sīgiriya, we still only arrive at a total amount of 1,028 coins – just one third of the number quoted above.

When based on such unreliable figures, future investigations in the field of Late Roman and Early Byzantine trade with the East and on the numismatic history of the island are without doubt condemned to fail[92]. Likewise, it is certainly premature to draw major conclusions from the existence of some known stray finds and an additional personal communication based on hearsay only. We cannot infer from the coins found at Ridiyagama [**166–169**] and

[90] Laser 1980: 9 "Wesentlich schwieriger und nur mit hohem Zeitaufwand verbunden gelingt es, Fundunterstellungen aufzuspüren, die aus lokalpatriotischem Eifer, persönlicher Wichtigtuerei, um fiktive historische Ereignisse "glaubhaft" zu machen oder die Wissenschaft zu foppen, in Museen und Sammlungen, und was weit ärger ist, auch in die Literatur gelangten".

[91] Bopearachchi 1992: 116 and repeated 2001a: 107. His statement has been lectured and published by Mango 1996: 157 and it is now on the best way to become an undoubted fact.

[92] Unfortunately, this number has started to spread even in serious literature on this topic, like in the perceptive article Burnett 1998: 183.

those allegedly discovered by villagers in the Uda Walawē area [**171**] that: "We have, once again, clear evidence to show that there were at least two entrepots along the bank of the Valave Ganga" (Bopearachchi 1996: 65).

The verified, reliable data, excepting those specimens with unknown provenance, consist almost exclusively of fourth century nummi *(folles)* and fourth to fifth century Æ 3 and Æ 4 pieces, while Æ 2 specimens occur only occasionally. The bulk of these coins were minted during the period ranging from Constantinus I to Marcianus, with a few 'runaway' pieces before and after (a far more detailed list will be given below in chapter 10):

AD	317	1
	324 – 330	4
	330 – 346	109
	346 – 364	103
	364 – 378	82
	378 – 383	11
	383 – 395	397
	395 – 406	185
	406 – 408	328
	408 – 423	137
	425 – 435	64
	450 – 474	9
Not precisely attributable		
	364 – 365/ 367 – 375	1
	378 – 392/ 408 – 423	1
	378 – 392/ 435 – 450	4
	379 – 395/ 402 – 450	7
	200 – 400	1
	300 – 350	2
	300 – 420	6
	350 – 420	29
	350 – 470	30
	380 – 470	18

The coins of precious metals at our disposal are provided with varying degrees of certainty in regard to their Śrī Laṅkān provenance. Only a single *denarius* of Tiberius has definitely been discovered on Śrī Laṅkān soil, but this is clearly an intruder from India[93]. Hence, the Late Roman and Byzantine gold coins can only be included with care in this study. As a contribution to the history of research, the first discovery of Roman coins in Śrī Laṅkā[94] should be mentioned in this context. It was in 1584 or 1585[95], when a probable Roman gold coin ("of base gold") and two copper coins were discovered at Māntai. These were reported by the contemporary Portugese chronicler Diogo do Couto, who first speculated about the possible interpretation of the few readable letters in the obverse legend. This gold coin obviously had an almost totally worn reverse, as do Couto was unable to give any description of it. The obverse showed, "the figure of a man, from the breast upwards, with a piece of lettering around worn away in some parts" (Ferguson 1909: 83). Apparently, the legend started with a C and the other discernable letters were R M N. This led do Couto to the suggestion that it was a coin of Claudius, and the readable letters belonged to the word ROMANORVM. This view was rejected by Still (1907: 170) who in contrast, considered it to be a coin of Constantinus I. However, because of the scant details known, any suggestion is without sufficient foundation – it might have been from almost any period. Almost nothing is known about the two copper coins, except that one of them was "quite worn". When Valentyn referred to do Couto's report in 1724, he spoke of *three* copper coins (Arasaratnam 1978: 94). Indeed, neither author states that they were *Roman* copper coins. This is tacitly assumed, as local workmen had discovered the specimens when quarrying stone in an alleged Roman building. This is, of course, utter nonsense, as there is no trace of any Roman building in Śrī Laṅkā. It is surprising that no description is given of the other (or two) obviously quite good specimen(s). Taking into consideration the multitude of coin types unearthed at Māntai (see catalogue entries [**63** ff.]) the Roman origin of these coins may be doubted. What remains is the discovery of a most-probable Roman gold coin of uncertain date.

The few Greek æs coins of small size discovered both in India and Śrī Laṅkā have sometimes led writers to think in terms of very

[93] For the early Roman *aurei* and *denarii* discovered in great numbers in South India see the works of Berghaus, MacDowall, and Turner.

[94] For India, the first discovery of Roman coins is attested for the year 1786 (Gupta 1991: 126).

[95] The dates 1574 or 1575 given by do Couto are certainly an error as the coins had been found "when Joaõ de Mello de Saõ Payo was captain of Manar". As this was the case in the 1580s and the ship of de Mello who wanted to present the coin to the Portugese king foundered in 1592, the 1584/5 date for the discovery is the more probable (Ferguson 1909: 83 f.).

early trade contacts between the Mediterranean and South Asia. These pieces, however, are of the same size as the Late Roman examples, and naturally found their way to the Indian Subcontinent and to Śrī Laṅkā at the same time as the latter. Besides these Greek specimens, a genuine Aksūmite æs coin and a cast Egyptian imitation were also unearthed during the course of recent archaeological excavations at Tissamahārāma (**182.3** and **182.4**). Two small, so-called 'quasi autonomous', æs coins – one each from the cities of Alexandria and Antiochia (**98** and **170**) and both probably of early fourth century date – round off the group of 'rarities'. These pieces have no real significance in regard to the chronological sequence and details of the East-West trade in late antiquity. To summarise in a pithy way, one may state that all the scrap metal available in the eastern Mediterranean area during the fifth century somehow found its way to Śrī Laṅkā. The same range of material as is known from Śrī Laṅkā can be observed in a recently published fifth century hoard from northern Italy (Asolati 2003). A few pre-Christian Greek coins and pre-Constantinian specimens, as well as blank lead flans, form parts of this hoard, which ranges from Constantinus I to Leo I. From its chronological structure, the hoard could equally have been discovered in South India. Of the identifiable specimens, twenty-four belonged to the Constantinian dynasty, eighty-five to the Theodosian dynasty, and fourteen were of post-450 date. Thus, the small Greek coins discovered in India and Śrī Laṅkā – and this must be emphasised again – formed part of the Mediterranean currency in the fifth century and therefore cannot be given as proof for pre-Christian trade contacts between the Western world and South India. Also intermixed with Late Roman coins in hoards, and unearthed as single finds in archaeological excavations, are small æs coins of the Vandalic period from North Africa. The same holds true for some solitary Sāsānian and Aksūmite æs-specimens as well as Egyptian imitations of the latter. As in the case of the Greek coins, we have to be cautious when interpreting the North African specimens. We cannot deduce any kind of direct relationship between the region of origin and the region of discovery, as these specimens clearly found their way to Śrī Laṅkā via Syria/Palestine/Phoenicia. In this area, a significant number of these coins formed part of Late Roman hoards comparable to those from Śrī Laṅkā.

Coins of other states contemporary with the Late Roman / Byzantine specimens in Śrī Laṅkā and South India are not known in large numbers from assured finds in either country. Here again we can only operate with varying degrees of certainty. Aksūmite gold coins of fourth century date, and less than a handful of later æs coins, are reported as having been discovered in South India. For Śrī Laṅkā, there are only a few Sāsānian silver coins of unknown origin in private collections. Only the small Aksūmite æs coins discovered as single finds during the course of archaeological excavations in Śrī Laṅkā, and the small Sāsānian coins forming part of Roman hoards, can be considered as trustworthy evidence.

The Late Roman and Byzantine coins unearthed in Śrī Laṅkā and South India roughly cover the period from Constantinus I to Constans II. Within this time-span, different groups are discernible in regard to their date and place of origin. Æs coins from Constantinus I to Leo are ascertained in different quantities in both Śrī Laṅkā and South India. Well-documented hoards or single finds of gold coins are completely absent in Śrī Laṅkā. Here we have only hints to the former occurrence of such coins on the island. The reported *solidi*, *semisses*, and *tremisses* date from the time of Theodosius II onward, up to an uncertain terminus. This is to be expected in view of the reliable hoards of Late Roman/Byzantine gold coins in South India. Except for a few earlier specimens, the bulk of the coins begins with the reign of Theodosius II and normally ends with Anastasius I, being in their turn followed by some solitary later pieces.

To get an idea of the numbers we are speaking of when dealing with Late Roman æs coins we have to recapitulate the following facts: Only a little more than 5,000 of these coins are assured for Śrī Laṅkā with an acceptable degree of certainty. We may add another 12,500 specimens that are most probably genuine Late Roman æs coins. By redoubling this new total of 17,500 more or less reliable pieces to get an idea of the unidentifiable but probable Roman coins, we get a final number of about 35,000 Late Roman æs coins so far discovered in Śrī Laṅkā. Expressed in terms of Æ 3 and Æ 4-size specimens, we have from Śrī Laṅkā in the first case the equivalent of 8.75 *solidi*, and in the second case 5 *solidi*. In terms of weight, a cargo consisting exclusively of Æ 3 would have weighed about 87.5 kg, while a freight of only Æ 4 would have

weighed 38.5 kg. This is barely a sixth part of the number of c. 200,000 pieces estimated by Bopearachchi (1995a: 387), but his figure is based on additional, enormous, but highly doubtful hoards, and they also include the Nāimana imitations. When speaking of over 200,000 genuine Roman coins, both Salles and Burnett unfortunately overlook this fact (Salles 1995: 426; Burnett 1998: 183).

An additional, although marginal, problem arises when trying to estimate the numbers of coins in a former hoard. One particular hoard, known only from the literature, is said to have consisted of c. 5,800 specimens. However, this number has only been calculated from the weight of the hoard: 13 pounds. Attempting to calculate the original number of coins in a hoard of which only the weight is known must be regarded as a hopeless cause. Fifth century Śrī Laṅkān hoards of Roman copper coins are generally composed of Æ 3 and Æ 4 specimens. The estimation of the intended weights of copper coins from the end of the fourth to fifth century is a science of its own and discussion about the standards is far from complete. Therefore, we have no certain factors to calculate with. The next question is how many examples of each size were represented in the hoard. From the composition of the known hoards no common statistical data can be deduced. There is no recognisable constant numerical relation between the two coin sizes. Therefore, only hypothetical numbers are possible, based on uncertain theoretical weights. A minimum number can be given by supposing that all pieces were of Æ 3 size, and a maximum number can be calculated in the case of Æ 4 specimens. Within these limits however, everything is possible or rather – impossible. We do not know the standard weights, we do not know the composition, and we do not know the coins' state of preservation – in short, we do not know anything. Moreover, if a supposed hoard of several thousand Roman copper coins turns out to consist of imitations or vice versa, as has happened in the past, it is clearly much better to rely on a few but reliable data than on imagination.

Where the Late Roman æs coins and the specimens of other contemporary western types unearthed in Śrī Laṅkā came from is easy to recognise. The majority of the specimens showing legible mintmarks were minted in Antiochia, followed by those from Constantinopolis. The same holds true, if properly identified, for the Late Roman coins discovered in South India (Krishnamurthy 1994). Intermixed with the Roman coins are a very small number of 'Greek' specimens from the territory of the Dioecesis Oriens[96], and a small 'quasi autonomous' bronze coin struck by the city of Antiochia in the fourth century is recorded from the Karaitivu hoard [98]. A second example of this type of coin, this time struck by the city of Alexandria, is said to have been discovered in the Embilipiṭiya area [170]. The predominance of coins from the two mints of Constantinopolis and Antiochia in hoards and single finds of fourth to fifth century date in the Dioecesis Oriens has recently been shown (Noeske 2000a: table vol. 1, p. 283). Generally, the structure of the Syrian hoards is closer to the material unearthed in Śrī Laṅkā[97] than the comparable complexes from Egypt (Noeske 2000a: vol. 1, 124 f.). For example, the distinctive dominance of pieces from the mint of Constantinopolis can be noticed both in Asia Minor (Morrisson 1995: 78 f.) and in Śrī Laṅkā. Another striking parallel is evident between the currencies in both fifth century Palestine (Bijovsky 1998 and 2002) and Phoenicia (Butcher 2003) on the one side, and those in Śrī Laṅkā on the other – each region is the reflection of the other. The following items occur in both areas:

- Vandal coins of the fifth century
- cast Aksūmite imitations fabricated in Egypt from c. 430
- unstruck coin blanks
- small, earlier coins, comparable in size with those of the fifth and sixth centuries[98]

Besides the presence of these 'unusual' coins, the structure of the hoards in the two areas show another conspicuous characteristic. In both cases, the calculated number of coins per year sharply decreases from the year 408. Likewise, the presence of a certain number of fourth century specimens is attested in fifth century contexts. Hence, we can assume with good reason that many of the coins discovered in Śrī Laṅkā have a Syrian / Palestinian / Phoenician provenance. In late fourth century Antiochia,

[96] For Śrī Laṅkā, see index, for India Krishnamurthy 1995 and 2000a.

[97] Walburg 1985: 226 f. and the present catalogue, presenting new material and giving more details than in Walburg 1985 for the finds prior to this date.

[98] For a compilation of Palestinian hoards showing this phenomenon, see Bijovsky 1998: 86, n. 1, and Phillips / Tyler-Smith 1998. For an instructive coin list from a Phoenician site see Butcher 2003.

the primary mercantile link between East and West at this time (Milewski 2001: 110), luxury goods were received from China, Arabia and India, according to the well-informed Iohannes Chrysostomos, monk and later priest in this city from 372 to 397: *ἐν τῇ Σηρῶν χώρᾳ ἕτεροι, ὅθεν τὰ ἱμάτια ταῦτα. Ἐν δὲ τῇ ἀρωματοφόρῳ Ἀραβίᾳ καὶ Ἰνδίᾳ, ἔνθα εἰσὶν οἱ λίθοι, πολλὰ τοιαῦτα ἔστιν εὑρεῖν* (Ad Timoth. I, cap. VI, homilia XVII, 3 [end]).

The small Sāsānian æs coins occasionally found in Śrī Laṅkān hoards are most probably intrusions from Mesopotamia into the region of the Dioecesis Oriens, from where they were brought to South Asia. Nine of these coins were part of a Late Roman hoard spanning the period from 335–341 to 402–408, discovered in Mesopotamia (Al Kishāsh, Iraq; Noeske 2000a: vol. 2, 714). Travelling south from the Antiochia region, the coins either reached Clysma or Aila, probably the latter. The *Legio X Fretensis* was stationed at Aila during the fifth century, as recorded in the *Notitia Dignitatum* (34.30). From here, the strategically and commercially important *Via Nova Traiana* ran north, while another route led northwest to Jerusalem, and from there further north to Antiochia[99]. Public safety on these routes however, ceased already during the fifth and sixth centuries as forts along *Via Nova Traiana* and *Strata Diocletiana* were partly abandoned (Westphalen 2006: 190). From Aila, the coins were brought by ship to Adulis. Here, at the latest point, the coins from the Dioecesis Oriens became mixed with those originating from the Dioecesis Aegyptus. This assertion can be deduced conclusively from several indicators. In general, the fifth century hoards from both regions are of the same structure, showing only slight differences. The result of mixing the two hoards together, one from each region, would be a third hoard showing the features of those unearthed in Śrī Laṅkā. Both the Egyptian and Syrian / Palestinian / Phoenician elements in this hypothetical but representative Śrī Laṅkān lot are scarce but clearly recognisable:

A Vandal coin was found in the Rekawa hoard, and a cast imitation of an Aksūmite æs coin was unearthed at Tissamahārāma. A very rare coin of Theodosius II, previously reported only from Egyptian finds, was also discovered there[100]. The excavations at Tissamahārāma have again yielded a genuine coin from the Kingdom of Aksūm, which most probably did not go the long way round via Syria/Palestine/Phoenicia to Śrī Laṅkā. Uncoined blanks made of lead as well as copper are attested from Egypt, Palestine, and Phoenicia (Noeske 2000a: vol. 2, 315, 333, 335, 339 [Egypt]; Bijovsky 2002: 202 [Palestine]; and Butcher 2003: 165 [Phoenicia]) and are also known from Śrī Laṅkā (Sīgiriya and Bēragama). A final common ground may be tentatively mentioned. In Egypt, Syria, Palestine, and Phoenicia, *antoniniani* – or rather so-called 'barbarous radiates' minted in the Gallic Empire in the third century in imitation of *antoniniani* – are verified in hoards (Noeske 2000a: vol. 2, 222 [Kellia], 293 [Hawara], and 487 [North Syria]; Bijovsky 1998: cat. nos. 4 and 5 [Gush Ḥalav]; Butcher 2003: 169–175 [Beirut]). In Śrī Laṅkā, we have only a few clues to the presence of these coins. Prior to 1924, Codrington bought one coin each of the Gallic emperors Postumus and Tetricus I in the Kandy bazaar, and a Nāimana imitation was found near Lunama, the reverse of which is based most probably on a coin of Tetricus I [**163.1**].

The hoards most representative of the coins available in both the Dioceses Oriens and Aegyptus in the second half of the fifth century are (omitting the occasional precursors)[101]:

Dioecesis Aegyptus

Place	Date range of coins in the hoard
Kellia	from 330–335 to 450–457
Kōm Washim	from 330–335 to 425–450
Meydum	from 306–336 to 410–423
Hawara (1892)	from 306–336 to 474–491
Hawara 6	from 330–337 to 408–423
Hawara 2	from 330–335 to 408–423
Hawara 1	from 324–346 to 402–408
Hawara 2 (1938)	from 324–336 to 474–491
Hawara 3 (1938)	from 324–336 to 474–491
Egypt (1931)	from 330–341 to 395–450
Qaw el-Kebir	from 317–337 to 474–491
Dendara 1	from 306–361 to 425–455
Dendara 2	from 306–361 to 393–423
Luxor?	from 341–346 to 395–408
Douch-Kysis	from 324–337 to 393–408

[99] For the importance of Aila see Mayerson 1986: 42.

[100] This coin of RIC 419 (= LRBC 2242) type is attested by only five specimens (Noeske 2000). No Syrian / Palestinian provenance is known.

[101] Taken from Noeske 2000a: vol. 2.

Dioecesis Oriens

Place	Date range of coins in the hoard
North Syria	from 335–337 to 474–491
Turkey?	from 335–337 to 408–423
Haifa	from 346–361 to 383–408
Kish	from 335–341 to 402–408

After arriving from both regions at Adulis, the fate of the coins starts to become uncertain:

either – the copper coins, regarded as valueless in the Roman Empire, were sold for their material value to Aksūmite traders who afterwards shipped them to South India

or – Roman merchants engaged in barter trade with the Indians present in Adulis[102] used the coins as additional merchandise or paid the difference of an unbalanced barter with them

or – Roman merchants carrying these coins embarked on ships of foreign nations to sail to India (see for example the story of Sopatros, narrated by Kosmas Indikopleustes).

3.1.6 The Nāimana imitations

"Naimana, gewisse in Indien hergestellte, sehr rohe Nachahmungen römischer Kupfermünzen, so genannt nach einem Orte auf Ceylon, wo ein solcher Fund <in 1887 or 1888 [**149**]> gemacht worden ist" (Schrötter 1930: s. v. *Naimana*). This short entry in a German numismatic encyclopædia from 1930, although based on a wrong assumption concerning its geographical origin, nevertheless characterises a coin type manufactured in Śrī Laṅkā from about the middle of the fifth century. When the supply of original Roman æs coins ceased about this time, local imitations were produced. As this kind of coin is almost exclusively discovered in the coastal regions of the ancient dominion of Rohaṇa, in the south of the island, it is only fair to assume that they were minted in this area. In the fifteenth century, the village of Nāimana was known by the name of Nāyimaṇai. In the following sub-chapters, various aspects of these coins are examined, including the places of their discovery and probable place(s) of manufacture, minting technique, die comparisons, iconography, lettering etc.

3.1.6.1 Finds

In contrast to the large finds of Roman coins, hoards of Nāimana imitations are almost exclusively confined to the southern coastal region of Rohaṇa. Hitherto, only four sites can be mapped. From east to west these are Kosgoḍa [**132**], Mātara [**144**], Nāimana [**149**, **151**, **152**], and Polommaruwa [**158**]. Outside Rohaṇa there is only one additional hoard of fifty-six specimens, which was unearthed at Mihintalē [**35**]. Single finds and small numbers of imitations have also been discovered during archaeological excavations, as solitary specimens in large Roman hoards, or simply by chance at different locations all over the island, but mainly in Anurādhapura, Sīgiriya, and Tissamahārāma. A single coin is reported from Kalmunai. A significant concentration of this type of coin is recognisable in the Mātara/Nāimana region. The known finds from there are supplemented by those from two other places, Hittetiya [**148**] and Hakmana [**157**], where imitations have also probably been found. From the concentration of find spots in this area it becomes evident that the imitations were struck there (see below), remained restricted to that region, and thus were never a currency covering the needs of the entire island.

3.1.6.2 Minting technique

– The dies

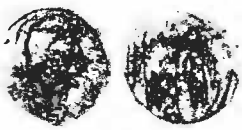
By comparing hundreds of examples, a large number of die identities and very close similarities have been observed. A first attempt to visualise these die-links failed graphically because of the complexity of the combinations. Thus, the interrelationships are shown figuratively:

[102] For Indian seafaring in Roman times see Schlingloff 1982.

1 Obverses and reverses from identical dies

1 A

1 *Fig. 18.1*



2 *Fig. 18.2*

1 B

1 *Fig. 18.3*

2 *Fig. 18.4*

1 C

1 *Fig. 18.5*

2 *Fig. 18.6*

1 D

1 *Fig. 18.7*

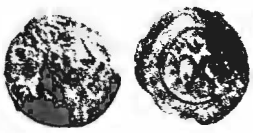
2 *Fig. 18.8*

1 E

1 *Fig. 18.9*

2 *Fig. 18.10*

1 F

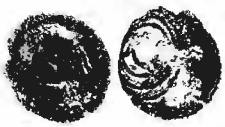


1 *Fig. 18.11*

2 *Fig. 18.12*

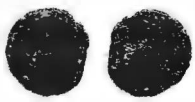
1 G

1 *Fig. 18.13*



2 *Fig. 18.14*

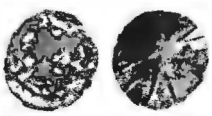
1 H



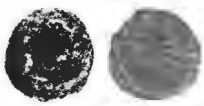
1 *Fig. 18.15*

2 *Fig. 18.16*

1 J



1 *Fig. 18.17*



2 *Fig. 18.18*

2 Obverses from identical dies

2 A

1 *Fig. 18.19*

2 *Fig. 18.20*

3 *Fig. 18.21*


4 *Fig. 18.22*


5 *Fig. 18.23*


6 *Fig. 18.24*

2 B

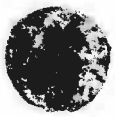

1 *Fig. 18.25*


2 *Fig. 18.26*

2 C

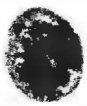

1 *Fig. 18.27*


2 *Fig. 18.28*


3 *Fig. 18.29*

2 D


1 *Fig. 18.30*


2 *Fig. 18.31*

2 E


1 *Fig. 18.32*


2 *Fig. 18.33*


3 *Fig. 18.34*


4 *Fig. 18.35*

2 F


1 *Fig. 18.36*

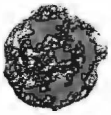

2 *Fig. 18.37*

2 G


1 *Fig. 18.38*


2 *Fig. 18.39*


3 *Fig. 18.40*


4 *Fig. 18.41*

2 H


1 *Fig. 18.42*


2 *Fig. 18.43*

2 J


1 *Fig. 18.44*


2 *Fig. 18.45*

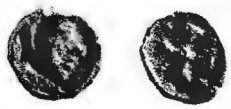
2 K

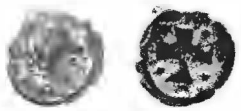

1 *Fig. 18.46*


2 *Fig. 18.47*

2 L


1 *Fig. 18.48*


2 *Fig. 18.49*


3 *Fig. 18.50*

The reverses of 2 and 3 are very similar.

2 M


1 *Fig. 18.51*


2 *Fig. 18.52*


3 *Fig. 18.53*

(link to group 5 B)

2 N


1 *Fig. 18.54*


2 *Fig. 18.55*

2 O


1 *Fig. 18.56*


2 *Fig. 18.57*

2 P


1 *Fig. 18.58* 2 *Fig. 18.59*

2 Q


1 *Fig. 18.60* 2 *Fig. 18.61*

The two coins belong to group 5 A.

2 R

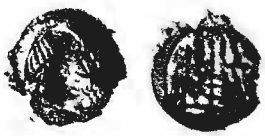

1 *Fig. 18.62* 2 *Fig. 18.63*

2 S

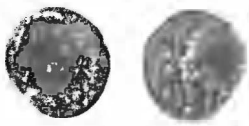

1 *Fig. 18.64* 2 *Fig. 18.65*

3 Reverses from identical dies

3 A



1 *Fig. 18.66*



2 *Fig. 18.67*

The obverses are not identical, but from the same engraver.

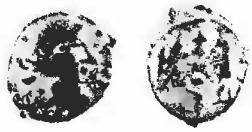
3 B


1 *Fig. 18.68* 2 *Fig. 18.69*

4 Obverses and reverses from very similar dies

4 A

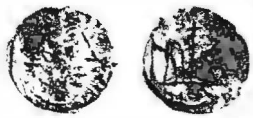
1 *Fig. 18.70*



2 *Fig. 18.71*

3 *Fig. 18.72*

4 *Fig. 18.73*



5 *Fig. 18.74*

4 B

1 *Fig. 18.75*

2 *Fig. 18.76*

3 *Fig. 18.77*

5 Obverses from very similar dies

5 A

1 *Fig. 18.78*

2 *Fig. 18.79*

3 *Fig. 18.80*

4 *Fig. 18.81*

5 *Fig. 18.82*

6 *Fig. 18.83*

7 *Fig. 18.84*

8 *Fig. 18.85*

9 *Fig. 18.86*

10 *Fig. 18.87*

11 *Fig. 18.88*

12 *Fig. 18.89*

13 *Fig. 18.90*

14 *Fig. 18.91*

15 *Fig. 18.92*

16 *Fig. 18.93*

17 *Fig. 18.94*

18 *Fig. 18.95*

19 *Fig. 18.96*

20 *Fig. 18.97*

21 *Fig. 18.98*

22 *Fig. 18.99*

23 *Fig. 18.100*

24 *Fig. 18.101*

25 *Fig. 18.102*

26 *Fig. 18.103*

27 *Fig. 18.104*

28 *Fig. 18.105*

29 *Fig. 18.106*

30 *Fig. 18.107*

31 *Fig. 18.108*

32 *Fig. 18.109*

33 *Fig. 18.110*

34 *Fig. 18.111*

35 *Fig. 18.112*

1–2 = group 2 B
4–6 = group 2 C
7–10 = group 2 E
25–26 = group 2 Q

5 B

1 *Fig. 18.113*

2 *Fig. 18.114*

3 *Fig. 18.115*

4 *Fig. 18.116*

5 *Fig. 18.117*

6 *Fig. 18.118*

7 *Fig. 18.119*

8 *Fig. 18.120*

9 *Fig. 18.121*

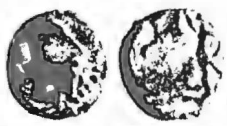
10 *Fig. 18.122*

11 *Fig. 18.123*

12 *Fig. 18.124*

13 *Fig. 18.125*

5 C



1 *Fig. 18.126*

2 *Fig. 18.127*

3 *Fig. 18.128*

4 *Fig. 18.129*

5 *Fig. 18.130*

6 *Fig. 18.131*

7 *Fig. 18.132*

8 *Fig. 18.133*

9 *Fig. 18.134*

10 *Fig. 18.135*

5 C.1 is linked by its reverse with 6 B.11.

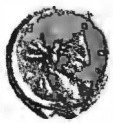
5 D

1 *Fig. 18.136*

2 *Fig. 18.137*

Linked with 1 E and 2 G.

5 E



1 *Fig. 18.138*

2 *Fig. 18.139*

3 *Fig. 18.140*

4 *Fig. 18.141*

5 *Fig. 18.142*

6 *Fig. 18.143*

7 *Fig. 18.144*

8 *Fig. 18.145*

5 F

1 *Fig. 18.146*

2 *Fig. 18.147*

3 *Fig. 18.148*

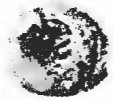
4 *Fig. 18.149*

5 *Fig. 18.150*

6 *Fig. 18.151*

5 G

1 *Fig. 18.152*



2 *Fig. 18.153*

3 *Fig. 18.154*

4 *Fig. 18.155*

5 *Fig. 18.156*

6 *Fig. 18.157*

7 *Fig. 18.158*

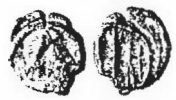
8 *Fig. 18.159*

9 *Fig. 18.160*

10 *Fig. 18.161*

11 *Fig. 18.162*

12 *Fig. 18.163*



13 *Fig. 18.164*

5 G.13 is linked with reverse 6 A

6 *Reverses from very similar dies*

6 A

1 *Fig. 18.165*

2 *Fig. 18.166*

3 *Fig. 18.167*

4 *Fig. 18.168*

5 *Fig. 18.169*

6 *Fig. 18.170*

7 *Fig. 18.171*

8 *Fig. 18.172*

9 *Fig. 18.173*


10 *Fig. 18.174*


11 *Fig. 18.175*


12 *Fig. 18.176*


13 *Fig. 18.177*


14 *Fig. 18.178*


15 *Fig. 18.179*


16 *Fig. 18.180*


17 *Fig. 18.181*


18 *Fig. 18.182*


19 *Fig. 18.183*

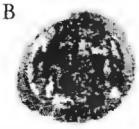

20 *Fig. 18.184*


21 *Fig. 18.185*


22 *Fig. 18.186*

6 A.2 is from the same die as Pushparatnam 2002: 91, Fig. 11, discovered in Kalmunai.

6 B


1 *Fig. 18.187*


2 *Fig. 18.188*


3 *Fig. 18.189*


4 *Fig. 18.190*


5 *Fig. 18.191*


6 *Fig. 18.192*


7 *Fig. 18.193*


8 *Fig. 18.194*


9 *Fig. 18.195*


10 *Fig. 18.196*


11 *Fig. 18.197*


12 *Fig. 18.198*


13 *Fig. 18.199*


14 *Fig. 18.200*

6 B.11 is linked by its reverse with 5 C.1.

6 C


1 *Fig. 18.201*


2 *Fig. 18.202*


3 *Fig. 18.203*


4 *Fig. 18.204*

6 D


1 *Fig. 18.205*


2 *Fig. 18.206*

Link to 4 B.

6 E


1 *Fig. 18.207*


2 *Fig. 18.208*

Fig. 18. Nāimana imitations from identical and very similar dies.

Provenance of the listed specimens

1	A 1	Nāimana?
	A 2	Unknown
	B 1	Unknown
	B 2	Unknown
	C 1	Kosgoḍa
	C 2	Kosgoḍa
	D 1	Nāimana?
	D 2	Nāimana?
	E 1	Unknown
	E 2	Unknown
	F 1	Nāimana?
	F 2	Unknown
	G 1	Nāimana?
	G 2	Nāimana?
	H 1	Ridiyagama
	H 2	Kosgoḍa
	J 1	Mātara
	J 2	Mātara
2	A 1	Mātara
	A 2	Mātara
	A 3	Nāimana?
	A 4	Unknown
	A 5	Mātara
	A 6	Unknown

	B 1	Nāimana?
	B 2	Mātara
	C 1	Mātara
	C 2	Nāimana?
	C 3	Mātara
	D 1	Nāimana?
	D 2	Mātara?
	E 1	Unknown
	E 2	Unknown
	E 3	Unknown
	E 4	Mātara
	F 1	Nāimana?
	F 2	Nāimana?
	G 1	Nāimana?
	G 2	Nāimana?
	G 3	Kandy?
	G 4	Kandy?
	H 1	Mātara
	H 2	Mātara
	J 1	Mātara
	J 2	Mātara
	K 1	Mātara
	K 2	Unknown
	L 1	Mātara
	L 2	Unknown
	L 3	Mātara
	M 1	Lunama?
	M 2	Ridiyagama
	M 3	Nāimana?
	N 1	Kosgoḍa
	N 2	Mātara
	O 1	Mātara
	O 2	Nāimana
	P 1	Mātara
	P 2	Unknown
	Q 1	Ridiyagama
	Q 2	Nāimana?
	R 1	Nāimana?
	R 2	Kosgoḍa
	S 1	Nāimana?
	S 2	Unknown
3	A 1	Nāimana?
	A 2	Mātara
	B 1	Ridiyagama
	B 2	Mātara
4	A 1	Mātara
	A 2	Mātara
	A 3	Mātara
	A 4	Nāimana?
	A 5	Nāimana?
	B 1	Lunama?
	B 2	Nāimana?
	B 3	Mātara
5	A 1	Mātara
	A 2	Nāimana?
	A 3	Mātara
	A 4	Mātara
	A 5	Nāimana?
	A 6	Mātara
	A 7	Unknown
	A 8	Unknown
	A 9	Unknown
	A 10	Mātara
	A 11	Mātara
	A 12	Unknown
	A 13	Mātara
	A 14	Mātara
	A 15	Mātara
	A 16	Unknown
	A 17	Nāimana?
	A 18	Mātara
	A 19	Nāimana?
	A 20	Nāimana
	A 21	Unknown
	A 22	Unknown
	A 23	Nāimana?
	A 24	Mātara
	A 25	Ridiyagama
	A 26	Nāimana?
	A 27	Unknown
	A 28	Nāimana?
	A 29	Nāimana?
	A 30	Nāimana?
	A 31	Mātara
	A 32	Nāimana?
	A 33	Mātara
	A 34	Mātara
	A 35	Unknown
	B 1	Mātara
	B 2	Kosgoḍa
	B 3	Mātara
	B 4	Mātara
	B 5	Mātara
	B 6	Mātara
	B 7	Mātara
	B 8	Nāimana?
	B 9	Nāimana?
	B 10	Kandy?
	B 11	Nāimana?
	B 12	Kosgoḍa
	B 13	Kosgoḍa
	C 1	Nāimana
	C 2	Mātara
	C 3	Mātara
	C 4	Nāimana?
	C 5	Nāimana?
	C 6	Nāimana?
	C 7	Nāimana?
	C 8	Nāimana?

	C 9	Mātara
	C 10	Unknown
	D 1	Unknown
	D 2	Kosgoḍa
	E 1	Unknown
	E 2	Unknown
	E 3	Unknown
	E 4	Unknown
	E 5	Unknown
	E 6	Nāimana?
	E 7	Nāimana?
	E 8	Nāimana?
	F 1	Mātara
	F 2	Mātara
	F 3	Mātara
	F 4	Nāimana?
	F 5	Nāimana
	F 6	Unknown
	G 1	Mātara
	G 2	Mātara
	G 3	Nāimana?
	G 4	Unknown
	G 5	Mātara
	G 6	Mātara
	G 7	Mātara
	G 8	Unknown
	G 9	Kosgoḍa
	G 10	Kosgoḍa
	G 11	Kosgoḍa
	G 12	Kosgoḍa
	G 13	Kosgoḍa
6	A 1	Mātara
	A 2	Mātara
	A 3	Unknown
	A 4	Mātara
	A 5	Mātara
	A 6	Mātara
	A 7	Mātara
	A 8	Mātara
	A 9	Mātara
	A 10	Mātara
	A 11	Kosgoḍa
	A 12	Kosgoḍa
	A 13	Kosgoḍa
	A 14	Kosgoḍa
	A 15	Kosgoḍa
	A 16	Kosgoḍa
	A 17	Nāimana?
	A 18	Nāimana?
	A 19	Unknown
	A 20	Nāimana?
	A 21	Nāimana?
	A 22	Kosgoḍa
	B 1	Mātara
	B 2	Nāimana?
	B 3	Mātara
	B 4	Mātara
	B 5	Mātara
	B 6	Nāimana?
	B 7	Mātara
	B 8	Unknown
	B 9	Mātara
	B 10	Mātara
	B 11	Nāimana?
	B 12	Nāimana?
	B 13	Unknown
	B 14	Unknown
	C 1	Mātara
	C 2	Unknown
	C 3	Unknown
	C 4	Unknown
	D 1	Lunama?
	D 2	Lunama?
	E 1	Mātara
	E 2	Mātara

If we were speaking here of a technically highly developed ancient mint, like a Greek or Roman one, we would interpret this observation as a clear sign of a short but intensive minting process. In such a case, we would suppose the dies to be made of optimal material, the blanks to be of suitable thickness and made of easily workable metal, and the use of hot or cold striking, according to the metal and the composition of the blanks. However, in the case of the Nāimana imitations, things look rather different. The vast majority of the pieces examined were struck on thin to very thin blanks. This, of course, stressed both the dies – most probably made of bronze – and the minter. The latter had to strike with the hammer using greater exertion than in the case of thicker blanks, and the dies also suffered from the lack of a suitable buffer between the upper and lower die. These two criteria shortened the life of the dies, and the upper die in particular would often have needed to be replaced by a new one.

Ancient coin dies were made either of iron or bronze, or of a combination of both these metals. Although we know of Sinhalese iron tools with surface hardening from the fifth century, or even earlier[103], it is highly improbable that ancient, native die engravers used

[103] Hadfield 1912: 163–165, for a hardened chisel (5th century) from Sigiriya and Parker 1909: 551ff., for early iron tools in general.

this material. Compared with bronze, iron is much more difficult to work. The engraver had to cut the intended design of the coin into the burnished surface of the cast die, which afterwards had to be polished and hardened. Mistakes made during the engraving process, and cracks occurring in the dies while minting, could only have been repaired with great skill, if at all. The most effective and economic alternative was to insert a bronze die into an iron shaft (Vermeule 1953/4; Lupu 1967; Walburg 2004). Either these dies were cast using a single model to prepare the moulds for casting, as described when reconstructing the manufacture of Arab dies (Balog 1955: 196), or they were produced by using hubs like those depicted below[104].

19a

19b

Figs. 19a–b. Hubs for the production of dies (19a Celtic, 19b pre-Roman Dacia; not to scale).

The almost identical and easily reproducible bronze dies could be removed from the iron shaft when damaged, cracked or worn and be replaced by a new one; slightly damaged dies were easy to re-cut[105] (see Fig. 20).

In contrast, the harder iron shafts were more suitable for receiving the blows of the hammer than dies made completely of bronze, and were therefore longer-lived. That this method of using multiple bronze dies and re-cutting was indeed used in ancient Śrī Laṅkā, at least from the second half of the fifth century onwards, becomes clear from the many groups of very similar heads and busts on the obverses of the Nāimana imitations.

The upper die depicted (Fig. 21) belongs to the category just described[106]. As in this example, we have to presume that similar Śrī Laṅkān upper dies showed a considerable flat

a b c

Figs. 20 a–c. Almost identical obverses struck with the same, re-cut die.

Fig. 21. Ancient Roman upper die (not to scale).

area around the design, instead of a narrow or bevelled edge, which leaves a raised outer area when minting[107]; this feature is missing from all the imitations.

The similarity already mentioned between the coins' designs might also result from the use of minted imitations as patterns when casting new dies, a method often used in antiquity. This became necessary when the casting mould for the die had been damaged or broken. The number of coins minted using each bronze die can hardly be estimated. It depends on the metal composition used for the dies and blanks, the thickness and size of the coins they were intended to produce, the material mass and condition of the die, the heaviness

[104] 19a: Celtic punch, in trade in 1987 (auction sale Peus 318, 1987, no. 1113; another two Celtic punches were offered two years later (Peus 326, 1989, nos. 22 and 27). For a recently discovered set of minting tools see Ziegaus 2002. 19b: Walburg 2004. Bronze hub that had been inserted into an iron shaft; from pre-Roman Dacia.

[105] Re-cut dies can be observed in at least four different pairs of coins: Walburg 1985: X 15, 16 and 17, X 15, 38 and 39, Walburg 1996: I 2001A, 65 and I 2001B, 29 and two specimens of the [235] complex (figs. 229 and 230).

[106] In trade in the early 1990s.

[107] See the graphs in Hill 1922: 31.

of the hammer blows, and the decision as to whether to heat the blanks or not.

Nevertheless, the die-links and close similarities observed are not only informative in view of the technical aspects of manufacturing the imitations. They also tell us something about the mints employed. Judging from the systems listed above, it is highly improbable that a multitude of mints were active at the same time. The observed die-links and the large number of similar-looking coins – some were certainly overlooked – point to the existence of only one mint or, at the very least, to a principal mint involved. Die-links are not confined to pieces discovered together in the same hoard(s). Links also exist between coins from different hoards. The following hoards, for example, are connected in this way: Nāimana (?) – Lunama (?) – Ridiyagama tank (Group 2 M), Ridiyagama tank – Kosgoḍa (group 2 O), Nāimana – Ridiyagama tank (group 2 R) and Mātara – Ridiyagama tank (group 3 B). A single specimen from Kalmunai is also linked with a coin in the Mātara hoard. The far larger number of connections between similar-looking coins can easily be found among the hoards listed above. Where the chief mint should be sought will be discussed below in the chapter on the place(s) of manufacture.

– The alloys used, the casting of the blanks, and the minting process

The dies obviously suffered from the metallurgical quality of the blanks they were used to strike. An overwhelming majority of the imitations are made of a thin to very thin metal. In the process of minting these thin blanks, the dies became highly strained and were therefore short-lived. For this reason, the die-engravers had to manufacture new, similar-looking dies at short intervals to replace the old, damaged ones. Consequently, as can be observed, there are many more similar than identical designs on both the obverses and reverses.

Judging from their appearance, the metal used to manufacture the imitations was a copper alloy. A wet chemical analysis[108], carried out in 1993 on six coins at the forensic science institute of the German *Bundeskriminalamt* (BKA) in Wiesbaden[109], yielded the following percentages for the main elements of copper (Cu), lead (Pb), tin (Sn) and iron (Fe; Walburg 1994: 329):

	Cu	Pb	Sn	Fe
1)	74.84	22.80	1.83	0.80
2)	73.76	23.26	1.82	0.70
3)	66.90	28.26	3.02	0.80
4)	64.48	27.77	3.46	0.70
5)	64.30	30.43	2.97	0.85
6)	62.97	28.09	2.48	0.67

Additional traces of sulphur (S), silicon (Si), manganese (Mn), zinc (Zn), cobalt (Co), nickel (Ni), arsenic (As), antimonic (Sb), bismuth (Bi), calcium (Ca), cadmium (Cd), gold (Au), silver (Ag), chromium (Cr), potassium (K), sodium (Na), boron (B), and scandium (Sc) were detected. Some of these impurities, like gold, silver and nickel are common components of copper ore (Moesta / Franke 1995: 137).

The fact that coin nos. 1 and 2 show a 10% higher amount of copper than nos. 3 to 6 should not necessarily be taken as circumstantial evidence for a chronological or geographic division between the two groups. Indeed, recent research has shown that the amount of lead in cast blanks manufactured from the same alloy is random (Deraisme / Barrandon 2005) – the difference can be as high as 17%.

In addition to the coins, two pieces of slag from recent excavations at Tissamahārāma were also analysed. They came from an area of the site which the excavators were able to prove had formerly been used for metal processing. This metal, however, had not been used for the manufacture of the imitations. The main elements were copper, silicon, calcium and iron – but there was no lead or tin.

The alloys used for casting the six blanks are known as leaded tin-bronze, composed of Cu, Pb, and Sn, in which the usual amount of lead can be as high as 28% and for tin as much as 10% (Klein 1965: 232; Gowland 1912). Seeing these figures, one is inclined to believe that coins manufactured from such alloys must have been cast. The high percentage of lead within the copper/lead/tin-alloy should

[108] For the problems to obtain reliable data when analysing copper-lead alloys by non-destructive methods see King / Metcalf / Northover 1992: 60–62.

[109] I would like to take this opportunity to express again my gratitude to W. Stoecklein (retired) of the BKA. Without his help this chapter could not have been written and the technical aspects of manufacturing the Nāimana imitations would remain obscure.

make it impossible to strike coins from this mixture of metals. Lead causes the alloy to become brittle, both in its hot *(warmspröde)* and cold state[110]. Therefore, one would think that a cast blank could not have been struck, either cold or warm, without cracking. In the case of some medieval Śri Laṅkān coins, scholars wondered that the local mint workers were able to strike a coin containing 5% lead, whereas two other pieces, "with about 12 per cent. were evidently unworkable, both of these being in the cast state" (Thompson *et al.* 1958: 144). In other cases where scholars were dealing with coins manufactured from comparable copper/lead/tin-alloys all examples without exception were cast[111]. Coins with a high lead content that are known to have been struck are described as showing the same features as the Nāimana imitations: "Hard, very brittle metal with grey fracture" (Brill / Shields 1972: Pb-627 – a coin of Traianus with 21.9% lead). A further set of figures should be mentioned in this context. Codrington (1924: 27) published the results from an analysis of a goddess plaque: lead 59.93%, copper 14.84%, silica (silicon) 0.62%, iron 0.14%, and a trace of nickel. Unfortunately, he did not explain the missing 24.5%, so that we can hardly deduce anything from these data except the fact that the object had been produced by using an alloy of copper and lead with an incredibly high amount of the latter. According to an analyst at the BKA, it is impossible to achieve some kind of heterogeneous copper/lead-alloy from a melt containing more than 36% lead without separation by liquation[112]. At this point, it seemed evident that the Nāimana imitations had been cast and not struck. Nevertheless, further investigations were carried out in the forensic science institute of the BKA. Here, scholars were able to furnish proof that the imitations were in fact struck and not cast[113]. To gain absolute certainty, the *Wieland-Werke* in Ulm became involved in the investigations, and they confirmed the results of the BKA, giving a detailed description of what must have happened in the process of striking the coins. The microstructure of the metal clearly indicates that there was at least one transformation in cold state. The metal may have been transformed repeatedly, interrupted by reheating. This observation is in accordance with the results of another, comparable investigation detailing the steps taken in manufacturing coins from a leaded bronze (Hammer / Klemm 1979: 78–90; Hammer 2000: 541). The metals necessary for the intended alloy were melted together in a crucible placed into a charcoal fire. Using bellows to obtain the necessary c. 1,000° C, the molten alloy was stirred intensively with a wooden stick to guarantee an equable dispersion of the metals, especially of the lead. To prevent the melt from absorbing oxygen, which would cause it to become brittle, it was covered with powdered charcoal while stirring. The high percentage of lead in the Nāimana imitations lowered the fusing point and heightened the fluidity of the alloy, and might be an indication of a shortage of charcoal, making it necessary to use this technique. After the melting came the casting of the blanks. An equable dispersion of the metals[114] was the result of having stirred well, immediately pouring, and quick solidification. As there are no marked layers of lead (*Bleiseigerung*) the blanks could not have been manufactured by cutting pieces from a cast rod. Consequently, they must have been cast separately, in rows, turrets, or trees. This logical deduction is evidenced by the fact that many of the imitations show rough tenons, being the remains of metal from the casting channels (Fig. 22).

This process of fabricating the blanks was still applied in the twelfth and thirteenth centuries, as in the case of the medieval Sinhalese large copper coins (Codrington 1924: 83).

After cooling, the cast was removed from the mould and the blanks were cut or broken off. If not done properly, this could leave either tenons and/or v-shaped or semicircular indentations along the edge of the blanks (Fig. 23).

The blanks obtained through this casting process were slightly thicker and smaller than the sizes of the intended coins and had a rough surface. The next stage in preparing them for the final minting was the flattening of the blanks by hammer blows. This caused the first transformation of crystals and a hardening of the metal. To soften the blanks again they were reheated up to a dark red glow (c. 600° C),

[110] Sachs 1933: 70 and 126. For the following see also Hauptmann / Weisgerber 1985.

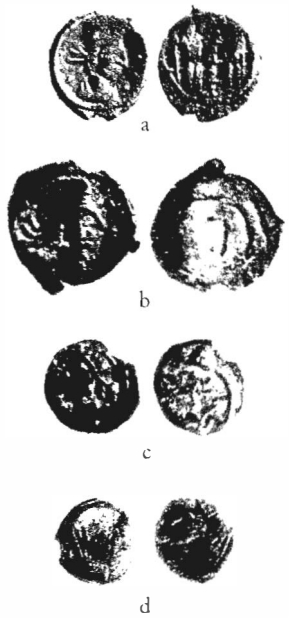
[111] Hammer 1907: 126f.; Crawford 1974: II 572–576; Cowell *et al.* 1993: 185–197; Boon 1965: 163; Ilisch 1993: 174–176; Peter 1990: 86f.

[112] The highest percentage of lead discovered by Brill / Shields 1972: 292, Pb-603, was 36.8%.

[113] The complete and illustrated research report is printed in German in Walburg 1994: 336–340.

[114] This can be observed both in Walburg 1994: 338 fig. 3 and Hammer / Klemm 1979: 74f. figs. 7 and 8.

Figs. 22 a–b. Coins with tenons.



Figs. 23 a–d. Coins with tenons and v-shaped or semi-circular breaks.

causing the second transformation. To get an even surface for the minting, the blanks were flattened again (third transformation) and then reheated again (fourth transformation), followed by sudden cooling. The actual minting process, with the final transformation, took place when the blanks were in a cold state after they had been cleaned from the oxides caused by heating and cooling. This procedure is exactly the pattern described by the *Wieland-Werke* mentioned above: "Da Zwillingsbildung weitgehend durch Kaltumformung <first transformation> mit anschließender Rekristallisationsglühung <second transformation> verursacht wird, die Zwillingskorngrenzen aber später überformt wurden <third transformation>, ist denkbar, daß auch mehrfache Umformungen mit Zwischenglühungen <all transformations> stattgefunden haben" (Walburg 1994: 340).

The final stage was the minting of the coins. In all probability, the classical method was applied, using a fixed lower die and a moveable upper die to strike the coins by hand in the way already described above. Keeping in mind all the technical features of both the dies and the blanks, we are now able to explain a phenomenon which has hitherto misled all scholars when trying to estimate how long the imitations remained in circulation. Many imitations at first sight look heavily worn as a result of their longevity. According to one estimate, Roman æs coins and their imitations remained in circulation probably up to the first half of the seventh century (Codrington 1924: 33). In fact however, many of the imitations were only weakly struck, leaving often extensive parts of the obverse and reverse designs quite sharp, while other parts are hardly visible. These uneven features are scarcely possible for heavily worn pieces, as their design was evenly effaced due to wear. In the case currently under consideration, the local minters were obviously aware of the metal's brittle quality and therefore tried to strike as softly as possible to avoid cracking the blanks. It can also be observed that the upper die was often not placed at a true horizontal onto the blank, causing the same features as the weakly struck coins just described. Therefore, it should be emphasised again that the Nāimana imitations as a whole are not worn out due to long circulation!

– The metals

Closely connected with these various aspects of the minting technique is the question of the availability of the metals. Copper was used in abundant quantities in Śrī Laṅkā throughout the centuries for a variety purposes (Tennent 1860: 388f.). In the sixth century, mention is made of a "boat made of copper" during the reign of Dhātusena (Clv. 38.77). The same king, "set up there <in Anurādhapura> sixteen bath maidens of bronze" (Clv. 38.56); a further proof of the abundance of copper, the main component of bronze. Concerning this metal, the Mahāvaṃsa reports: "On the east side of the city <Anurādhapura>, at a distance of seven yojanas, on the further bank of the river <The Mahaweli Gaṅgā> and near Tambapiṭṭha <literally 'copper-field'>, copper appeared. And the dwellers in the village there put the nuggets of copper into a vessel, and when they had sought the king they told him this matter" (Mhv. XXVIII.16–17). The king mentioned here was Duṭṭhagāmaṇī (101–77 BC). This passage is normally quoted as one of the miracles that occurred in connection to the

building of the Mahāthūpa in Anurādhapura[115]. That the account of the Mahāvaṃsa is indeed trustworthy has been proved in modern times by Śrī Laṅkān geologists[116]. The ancient site of Tambapiṭṭha mentioned in the Mahāvaṃsa can be reasonably located somewhere within the Arippu prospect, centred around Seruwila (Seruwawila, Seruvavila). This town is situated sixty-three miles as the crow flies east of Anurādhapura on the further, i. e. the east bank of the Mahaweli Gaṅgā[117]. The length of the Śrī Laṅkān yojana is estimated to have been from seven and a half to nine miles (twelve to fourteen and a half kilometres) (Rhys Davids 1877: 16, table entries 25–30).

Though copper is not mentioned in the report of the Geological Survey Department, there are some observations made in it that are worth quoting in full:

"3.1 ... The area referred to <in the Mahāvaṃsa> falls on Arippu taking a "Yojana" an equivalent to approximately 13 kms. This record throws some light on past mining activity to the period 77–101 BC during the reign of King Dutugemunu. It is quite possible that this mining activity continued till about the 17th century.

3.2 During the preliminary inspections carried out by the Geological Survey Department old mine dumps and trenches parallel to the regional strike and in line with the mineralized basic rock were observed. An ancient quarry site with vertical faces is seen immediately NE of the 54th M. S. on the Batticaloa – Trincomalee road. A careful examination of the quarry faces has revealed that there are old chistle marks suggesting some past mining activity. Burnt wood encountered at depths of about 9–12 meters in drill holes put down close to this quarry site confirms that there had been some smelting activity in the past. It was also observed that magnetite was strewn close to the old trenches suggesting that the earlier workers had gone for some other mineral apart from magnetite. It is interesting to note that the people engaged in this trade in the past were knowledgeable of beneficiation processes and methods of extraction".

The occurrence of magnetite is a further indication of ancient copper mining at this site since iron ore is often found close to that of copper[118]. This clearly shows that the copper deposit mentioned in the Mahāvaṃsa is not fictional, but has to be taken literally. The wide-spread use of copper mentioned above makes it highly probable that other deposits of this metal existed in antiquity. At Kurunēgala, it is attested by a modern eyewitness that chalcopyrite ($CuFeS_2$), an important copper ore (Hagenbeck 1923: 101), can be found in the graphite mine there. In addition to local sources, one also has to take into consideration the possibility of a supplementary, but in no way exclusive, import of copper from India[119]. Perhaps it was obtained from Kalliana (modern Kalyān, near Bombay/Mumbai), as can be deduced from a reference by Kosmas Indikopleustes: *τῇ Καλλιάνᾳ, ἔνθα ὁ χαλκὸς γίνεται* (Kosmas Indikopleustes XI, 447 D).

The second main component of the alloys from which the imitations were made is lead. According to Tennent, this metal is also mentioned in the Mahāvaṃsa (Tennent 1860: 389, quoting Mhv. ch. XXV). However, Tennent only had at his disposal Turnour's translation of the Mahāvaṃsa, published in 1837. Following this translation, molten lead was used as a weapon by pouring it over attacking enemies. On the other hand, Geiger's translation of this passage, reads *pitch* instead of *lead* (Mhv. XXV.30–31). This is more probable, as pitch has a melting point of 40–85 °C, while lead, on the contrary, has to be heated up to 327.5 °C to melt it.

Lead deposits are unknown in modern Śrī Laṅkā, and they do not seem to have ever existed in ancient Śrī Laṅkā. No written sources are known in this respect and modern archaeological excavations such as those at Tissamahārāma, Sīgiriya, and Māntai have yielded only a few, very small, lead objects. Some new results from the Tissamahārāma excavations however, have given us some important data in this context. Gold working is attested during the first mil-

[115] So, for example, by Tennent 1860: 389 n. 11 and Nicholas 1956: 77 ("but these stories are not to be accepted literally"). Contrary Geiger 1960: § 12.

[116] I am most grateful to F. Barthel of the Federal Institute for Geosciences and Natural Resources in Hannover, who brought to my notice the following instructive publication: D. E. de S. Jayawardena / S. Padmasiri, Preliminary report on the copper-magnetite occurrence at Seruwila, with special reference to the Arippu prospect. Geological Survey Department, Sri Lanka (Ceylon), June 1977 (file no. EM/FE/22).

[117] At least one elephant & swastika coin was discovered there as becomes evident from a hand-written note in Biddell's CCC on p. 21.

[118] I owe this information to F. Barthel (see above).

[119] For the copper deposits in India see Prakash / Singh 1986: 459–461.

lennium[120], and in the course of the refining process, certain quantities of lead and copper were used. It therefore seems evident that lead was imported, but where did it come from? At first, one naturally thinks of the adjacent areas of the Indian Subcontinent as the country of origin. Although it is clear from the surviving coins that lead was used in various regions of India, it is not known which mines supplied the metal. In the Deccan and in Peninsular India, the Andhras and their feudatories up to the fourth century used a generally pure lead for coin production (Mitchiner 1978: 614–622; Elliot 1886: 22f.), and in the Madurai area as well, lead coins were manufactured up to the beginning of the third century (Mitchiner 1978: nos. 5019–5023). Galena ore is reported in the region of Zawar, fifteen miles south of Udaipur in Rājasthān (Brill / Shields 1972: 301 [Pb-249]), and further deposits exist in the Sarigipalli-Dhumohalli area of Orissa and in the Kadapa basin of Andhra (Reddy 2004: 29). However, there is no proof for an Indian origin of the lead used in the production of Nāimana imitations. Lead isotope analyses of Satavahana and Ikshvaku lead coins have shown that even these indigenous Indian specimens were not manufactured from metal supplied from the deposits mentioned above (Reddy 2004: 29f.). Another possibility was pointed out in a recent publication dealing with finds of cultural material in the Tissamahārāma region, where a comparatively large number of lead objects have been found (Bopearachchi / Wickremesinhe 1999: 17, 19, and 32f.). The authors point to a probable import of lead from Southeast Asia, especially from Thailand, as ingots in the same ring form as one discovered at Tissamahārāma have also been found there (Bopearachchi / Wickremesinhe 1999: item no. M.52 and p. 33).

The dating of these ingots proposed by Mitchiner is not entirely helpful as they vary from c. 200 to c. 1350 (Mitchiner 1978: nos. 5323–5329, 1979: nos. 2612–2616; 1998c: 30, nos. 10–14). If some of these rings, however, should indeed date to the early part of this range (c. 200–600; Mitchiner 1998c: 29) these imports from Southeast Asia may well have been among the raw materials necessary to produce the contemporary Nāimana imitations.

The 'inscribed coins' (see chapter 3.2.3), allegedly datable from the second century BC to the second century, are in fact tokens of uncertain date, and are not made of pure lead as suggested in the publication on them (Bopearachchi / Wickremesinhe 1999: 15 [date] and 17 [metal]) but probably of a high lead bronze. These 'coins' were first reported in 1996, and in regard to the metal used the author writes: "The coins observed were alloy of high amount of lead mixed with few copper"[121]. This observation is supported by another writer (Lingen 2000: 6) who speaks of a "lead alloy". However, in this context, it is important to recognise the obviously high amount of lead used to manufacture these tokens. To sum up, we can assert that both copper and lead must have been available in significant quantities.

Explaining the presence of the third main element within these alloys is somewhat more difficult. Tin was obviously never a native product of Śrī Laṅkā or of the Indian Subcontinent in ancient times, though it is said that in 556, king Kittisirimegha covered the house of the bodhitree with tin plates[122]. Interestingly, the provenance of tin is often passed over in silence by modern authors[123]. In antiquity, tin ore was obtained mainly from England and Spain, while in modern times the main deposits are located in China, Thailand, Malaysia, and Indonesia. From where, and by which routes, ancient civilisations were able to get their tin is uncertain. Besides England and Spain, some minor deposits are known in France, Greece, and in the Near East[124]. In analogy to the lead, we should probably assume it to be an import from Thailand, as prior to the thirteenth century the Malay Peninsula was the principal source of Asiatic tin (Blanchard 2001: vol. 1, 18 and vol. 2, 899–901; Jacq-Hergoualc'h 2002: 66f.). More generally, we should assume a Southeast Asian provenance for this metal, although a possible western origin cannot be entirely discounted. In this respect it is worth mentioning that in Roman times tin was traded from Britain to Palestine and Egypt[125]. From there, the metal may have found its way to

[120] Rehren 2001.

[121] Jayasinghe 1996. As far as can be seen, no metallurgical investigations were carried out until now.

[122] Clv. 41.65. Referring to this passage, Geiger himself later cautiously stated that "The metal called tipu may be lead or tin" (Geiger 1960: § 12).

[123] For example Tennent 1860, Elliot 1886, Codrington 1924, and Prakash / Singh 1986.

[124] Riederer 1981: 26. According to a newspaper article (*Die Welt*, 5.1.1994) the remains of a Bronze Age tin mine were discovered in Turkey.

[125] Casson 1998: s. v. *tin* and 27–29, dealing with the trade of metals as narrated in the *Periplus Maris Erythraei*. Drexhage 1998: 198f. and Haldon 2005: 33, for the tin trade between Roman Britain and the eastern parts of the empire.

the Indian Subcontinent, in the same way as the Late Roman coins (see *part IV* below). The working of this metal from early times is evidenced in Śrī Laṅkā by the existence of the profession of tinsmith[126]. The low percentages of tin represented in the analyses seem to indicate that this metal was either unobtainable in larger quantities, or that it was not intended to be used in large amounts, even though it was possible to do so. Coin nos. 1 and 2 seem to have been manufactured from a different composition than the remaining four pieces, which form an homogeneous group.

The very low but regular proportions of iron indicate that the copper was most probably obtained most from a single source, as iron is often found as an associated ore *(Begleiterz)* with copper, as mentioned in the report quoted above.

In this discussion of the mineralogical content, it should also be mentioned that during the course of archaeological excavations at Pomparippu, Puttalam Dist., NWP, several copper objects were unearthed in Iron Age burials. Five of these tested positive for copper, lead and tin, and a sixth for copper and lead only. Unfortunately, these burials could then not be dated (Begley *et al.* 1981: 80f.).

From the analytical data, it is evident that in all probability, native metalworkers were able to use pure metals and to choose the alloys deliberately. The second possible method of producing the blanks however, was simply to melt down scrap metal of whatever kind was available. To explore this possibility, we should try to get an impression of the quantities of metals necessary for the production of the known, and estimated, numbers of Nāimana imitations. Since last writing on this topic in 1994 (Walburg 1994: 333), the number of reliable new findings has barely increased, so that the numbers used previously can still be applied in the present study. If we accept at face value all possible reports and data concerning finds of imitations (including the doubtful ones), we get a figure of approximately 10,000 specimens unearthed between 1887 and today (in fact, the number of definitely confirmed coins is only about 3,800). Generously quintupling this number to include those coins that might reasonably be discovered in the future, we arrive at a total of c. 50,000 imitations. This is, of course, a purely hypothetical and academic assumption; the true number of imitations produced will certainly never be known[127].

The average weight of the imitations can be given as 1.4 g (based on a sample of 150 coins). Taking into consideration a certain loss in weight due to wear and corrosion we can safely calculate an average original weight of 1.5 g.

The analysed alloys consist roughly of:

a) three quarters of copper + one quarter of lead

50,000 pieces × 1.5 g = 75 kg : 4 = 18.75 kg
= 56.25 kg of copper + 18.75 kg of lead

b) two thirds of copper + one third of lead
50,000 pieces × 1.5 g = 75 kg : 3 = 25 kg
= 50 kg of copper + 25 kg of lead

These quantities could easily be obtained by melting down a single or several large metal objects, such as broken bells or damaged statues, and no mining would have been necessary to get the metals required for minting coins. Assuming that scrap metal was used, one could therefore explain the relatively high and irregular percentages of tin as being derived from the melting down of locally made or imported bronze objects. Maybe we have to assume the use of a mixture of both scrap and pure metals[128].

Finally, an additional method of obtaining lead shall be described which might be of interest. Lead is very often a residue in the process of silver refining. Normally, silver does not occur in a pure form but is imbedded in other minerals, chiefly lead. Hence, the silver deposit described in the Mahāvaṃsa (Mhv. XXVIII.20–35), with its lumps of silver, cannot in fact be taken literally, but only as an indication of the existence of silver deposits

[126] Paranavitana 1970, inscription no. 370, datable only roughly from the third century BC to the first century.

[127] For a discussion of the pros and cons of statistical and empirical methods in calculating the real coin output see Füeg 1997.

[128] Another procedure to obtain the necessary metal to manufacture imitations is known from ancient Gaul and Britain (Bastien 1985: 146). Elder coins that had been withdrawn from circulation because they were not current anymore were melted down. This method can be definitely excluded in case of the Nāimana imitations. In fifth century Śrī Laṅkā there had been no bronze coinage prior to the Roman that could have been used as raw material.

and silver mining in antiquity, as explicitly ascribed to the island by Ptolemaios in the second century: "*μέταλλα παντοῖα χρυσοῦ καὶ ἀργύρου καὶ τῶν ἄλλων·*"[129]. More than one and a half millennia later, in 1724, Valentyn narrates: "It is said that in the interior of the country there is also gold and silver but that the Emperor will not have them mined" (Arasaratnam 1978: 183). After the refining process, a comparatively high amount of lead is left, keeping in mind that an ore containing 0.5% of silver is regarded as very rich and everything above 0.2% is considered good (Moesta / Franke 1995: 60). The silver mine (or mines) of ancient Śrī Laṅkā was not very productive. Locally produced silver coins are confined to small ingots intended to imitate Indian punch-marked coins. The pieces so far unearthed are scarcely of silver at all, but are mainly silver-plated æs cores (see for example the hoard of thirty-two plated specimens from Tissamahārāma/Niyadella). Silver remained scarce in Śrī Laṅkā. This is evident from the extreme rarity of mediaeval silver coins compared with the abundant quantities of copper and gold coins found. In the third quarter of the seventeenth century, gold and silver mines are reported from hearsay, stating that the kings did not want to have these metals dug: "auch saget man von Gold- und Silber-Minen/desgleichen von Eisen/und anderen Metallen/und daß die Könige solche nicht wollen ausgraben lassen" (Baldaeus 1672: 426). Instead of the method of plating used in antiquity, the mediaeval minters applied the method of silver washing to the freshly struck copper coins to give them the appearance of silver. In this case, the silver may have been part of the residue left during the process of copper refining, as silver may also occur in copper ore. In fact, silver was detected as a trace element when analysing six Nāimana imitations (see above) and two mediaeval Śrī Laṅkān copper coins (Walburg 1994: 338). The possible relations described between the metals in question cannot be proved as having really existed in ancient Śrī Laṅkā. So far, we have no definite proof of the occurrence of lead on the island, or of silver either, but this does not necessarily mean that there was no lead mine in antiquity. Perhaps, after having been exhausted, it was given over and the remaining traces of ancient mining have not yet been discovered. Here, the report concerning the Arippu prospect mentioned above should be remembered. Without it, the passage in the Mahāvaṃsa referring to deposits of copper would also be regarded with scepticism.

Fig. 24. Coin from the alleged Lunama hoard (enlarged × 2).

As a result of the investigations concerning metallurgy, we can state that:

- copper was available in Śrī Laṅkā
- lead was most probably imported from India or Thailand
- the origin of the tin is unknown; it was perhaps imported from the Malay Peninsula (or even from the western world)
- scrap metal may have been used
- gold and silver were available in Śrī Laṅkā

3.1.6.3 Iconography and epigraphy

Imitations – and it makes no difference where they are found – are always looked at with a certain kind of disdain. At best, a limited degree of artistic value is attached to them. In all my articles dealing with the Nāimana coins, I have tried to show that they are not as insignificant as they may seem, and that it is worthwhile to study them in more detail.

At first sight, the imitations' pictorial compositions are of little interest. The obverse shows either a head or a bust looking to the right or left. Normally they are bareheaded or wear a diadem – or occasionally a helmet. Busts are shown either with a cuirass or draped, in exactly the same way as their Roman patterns. A lined, double-lined, dotted, or serrated circle surrounds the picture.

A striking artistic parallel can be traced between a head depicted on a coin and a seal impression discovered at Tissamahārāma (Bopearachchi / Wickremesinhe 1999: K.1). The coin is part of a hoard allegedly unearthed at Lunama, four kilometres west of Goḍavāya, and thus not far from Tissamahārāma itself (Fig. 24).

[129] Geographia 7.4.1. See also Geiger 1960: § 12, who assumes that there must have been gold, silver and copper mining in ancient Śrī Laṅkā.

Even the detail of the trident-like object in front of the lower part of the face is clearly visible on both objects. The sharp, circular impression and especially its size, which corresponds to the coin's diameter, suggest that a coin die was used to make the sealing. Alternatively, if we assume that a separate seal matrix had been made in terracotta, it must then have been modelled by using a coin like the one depicted. As a third possibility, it can be argued that the same artist who had cut the coin die could also have carved the seal into stone, wood, bone, or ivory. However, from its total appearance, it seems most likely that the impression was made by using a coin die. A second sealing of comparable type, also showing a 'Roman' head, is said to have been discovered in northern Śrī Laṅkā (Pushparatnam 2002: 90 fig. 10).

While the obverses are exclusively imitative, the reverse designs can be divided into imitation Roman on the one hand and local invention on the other. The border-line between the two groups is sometimes barely visible. The more important group is the second, showing some interesting parallels with other kinds of symbolic representations. These mainly occur as part of rock inscriptions or on pottery, in both cases being called 'symbolic graffiti'. Their meaning is still being debated. The most dominant of these symbols is the swastika, which is found all over India and Śrī Laṅkā. It is just this wide-spread occurrence that makes the interpretation proposed by Paranavitana impossible (Paranavitana 1970: xxv f.). He argued that the swastika had the phonetic value of *Tiśa*, quoting as proof two coins of the Kuṇindas in the Himalayan region (Allan 1936: 159 nos. 1 and 3). The second coin, where the two akṣaras for the word *Tiśa* are replaced by a swastika, is only a solitary specimen in a group of sixty-nine coins of the same type, struck in silver and copper. Therefore, this interpretation does not sound very convincing[130]. The swastika, the wheel or sun symbol, and the cross are found, sometimes in combination, on early dedicatory religious inscriptions (Paranavitana 1970: xxvi nos. 1, 20, 35, 37). Other symbols known from coins are sometimes scratched into ancient pottery. Besides the well-known swastika and the cross, a line pattern and a star-like symbol occur on both coins and pottery[131]. Some of these symbolic graffiti, like the swastika, the star, and the line pattern, date back to the third millennium BC. A less common pattern is one that shows concentric circles. It is found on coins and in a rock carving at Anurādhapura where it is said to represent an ancient fifth century Buddhist 'map of the world'[132], with the mythical Mount Meru at its center. Tiny circles with a cross superimposed, which Bell identified as the astrological symbol of the earth, are also part of this picture. This design closely resembles the cross-within-circle motif of the Nāimana imitations. Another depiction of this kind is known from twelfth century Paṇḍuvasnuvara (CAR Archaeology 1952: G 19 f.).

The proposal formulated above, demanding a more detailed study of these coins, applies especially to the inscriptions found on them. It has been argued before (Walburg 1985: 47) that the visible signs should not be universally dismissed as merely imitative Latin legends, as argued by one of the early numismatists:

"Evidently the craftsmen who manufactured the coins had no knowledge of the Roman writing, for the inscription round the head is replaced by various makeshifts, which serve to fill the coin, and which indeed at a little distance or in worn specimens give quite the effect of letters. In some specimens the writing is represented by a series of small stars, in others by rows of dots or of the figure 1, and yet another by a serrated line like a piece of string knotted at short intervals" (Still 1907: 167).

This characterisation has been repeated constantly throughout the decades up to our own time (Bopearachchi 1990: 81). In fact, things look very different. The majority of the known Nāimana imitations have no traces of lettering at all, some show signs like those described above, while the form of the others calls for our attention. Once led to believe that there might be readable inscriptions represented on the coins, we then have to ask about possible scripts and languages. The script can be easily identified by surveying other contemporary

[130] See also Coningham *et al.* 1996: 90, for earlier attempts to identify graffiti as a kind of script and passing over Paranavitana's proposed solution with silence.

[131] Deraniyagala 1972: 123 f., nos. 1 (cross), 31 (line pattern), 54 (star), and 55 (swastika). 31 = Walburg 1985: pl. 10.156; 54 = Walburg 1985: pl. 7.98 and 1996: pl. 97.

[132] Codrington 1924: 47, no. (12) and Walburg 1985: pl. 128 and 129 (coins); Bell / Bell 1993: 127 f.

inscriptions as a primary source. Up to the fifth century, all Sinhalese inscriptions were written in the Brāhmī characters of the Aśoka inscriptions. Thereafter, the characters became more rounded or cursive and were executed in a more casual manner (Geiger 1900: 17). There is no reason to believe that another script was used on coins than those employed for inscriptions, and therefore the characters found on the coins are most probably Aśokan Brāhmī as well. The possible languages of fourth to fifth century Śrī Laṅkā are either the Sinhalese Prakrit or Proto-Sinhalese of the inscriptions, or the Pāli of the chronicles (Geiger 1938: 1–4). Knowing this, the 'imitated Roman legends' must be studied more carefully. This is even more important, as some Latin and Brāhmī characters have the same form:

Latin	*Brāhmī*
E	ja
C	ṭa
O	ṭha, or e
D (normal and inverted)	dha
T (inverted)	na
I	ra
V (inverted)	ga
L	u

These few examples are confined to a comparison between Latin and Aśokan Brāhmī. The later Brāhmī script offers some additional similarities with Latin characters (Bühler 1896: pl. II and III). However, it must be emphasised here that by no means all, recognisable signs should be interpreted as intended Brāhmī legends. In view of the above-mentioned formal comparisons, it is very difficult to decide, if at all, what was intentional script and what was merely imitation. This problem is aggravated by further possibilities such as incorrect writing, omissions or reduplications.

At first, a compilation of the recognised forms will be given[133]. As this script runs principally from left to right, the legends have been read in analogy to contemporary Roman coins, i. e. starting at the lower left and running clockwise to lower right, the characters being based and aligned with the centre of the coin. However, some of the lithic records are written from right to left, so we must also take this possibility into consideration for the coins as well. Particularly problematic are those designs where akṣaras are placed within the four quarters left by the frame of a cross, because in these cases it is very difficult, if at all, to decide where to start reading and in which direction (Fig. 25).

The most unambiguous of the expressions used is found on coin nos. 7, 3, and perhaps 2. Here we read *dāna* and most probably a misspelling of *mahādāna*. In Pāli, a *mahādāna* is, "the great gift (to the bhikkhus) a special great offering of food & presents given by the laymen to the Buddha & his followers as a meritorious deed, usually lasting for a week or more", whereas *mahādhana* simply means "(having) great wealth" (PTS 526). *Dāna*, the offering of gifts to a monk or to the *saṅgha* in general, is the most eminent meritorious act in the Buddhist faith[134]. Interpreting the cross on coin no. 7 as an akṣara, we may consider the reading of *danaka* = "what is given" or "to be given" (Paranavitana 2001: 338, s. v. *dana* 2).

Coin no. 1 perhaps preserves the term *mahāpāda* or *mahapā*, meaning 'prince royal' (Geiger 1960: § 115). Likewise, we might consider the reading *mahāpūja*, a sacrificial festival in honour of a sanctuary or a relic (Geiger 1960: § 197). It is not possible to decide with certainty whether there is an akṣara in the fourth corner. In the first compartment there is an additional word, *dha jha*, which is probably a misspelling of *dhaja*[135]. These are flags used as sacrificial objects during *mahāpūja*.

Telā on coin no. 8 may stand for *tela*, meaning 'oil' (PTS 307). This could be an allusion to the burning oil used in temples. Donations of money to monasteries were made, "for defraying expenses on account of oil for lamps" (Paranavitana 2001, inscription no. 147.2).

All the other syllabic sequences are too fragmentary and unintelligible to allow even a moderately convincing reading or interpretation. Therefore, this part of the chapter dealing with epigraphy is mainly intended to

[133] References are referring to the published and illustrated pieces in Walburg 1985 and Walburg 1996.

[134] PTS 318; Geiger 1938: §§ 38.11.2 and 57.2: *dana* = wealth (P. *dhana*); Geiger 1960: § 126: *dana* = giving of alms. According to Hettiarachchi 1990: 69, *dāna* = alms in form of a meal, in a religious context; used in an inscription dating from the second half of the fourth century (EZ III, 178 and commentary on p.186). For the modern meaning of *dāna* in the Buddhist faith see Humphrey 1992: 109.

[135] According to Kurunaratne 1984: 10 and 21, *jha* when replaced by *ja* never again occurs in inscriptions. But from Geiger 1960: § 195, it is evident that *jha* was used in even much later times.

1

ma | *hā or ha* | *pā* | ? |[136] in the four quarters of a cross, and *dha jha*[137] additionally in the first quarter

2

ma | ? | ? | ? |[138] in the four quarters of a cross

3

ma | ? | *dham* | *na* ? |[139] in the four quarters of a cross

4

ga . . . gu - bhā sam u ga . . .[140]

5

ga ka . . .[141]

6

sam u ta tham u . . .[142]

7

ka (or a cross?) - *dā na*[143]

8

te lā[144] (in the form of a monogram)

9

tha - ka (or a cross?)[145]

10

. . . - dha ta ga[146]

11

ga ya/ja ro[147]

12

jha[148]

13

o[149]

Fig. 25. Coins with readable akṣaras.

[136] Bühler 1896: II,XX/32 | II,VIII/40 or II,XIX/40 | II,XIX/28 | ? |.
[137] Bühler 1896: II,IXI/21 | II,VI/16.
[138] Bühler 1896: III,VI/30 . . . Later Brāhmī, on and after the second century.
[139] Bühler 1896: III,XIV/30, . . ., III,XIV/24, III/XIV/25 ? Later Brāhmī, on and after the second century.
[140] Bühler 1896: II,II/11 . . . II,IX/11, II,II/31, II,II/37 (specular), II,III/5, II,II/11 . . .
[141] Bühler 1896: II,II/11, II,IV/9 . . .
[142] Bühler 1896: II,II/37 (specular), II,III/5, II,VIII/18, II,IV/19, II,III/5.
[143] Bühler 1896: II,II/9, II,IX/20, II,XI,27.
[144] Bühler 1896: II,XX/23, II,/33; tela = 'oil' (Geiger 1960: § 34).
[145] Bühler 1896: II,VI/24, II,IV/9.
[146] Bühler 1896: II,VI/26, II,II/23, II,VI/11.
[147] Bühler 1896: II,XVI/11, II,XVI/33 | II,XVI/15, II,XVI/34. No Aśoka-Brāhmī, but contemporary.
[148] Bühler 1896: II,VI/16.
[149] Bühler 1896: II,IXI/17. Later Brāhmī, c. 150 BC.

encourage linguists to take a closer look at these coins.

An interesting parallel from South India should be mentioned here. A so far solitary imitation of a Late Roman *solidus* is reported from Karnātaka (Mitchiner 2004: 4917). The pattern – a facing bust and the figure of Victory with a long cross – was first struck by Theodosius II between 420 and 422, and later by his successors from 450. The reverse side of the imitation shows a pseudo-legend which, according to the author, is written in fifth century Southern Brāhmī characters. This clearly proves that contemporary Brāhmī legends started to occur on locally manufactured, imitation Roman coins, both in South India and Śrī Laṅkā, at about the middle of the fifth century.

3.1.6.4 Place(s) and time of manufacture

As expounded in detail above, the die-links indicate that there was probably only a single mint, or at least a main mint for manufacturing the imitations. Hoard evidence suggests that this was situated most probably in or near Mātara[150], i. e. in the extreme south of the island. Here, in what is thought to have been the Indo-Śrī Laṅkān emporium or 'port of trade' (see for details the analytical section at the end of this monograph), people were accustomed to using the Roman coins they had acquired from various sources of income: participation in trade, harbour duties, porterage, and the selling of food and water to the crews and merchants of the Indian trading vessels[151]. According to the definition of a 'port of trade', a mint can form a key part of its infrastructure (Möller 2000: 23).

A far-reaching customs procedure, known as the *bandar* system, is documented from the Malabar Coast in the fourteenth century (Polanyi 1963: 43f., based on Ibn Baṭūṭā). After having been forced by warships to put into a certain harbour, the foreign merchant vessels were visited by customs officers. These were empowered to select a part of the cargo, which they bought by determining the prices themselves. The goods were afterwards resold for a higher price so that the treasury benefited from this procedure. The term *bandar* in Persian means 'harbour', and the Sanskrit term *bhandāra* denotes 'treasury, storehouse, magazine'. In a Śrī Laṅkān context, we find the title *bhandāgārādhikārin*, the 'inspector of the storehouse' (Geiger 1960: § 130). This inspector or treasurer may also have been responsible for the supervision of the port of trade, as was argued in the above-mentioned example of *bandar/bhandāra* (Polanyi 1963: 44).

Contrary to the one-mint-only theory, the size of the coins might lead to the assumption that they were struck in at least two different places. Two sizes of blanks are clearly discernible; a 'normal' one and, compared to this, a smaller, or much smaller, variety. These two sizes simply mark the outer limits, with a large number of additional 'floating' sizes in between. Analogous to this, and of course unusual for a normal currency, are the obviously unsettled and varying weight of the coins. We find pieces of 0.2 g as well as those weighing 3.31 g, with an unbroken series in between, in which each tenth of a gram is represented. Either they were accepted nominally, despite their different material value, or payments must have been made by weight. The contemporary use of different coin sizes is evidenced by the Mātara hoard [**144**], where all the sizes are present. Keeping in mind the dense net of die-links and very similar looking pieces, an alternative explanation to the normal hypothesis of a multitude of mints seems to be required. The diminishing size of the blanks may simply point to a scarcity of the necessary metals, and – having reached the final, minute size – to an early end of the minting. The statistics seem to be in favour of this solution, as there are far more normal and medium sized coins than the small or very small pieces (Walburg 1985 and 1996). The criterion of style also supports the reliance on only one mint, or at least points to the location of the principal mint. Though different stylistic groups can be discerned, these are nevertheless mutually connected by die-links. Thus, we have every reason to believe that it

[150] King 1996: 241, when dealing with Roman copies in Europe, also argues that the place of manufacture must be sought in areas where finds of copies are concentrated. When mentioning the alleged Lunama hoard, and without giving any argument, Bopearachchi (2001) simply states that these pieces had been, "fabriquées sur place", i. e. at Lunama.

[151] A somewhat unorthodox interpretation of the supposed existence of imitations can be found in the proceedings following the three papers of Still in 1907. Here, C. M. Fernando states that: "The Romans had a military outpost in South India; and may be the Naimana coins were a local coinage at that military outpost" (JCBRAS 19.58, 1907: 215). This need not to be discussed further.

was either in Mātara, Hittetiya, or Nāimana – or in the close vicinity of these places – that the imitations were manufactured in a central mint after the inflow of genuine Roman æs coins from South India had ceased, at around the middle of the fifth century. The correctness of this assumption, and the final decision as to whether there were one or more mints, can only be proved by comparing coins unearthed in the Mātara / Nāimana region with those discovered far away from this area. Unfortunately, the only hoard that could be used in this respect is unsuitable. The coins of the Mihintalē hoard [**35**], consisting of fifty-six imitations and one Roman sample, were in such a bad state of preservation due to corrosion that even the determination of types was possible in only a very few cases. Instead of an indisputable link, only a probable one can be quoted. Although inconclusive, it should be pointed out that two pieces of the Mātara hoard [**144**] are connected by identical obverse dies with two coins that were bought in the 1960s in Kandy [**111**]. Another example from the Mātara hoard [**144**] is linked by its reverse with a coin discovered in Kalmunai [**52**].

There is one final observation to be made in regard to the different styles of design on the reverse side of the imitations, and which is central to determining the time of their manufacture. There are two clearly distinguishable classes of reverse design: The first is a more or less faithful copy of the Roman pattern, while the second shows individual, local motifs. Despite the many Roman patterns that were available to the native die-cutters, they nevertheless chose two favourite designs. The first is a Constantinian reverse showing two soldiers with a standard between them. The second design is of fifth century date, showing a cross within a wreath. Obviously the local artists had less difficulty in cutting these simple linear and static designs into the later metal dies than more complicated compositions like a soldier spearing a fallen horseman. The second class consists of coins with independent reverse designs having nothing in common with those of Late Roman Æ 3 and Æ 4 specimens. From the logical point of view, one would assume that the class one coins were made first, and then followed by coins of class two. In this case, one would have to postulate a constant decline in artistic skill, ranging from faithful copies to unintelligibility. This, in turn, would imply a chronological sequence. The point of transition from class one to class two must thereby have been the Roman Æ 4 'cross within wreath' design; ranging from a good imitation, via a cross within a wreath or circle, a cross within straight or paddle-wheel like lines, and the same without a cross, to a large cross, various wheel ornaments (sometimes identified as *dharmacakra*) a swastika, and finally mere lines. The transition must then have taken place sometime after 422, the first year the Roman pattern was struck. Keeping in mind this hypothetical chronological sequence, it is evident that specimens of class one could only have been created after the Roman prototypes had reached the island, for example:

- after 335 for *gloria exercitus* (two soldiers)
- after 351 for *fel temp reparatio* (falling horseman)
- after 383 for *salus reipublicae* (Victory/captive)
- after 403 (or 406) for *gloria romanorum* (three emperors)

This sequence of classes one and two appears convincing, but in reality the facts differ totally from this assumption. Obverse die-links between both groups definitively prove that both are contemporary. For example, a *gloria exercitus* reverse shares the same obverse die with a wheel-diagram reverse, and although the two coins figured above as 18.44 and 18.55 were struck from the same obverse die, one has a *gloria exercitus* reverse while the other shows a cross-within-wreath design. Consequently, both pairs must be of late date. This observation is in perfect accordance with the historical events and, what is more important, with the archaeological data obtained from the Tissamahārāma excavations. Here, neither Roman coins nor their imitations were discovered in layers datable to before the fifth century. In relevant numbers, imitations only occur in layers dating from the mid-fifth to seventh century. For this period of one and a half centuries, we have up to now about 3,800 definitely confirmed specimens; that is to say, on average, about twenty-five coins per year, if we assume a constant minting schedule. This, however, is impossible, both from the numbers themselves and, more significantly, from the tremendously dense network of observable die-links, the large number of very similar-looking coins, and the number of dies that had been re-cut. At all events, these indicate a short but intensive production within a

confined area. Thus, the minting of imitations must have already ceased by the end of the fifth century. A further chronological clue can be gathered from the following observation: Although discovered in the same geographical region, hoards of genuine Roman coins and of imitation coins are always 'pure' hoards. This means that specimens of the two categories are never found together in a 'mixed' hoard (Walburg 1985: 43). This contrasts with Roman Britain, for example, where, in the third century, the currency consisted of genuine and imitation pieces circulating side by side: A further example would be Egypt in late antiquity. This consequently means that the imitations were not produced to increase the amount of money in circulation for economic reasons, but rather to replace the accumulated, genuine Roman coins that – for whatever reason – had disappeared from circulation. As Roman hoards normally close at about the middle of the fifth century, the production of imitations consequently began around 450.

In discussing the possible minting locations we have to consider Tissamahārāma as another candidate, and to weigh the apparently contradictory data so far obtained from this site. Presuming, theoretically, a widespread use of coins as media of exchange, it would naturally be justified to expect the existence of a mint in, or very close to, the capital city of Rohaṇa, thereby serving its need for money. Indeed, some of the archaeological data appear to support this assumption. Firstly, we have the seal impression from Akurugōḍa that was most probably fabricated by using a coin die (see Fig. 24). Secondly, the German excavations have yielded evidence for some kind of industrial metal-working, beginning far earlier than the date of the Nāimana imitations. Due to the long lapse of time between the date of the furnaces and the date of minting the imitations, the different results obtained for the first comparative analysis of bronze slag from the furnaces, and the metal the coins were made from, is of little significance (Walburg 1994: 338).

Bronze processing was carried out alongside iron working, as attested by large quantities of iron slag[152]. Besides other tools, the iron shafts for the coin dies could also have been manufactured at Tissamahārāma as well. Deposits of iron ore, in the form of hematite pebbles, are reported from alluvial gravels in the Kirindi Oya, just four miles northwest of Tissamahārāma[153]. These supporting arguments in favour of the existence of a mint in the fifth century seem to be balanced however by contradictory data. No single, large hoard of imitations comparable to those from the Mātara region has hitherto been found at Tissamahārāma or in its close vicinity. Only eleven imitations have so far been unearthed there during the entire course of excavations up to the year 2006. That there was however an obvious need for money for religious donations is confirmed by the finds at Debarawewa [**195**] and Uduwila [**198**], both close to, or inside, a vihāra. Thus, large finds of imitations within these areas are to be expected. Taking into consideration all these arguments, there is a strong possibility of the former existence of a mint at Tissamahārāma as well. In this context, we may look briefly to late Iron Age Europe, where in some places mints were founded in sanctuaries, and it has been argued that the devices on some coin types are evidence for the manufacture of these specimens especially for ritual purposes[154].

Here, a rather remarkable hypothesis concerning the creation of the imitations should be mentioned. It is embedded in the *Sihigiri-vitara*, allegedly written by Ānanda-sthavira, a scholar active in the mid-fifteenth century. The original "Story of Sigiri" was supposedly preserved only in the so-called interlinear inscriptions, found incised into several stone pillars and plates. The opponents of Ānanda-sthavira are alleged to have afterwards overwritten these inscriptions[155]. Although of some length, the passage referring to the coins shall be quoted in full:

[152] Weisshaar *et al.* 2001: 24 f. As early as 1884, Parker noticed at Tissamahārāma, "the large number of nodules of kidney iron" (Parker 1884: 61). Baldaeus 1672: 426, gives an eyewitness report that iron was obtained from Śrī Laṅkān soil.

[153] Oliver / Erb 1957: 28. The main deposit of iron ore in this area is the belt of country between Mātara and Akuressa (12 miles northwest of Mātara): Cook 1951: 74. Valentyn already included iron as a native mineral in 1724 (Arasaratnam 1978: 183).

[154] Haselgrove / Wigg-Wolf 2005: 12 f.

[155] Concerning the 'interlinear inscriptions' discovered and deciphered by Paranavitana in 1972, Indrapala (1979: 160), remarked that: "So far no other scholar has claimed to have read these 'interlinear inscriptions' ... In the past few month he <i. e. the author> has spent considerable time in examining some of the stones mentioned by Dr. Paranavitana ... but he has failed to see the interlinear writings that Dr. Paranavitana refers to".

a b

Fig. 26 a–b. Æ imitations of probable Indian origin. Struck from the same pair of dies.

Fig. 27. Gold Nāimana imitation (rubbing) from the Biddell documents (enlarged, not to scale).

"'Many of the goods that can be sold to merchants from abroad', continued the Saṁghasthavira, 'can be had for nothing or at a trifling cost in the villages of the Siṁhala kingdom. ... Those goods and others like them, can be had without paying anything by ordering the headmen of villages to collect and send them. But it would be desirable to give something to the villagers also, to receive their ready co-operation in collecting them. Formerly, the agents of the merchants from the Roman empire (Roma-rājya) went to the villages in the Siṁhala kingdom and gave token coins (śalākas) of copper, struck in imitation of the gold coins of the Roman empire, in order to purchase spices such as pepper. The villagers, in their turn, used these token coins for buying such goods as salt, glass bangles and glass beads. Those token coins of copper are still in circulation among the villagers. If token coins of copper, simulating them, were issued by Your Majesty also, it will be possible to make the villagers accept them, and if those token coins of copper were made use of in the purchase of goods produced in the villages, great profit can accrue therefrom also'" (Paranavitana 1972: 65 f.).

Thus, besides other economic activities, the king Kassapa I could have created the Nāimana imitations in order to defray the expenses of building the palace of Sīgiriya. This is certainly a unique point of view[156].

3.1.6.5 Imitations struck in gold

A very difficult, if not impossible, question to answer is whether imitations were also struck in gold. The few pieces ascribed to this group are ambiguous.

The first coin in this small series was discovered between Veyangoḍa and Mirigama and was published by Codrington (1924: pl. 26). It is an imitation of a type struck by Valentinianus I (Fig. 26).

Compared with the style of the Nāimana æs imitations, the dies engraved for striking this gold specimen differ totally from those manufactured for producing the base metal pieces. In addition, the letter 'X' on the reverse is never found in the 'legends' of the Nāimana æs imitations. A second example, struck from the same pair of dies, was sold at Sotheby's in 1977. If genuine – and the two pieces have to be accepted as such until the contrary is proved – they must be of Indian origin[157].

The next coin is known only from the Biddell documents. Its details are preserved in a pencil rubbing on a small sheet of paper affixed to p. 45 of Biddell's CCC (Fig. 27).

The obverse is in a quite good style, while the reverse design is a rather degenerate version of the common, Late Roman pattern of 'two soldiers guarding a standard'. This discrepancy between the obverse and reverse style is often observed on the Nāimana imitations. This gold coin was not part of Biddell's collection, as there is no relevant entry for it in his journal. Unfortunately, no further details are known concerning this extraordinary and solitary specimen.

[156] Of the same degree of creativity is Tameanko 1991, when dealing with the *denarii* of Augustus and Tiberius and their local imitations found in India: "The supposition is that the Roman merchants, suffering financially under the severe restrictions to export coinage, and later finding that the Indians would not accept the debased denarii of Nero, decided to strike their own denarii, of high silver content, and bearing the bust of Augustus or Tiberius. The Indian merchants were very familiar with and trusted the coins bearing the effigies of these early emperors. As counterfeiting was a capital crime in the Roman world, the merchants had native engravers make the dies and strike the coins in India, the coins were readily accepted by Indian merchants and facilitated trade when the Roman-made luxury, barter commodities were unacceptable".

[157] Weights: Codrington 2.138 g, Sotheby 2.44 g.

The last coin to be mentioned is only known from a written description in Biddell's journal. The collector bought it from Codrington sometime after October 1920. Biddell's entry in his journal on p. 51, no. 1091 reads:

"A/ 0.45" 2.017 <g> "Wheel type: Purchased Colombo where said to have been sold by a villager. October 1920" HWC(odrington) *P*$^{d.}$ (paid) *HWC 10/.* (10 Rupees)".

Surprisingly, Codrington does not mention this specimen in his monograph of 1924. This seems to indicate that something was wrong with the coin, and that it was for this reason that Codrington decided not to incorporate this piece into his book.

In summary, we have to confess that – based on so few specimens – nothing definite can be said. We can neither deny absolutely the possible existence of perhaps a very small issue of imitation gold coins, nor can we prove the former use of a regular gold coinage.

3.1.7 Excursus: South India

As comprehensive as the survey compiled for Śrī Laṅkā may be, it cannot be evaluated and interpreted if disconnected entirely from the data gathered from South India. The close geographical proximity between the two regions, with the resulting pattern of political interference and trade relations, has left visible numismatic traces.

3.1.7.1 Late Roman coins in South India

From two South Indian towns alone, Karūr and Madurai, about 5,100 Late Roman coins, plus other 'large quantities', have so far been counted. To be added to these are the 'great numbers' found along the Coromandel Coast, and those from a few additional, inland sites. At present, we may calculate speculatively on a total of about 6,000 to 8,000 Late Roman æs coins found in South India. On the negative side, only this abridged summary is possible, as in some cases we have merely cursory descriptions of, 'several hundreds', 'large quantities' or 'great numbers' of Roman coins being found. On the positive however, we are in the advantageous position of having a detailed publication of a certain number of the coins discovered in the two towns of Karūr and Madurai. This provides us with the data necessary to precisely evaluate the relations between South India and Śrī Laṅkā on the one hand, and between this entire region and the western world on the other. The majority of the other known finds are concentrated on the east coast from Mahābalipuram in the north to Kīlakarai in the south.

Finds of Late Roman and Early Byzantine gold coins are recorded from several places in South India as well as in the central and northern parts of the subcontinent. Besides some fourth century *solidi*, the majority of the gold coins belong to the period ranging from the reign of Theodosius II (402–450) to that of Anastasius I (491–518). Solitary specimens of Iustinus (518–527), Iustinianus I (527–565), and Heraclius (610–613) are further documented with varying degrees of certainty.

3.1.7.2 Alleged finds of imitation Late Roman æs coins in South India

It is stubbornly rumoured that imitation Roman æs coins have also been discovered in South India. In part, this seems to be merely wishful thinking, intending to prove thereby the existence of settlements in India inhabited by Roman merchants (Raschke 1978: 672f.). One of the most recent publications dealing with this subject refers only to the alleged discovery of imitations at Madurai, in Tamilnadu (Mitchiner 1998: 78f.). Astonishingly the same author, in the same year, states that in central and southern Tamilnadu, "local imitative coinage <of Late Roman æs coins> was not made. The region simply stopped using coinage" (Mitchiner 1998b: 134). In the present context, it is important to note that the first part of this statement is true. Nevertheless, it seems worthwhile to trace out in detail where this confusion originated, how it was handed down to the present day, and to search for further arguments to support the assertion mentioned above. It is certainly to be hoped that hereafter the nonsense concerning alleged local imitations of Late Roman æs coins manufactured and found in South India will not be repeated again.

The first mention of these alleged imitations dates back to 1887/1888, when the second part of Major Robert Hutchinson Campbell Tufnell's, "Hints to coin-collectors in Southern India" was published. The essence of the author's reflections concerning the small copper coins found in Madurai was that if they were Roman they could not be there. Thus, the principal mistake made by Tufnell was that he had a

preconceived opinion of what was possible and what was not, though he was an undisputed authority in his time concerning the coins of South India (Petrie 1909). Firstly, he had in mind the large numbers of early Roman gold and silver coins unearthed in India. These were the kind of commercial media used by rich Roman traders to purchase luxury eastern goods, not the "small insignificant copper coins, scarce the size of a quarter of a farthing". Secondly, copper coins, if they were of Roman origin, should be similar to the, "fine copper coins (known as 1st and 2nd brass) so plentifully found among the Roman remains exhumed in various parts of Europe". Thirdly, the *aurei* and *denarii* of Augustus and Tiberius had been found in many parts of the country, while these small copper coins were discovered exclusively in and around Madurai. Tufnell therefore concluded that, "this surely points to the probability of the existence at one time of a Roman settlement at or near that place". The resident Roman merchants in Madurai must have had the small copper coins struck, "specially for the purpose of trade with the pauper population". Unfortunately, Tufnell was constrained both by the need to explain the existence of these coins and by their worn out state of preservation, which made it impossible for him to recognise their true nature and origin.

●nce misinterpreted in this way, and having deduced from it the attractive illusion of Roman merchants settled in India, this fiction was avidly accepted and developed by later authors. In 1904, for example, Hultzsch thought that these coins, "suggest the existence of a Roman settlement and mint at Madura" (Hultzsch 1904: 403), and in 1933 Desikachari was convinced that, "a colony of Roman merchants and soldiers must have settled in Madura" and that, "the coins in question were probably intended for use in a colony or settlement of local <Roman> merchants and soldiers" (Desikachari 1933: 17–22). Like Tufnell, he could not imagine that such small copper coins had found their way from the Roman Empire to South India, "for use in mercantile transactions". Unlike Tufnell, who seems to have been aware of the late date of the coins, Desikachari added more confusion to the discussion by suggesting a possible pre-Neronian date for these pieces. Finally, and yet taking into consideration a possible Roman origin for the coins, he suspected that they may, "have been minted in Europe for use in the Roman Settlements in the East". In 1912, about twenty years before Desikachari, Dahlmann had already argued that the Roman copper coins found in Madurai were of an early date and served as a currency for the residents of a much larger Roman colony there:

"Die Tatsache, daß römisches Kupfergeld in einer und derselben Stadt und an vielen Stellen massenhaft ausgegraben wurde, legt die Schlußfolgerung nahe, daß die römische Kleinmünze für die kleineren Haushaltungsbedürfnisse unter den in Madurai ansässigen römischen Kaufleuten im täglichen Gebrauch gewesen. Römisches Kupfergeld konnte aber in einer indischen Stadt nur dann eine so ausgedehnte Zirkulation erhalten, wenn eine größere Kolonie römischer Residenten vorhanden war, unter denen das römische Kleingeld für die täglichen Bedürfnisse in Umlauf gesetzt werden konnte" (Dahlmann 1912: 55).

We need not wonder that these conjectures on the alleged existence of imitations of Late Roman æs coins in South India have become 'fact', when we read in what is probably the most quoted monograph dealing with Rome's trade with India (Warmington 1974: 124) that, "at Naimana in S. Ceylon, as also in the Madura district of South India, have been found hundreds of coins of the fourth and fifth centuries of rough workmanship, minted in Ceylon and South India but imitating in size and appearance contemporary 'Roman' issues".

More cautious or even partly critical voices on this subject were simply not heard (Still 1907: 609–615; Henderson, quoted in Desikachari 1933: 20). Chattopadhyaya was obviously uncertain about the use of imitation Roman æs coins in South India to serve the needs of a Roman colony in Madurai. Quoting CCC, he refers to Śrī Laṅkā and suggests merely, "that the situation may have been similar in the extreme south of the peninsula" (Chattopadhyaya 1977: 117). Sewell stated that he had never seen any of the imitation æs coins described by Tufnell. This observation can be partly supported: In examining 131 photographs of small copper coins found in Madurai and now in the Krishnamurthy collection, I did not come across a single piece identifiable with certainty as an imitation. It must be confessed that most of the coins were heavily corroded and that photographs may sometimes betray the eyes. Additionally, there is a wide range of artistic skill in the execution of genuine Roman coins of this period. However, in the publication of a much larger number of Late

Roman copper coins from Karūr and Madurai no mention is made of any imitations (Krishnamurthy 1994).

An interesting observation, which adds a new dimension to this topic, is worth quoting at length[158]:

"In the year 1988, about 355 silver coins were found in a village Navalai, Harur Taluk, Dharmapuri district. These are punch-marked coins of irregular shapes varying from square to circle. These coins are now in the collection of Tamil Nadu State Department of Archaeology. A point of great interest is that these coins are coated with copper and show impressions of Roman emperors, with legends. The cause for coating copper and imprinting Roman heads and legends is not known. Perhaps the Roman copper coins were circulating as popular currency and that some attempts were made to convert them into Roman copper coins. The discovery of these coins show that imitation Roman coins were in circulation and such coins were minted in Tamil Nadu. Scholars suggested that some imitation coins were made locally. The present find proves this suggestion. The Roman portrait and legends are yet to be deciphered. The hoard may be assigned to 4–5th century AD. It is possible that by the time of conversion to Roman coins, the punch mark coins were no more recognised as legal currency".

Without any photographs, and confined to this description alone, we can only voice our surprise that someone should have manipulated Indian silver punch-marked coins in order to give them the appearance of Roman copper coinage. This seems highly improbable. Recently, the debate on the origin of the Nāimana imitations was needlessly revived (Pushparatnam 2002: 89–92). Driven by a wish to highlight the role Tamils played in the history of Śrī Laṅkā, the author places the origin of the Nāimana imitations in South India, conceding that comparable coins might have been issued in Śrī Laṅkā as well; preferably, of course, in the north. Unfortunately, he is clearly unaware of the large numbers of this kind of coin in the south of the island.

The result of this short excursus can only be the statement that, unlike the situation in Śrī Laṅkā, there is no definite proof for the existence of locally manufactured imitations of Late Roman æs coins in South India.

Another interesting aspect however should not be passed over in silence only because there is not yet any explanation for this phenomenon. Some features of the Nāimana imitations, technical as well as artistic, can be traced in some hitherto undated coins of the Pallava dynasty of South India. From the technical point of view, there is a remarkable conformity between the two groups in regard to the size of the coins, their arbitrary weight, the metallurgy, the method of casting the blanks and the way of minting. In publishing a group of Pallava coins, Mitchiner (1998b: 107, nos. 240–247) observed that: "Many of the coins are weakly struck" and that they, "were made of potin". The latter expression is somewhat problematic. In this context, it almost certainly denotes a high-lead bronze and not, as it usually implies, a high-tin bronze. The primary definition of 'potin' as an alloy of brass and of another metal is most unlikely in this case. Due to the characteristics of this presumed alloy, the Pallava coins, just like the Nāimana imitations, could only have been struck weakly, that is carefully (see chapter 3.1.6.2). The casting of the blanks was done in the same way in both countries, i. e. the blanks of the Pallava coins were also cast in rows. This is evident from the visible v-shaped and semicircular notches, as well as from a clearly recognisable tenon on one coin (Mitchiner 1998b: no. 243).

The technical parallel finds its counterpart in the artistic treatment. All the Pallava coins under discussion here show the same design. The obverse depicts a humped bull, and the reverse shows what I have called a 'wheel ornament' in the case of the Nāimana imitations. Mitchiner's 'Dharmacakra', i. e. the Buddhist wheel of the law, graphically refers to the same motif.

Nāimana Pallava

Figs. 28 a–b. Very similar looking coins from Śrī Laṅkā and South India.

The very close similarity of the reverse designs is naturally not to be observed on the obverses. However, apart from the marked diversity regarding their main design, the two groups

[158] Nagaswamy 1995: 32; and Satyamurthy 1995a: 56, who obviously takes this 'observation' by Nagaswamy seriously.

nevertheless have something else in common. Symbols and characters have been placed around the main design, although these have not been read in the case of the Pallava coins. The largest number of these coins are said to have been found in riverbeds at Tirucoilur and Karūr, from where Late Roman æs coins are also reported. Going further north the number of coins decreases. Still sizeable quantities are reported from the vicinity of Mahābalipuram (Roman coins too), many from a river bed at Arni, near Arcot, while only a few specimens have been found in excavations at Kanchipuram, the capital of the dynasty (Mitchiner 1998b: 106). The dating of these coins is very uncertain. No archaeological data seem to be available for them, and when publishing this group of coins Mitchiner oscillates between, "the period after circa AD 400" and, "after the suppression of the Kalabhras in c. 590". Thus, they *might* be contemporary with the Śrī Laṅkān Nāimana imitations. However, at our present stage of knowledge, it is only possible to point to the observed similarities between the South Indian and Śrī Laṅkān coins. Perhaps there are relations between the two groups, but maybe it is merely a fortuitous coincidence.

3.1.7.3 Late Roman coins from Śrī Laṅkā and South India – a short comparison

The Late Roman æs coins found in Śrī Laṅkā and in South India do not differ from each other either in relation to the size, types or numbers discovered – with one remarkable exception: In India, the list of Roman emperors represented on coins terminates with a certain number of pieces of the Emperor Leo (457–474), while in Śrī Laṅkā, the latest coins found in hoards are normally those struck by Theodosius II and Valentinianus III from 425 to 435 (a cross within wreath). For the following period, only a very few specimens of Marcianus (450–457), and only two coins of Leo from the Tissamahārāma excavations, are attested for Śrī Laṅkā. Were both countries therefore supplied directly with Roman coins, or were those in Śrī Laṅkā transferred from India? This question will be answered in *part IV* of this study, dealing *inter alia* with the state of affairs in the dominion of Rohaṇa. Here, in the southern part of Śrī Laṅkā, finds of Roman coins are significantly concentrated in a clearly defined region, which appears to have been in close contact with South India. Unlike in Śrī Laṅkā, the overwhelming majority of Late Roman æs coins discovered in South India are found in riverbeds. On the island, in contrast, these coins are normally found amassed in hoards or as stray finds.

In the case of Late Roman gold coins, matters are not as unequivocal as for the base metal coinage. In South India, finds of Late Roman gold coins are definitely attested, while in Śrī Laṅkā we have some written but only partly reliable hints to their former presence there. Among the trustworthy finds is a *solidus* of Theodosius II, discovered together with another thirteen specimens most probably at Mātara, or in the close vicinity of this town [**146**]. From its description, another coin from this lot must have been a fifth century *tremissis*. If we give some credence however to the listings of Biddell and Codrington [**239**, **240**], then we get a collection of Late Roman and Early Byzantine gold coins comparable to that compiled for South India.

3.1.8 Other coins discovered in Śrī Laṅkā

Due to a lack of further investigations, hardly anything decisive can be said about the other coin types listed by Codrington in 1924 for this period, viz. the 'Buddhist cakram' type, the elephant & swastika, horse & swastika, lion & swastika, tree & swastika, and rectangular bull types. However, the types listed may only require a little attention, as only a very limited number of them are known, and they are certainly not to be compared with the large number of punch-marked coins and Roman specimens with their respective imitations found on the island. For the rectangular bull type, Biddell on p. 16 of his CCC noted that there was: "Nothing, anywhere; (as there is in the case of the eldlings) to say that there are other . . .?. . . in Ceylon, and presumably Ceylon coins" Additionally, it is remarkable that, where the place of discovery is reliably known, they have been found almost exclusively in the extreme north of Śrī Laṅkā[159] or in the capital city of Anurādhapura. The multitude of coin types allegedly discovered at Tissamahārāma[160] must be treated with caution. They should only be accepted for this region in cases when their occurrence is proven by

[159] For finds of specimens of the 'Buddhist cakram' type, both in northern Śrī Laṅkā and South India, see Shanmugam 2004.

[160] Bopearachchi / Wickremesinhe 1999.

the results of the archaeological excavations at this site. Up to now, only one specimen of the elephant & swastika type, three lion & swastika specimens, six tree & swastika coins, and one bull & triangle piece have been confirmed. Punch-marked coins and Roman specimens, in contrast, have been discovered all over the island. The same holds true, incidentally, for finds of mediaeval Sinhalese coins. This seems to imply that the pieces described above are intrusions from South India, an assumption supported by the fact that some of the types cited have been found there as well. It was observed as early as 1897 that: "Previous to this period <of Parakkamabāhu I> the coins circulating in Ceylon have no distinctive character: – they are either of the ancient punch-marked pattern or are importations due to foreign commerce or invasion" (Rapson 1897: § 127).

Fig. 29. So-called 'goddess plaque' (enlarged, not to scale).

Fig. 30. Pierced specimen.

3.2 Coin-like objects

Among the various coin types discovered on Śrī Laṅkān soil, there are some artefacts for which a monetary use must unquestionably be ruled out: the so-called 'goddess plaques', 'maneless lion coins', and 'earliest inscribed coins'.

3.2.1 The "Lakṣmī plaques" of ancient Śrī Laṅkā: A final attempt to convince 'monetarists' of their non-monetary function[161]

It was in 1884 that Henry Parker, one of the grand old men of Śrī Laṅkān archaeology and history, first unearthed some of the objects under discussion here (Fig. 29).

Initially, these objects were neutrally called "oblong copper coins", or were named according to their place of discovery, viz. "Tissa coins" (for Tissamahārāma), "Mulleittīvu coins", and "Anurādhapura coins". Today, they are commonly called goddess or Lakṣmī plaques. On one side of these rectangular pieces of copper alloy, a female figure is normally shown standing or seated as the main design feature – only very seldom is a male figure depicted – while the other side has a railed swastika. It is still a controversial matter of discussion whether these objects were coins or not. Following on from earlier convincing arguments[162] centred around unsettled weights, careless manufacture, and the fact that there are no physical signs that they were ever in circulation, and in view of the conclusions drawn from the following considerations, it is I think absolutely certain that these objects were not coins, a fact that some hard-line 'monetarists' still try to deny.

The reasoning begins with the visible features. When we take a closer look at the outer appearance of these pieces, several peculiarities immediately become evident.

Not infrequently, the plaques were pierced so that they could be worn as amulets (Fig. 30). According to one early writer (Still 1907b: 210), a plaque discovered at Mulleitivu on the northeast coast of the island had three beads attached to it.

That they had indeed been worn, and not just nailed on to something else, becomes clear from the fact that the burrs raised dur-

[161] This chapter is an extended and revised version of a paper read at the 18th International Conference of the European Association of South Asian Archaeologists held in London in 2005.

[162] A condensed argument supporting the view that these plaques were not coins is given by Still (1914): he had already rejected this explanation in 1907b. Codrington 1924: 30f. follows Still's arguments.

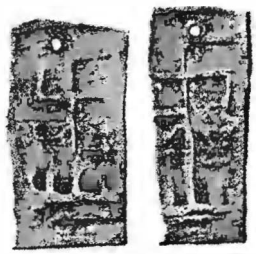


Fig. 31. Flattened burrs (enlarged, not to scale).

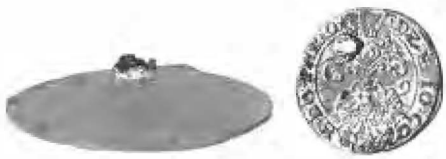


Fig. 32. Unflattened and flattened burrs on 16th century silver coins.

Fig. 33. Specimen bent in the form of an 'S'.

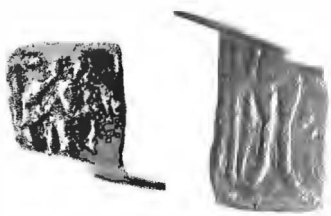


Fig. 34. Specimen bent at 90°.

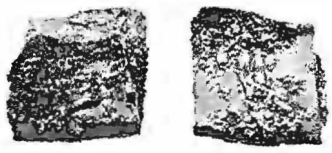


Fig. 35. Specimen folded 180° (enlarged, not to scale).

ing punching had been carefully hammered flat (Parker 1909: fig. 155 nos. 43, 44, 46, 47) (Fig. 31).

In comparison, above are two coins from the sixteenth century. The one on the left had been nailed to a doorpost or on the counter of a merchant's shop, while the one on the right had been worn as a piece of jewellery (Fig. 32).

On the goddess plaques, in all cases, the perforation was made above the figure's head from the obverse to the reverse. It is obvious therefore that the side with the figure was intended to be shown. In one case, it is apparent that the hole for suspension had evidently been created at the same time as the object itself, or had subsequently been made with the utmost care (Bopearachchi 1993: 80 fig. 10).

Further visible evidence that the goddess plaques were not coins, is provided by specimens unearthed during the course of recent archaeological excavations at Tissamahārāma, the capital of the ancient dominion of Rohaṇa in southern Śrī Laṅkā. Here, several examples discovered during a single excavation campaign had obviously been bent deliberately, sometimes violently, judging by the 25° to 95° angles; two specimens had been given the form of an 'S' (Fig. 33), while another had been bent at an angle of about 90° (Fig. 34).

Subsequent excavations even yielded two specimens that had been folded 180°, concealing by this treatment the figure of the goddess inside (Fig. 35).

In addition to these bent pieces, several specimens discovered as stray finds in the Tissamahārāma area, as well as in the course of the archaeological excavations, had been broken in a very conspicuous manner (Fig. 36).

In these cases, only a part of the standing figure, from the hip downwards or upwards, is preserved.

Another specimen found in the same area is worth mentioning. Here, someone has tried to cut off the head of the figure (Fig. 37), but ultimately they did not succeed[163]. The bevelled edges caused by a sharp tool are clearly recognisable, while the fact that the direction of the cut is from the obverse to the reverse is significant. In other words, someone has indeed tried to behead the figure, for whatever reason.

[163] A second plaque with a missing head, also allegedly from Tissamahārāma, was published by Bopearachchi / Wickremesinhe 1999: H.53.

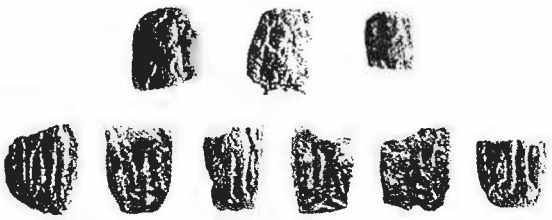


Fig. 36. Broken specimens (reduced, not to scale).

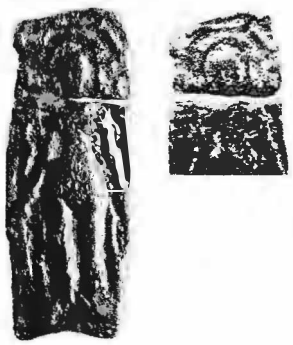


Fig. 37. Goddess plaque with 'cut off' head, from the Yoda Wewa area in Tissamahārāma (enlarged, not to scale).

Fig. 38. Goddess plaque with a horizontal "weld" from the Tissamahārāma excavations (enlarged, not to scale).

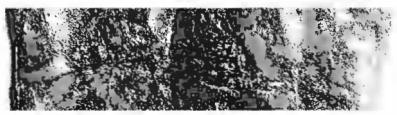


Fig. 39. Enlarged detail of fig. 38.

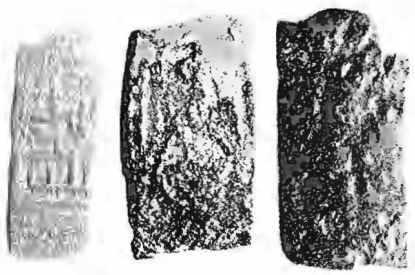


Fig. 40. Specimens with a curved top edge (enlarged, not to scale).

The plaque below has a horizontal "weld", and it is possible that it was intended to make the plaque breakable along this line (Figs. 38, 39).

However, it is not just the damaged or altered specimens that are of interest. Even well preserved pieces contain some crucial features which do *not* support the interpretation that the plaques once served as coins (Fig. 40).

These three plaques, which only stand as representatives of other additional examples, each have a curved top edge. There are no missing parts that have been broken off; these plaques were clearly made in this elaborate shap.

The specimen on Fig. 41 was given the form of a tongue or arch, while the one below has an almost oblong shape (Fig. 42). There are several other uncommon forms that are markedly different from the normal rectangular plaque: trapezoidal, double trapezoidal, and almost round shapes, serrated edges, and so on (Bopearachchi / Wickremesinhe 1999: pls. 13–15). Can coins of the same type take so many different forms?

Fig. 41. Specimen in the form of a tongue or arch.

Fig. 42. Oblong plaque.

In total, 158 goddess plaques had been discovered at Tissamahārāma by the end of the 2005 excavations. Of these, 14 were bent, and of another 20 specimens, only the upper or lower halves were preserved. In other words, about one fifth of the pieces unearthed had been treated violently. The reason for this is unclear. Nevertheless, it looks as if someone had intended to cause irreparable damage to them. It must be stressed again that the halved specimens had all been *broken* and not *cut* to create fractions. This alternative solution was proposed in the case of seven specimens that were assumed to have been deliberately reduced in weight, as parts of each plaque were cut off to produce fractions from one half down to one sixteenth[164]. In fact, these specimens had simply been struck on blanks that were too small for the dies used.

At Tissamahārāma, bent and halved goddess plaques occur in all layers from the first century BC to the seventh century. I would therefore argue that the reason for this treatment of the plaques has to be sought in the sphere of Hindu and/or Buddhist ritual action, practised unchanged for centuries. It is highly unlikely that the plaques would have been treated in this way if they really were used as money.

The results of the Tissamahārāma excavations are additionally instructive in other respects. The single coins discovered as site-finds are normally of small size and are of little value, reflecting casual loss by the former owner. If these plaques had indeed been coins, the large and heavy specimens would have been of considerable value. If this were the case, people would have searched more intensively for the lost coins than they evidently did, a fact that can be deduced from the large number of single finds at Tissamahārāma. Of the 304 identifiable ancient coins and coin-like objects found up to 2005, no less than 158 were goddess plaques – over half. We must therefore conclude that the plaques were of no monetary value. The state of preservation of the Tissamahārāma specimens, as well as that of the plaques in general, also suggests a non-monetary function. All the specimens are very well preserved. They are often weakly struck or carelessly cast, but they are never worn. If they had indeed been used as money, traces of their circulation in the form of worn surface areas would be recognisable on at least some of the specimens, especially when taking into consideration their long period of use. Through the results of archaeological excavations at Anurādhapura, the 'circulation' of the goddess plaques could only be determined by stratified pieces for the period from c. 200 BC to 200 (Sirisoma 1972; Coningham 1991a: 173 f.). Thanks to the material from the Tissamahārāma excavations, we can now fix the span of time in which the goddess plaques were used there from the second half of the first century BC to at least the seventh, perhaps even to the eighth or ninth century[165]. It is hard to believe that these objects circulated as coins in unchanged design for about eight to nine hundred years.

The weights – or rather, the arbitrary value of the weights – of the complete, well preserved specimens unearthed during the course of the recent Tissamahārāma excavations, and of the complete specimens published elsewhere, also support the argument that the plaques were not monetary objects, as they obviously do not conform to any defined weight standard. The weights of the very fine and extremely fine specimens range from about 16 g to little more than half a gram.

WEIGHTS OF THE TISSAMAHĀRĀMA SPECIMENS:

Weight in g	*State of preservation*
8.52	extremely fine
6.80	"
6.29	"
5.66	"
5.43	"
5.41	"
5.40	"
5.30	"
5.18	fine
5.01	very fine
3.87	extremely fine
3.17	"
3.08	very fine
3.01	extremely fine
2.89	very fine

[164] The specimens H. 77 to H. 83, quoted by Bopearachchi / Wickremesinhe 1999 as pieces that were cut to create fractions, had simply been struck on blanks that were too small for the dies used. This is quite clear from the figures on their pl. 15.

[165] It is quite unintelligible why Momose and Abe 1996: 52, vote for the commencement of these objects only in the third century. Regrettably without quoting their sources, the authors state that: "Lakshmi plaques are thought to have been in circulation from the third to the fourth, or third to the eighth century AD".

2.73	very fine
2.58	corroded, otherwise extremely fine
2.52	very fine
2.50	corroded, otherwise extremely fine
2.49	very fine
2.48	fine
2.46	extremely fine
2.38	corroded, otherwise extremely fine
2.26	corroded, otherwise very fine
2.26	very fine
2.22	fine
1.89	corroded, otherwise fine
1.66	very fine
1.39	extremely fine
1.33	"
1.15	very fine
0.68	extremely fine

This observation, in addition to the outer appearance of the plaques just described, leads to the next problem. Any artefacts that are intended to be accepted as a currency by a community have to be uniform, in order to inspire confidence in those who have decided to use these particular objects as money. That is why every regular issue of coins is based on a certain weight standard prescribed by the issuing authority. Moreover, even the simplest monetary systems, based on just one metal, normally indicate at least a basic value, supplemented by one or more fractions or multiples of it. Although the coins used in all ancient monetary systems had a certain degree of weight irregularity, a basic equation is determinable in all cases. Even if we have to accept a certain amount of deviation from the assumed standard weights in either direction, it is clear that the known weights of the plaques are completely arbitrary. If, despite this observation, one still insists on referring to this 'monetary' system as one of normal coinage used in everyday commercial transactions, then these 'coins' must be regarded at best as 'credit coins'. In this case, the intrinsic value, that is the value based on the weight and the kind of metal used, would be of no significance. The lightest and the heaviest pieces would therefore have been given and taken as equivalents. However, the coins would need to have displayed at least a *certain* degree of uniformity in order to guarantee the value set by the ruling authority. The objects discussed here do not fulfil this requirement. Compulsory

Fig. 43. Gaja-Lakṣmī (enlarged, not to scale).

weight standards, with coins of equal design, were first introduced into mediaeval Śrī Laṅkā only in the late tenth/early eleventh century, with the creation of a regular coinage[166].

The figure represented on what is presumed to be the obverse of the plaques has been commonly identified as the Hindu goddess Lakṣmī, the consort of Vishṇu. There is, however, no convincing proof for this generalised attribution, which can be traced back to Codrington (1924: 27). Other scholars have been more cautious and more precise in their descriptions and interpretations. Both Parker (1909: 499ff.) and Still (1907b: 206ff.), for example, distinguish between the female and male figures shown on the plaques. Still, in particular, must be credited as he collected some 200 specimens for examination. In addition, both authors identified the trident as a symbol of both the male and female figures, and attributed it to the Hindu god Śiva. The bull represented on the reverse is also associated with Śiva. The Nandipada, the 'foot-print of Nandi', can be seen on some plaques, and likewise stands for Śiva's vehicle and main attendant. However, the lotus flower shown on the obverse is attributable to Vishṇu and to his wife Lakṣmī (Fig. 43).

In the case of a full-breasted, broad-hipped female figure who is shown being anointed by a pair of small elephants, each standing on a lotus, there can of course be no doubt about the identity of the goddess: this is definitely Gaja-Lakṣmī, known so frequently from ancient

[166] See the uniformity of weights given for the different issues by Codrington 1924, in his chapter on mediaeval Śrī Laṅkā.

Fig. 44. Wavy lines below the swastika, probably suggesting water.

Fig. 45. Guard stone.

Indian art (Singh 1978: 18f.). Besides this, the geographical distribution of the plaques also points to this divine couple. Apart from those pieces discovered in the capital city of Anurādhapura, all other finds were unearthed in coastal regions around the island: Chilaw, Māntai, Kantarōḍai, Vallipuram, Mullaitivu, Tissamahārāma, and Goḍavāya. In contrast, not a single specimen has been found in the temporary capital of Sigiriya, located inland, although these plaques were definitely still used after 450. As both Vishṇu and Lakṣmī are very closely connected with water and the sea[167], it seems likely that the plaques were used in sanctuaries near to the sea (Fig. 44). The wavy lines on the reverse of this specimen were probably intended to symbolise 'water', and this again would support the interpretation just given.

However, it is probable that the plaques represented a multitude of different elements, and not just attributes assignable to a single god or goddess.

At one of the coastal find spots, a very interesting receptacle with remarkable contents was unearthed. The container discovered at Tissamahārāma consisted of two similar parts, each resembling the shape of a dāgoba. They were sealed together so that the contents were entirely enclosed. The hole now visible was made by the finder in order to reach the contents, which apparently consisted of about fifty goddess plaques embedded in a very powdery sand (Bopearachchi / Wickremesinhe 1999: 98). It is reported that three very fragile human skeletons were discovered close to where the receptacle was found. Although there is no proof that the skeletons and the container are contemporary or belong together, there is nevertheless a real possibility that this might indeed be the case. The container in which they were found seems to suggest a funeral offering: religious votive plaques embedded in very powdery sand, and permanently enshrined in a receptacle reproducing the shape of a dāgoba. The recent archaeological excavations at Tissamahārāma also revealed a pit dating from the second half of the fourth to the first half of the fifth century, which contained human bones together with a goddess plaque. Another fifty-six goddess plaques were found at the Abhayagiri dāgoba in Anurādhapura. The excavator argued that these had been enshrined in the cella of a chapel associated with the dāgoba (ASCAR 1910/1: 15 and 67). Another three (or perhaps four) specimens are reported from the Ruvanväli dāgoba (Coomaraswamy 1914: 27 and pl. 21). This again reinforces the impression of a religiously-motivated use of the plaques as votive offerings.

In the case of Lakṣmī, a second aspect of this deity becomes important. In the secular meaning of fertility, Lakṣmī stands for prosperity and wealth. Combined with the concept of 'fortune', for which she is also responsible, she was the ideal goddess for merchants[168]. As an example, many Indian terracotta medallions depicting Gaja-Lakṣmī, together with Kubera, the god of wealth, have been unearthed in Thailand. They attest to the presence of Indian traders in this Southeast Asian region during the fifth to eighth centuries. Hence, the presence of goddess plaques in various coastal areas of Śrī Laṅkā also seems appropriate.

A second train of thought developed by Parker led to the interpretation of the figures

[167] For Lakṣmī see Bandyopadhyay 1989.

[168] Indrawooth 1992 has highlighted this aspect of the goddess when dealing with the trade between India and Southeast Asia in antiquity.

as guardian deities, comparable to those of the ancient Sinhalese guard-stones (Fig. 45) (Parker 1909: fig. 157; Boisselier 1979: figs. 75 and 80). This protective function, supplemented by the auspicious swastika on the reverse of the plaques, would have made them into powerful charms against evil spirits.

In fact, we can observe a remarkable similarity between a stone carving of a Nāga-king and a figure shown on some of the plaques. The seven dots around the head definitely correspond with the seven cobra heads (Fig. 46).

Some figures have a halo around their head – even a double halo in a very small number of cases (Fig. 47) – while others have none.

It is therefore fair to say that we can no longer refer only to "goddess plaques" or, even more specifically, to "Lakṣmī plaques" – though most specimens evidently do represent this goddess – but more neutrally, to "religious plaques" or "tokens". These are not attributable to any specific faith as Lakṣmī, for example, was venerated by both Hindus and Buddhists.

Some years ago, specimens in silver started to appear on the art market. The first single pieces were said to have been found in the south of the island. Soon after their first appearance, many more were offered for sale but no photographs of these items were available. These pieces are regarded, most probably correctly, as modern forgeries. However, a final judgement will only be possible after one or more of them have been published[169].

I should add, however, that there are some indications that there may have been tokens that were different from the copper pieces (Fig. 48). A rubbing of a specimen found on the seashore at Chilaw, on the west coast of the island, in 1935 is attached to one of the documents forming part of what was once a private coin collection. It is described as a piece of "white metal" – whatever this may mean. However, no further evidence for the existence of genuine plaques in metals other than those made of copper alloys has so far been obtained.

Three specimens from the Tissamahārāma excavations, of which two are shown here, have so far been found from the final stage of typological degeneration (Fig. 49). The very thin sheets of metal show only the outline of a crudely executed figure; positive on one side and in negative form on the other. These specimens, however, are not confined to a late period, thereby defining the general end of the plaques, but have been found in layers that can be dated variously from the second, the fourth to mid-fifth, and the mid-fifth to ninth centuries. Monetarists might identify them as a kind of emergency money, but this would presume the existence of a regular coinage of this kind.

Fig. 47. Halo and double halo (enlarged, not to scale).

Fig. 48. Rubbings of a "white metal" Lakṣmī plaque from the Biddell documents.

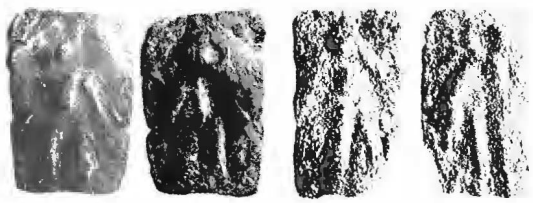


Fig. 49. Thin, incuse specimens.

[169] The information about these silver pieces was gained from Ratnatunga 2001, sub-file 'Lanka – Modern fakes' and from H.-J. Weisshaar (private communication).

Although perhaps unnecessary, it should be stressed finally that the plaques are naturally of Śrī Laṅkān origin and are definitely not Indian as has been suggested – based only on the fact that a single specimen was discovered in the South Indian town of Karūr[170]. Another plaque has been found in Dhaka, Bangladesh (Mitchiner 1995a: 65).

One argument put forward by monetarists in favour of the monetary function of the plaques is the observation that some were struck on the large elephant and swastika coins. This has been interpreted as the normal practice of overstriking, known throughout the history of coinage. In the present case, however, another explanation seems more plausible. At least twenty-one plaques were discovered at the coastal village of Nintavur (Batticaloa District, EP), *all* of which had been struck on rectangular pieces of metal produced by cutting large and thin elephant and swastika coins into suitable sizes (Hettiaratchi 1950 and 1952). These specimens were found in association with a number of intact elephant and swastika coins. This strongly suggests some kind of mass production of goddess plaques in the manner described. It is true that we have no reliable archaeological data concerning the period of circulation of the elephant and swastika design[171], but we have good reason to assume that the goddess plaques both pre-date the elephant pieces as well as post-dating them. Normally, the overstruck type replaces the type underneath it, but here both types were clearly contemporary and are found side by side during a certain period. It therefore seems fair to assume that the elephant and swastika pieces only provided the raw material for the manufacture of the goddess plaques.

To sum up, the observations presented concerning metrology, manufacture, iconography, and the archaeological data all support the conclusion previously drawn by John Still in 1907, following a brilliant analysis of the plaques' nature: they were never used as money, but were actually religious amulets and votive offerings whose real purpose and meaning have still to be investigated.

Appendix
Goddess plaques from Tissamahārāma

In the preceding chapter I have shown, I hope convincingly, that the goddess plaques were definitely not coins. However, as this problem has now been disputed for over a century and will obviously be discussed for at least another, it seems worthwhile to depict the recently discovered specimens that are either well preserved or show some peculiarities, in order to present this new material adequately in its broadest range. Four plaques minted from the same obverse die are depicted as no. 84. The one on the far left is said to have been discovered in the Embilipiṭiya area, while the other three come from the Tissamahārāma area. This seems to suggest that the plaques were at least partly manufactured in Rohaṇa. The plaques illustrated are from the following provenances:

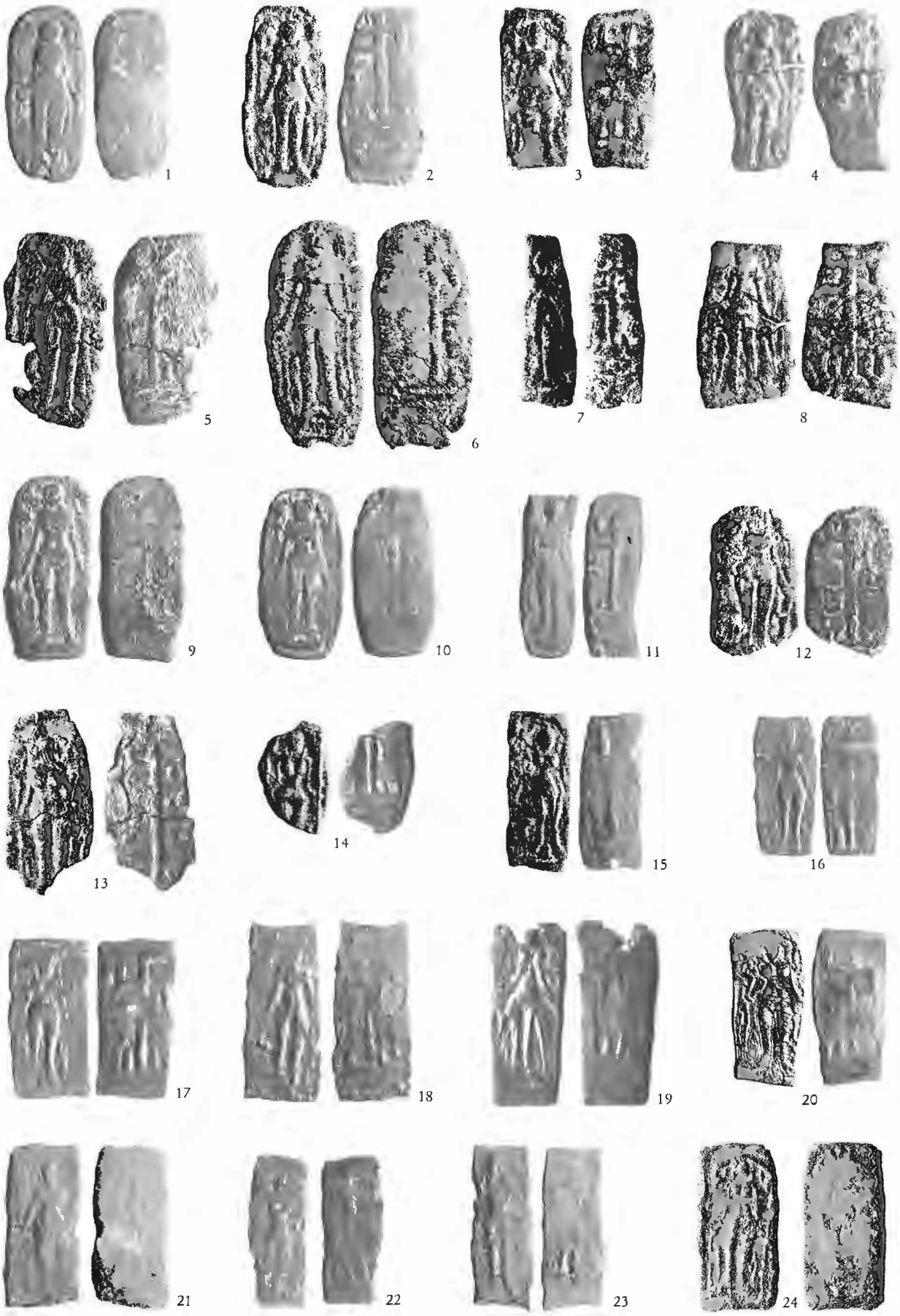
1–60	Tissamahārāma excavations 1992–2005 (58–60: small hoard)
61–78	Tissamahārāma area 1995–2005
79–80	Goḍavāya excavations 1995–2004
81–83	Embilipiṭiya area

Plate No	*Complex No*	*Weights in g*
1	188.13[1]	5.01
2	188.13[2]	5.41
3	188.13[3]	2.58
4	188.13[10]	5.18
5	188.13[8]	6.80
6	189.15[38]	6.29
7	188.13[5]	5.43
8	188.13[9]	5.40
9	189.15[11]	5.66
10	189.15[13]	5.30
11	189.15[39]	3.87
12	189.15[1]	4.02
13	189.15[5]	5.94
14	184.16[5]	2.89
15	186.12[2]	3.17
16	182.20[3]	2.26
17	180.8[10]	3.01
18	183.16[4]	2.38
19	180.8[6]	2.49
20	187.17[7]	2.06
21	183.16[3]	2.50
22	180.8[7]	1.89
23	186.12[12]	1.58
24	189.16[8]	2.28

cont. p. 96

[170] Krishnamurthy 1991: 61, 'feels' that these objects, "might have gone from Karur ... to Srilanka due to maritime trade". This is an interesting point of view when we recall the number of objects found in Śrī Laṅkā. The solitary specimen published by Krishnamurthy is doubled when treated again in Mitchiner 1995b: 19. The latter, evidently erroneously, adds the specimen quoted and depicted by Krishnamurthy from Parker 1909, and which is therefore of Śrī Laṅkān origin.

[171] Codrington 1924: 26, only vaguely argues that they, "may have been issued before the Christian era", while Mitchiner 1978: p. 629, ascribes them too definitively to the period c. 29 BC – 297 AD.



Goddess plaques from Tissamahārāma, nos. 1–24.

Goddess plaques from Tissamahārāma, nos. 25–54.

Goddess plaques from Tissamahārāma, nos. 55–78; Goḍavāya, nos. 79–80; Embilipiṭiya area, nos. 81–83; no. 84: four plaques minted from the same die (cf. p. 92).

Continued from p. 90

PlateNo	*ComplexNo*	*Weights in g*
25	189.15[12]	8.52
26	182.20[1]	2.26
27	187.17[8]	2.75
28	189.15[36]	2.17
29	184.16[7]	1.39
30	186.12[18]	2.99
31	186.12[1]	3.00
32	186.12[3]	1.22
33	186.12[6]	1.68
34	184.16[4]	2.12
35	189.15[10]	3.74
36	188.13[7]	3.57
37	182.20[4]	2.73
38	186.12[4]	1.91
39	184.16[6]	0.77
40	189.15[29]	1.39
41	186.12[20]	2.90
42	188.13[13]	3.08
43	189.15[32]	3.14
44	189.15[28]	1.59
45	189.15[25]	3.44
46	188.13[11]	2.22
47	189.15[20]	2.24
48	189.15[22]	2.03
49	188.13[15]	1.66
50	189.15[24]	2.63
51	188.13[12]	2.48
52	188.13[14]	2.52
53	189.15[21]	2.57
54	186.12[17]	0.60
55	184.16[3]	0.84
56	186.12[5]	0.92
57	187.17[10]	0.79
58	188.13[22a]	0.68
59	188.13[22b]	1.33
60	188.13[22c]	1.15
61	181.11[1]	5.72
62	181.11[2]	6.50
63	190.12[1]	1.85
64	181.11[3]	0.58
65	181.11[4]	0.70
66	181.11[5]	1.00
67	181.11[6]	3.38
68	190.12[2]	3.92
69	190.12[3]	3.38
70	190.12[4]	3.70
71	190.12[5]	4.92
72	190.12[6]	2.85
73	190.12[7]	3.37
74	181.11[7]	3.52
75	190.12[8]	3.02
76	181.11[8]	3.33
77	190.12[9]	5.74
78	181.11[9]	2.33
79	176.16[1]	3.85
80	176.16[2]	1.42
81	170.18[1]	5.29
82	170.18[2]	5.37
83	170.18[3]	3.78
84	Die-identical obverses	

Fig. 49 a. Maneless lion token.

3.2.2 The "maneless lion" tokens – why they are not coins[172]

Surprisingly, it was only in the late 1980s that we received definite archaeological proof of the Śrī Laṅkān origin of the items under discussion here. The *UNESCO* excavations at Anurādhapura have yielded enough specimens to ascertain their native origin, as had already been conjectured by Codrington (1924: 25, supported by Allan 1927: 192). An attribution to the early Pallavas of South India (Chattopadhyaya 1977: 17; Mitchiner 1978: 629) is hence untenable, as will be shown in detail. As early as 1886, it was argued for what was then an apparently unique specimen (Fig. 49a) of the maneless lion type, "that it may possibly have been a weight" (Elliot 1886: 152c, no. 58). This interpretation was based on the reverse design, which shows four dots within a circle. To revive this idea, one would have to search for a standard unit which, when quadrupled according to the four dots, would fit into a weight system. As this hypothetical unit would need to have been of a very low weight, one immediately thinks of seeds; since in Asia many monetary systems were based on the weight of seeds of various kinds. Seeds were certainly used as weights in Śrī Laṅkā, from ancient times up to the twentieth century (Codrington 1924: ch. I [Metrology]). If we base our calculations on the *manjādi* seed, we would have weights ranging from 0.19 g to 0.32 g for each seed (Codrington 1924: 9f.), and when quadrupled from 0.76 g to 1.28 g. Many specimens of the maneless lion type fit into this range; on the other hand, we also have well preserved pieces beyond these limits:

[172] The text of this chapter is a modified version of Walburg 1997a.

Weight	*Provenance*
3.13	Tissamahārāma (KAVA excavations; encrusted)
2.83	Unknown (Codrington 1924: 25 and note = Elliot 1886: 152c and pl. II/58 = Chattopadhyaya 1977: no. 28 = BM 1886–5–5–17; presented by Sir W. Elliot)
2.74	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
2.59	Tissamahārāma (KAVA excavations; some parts broken off)
2.38	Unknown (BM 1959–10–20–186; W. R. Jacks Bequest)
2.37	Unknown (BM 1970–5–14–132; ex. C. H. Biddulph collection)
2.31	Anurādhapura, Buddhist rail near Jētavanārāma (Codrington 1924: 25 and note)
2.30	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
2.26	same provenance
2.00	Anurādhapura, Citadel (Coningham 2006: 12, sf 2918)
1.88	Tiruk(k)ē(ti)śvaram = Māntai (Codrington 1924: 25 and note)
1.87	Unknown (BM OR 1160)
1.83	Tissamahārāma (KAVA excavations; pierced)
1.58	Unknown (BM 1959–10–20–185; W. R. Jacks Bequest)
1.58	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
1.55	same provenance
1.45	Anurādhapura, Buddhist rail near Jētavanārāma (Codrington 1924: 25 and note)
1.43	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
1.37	Anurādhapura, Jētavanā dāgoba (Codrington 1924: 25 and note)
1.33	Unknown (BM OR 1161)
1.30	Anurādhapura, Kiribat vihāra (Codrington 1924: 25 and note)
1.26	Anurādhapura, Buddhist rail near Jētavanārāma (Codrington 1924: 25 and note)
1.21	Kadugannawa (Codrington 1924: 25 and note)
1.21	Kantarōḍai (Codrington 1924: 25 and note)
1.19	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
1.17	Unknown (BM 1970–5–14–133; ex. C. H. Biddulph collection)
1.15	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
1.14	same provenance
1.13	Unknown (BM 1959–10–20–187; W. R. Jacks Bequest)
1.10	Anurādhapura, Jētavanā vihāra (Codrington 1924: 25 and note)
1.05	Tissamahārāma (KAVA excavations; corroded, some small parts broken off)
1.05	Kantarōḍai (Codrington 1924: 25 and note)
1.01	same provenance
0.93	Unknown (BM 1959–10–20–190; W. R. Jacks Bequest)
0.93	Unknown (BM 1959–10–20–189; W. R. Jacks Bequest)
0.90	Unknown (Codrington 1924: 25 and note)
0.90	Anurādhapura, Citadel (Coningham 2006: 12, sf 394)
0.85	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
0.81	same provenance
0.80	Anurādhapura, Citadel (Coningham 2006: 12, sf 2327)
0.79	Anurādhapura, Jētavanā dāgoba (Codrington 1924, p. 25 and note)
0.78	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
0.77	Anurādhapura, Kiribat vihāra (Codrington 1924: 25 and note)
0.76	Unknown (BM OR 1162)
0.75	Tissamahārāma (KAVA excavations; some parts broken off)
0.73	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
0.70	same provenance
0.66	Anurādhapura, building east of the sacred road opposite Ruvanväli dāgoba (Codrington 1924: 25 and note)
0.65	Unknown (BM 1959–10–20–188; W. R. Jacks Bequest)
0.62	Anurādhapura, Jētavanā vihāra (*UNESCO* excavations)
0.61	same provenance
0.57	same provenance
0.41	Anurādhapura, Buddhist rail near Jētavanārāma (Codrington 1924: 25 and note)
0.32	same provenance
0.31	Kantarōḍai (Codrington 1924: 25 and note)

Weight	*Provenance*
?	Anurādhapura, Abhayagiri vihāra (Wikramagamage 1984: pl. 9)
?	Anurādhapura, 6 × Jētavanā vihāra (*UNESCO* excavations)
?	Anurādhapura, 2 × inside Jētavanā dāgoba (Codrington 1924: 25 and note)
?	Anurādhapura, 2 × Abhayagiri vihāra (*UNESCO* excavations)
?	Pomparippu, 2 × "in the debris of the stupa" (CAR Archaeology 1957, G 8)

The average weight of the *manjādi* of Anurādhapura, where most of the maneless lion specimens have been found, was 0.28 g (× 4 = 1.12 g; Codrington 1924: 9). This corresponds to the average standard weights given by Codrington based on his calculations of the copper standard (Codrington 1924: 26). If we accept a lower limit of 0.90 g and an upper limit of 1.20 g, thirteen of the total number of fifty-five specimens can be related to this estimated weight of 1.12 g. I am inclined to believe however that, despite appearing at first sight to be a probable interpretation, the maneless lion pieces were not weights. It is true that in antiquity weights were not manufactured as precisely as in modern times; they were normally less than the intended full weight[173]. In the present case, however, the range of weights of well preserved specimens is too extreme and cannot be accepted as normal. The heavy pieces should have more than four dots, and the lighter specimens less than four dots, if indeed they depicted the number of seeds that they were intended to represent. Additionally, one would have to ask for what reason such a lot of weights were necessary.

By interpreting these pieces as coins, the problem of weight becomes less serious, but it nevertheless needs to be discussed. If the four dots were intended to characterise a certain coin denomination, then all the pieces, despite their different weights, must therefore represent a single unit or nominal value. It could be either

a) A unit of four . . . (but of what? For seeds see above)

or

b) 1/4 . . . (but again of what?) . . .

a) As one *kaḷañju* holds twenty *manjādis*, four of these seeds are therefore equivalent to 1/5 *kaḷañju*. The full intended weight of 1/5 *kaḷañju* was c. 1.11 g, calculating 5.57 g for one *kaḷañju* (Codrington 1924: 26). This corresponds to the *manjādi* weight of Anurādhapura: 0.28 g × 4 = 1.12 g. Therefore, these pieces should be units, of whatever name, of 1/5 *kaḷañju* or four *manjādis*. Unfortunately, a unit of 1/5 does not fit into the *kaḷañju* system of 1, 1/2, 1/4 and 1/8.

b) Supposing that 1/4 *kaḷañju* is intended, we would then have a mean weight of 1.39 g, with a lower limit of 1.12 g and an upper limit of 1.81 g. Many of the maneless lion pieces can somehow be connected with these weights, but not in a satisfying way. Even if we accept, as we sometimes do in the case of ancient coins, a wider scope of weights due to an *al marco* and not an *al pezzo* instruction to the minters, the weights under discussion here seem far too arbitrary. The representation of each tenth of a gram from 0.3 g to 2.0 g with no significant peak(s) among them, and the small number of very heavy pieces of more than 2 g, indicate that the maneless lion pieces are not coins. This phenomenon of arbitrary weights is shared with other Śrī Laṅkān types such as the goddess plaques, the elephant and swastika pieces, and the fifth century imitations of Late Roman copper coins. So, if the maneless lion specimens are neither weights nor coins, what kind of function did these items really have? One argument in favour of their identification as tokens is the absence of any legend. This characteristic is shared with almost all the other 'coins' attributed to Śrī Laṅkā prior to the beginning of the eleventh century (for the only exception see chapter 3.2.3). Tokens did not need to be inscribed because of their unequivocal designs, indicating their limited but well-known function. Archaeological finds, the process of manufacture, and pictorial details supported by literary evidence, will help to answer this question further.

Of the lion tokens with known provenance, the overwhelming majority have been discovered at Anurādhapura. For comparison, from the 304

[173] See for example the Late Roman *exagia solidi* of which hardly any specimen has the full weight of 4.55 g.

identifiable ancient coins and coin-like objects unearthed during the archaeological excavations at Tissamahārāma from 1992 to 2005, only five were maneless lion tokens, and one of these was pierced. Of the Anurādhapura specimens, twenty-four were discovered at the Jētavanā vihāra, four from the Jētavanā dāgoba, and five more were found near this building: This is a remarkable total of thirty-three specimens from the Jētavanā complex as a whole. Three pieces were unearthed at the Abhayagiri vihāra and two at the Kiribat vihāra. Almost all of the Anurādhapura specimens, and the pieces from Pomparippu as well, were found in or near religious buildings. The two most important pieces for dating this series come from inside the Jētavanā dāgoba. One of these was found seven feet below pavement level, the other beneath a slab (Codrington 1924: 25 n. 1). As the dāgoba has a brick foundation twenty-six feet in depth (Fernando 1965: 46), the maneless lion pieces were evidently used during the reign of king Mahāsena (334–362), who built Jētavanā. This assumption is supported by the fact that only very few specimens have been found at Abhayagiri, which is earlier in date than Jētavanā. Most striking is the very good state of preservation of almost all the known examples, many of which look freshly minted[174]. These observations, and the absence of specimens from the later royal residence of Sigiriya, evidently show that this series was short-lived and that the pieces had not been circulated like coins. From the archaeological point of view, there is no objection to ascribing the maneless lion pieces to Mahāsena himself, confining them to the time of his reign and to the city of Anurādhapura. The results from the Tissamahārāma excavations are unequivocal in this respect. Of the four specimens found in stratified layers, one is datable to the period from the third to the fifth century, one to the fourth century, another from the fourth to the fifth century, and the last to the period from the fifth to the seventh century; none of these are prior to the reign of Mahāsena. These data support the validity of a late dating of this king to 334–362, instead of an early dating of 276–303 that seems to have become popular in recent times (for example Dias 2001: 75). The native origin of these pieces is confirmed by the absence of finds outside Śrī Laṅkā, especially from South India[175].

Besides the archaeological evidence, the manufacture and the iconography of the tokens can also contribute to our knowledge of this noteworthy series. Unlike the goddess plaques, of which both cast and struck examples exist, the specimens of the maneless lion series have all been struck. The shape and thickness of the flans differ widely. Thick pieces as well as thin ones of circular, square or rectangular shape are known. Even octagonal examples have been discovered, the blanks for which were prepared very neatly in this unusual form (Coningham 1991a: fig. 6c; Walburg 1997a: fig. 1.10). This multitude of shapes, besides their arbitrary weight, also clearly indicates the non-monetary function of these specimens. The thin flans share their method of manufacture with the similarly struck goddess plaques; i. e. pieces in the intended form were cut from rolled out band-metal or sheets – sometimes neatly, sometimes roughly. The thick flans appear to have been cast. Most pieces have a well-executed obverse design. However, there are a few specimens that seem to be contemporary imitations, sometimes of a very rude fabric. One of the Abhayagiri specimens (Wikramagamage 1984: pl. 9 / 3 A and B) falls into this category, and four other pieces are likewise imitations (Walburg 1997a: fig. 1.9–12). These may be compared with the crudely-executed religious tokens described above (see Fig. 49). Exactly the same phenomenon can be observed in an Indian series from Taxila. These examples also belonged to a short-lived series, and here again we find stylistically well-executed specimens and contemporary coarse imitations side by side[176]. In the case of the lion tokens, we can be sure that within the short time of the token's manufacture, it was impossible for such a strong stylistic decline to have taken place. No die-links have yet been observed.

Today, the nomenclature is uniform when writing about these pieces. Everybody speaks of a 'maneless lion' when describing the ani-

[174] A 'worn out' piece from Abhayagiri described by Wikramagamage (1984: 77, site V, serial no. 1) is in fact well preserved, as I could see in 1984. The author's conclusion on p. 73 of his report is therefore misleading. Wikramagamage does not mention another (third) specimen in good condition from Abhayagiri (S13W23 3[6], layer 1B).

[175] General works on South Indian numismatics, such as Tufnell 1888, Desikachari 1933, Ramayya 1967, Chattopadhyaya 1977, and Mitchiner 1995, never mention these tokens as finds in this part of the subcontinent.

[176] Allan 1936: 223, nos. 77 ff. and pl. XXXII, nos. 17–22 (imitations = nos. 20 and 22). For assignment and dating see especially §§ 157 and 164.

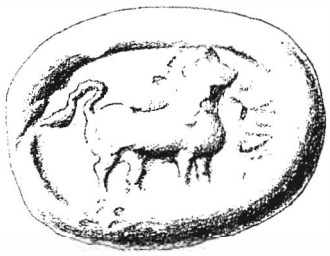


Fig. 50. Sealing from Tissamahārāma (enlarged, not to scale).

mal shown on the obverse. When publishing what he supposed was a unique[177] specimen, Elliot was not quite sure of the animal's nature when he wrote: "Obv. An animal like a dog"[178]. For Still, the animal was "a dog or a lion" (Still 1908: 27) and by the time of Codrington it had become a 'maneless lion'. With the exception of the tail with its tuft, nearly all the details seem to be in contradiction to the animal's identification as a conventional lion, as known from other coins and from relievos[179], but nevertheless it is clearly meant to be one. The ancient die-engravers were obviously unfamiliar with this animal. The snout is short, thick, and flat and the legs sometimes look like those of a hoofed animal. Obviously, the artists had never seen a living lion, or a realistic picture of one, so that they erred in the details. Zoologically, it can be classified as the factual maneless lion of Gujarat, local to the coastal region south of the Indus delta, and still living there. It is in fact a rather large animal, but its mane consists only of short, straight and thin hair. This type of lion was already mentioned by Plinius in the first century[180]. Its representation on the tokens must be regarded as highly stylised and heraldic, like the lion on the Lauriya-Nandangarh pillar of Aśoka (Härtel / Auboyer 1985: fig. 132). Three interpretations of the lion's possible function are given there: As a guardian animal, an heraldic animal of the ruler, or a symbolic hint to the Lord Buddha as: "The lion descending from the Sakyas" (Härtel / Auboyer 1985: 205). In the present case, two of these possibilities can be excluded. As the lion is depicted in an heraldic, statuary and therefore calm, or passive, way it is unlikely to represent an active guardian against evil spirits. A 'Buddhist' lion is also unlikely as there are no additional religious symbols. Without these signs, for example the swastika or the *dhammacakka*, people would not have been able to understand the allusion. The correct identification as the heraldic animal of a ruler can be deduced from recent archaeological discoveries. The excavations at Tissamahārāma and Goḍavāya have yielded perfectly preserved seal impressions showing an animal, standing and facing to the right (Fig. 50)[181].

Two additional seal impressions of this kind have also allegedly been discovered at Tissamahārāma (Bopearachchi / Wickremesinhe 1999: K.8 and K.9).

It is apparent at first sight, that this animal is identical to that of the maneless lion series from a stylistic point of view. If one keeps in mind the historical significance of the lion symbol, there is good reason to believe that the lion represented on the tokens, and on the bulla, is meant to show the royal heraldic animal for the first time in Śrī Laṅkā's monetary history[182]. For this reason, and judging by the absence of any religious symbolism, both items must be regarded as official state issues, dating from the reign of Mahāsena. That the dominion of Rohaṇa, to which Tissamahārāma and Goḍavāya belonged, had been under this sovereign's rule is clear from the Mahāvaṃsa[183].

[177] The first known, and correct, publication of such a piece was that by Prinsep (1837: pl. XX, 24) with the description, "having a *sinha* and four dots". This is the specimen mentioned by Codrington as having been found in Tirukēśvaram. In 1848, a specimen was described by Stark (1847/8: 155) as, "a small copper coin bearing on one side what seems intended for a lion".

[178] Elliot 1886: 152 c, no. 58. On pl. II (where the piece is illustrated) some other, very similar looking, animals are represented, but these are identified as lions and not as dogs.

[179] The tail is not curved over its back in the form of an inverted and compressed 'S'. No forepaw is raised. The mouth is not opened in a roaring attitude, and it is not depicted as crouching.

[180] Plinius, *Nat. hist.* 8.18; Brockhaus' Konversations-Lexikon vol. 11, [14]1895 ('Löwe'); The New Encyclopædia Britannica, Micropædia vol. 7, [15]1993 ('Lion'). H. Petzsch, Säugetiere (Neue große Tier-Enzyklopädie Bd. 1, 1971) 317.

[181] For a photograph of the Tissamahārāma specimen, see Müller 2001: fig. 188a. The Goḍavāya example was first published and illustrated by the excavator himself (Roth 1995: 190).

[182] There is a gap of about a millennium before the second occurrence of a lion as part of a coin's design. See Codrington 1924: 77ff., and for a good illustration Rhys Davids 1877: fig. 5.

[183] Mhv. 37.41 and 37.47, where the building of two vihāras and the construction of a tank in Rohaṇa by king Mahāsena is reported.

Perhaps it was not by accident that Mahāsena chose this particular kind of lion. According to legend, the grandmother of Vijaya, the first ruler of Śrī Laṅkā, eloped with a lion *(sinha)* in the land of Lala – modern Gujarāt – and mated with him (Mhv. VI; Codrington 1939: 6ff.). By choosing this type of lion, Mahāsena might have intended to allude to the beginnings of this Great Dynasty.

After having no real difficulties with the interpretation of the lion, the tokens' reverse design is much more puzzling. Before trying to interpret it, one has to get a clear idea of the composition. It is evident that the circle is part of the main design. Compared with the size and form of the blanks, the diameters of the circle are too small to be regarded as the outer rim of the dies. In fact, none of the pieces has such an outer circle on the reverse. In other words, the reverse design is composed of four dots within a small circle. The close relationship between the lion tokens and the religious buildings where they have been found, especially Jētavanā, would suggest a religious motive in choosing this design. It might be the plan view of a dāgoba, confined to its essential parts; the dome with four items inside the relic chamber. The Ruvanväli dāgoba, for example, contained the figures of the four Great Kings, i. e. the four guardians of the world (Mhv. XXX.89). This is connected to the symbolic meaning of the numeral 'four' in the Buddhist doctrine of faith: The four noble truths; the four stages of enlightenment; the division of time into four cycles; the Buddha's four drives; the four divine kings who protect the Buddha and the doctrine in the four directions of space; and the four teeth found after the Buddha's cremation. The dots might also represent four of the most important dāgobas of ancient Śrī Laṅkā, viz. the Ruvanväli, Thūpārāma, Abhayagiri and Jētavanā. In this case, the tokens may have been struck on the occasion of the building of the Jētavanā, as one specimen was found in the dāgoba's foundation and another under a slab. The discovery of most of the known pieces in the Jētavanā complex supports this suggestion. The Jētavanā vihāra is closely connected to the Buddhist Sāgaliya sect, which was developed from the Dhammarucika sect and worked in parallel with it. They were in opposition to the monks of the Mahāvihāra, who were representative of the orthodox Theravāda school. After the foundation of the Jētavanā vihāra by Mahāsena, the Sāgaliya monks dwelt there under the monarch's patronage. It might be possible to find a link between the royal lion tokens and this sect. Supposing that the circle on the token's reverse stands for the Jētavanā dāgoba itself, the four dots may therefore denote architectural features of the Jētavanā vihāra. Monasteries of the Dhammarucika sect were constructed according to a distinct pattern. The nucleus, within a square rampart, consisted of four sacred buildings: a small dāgoba, a *bodhighara* (the platform of the sacred tree), a *paṭimāghara* (a temple containing the sacred image), and an *uposathaghara* (the building where the ordination of priests was celebrated; Boisselier 1979: 60 and plans on pp. 56 and 57). Do the four dots represent these buildings, and have the tokens been used as a kind of temple token, confined to the Jētavanā complex? It has here been proposed that the tokens were struck by Mahāsena, the founder and patron of the Jētavanā vihāra, and that the distribution of finds suggests an almost exclusive use of these tokens within the boundaries of this complex. It therefore seems valid to assume that these tokens bearing the royal emblem were struck by the monarch especially for Jētavanā. Perhaps the four dots represent the monarch's granting of the four priestly necessaries, viz. *cīvara* (clothing), *piṇḍapāta* (food), *senāsana* (dwelling) and *bhesajja* (medicine) (Clv. 37.76). The tokens might also be identified with the *salākā* of the Mahāvaṃsa; tickets by which food presented to a monastery by the monarch and/or by private donors was allotted to the monks (Mhv. note to XV.205 and XXXIV.64). This train of thought, connecting 'coin'/token/amulet – religion – and temple/monastery, becomes even more conclusive by drawing on other parallels. In ancient China, temple coins – or rather tokens – were used during religious ceremonies (Kainz 1894). From India, we have the term *dakṣiṇā*, a sacrificial fee for the priests (Gokhale 1993).

According to the Mahāvaṃsa, the Jētavanā vihāra must have been built in Mahāsena's tenth regnal year or somewhat later[184]. Thus, one can determine the likely period for striking the lion tokens to the years c. 344–362. Today, the lion

[184] Mhv. XXXVII.1–9, where it is stated that the Mahāvihāra was desolate for nine years, counting from the year of Mahāsena's consecration. Immediately after the Mahāvihāra's re-establishment, the Jētavanā vihāra was built as a new offence within its boundaries.

Fig. 51. Pierced maneless lion token (enlarged, not to scale).

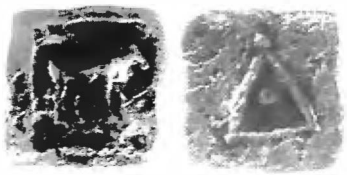


Fig. 52. Humped bull token (enlarged × 2).

tokens are very rare[185]. However, in contrast to this modern scarcity, many different dies were obviously used to strike theses pieces. Originally, the number of tokens manufactured must have been far more significant than it appears today. We need not wonder about this, as the relics of this hated monarch and the heretical sect that he patronised, had naturally ceased to be used after Mahāsena's death.

The recent archaeological excavations at Tissamahārāma have yielded a so far unique specimen. As in the case of some of the goddess plaques, this piece has been pierced. The neatly flattened burr on the reverse around the hole clearly shows that this token was worn as a kind of amulet. The layer in which this specimen was discovered is datable to phase f 2, i. e. from the fourth/fifth century (Fig. 51). It is futile to speculate upon the motives of the former owner of this piece – what is important is the fact that it *is* pierced. This treatment places it in the same category as the pierced, non-monetary, goddess plaques.

Here we have to insert a specimen which obviously belongs to the maneless lion type. Its obverse shows a humped bull facing right within a square linear border, while the reverse shows a single dot within a triangle. By design and fabric, both types are doubtless contemporary (Fig. 52)[186]. The archaeological proof for this assertion is provided by the Tissamahārāma excavations. The specimen depicted was discovered in a phase f layer, datable from the fourth to fifth century. Originally, the excavators dated this layer to phase d (first to second century) and it was on this dating that the first interpretations were based (Walburg 2001: 261 and 276). After chronological modification by the archaeologists, there is no longer any problem in bringing the lion and bull types together. Only a very few specimens of the bull type have been recorded:

Tissamahārāma [180.2]	0.55 g
Unknown provenance[187]	0.56, 0.48, 0.41, and 0.32 g

If we consider these specimens as coins, they should consequently be a fraction of the lion type, preferably ¼ in accordance to the number of dots. This would give corresponding weights for the lion type of 2.24, 2.2, 1.92, 1.64, and 1.28 g (the weight of each of the bull specimens mentioned above multiplied by four). This would indeed fit into the range of weights listed for the maneless lion tokens, but on the other hand there are several lion pieces that are even lower in weight than the quoted bull specimens. To increase the confusion further, one can include some additional specimens here with a design comparable to those of the two types just described. The obverse shows a bull facing right or left, while the reverse shows, within a square, a circle with three or four dots. Two specimens are recorded from Vallipuram (in Jaffna District, NP; Codrington 1924: 24 nos. 17. [v] & [vi]). The one with the bull facing right and with three dots weighs 2.83 g, while the other with bull facing left and four dots weighs 2.48 g. Two additional pieces of the latter type have weights of 3.79 and 2.19 g[188]. Thus, there are no metrological interdependencies between the three-dot specimens and the four-dot pieces. The bull type has been tentatively ascribed to the early South Indian Pallavas; i. e. to the fourth century (Chattopadhyaya 1977: 196 ff.). However, it is quite uncertain where we should search for the origin of the bull

[185] The British Museum, for example, is in possession of only twelve specimens, and Mitchiner 1978 merely mentions them without illustration.

[186] The similarity has already been observed by Codrington 1924: 24.

[187] Chattopadhyaya 1977: 198, no. 35.

[188] Chattopadhyaya 1977: 197, no. 34, both of unknown provenance.

type, whether in Śrī Laṅkā or South India. It seems a remarkable coincidence that sealings unearthed in Tissamahārāma also show this animal, and we might therefore consider a Śrī Laṅkān origin for the bull type as well. Nevertheless, the connection between the lion and the bull types remains, at least for the moment, obscure.

As a final numismatic criterion against the monetary function of the maneless lion tokens one may adduce that – like in the case of the artefacts discussed in the next chapter – up to now no hoard but only single finds are attested.

3.2.3 The alleged "earliest inscribed coins" from Tissamahārāma – why they are not coins[189]

In 1996, a newspaper article first drew attention to an allegedly new type of coin said to have been found in the hamlet of Akurugōḍa in Tissamahārāma (Jayasinghe 1996 and 1997a). Six specimens (three examples each from two different collections) were described, discussed and also illustrated with photographs and line drawings (Fig. 52a).

A picture of a mould for producing this type of alleged coin was also published. Although no reasons were given for the conclusions that were drawn, these specimens were dated to the first century. The numismatic part of this article is beyond criticism.

This subject was dealt with anew by Bopearachchi in 1999 (Bopearachchi 1999: 18f.) and again in the same year – this time in much greater depth – in a monograph by Bopearachchi and Wickremesinhe (1999: 15–19 [text] and 51–64 [catalogue]). In 2000, the reference section of their book was republished almost unchanged[190]. H. Falk of the *Institut für Indische Philologie und Kunstgeschichte* in Berlin read the legends on these pieces, while Bopearachchi was responsible for the numismatic aspects of the discussion. In 2002, Bopearachchi again wrote at length on the 'Tamil section' of this group (Bopearachchi 2002: 66–69). All the forty-four inscribed items under discussion here are from the Wickremesinhe collection[191], and were bought at Galle and Mātara sometime between 1983 and 1991. Both locations are in the extreme south of Śrī Laṅkā, and are situated around sixty miles (Mātara) and seventy-five miles (Galle) southwest of Tissamahārāma. In 2000, when reviewing the monograph of Bopearachchi and Wickremesinhe from 1999, Lingen recognised that two additional pieces

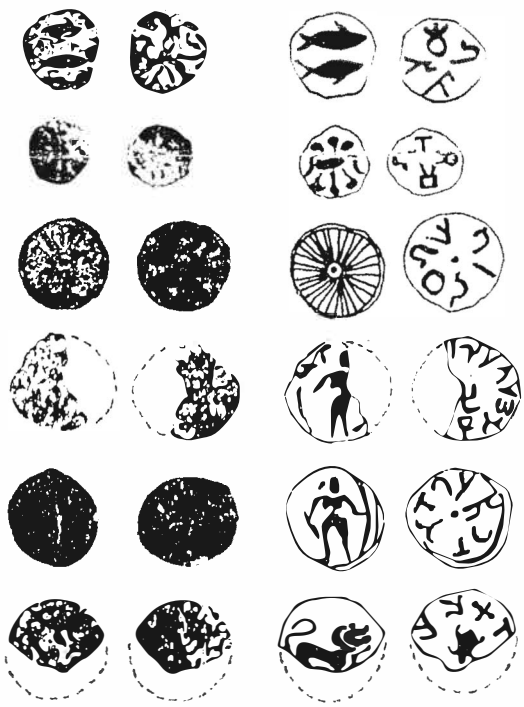


Fig. 52 a. First publication of the 'earliest inscribed coins'.

– one bought in Colombo and the other in Māpusa / Goa, India – had been cast from the same mould as the specimen E.12 in the Wickremesinhe collection (Lingen 2000). The latter item belongs to a group of artefacts that Bopearachchi has termed 'uncertain inscribed coins', comprising the catalogue entries E.1–39 in Bopearachchi / Wickremesinhe 1999. Another group, which the author called 'uninscribed coins', supplements this (F.1–17). In discussing Bopearachchi's publications, it will become clear that these pieces – whether 'inscribed', 'uncertain inscribed' or 'uninscribed' – are not really coins.

Bopearachchi obviously starts from the principle that a round object with design(s)

[189] This chapter is a slightly modified version of a paper read at the 17th International Conference of the European Association of South Asian Archaeologists held in Bonn in 2003 and published as Walburg 2005.

[190] Bopearachchi *et al.* 2000. In fact, this article by the three authors was the basis for the section in Bopearachchi / Wickremesinhe 1999.

[191] Somadeva 2002 added to our knowledge some more specimens from other private collections. All pieces are again said to have been unearthed at Tissamahārāma (Akurugōḍa).

and/or inscription(s) on one or both sides is inevitably a coin. Apart from some square specimens, and those showing the anomalous shapes of a tortoise and a fish (Bopearachchi *et al.* 2000: nos. 41–43), for which the author gives no explanation, we are compelled to point out that coins, as a form of money, have to fulfil certain basic requirements. The (apparently unconsidered) statement by Bopearachchi that: "It is most probable that the lead objects made in the form of Conch, fish and beads were used as money (M. 1–7)" (Bopearachchi / Wickremesinhe 1999: 32), should not therefore be allowed to stand unchallenged. This critical view becomes even more compelling as Bopearachchi himself admits that the objects were chosen from, "a great variety of lead artefacts" found in the Wickremesinhe collection. Similar miniature objects made of bronze and silver – a frog, a crab, a tortoise, two fishes (of silver) and a conch shell – have been discovered in Anurādhapura beneath the floor of the northern pond (Fernando 1990: 100).

The right to mint or cast coins is normally the exclusive right of a sovereign authority. In the dominion of Rohaṇa – or more precisely, in the capital city of Tissamahārāma, where the pieces are said to have been found – this would have been the local ruler. When we start from the principle of a money-based economy, as most modern writers assume was the case for the island in antiquity, the idea of private individuals producing coins on their own behalf (Bopearachchi *et al.* 2000: 121) has to be ruled out.

The inscriptions preserved on these objects are hard to read, but provide us with a number of names such as Gutta, Guttamagga, Majjima, Pussa, Tissa, Datta, etc. As Bopearachchi has correctly observed, these alleged 'coins' were clearly not issued by kings. Although some of the names mentioned are attested for Śrī Laṅkān sovereigns, the titles rāja or mahārāja are generally missing. He therefore argues, "that local rulers, lords, householders and even individuals were involved in these monetary activities" (Bopearachchi *et al.* 2000: 121). However, as only the terms 'lord' and 'householder' are recorded in some of the legends, it is quite unclear who these "local rulers" were, whom Bopearachchi appears to have quite incidentally invented. For epigraphic and linguistic reasons, it was concluded that four of the forty-four 'coins' published by Bopearachchi *et al.* were struck by, "Tamil traders settled in the Tissamahārāma region for inland and maritime trading". Moreover: "The fact that they could issue coins (or trade tokens) in their own names inscribed in Tamil shows that the Tamil mercantile community of the region enjoyed considerable autonomy" (Mahadevan 2000: 154). One of the Tamil names (Cāttaṉ) identified by Mahadevan (2000: 150) by reading anew the inscriptions on some of the 'coins', was also discovered about ten years ago on an ostrakon discovered in Egypt and which Mahadevan dated to the second century (Salomon 1991: 734)[192]. Taking this interpretation one step further, Bopearachchi argues that all these pieces were probably issued by merchants (Bopearachchi 2003: 685). Finally, enthralled by the Tamil element, Sitrampalam (2003: ch. IV) reasons that these 'coins' might have been struck by one of the thirty-two Damiḷa kings overpowered by Duṭṭhagāmaṇi (101–77 BC), as described in the Mahāvaṃsa XXV. This unfounded and erroneous conjecture entirely misses the point, as Bopearachchi and Wickremesinhe (1999: 15) do not date these objects precisely to the second century BC, as stated by Sitrampalam, but in fact ascribe them only generally to the period between the second century BC and the second century. Any linguistic minutiae adduced – for whatever reason – in an attempt to demonstrate further Tamil elements in the 'coins legends', should I think be abandoned in favour of Falk's thorough readings as given in Bopearachchi / Wickremesinhe 1999 and Bopearachchi *et al.* 2000. Here, two Tamil names have already been identified (A.21 and 37). However, what is the significance of the two, or possibly more, Tamil names represented on these objects? They merely document the presence of a number of Tamil individuals – a fact that is neither important nor surprising from an historical view of antiquity. The inscription, "Of . . ." (followed by a name or sometimes a title, or by genealogical information) on the tokens, would seem to indicate either a dedication (such as, 'a donation/offering of . . .') or simply a possessive ('the sign of . . .') to be used in any general context, but certainly not in a monetary one[193].

[192] According to Parker (2002: 64), the two *ostraka* from Quseir al-Qadim containing the names 'Kanan' and 'Catan', are of the first century; like those two with Tamil-Brāhmī from Berenike.

[193] In the case of a regular coinage, the genitive case is, naturally, not uncommon.

Money, in order to be accepted as currency by a community, has to be uniform, well-known and inspire confidence in those who have decided to use particular objects as money. However, in the present case, we have a vast multiplicity of designs and inscriptions represented only by single examples or, at most, a very small number of pieces. Yet another new type was published recently[194]. Nevertheless, together these pieces form an homogenous group, which were certainly not manufactured over a period of several centuries. Confined to a limited area and to a limited period of time, these objects – if accepted as actually being money – could have been no more than a kind of makeshift currency. However, such an interpretation would assume the prior existence, as well as a temporary shortage, of a developed, *regular* Śrī Laṅkān currency. Unfortunately, there is not a single shred of evidence to support either of these assumptions.

Normally, coins were (and still are) produced in certain, generally large, quantities. The artefacts discussed here comprise three groups, classified by Bopearachchi as, "inscribed coins", "uncertain inscribed coins", and "uninscribed coins" (Bopearachchi / Wickremesinhe 1999: A.1–44, E.1–39, and F.1–17). The examples of the 'inscribed' group were evidently cast individually, as the type of mould used is documented (Jayasinghe 1996; Bopearachchi / Wickremesinhe 1999: B.1 [= Bopearachchi *et al.* 2000: no. 45] and L.6–7). In all cases, a single mould[195] was used rather than a combination of multiple moulds, arranged in turrets or trees, for the economic production of a larger number of specimens in a single casting process. Bopearachchi himself has demonstrated the existence of such multiple moulds at Tissamahārāma (Bopearachchi / Wickremesinhe 1999: L.1–3). These moulds have impressions for the manufacture of at least eight pieces, and were evidently used for casting imitation punch-marked coins. Moulds in India are known to have enabled the worker to cast a large number of coins in a single process[196]. Hence, single moulds would only have been used for manufacturing a very limited number of the types known so far. We also have to bear in mind the technical process of casting these artefacts. It is probable that the individuals responsible for issuing these 'coins' had no private furnace at their disposal, nor would they have had any knowledge of metalworking. Therefore, all these objects must have been produced at a central workshop or manufacturing area. In other words, they were manufactured upon request. The contractors were presumably goldsmiths and silversmiths who were used to engraving moulds for casting ornaments and jewellery. The customer, of course, had to pay in kind for the metal and the labour. The metalworkers would have carried out the melting and casting processes with ease, since they used pure lead, which has a low melting point (327.5° C) and is thus easy to cast. That pure lead was indeed used, at least in some cases, is clear from a number of colour photographs published on the internet in 2001, which show some specimens from the Wickremesinhe collection that had been sold to another collector[197]. Two other authors have described the metal as a high lead bronze (Jayasinghe 1996; Lingen 2000: 6). In this case, higher temperatures would have been necessary to melt the alloys together, and the melting and casting processes would have become more complicated. This could definitely not have been done by a simple householder.

In one case, Bopearachchi unwittingly points to the correct interpretation when he identifies a mould as having been used for casting ornaments (Bopearachchi / Wickremesinhe 1999: L.7). Astonishingly, however, he failed to realise that the same ornamentation is represented on one side of some of his 'coins' (A.1, A.6, F.4, and F.15), not to mention some other very similar-looking designs.

From the monetary point of view, we have to repeat literally here what has already been said in the case of the goddess plaques: Every regular issue of coins is based on a certain weight standard prescribed by the issuing authority. Moreover, even the simplest monetary systems, based on one metal only, normally indicate at least a basic value, supplemented

[194] Bopearachchi and Ratnatunga 2004. A second specimen of this type was unearthed during the archaeological excavations at Tissamahārāma [188].

[195] A double-sided, engraved mould from Anurādhapura – that will be discussed in detail below – does not contradict this observation.

[196] See Prakash and Singh 1986: vol. I, ch. XI: Casting techniques of ancient Indian coinage; esp. figs. 11.1 and 11.11+12. When tenons are clearly recognisable on the 'inscribed coins', such as Bopearachchi *et al.* 2000: nos. 38 and 39, there is always only one, not two. This, if necessary at all, is further proof of the individual manufacture of these artefacts.

[197] A.26, E.22, and E.30 were bought by K. Ratnatunga and published on the internet under http://lakdiva.com/coins/.

inscribed	*uncertain inscribed*	*uninscribed*	*inscribed*	*uncertain inscribed*	*uninscribed*
0.97	.	0.89	2.16	.	.
1.01	.	.	2.19	.	.
1.05	.	.	.	2.20	.
1.07	.	.	2.21	.	.
1.08	.	.	2.23	.	.
.	1.12	.	.	2.24	.
1.31	.	.	2.34	.	.
.	.	.	.	.	2.37
1.53	.	.	2.40	.	.
1.57	.	.	2.44	.	.
1.58	.	.	2.45	.	.
1.61	.	.	.	.	2.47
1.62	.	1.62	.	2.49	.
.	1.66	.	2.51	.	.
.	1.71	1.68	2.54	2.54	2.54
1.72	1.72	.	2.56	.	.
1.73	.	.	.	2.69	.
1.75	1.81	.	.	2.78	.
1.84	.	.	2.83	.	.
1.85	.	.	.	3.00	.
.	.	1.86	3.01	.	.
1.87	.	.	.	3.02	.
1.89	.	.	.	.	.
1.89	.	.	.	.	3.10
.	1.90	.	.	.	3.14
1.92	1.92 (2x)	.	3.20	.	.
1.93 (2x)	.	.	.	.	3.30
.	.	1.96	.	.	3.50
.	1.97	.	3.65 (2x)	.	.
2.00	.	.	.	.	3.79
.	2.01	.	3.85	.	.
2.03	.	.	.	3.96	.
2.05	.	.	.	4.06	.
2.06	.	.	.	4.43	.
2.06	.	.	4.61	.	.
.	2.08	.	4.91	.	.
2.09	.	.	.	5.06	.
2.11 (2x)	2.11	2.11 (2x)	.	5.35	.
.	2.12	.	.	5.63	.
.	2.13	.	.	.	6.50
2.14	.	.	.	6.57	.
.	.	2.15			

by one or more fractions and perhaps multiple values. If the 'inscribed coins', the 'uncertain inscribed coins', and the 'uninscribed coins' had indeed been money, a certain regularity at least should be discernable in the weight of the specimens. In fact, however, almost every tenth of a gramme is represented in the range between 0.9 and 4.6 grammes in weight. No significant peaks are discernible.

Although the coins used in all ancient monetary systems had a certain degree of weight irregularity, a basic equation is determinable in all cases. With regard to ancient Śrī Laṅkān metrology, however, we are currently standing on very uncertain ground. The only data we have that can be considered in any way reliable, are to be found in the work of Codrington. His calculations (Codrington 1924: 26), with

respect to the presumed weight standard of ancient copper coins, suggested a *kaḷañju* of (in rounded figures) 5.6 g, with subdivisions of 2.8 g (1/2 *kaḷañju*), 1.4 g (1/4 *kaḷañju*) and 0.7 g (1/8 *kaḷañju*). Even if we accept a certain amount of deviation from these calculated standard weights in either direction, it becomes clear that the weights listed above are completely arbitrary. If, despite this observation, one still insists on referring to this system as one of normal coinage used in everyday commercial transactions, then these coins must be regarded as credit coins. In this case, the intrinsic value, i. e. the value based on the weight and the kind of metal used, is of no significance. The lightest and the heaviest pieces of each type would therefore have been given and taken as equivalent. However, the coins would have had to display at least a certain degree of uniformity in order to guarantee the value set by the ruling authority. The objects discussed here do not fulfil this requirement. Again, it should be emphasised that compulsory weight standards, with coins of equal design, were first introduced into mediaeval Śrī Laṅkā only in the late tenth or early eleventh century, with the creation of a regular coinage[198].

Assuming for a moment that these tokens were in fact coins and that Bopearachchi was correct in stating that: "On the basis of the palaeography, the coins discussed below can be fixed without much of a risk between the second century BC and the second century AD", then we would still have another problem to be resolved. Bopearachchi himself points out that the first inscribed Śrī Laṅkān coins date back to the tenth century. Hence, on this basis, the long, dark ages in the numismatic history of the island must have lasted for at least seven centuries, and would have gone something like this: After an early and sudden beginning sometime between the second century BC and the second century – having already developed a system of combining legends and designs, as represented by the pieces discussed here – the people then abandoned this alleged coinage shortly after it had been invented. Instead of artistic and technical advancement, under the names of those local rulers already introduced by Bopearachchi, the Śrī Laṅkāns would then have restricted themselves merely to imitation. The casting of punch-marked coins and the minting of imitations of Late Roman æs coins, dating back to the fourth and fifth centuries, and found abundantly on the island, are the only recorded monetary activities during this period – the first attested by the existence of moulds (for example Bopearachchi / Wickremesinhe 1999: L.1–3), and the latter by the coins themselves. It was not until Vijayabāhu I (1059–1114) that a regular Śrī Laṅkān coinage first commenced. Such a scenario is barely credible.

Nothing definite is known about the locations or circumstances of the finds or even the number of pieces discovered – it is only reported that these tokens are said to have been found at Akurugōḍa in Tissamahārāma. The *Commission for General and Comparative Archaeology (KAVA) of the German Institute of Archaeology (now Kommission für Archäologie Außereuropäischer Kulturen)* has been carrying out archaeological excavations there since 1992, under the direction of Hans-Joachim Weisshaar. Hitherto[199], a total of 304 identifiable ancient coins and coin-like objects have been unearthed. These include Indian punch-marked coins, specimens from South India, Roman coins and their local imitations, coins from Palestine, Phoenicia and Aksūm, and Śrī Laṅkān ingots, as well as goddess votive plaques and manless lion tokens. These finds are listed in detail in the catalogue section of this study. Of the alleged, 'earliest inscribed coins from Tissamahārāma', the excavators have so far discovered only a single, broken specimen at Akurugōda [**188.11**] in a layer datable to the first century BC. If these objects had in fact been coins, there should have been more examples among the other items discovered. If all the tokens reported had indeed been unearthed exclusively at Akurugōḍa – and there is absolutely no evidence to support the accuracy of such a statement – their use must have been confined to a particular area, perhaps in connection to a purpose as yet unknown, and so far untouched by the excavators. In 1998, another collection of at least five of these artefacts was published, all of which belonged to the 'uninscribed' group (Seyone 1998: 84, nos. 3, 5, 6, 9, and 10). Although the booklet in which these specimens are shown should be used only with caution, owing to the author's ignorance of numismatics, we can nevertheless be quite certain regarding the accuracy of the quoted provenance of the published

[198] See the uniformity of weights for the different issues given by Codrington 1924 in his chapter on mediaeval Śrī Laṅkā.

[199] Up to the end of the 2005 campaign.

coins and other objects. The five specimens, all described as being made of lead, were found at Kantarōḍai, i. e. in the extreme north of Śrī Laṅkā. Therefore, the allegedly exclusive provenance hitherto claimed for Tissamahārāma must obviously be subjected to closer scrutiny. This is all the more necessary when taking into consideration the fact that a casting mould of the type reported from Tissamahārāma has also been unearthed at Anurādhapura (Coningham and Allchin 1992: fig. 16a; Coningham *et al.* 1996: 84f.). With the help of this mould, it was possible to produce disk-like objects inscribed *vacadatasa* and *vacadataha*, i. e. "of (or belonging to) Vatsa Datta". The authors interpret this artefact as a stone goldsmith's mould, which can be dated – according to the script – between the first and second centuries BC[200]. Astonishingly, Bopearachchi does not mention this mould from Anurādhapura when presenting his own (B.1) from Tissamahārāma (Bopearachchi / Wickremesinhe 1999: 18 and 61), even though the publication (Coningham *et al.* 1996) is mentioned in the bibliography. His failure to do so seems incomprehensible when it is realised that the name "*Datta*", with a two-fold final syllable (*-sa* and *-ha* in the Anurādhapura mould), corresponds to that of specimen no. 15 in Bopearachchi *et al.* 2000, where the authors discuss the name's 'modern' ending *-sa* instead of *-ha*[201]. Even in 2002, Bopearachchi merely repeated his text of 1999 unchanged, without discussing the Anurādhapura evidence (Bopearachchi / Wickremesinhe 1999: 17f. = Bopearachchi 2002: 68f.).

The engraved, double-sided mould from Anurādhapura cannot be cited as evidence of mass production, already rejected by the arguments presented above. The dialectic difference[202] in the spelling of the name indicates that this mould served as a universal tool; as it was possible to choose which side of the mould – and thus, which form of the name – should be used. When casting a two-sided artefact, a second mould with an engraved picture would have been attached to the preferred side.

It is possible to add one final argument that also runs counter to the assumption that these tokens had a monetary function. Unlike coins, they have never been found in hoards, but only as single finds. If they really were coins, and thus served as media of exchange, at least one small hoard should have been discovered (see also previous chapter). A striking parallel has recently been reported from the Tauric Chersonesos (Kovalenko 2002). Twenty different issues of lead tesserae, which had been unearthed exclusively as single finds, are interpreted as objects that are likely to have been of cultic and votive significance. As in the case of the so-called, 'earliest inscribed coins from Tissamahārāma', several types are known only from one or two specimens. For others, dozens of examples are recorded. Their weights are as arbitrary as those of the Śrī Laṅkān lead pieces. In summary, all of the aforementioned arguments contradict the assertion that these objects, whether round or of unusual shape, are coins. Likewise, we are unable to provide a reliable dating for these objects, as we do not yet possess sufficient archaeological data.

To put it in a nutshell, we are forced to conclude that Bopearachchi, in trying to establish the 'earliest inscribed coins' as a new kind of early Śrī Laṅkān currency, regrettably failed to apply even the most elementary numismatic methods. Otherwise, he would have recognised immediately that these tokens lack all the features that necessarily characterise coins.

3.3 The 'money-boxes' from Ridiyagama and Tissamahārāma

It is not very often that we get any reliable information about the receptacles in which coins were collected, stored or deposited, being hidden and finally lost in antiquity to be discovered in modern times. For Śrī Laṅkā, the following examples are reported (in alphabetical order of provenance):

[200] Coningham and Allchin 1992: 165. Unfortunately, a more precise dating was not possible as the mould was found in the fill of a robber pit from the Polonnaruwa period.

[201] Perhaps it also would have been helpful for Rajan and Bopearachchi 2002 to have consulted Coningham *et al.* 1996 in general, and esp. pp. 90ff., when preparing their study on graffiti in India and Śrī Laṅkā.

[202] Coningham and Allchin 1992: 162; thinking of North Indian Prakrit and Sri Lankan.

Akurugōḍa	terracotta moneybox
Akurugōḍella	earthenware pot
Debarawewa	hand-made earthenware pot
Dehigahalanda	a pot
Dhatumandiraya	hand-made clay pot
Lunama	three ceramic pots (doubtful)
Minigodana	earthenware pot
Niyadella	earthenware pot
Polonnaruwa	copper-alloy pot
Ridiyagama	small terracotta pitcher
Sigiriya	semi-broken pot
Varani Iyattalai	clay pot

Except in six cases, nothing is known about the shape or size of the pots in which the coins were preserved. However, even these six receptacles are far from published in a manner that fulfils scientific need. In each case, no drawings are given, but only one or two photographs without any measurements. The state of preservation of the objects when found is also not reported, and visible damage could therefore be ancient or modern.

The first receptacle to be published was a small terracotta pitcher – a surface find from Ridiyagama[203]. When discovered, it was said to have been filled with Roman coins, of which only eighteen were left stuck inside. A black-and-white photograph only shows the pitcher from the top. A large part of the rim is broken off; most probably the section opposite the handle (although this is not visible). A part of the fracture is as dark as the rest of the pitcher and seems to be old, whereas the lighter parts seem to indicate a modern breakage. Close to the neck, the shoulder of the pitcher is pierced twice, the holes being placed exactly opposite each other.

When describing and discussing this pot, Bopearachchi only mentions *one* pierced hole, "large enough to insert Roman Third Brass alone" (Bopearachchi 1998a: 160; Bopearachchi / Wickremesinhe 1999: 29 [identical texts]), and he interprets this container as, "the oldest money box which has come to light so far". The illustration on the contrary clearly shows *two* holes. Unfortunately, it is not recorded whether the pitcher was sealed when found. Only if it had been, could the alleged slit, "to insert Roman Third Brass alone", be considered in any way reasonable. However, why should the natural opening of the pitcher be completely plugged and then have a hole pierced into its shoulder? If there was a need for a money box, it would have been easy to manufacture one for this purpose[204]. The double piercing observed seems rather to indicate that a cord was drawn through the holes in order to transport and/or to hang the jar. This might already have been a secondary function after the rim was damaged and the receptacle therefore became unsuitable for its original purpose. Its third and final use was to receive coins for concealment.

In this respect, the heading 'money-box' needs a more intensive discussion. This term is closely related to two other expressions that also describe receptacles filled with coins; the offering box, and the concealed box or safe. For the pitcher from Ridiyagama, the identification as a moneybox does not stand up to scrutiny. Moneyboxes, whether artless in shape or manufactured more extravagantly, are well known from the ancient world (Graeven 1901 [still fundamental]; Robinson 1924; Haberey 1959; Gorecki 1991). All of them share one common feature: they were deliberately fabricated to serve as moneyboxes, being completely closed with only one purpose-made slit for inserting the coins. They were intended to receive coins only *occasionally*, as an absolute surplus of wealth not needed at that moment or in the immediate future. The bulk of the coins in the possession of an individual or a household were kept in a quite different manner. The money needed for everyday use, and wealth accumulated for larger commercial transactions, was normally hidden. For this purpose, very simple pots or damaged kitchen vessels were used, like the one just described. This practice of hiding coins in repaired, partly broken or damaged pots and other receptacles can be observed throughout the centuries, and is, for example, well documented from eastern Dakia during the Roman period, from the first to the third century (Mihăilescu-Bîrliba 1998: 471).

Three other alleged moneyboxes are said to have been found at Tissamahārāma in the hamlets of Akurugōḍa, Akurugōḍella, and Niyadella (Bopearachchi / Wickremesinhe 1999: I.1–3). Here we find the third kind of container, the offering box. The two most

[203] Bopearachchi 1998a: 178, fig. 24. First published by this author 1996a: 5.

[204] See, for example, the Roman money boxes in Haberey 1959: figs. 1.4–6, and the examples in Yongjian 2002: figs. 9–12 from ancient China.

interesting examples are each documented by only two photographs; a side projection and a top view. The sizes are missing from the descriptions and scales are not used on the plates. The first (I.2) resembles a pyramid cake with an upper part in the form of a dāgoba. It is not clear whether the top of the receptacle is damaged or not, or whether the visible slit is original. From the photograph, one is given the impression that there is a juncture, indicating that the artefact is composed of two fitted parts. Thirty-two silver-plated æs punch-marked coins were said to have been found inside. It is not confirmed whether the find was complete or whether some pieces had already been removed. Only seven pieces are published, and these were identified and catalogued as belonging to the genuine Indian Magadha – Maurya series of punch-marked coins (Bopearachchi / Wickremesinhe 1999: G.87–93). Nothing is said about what happened to the other twenty-five pieces. Checking the photographs, which do not show these pieces at full size but arbitrarily enlarged, it is obvious that this attribution is untenable. Similar pieces of this type have been found at Kantarōḍai, Anurādhapura, Goḍavāya, and Tissamahārāma. The origin and date of these small, blank specimens – no punch-marks are visible on these pieces, and this is not because of their supposedly bad state of preservation – are still obscure (see chapter 3.1.3). Thus, they should in preference be described as ingots.

The second receptacle (I.3) is best described as looking like the shell of the *Charonia tritonis* (triton's horn). The upper part is in the form of a dāgoba. Here, again, it is not reported whether the receptacle was sealed in any way when found, but when first published it too was characterised as a moneybox. Inside were allegedly discovered, "367 late Roman copper coins and their local imitations" (Bopearachchi / Wickremesinhe 1999: 30 and 98). Here, at once, suspicions arise. In Śrī Laṅkā, hoards of genuine Roman and of imitation coins always occur as 'pure' hoards, meaning that both categories never occur together within a single hoard (see above and Walburg 1985: 43). Accordingly, it seems very unlikely that this hoard should be the one exception. Bopearachchi and Wickremesinhe have only published three Late Roman coins from this hoard; nothing is said about the rest, and no reason is given for the choice of these three examples. In the whole publication, there is no indication as to whether the total number of coins was still in the possession of the collector. The composition of this hoard is not even cursorily described and none of the alleged imitations is illustrated[205]. Bearing in mind the often bad state of preservation of many of the Roman coins, and the usually weakly struck imitations, one has to question whether the writers were able to clearly distinguish between genuine Roman and imitation pieces. In fact, the authors do not seem to be very familiar with this type of coin. For example, a very well-preserved Nāimana imitation of the *gloria exercitus* (one standard) type is declared to be a genuine Roman specimen, and is definitively attributed to Constantinus I (Bopearachchi / Wickremesinhe 1999: G.25). In fact, this coin is a well-executed imitation of the Late Roman *gloria romanorum* (three emperors) design, the latter having been struck by the emperors Arcadius, Honorius and Theodosius II[206]. It is therefore to be regretted that when found this receptacle did not pass immediately into the hands of an academically trained numismatist or archaeologist. If carefully opened, accepting the damage to the receptacle, the stratification of the coins inside would have helped to answer conclusively one of the central questions concerning ancient East – West trade and the numismatic history of Śrī Laṅkā. Has the flow of copper cash from the West to the island been a constant one (with the eldest coins found at the bottom of the container overlain by the younger ones) or were they mixed together, hinting at only a very few transports of already mixed money in the second half of the fifth century, as is indicated by the results of the Tissamahārāma excavations[207]?

However, in the present context, the receptacle is much more interesting than its contents, of whatever kind. Like the container mentioned above, this too does not belong to the ordinary category of everyday pottery.

[205] The assertion that the goddess plaque H.41 was also part of this hoard can most probably be traced to a typing error. Just as in the case of catalogue entry H.38, the hoard number should read I.4 instead of I.3.

[206] Ratnatunga – who had bought this coin, besides others, from Wickremesinhe in August 2000 – has published a very good enlarged colour photograph on the internet at www.lakdiva.com\coins\roman\roman_indo_cu.html.

[207] Weiller 1999 and Cécillon 2005 impressively demonstrate what can be deduced from a hoard found *in situ*, when carefully handled and studied.

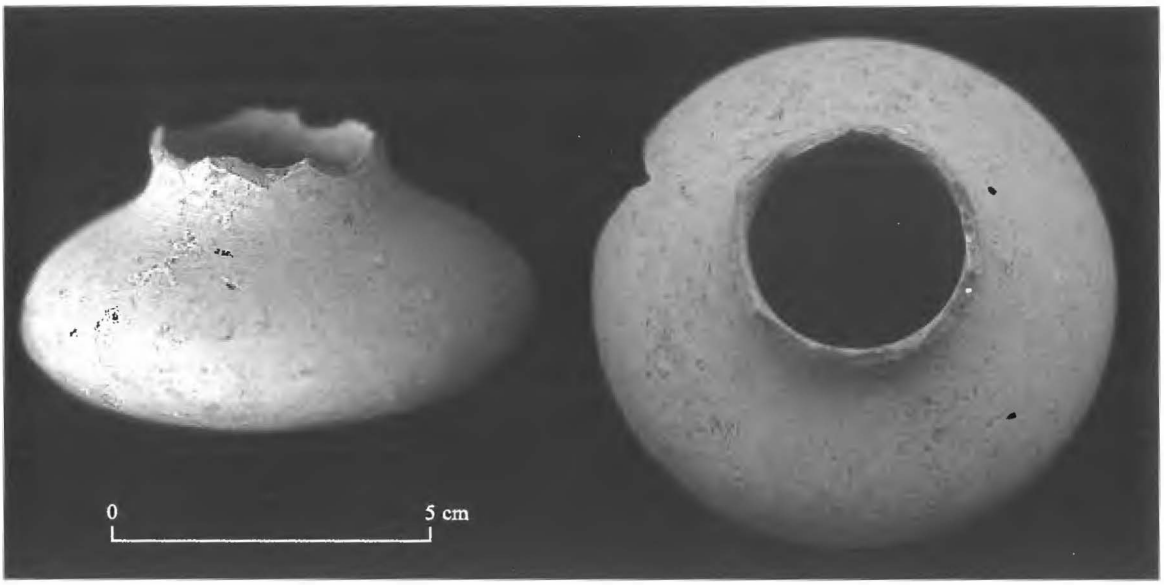


Fig. 53. Find container (reduced, not to scale).

The same is true of a third container (I.4) also discovered at Tissamahārāma. The latter is the key for a logical interpretation of the whole group. As it exclusively contained fifty goddess plaques, this receptacle has already been discussed in chapter 3.2.1. This find was 'accompanied' by a second, again from Tissamahārāma (I.5). The obviously simple pot, of which only a top view exists, allegedly contained 317 goddess plaques.

Near the site of the German archaeological excavations in Tissamahārāma, an earthenware pot was apparently discovered in a pit dug for precious stones [**191**]. In 2002, the excavators were allowed by the owner to take photographs of the finds (Figs. 53, 54).

The contents consisted of two fragments from two separate goddess plaques (above left) and two square, flat objects with smooth surfaces (above right). The latter may be either silver, silver-plated æs, or æs ingots, or punch-marked coins made from these materials. It is not known whether the pot originally contained more of these items or even other objects. For this reason, it is scientifically of only limited value. On the other hand, when taken for granted that these specimens were stored in this container, we get an important chronological fixed point for them; this kind of pottery cannot be dated earlier than c. 500 (personal communication by H. Schenk).

The last container to be discussed here (I.1) is of indistinct shape. Judging only from the two photographs, it looks like an oval melon

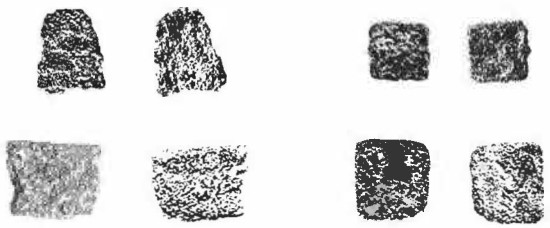


Fig. 54. The alleged contents of the pot (not actual size).

with a slit in the top. It allegedly contained twenty-eight Indian punch-marked coins and four goddess plaques. The latter were not published while, in the catalogue, twenty-*nine* punch-marked coins are said to have been found (Bopearachchi / Wickremesinhe 1999: G.57 and G.59–86). Here we need to compare the composition of the contents with that of a hoard of punch-marked coins unearthed during the archaeological excavations at Tissamahārāma [**185**] in 2002. It is noticeable that the ratio between early and late coins within the two hoards is different (see the following comparative table)[208]. Four additional coins that were found close to the Tissamahārāma hoard are added in brackets, as they may or may not belong to it.

[208] The periods are those of Gupta and Hardaker 1985.

	B/W	*Tissamahārāma*
II	1	–
IVa	–	–
IVb	2	–
IVc	–	–
IVd	14	1
Va	1	–
VIa	–	2
Vb	–	–
VIb	6	7 (2)
VII	2	1
IVb–Va	–	1 (1)
Vb–VIb	–	2 (1)
Vb–VII	–	2
VIb–VII	–	2

A second remarkable difference between the two groups is the fact that the coins from the receptacle are in a very good state of preservation, while the specimens from the Tissamahārāma hoard, though younger, are generally heavily worn. These observations lead to the conclusion that in the first instance, the coins were collected and stored over a considerable period of time within a special container, i. e. they were deliberately withdrawn from circulation. In the second instance, the coins represent merely a part of the contemporary circulation, temporarily wrapped in a piece of cloth. Thus we have a clear comparison between an especially motivated storage and a common one.

Starting from the religiously-motivated accumulation of the goddess plaques suggested above, we may now ask whether a comparable purpose can be assumed in the other cases as well. In at least one example, a link to Buddhist dogma can be established by the form of the container. Being white and hollow, the shell symbolises the element 'ether' in Buddhist teaching. Moreover, the conch shell or *śaṅkha* belongs to the eight auspicious Buddhist symbols[209] or *aṭṭha maṅgalikāni* (Karunaratne 1990). These comprise the *srivatsa* symbol, *camara* (flywhisk), *ankusa* (elephant goad), *matsya* or *matsya yugma* (fish or double fish), *swastika*, *bhadrapitha* (auspicious seat), *śaṅkha* (conch shell), and *pūrṇaghaṭa* (vase of plenitude). The object held by the seated figure on the reverse of the early mediaeval *Śrī Laṅkā Vibhu* coins may also be interpreted in a comparable way (Lautz 1986a: 5f.). In this case, however, the *śaṅkha* is associated with Vishṇu[210]. Alternatively, it might also be an allusion to Śaṅkhanidhi, one of the attendants of Kubera, the god of wealth, who wears a conch on his head (von Schröder 1990: figs. 95 A–F). The simplest interpretation, however, may be found in the explanation of François Valentyn in 1724: "chanks [note: From *sanku* (Tam.) – conch-shell] or sacrificial horns" (Arasaratnam 1978: 139). This brings us back to the beginning, where these receptacles were interpreted as offering boxes, or containers for sacrificial donations; in other words, a sacrificial horn to receive coins or tokens.

Besides the unusual shapes of some of the pottery, the contents of the receptacles are also informative:

- c. 367 Late Roman copper coins or their imitations
- said to be filled with Roman coins
- twenty-eight silver punch-marked coins and four goddess plaques
- thirty-two silver-plated æs ingots
- 317 goddess plaques
- c. fifty goddess plaques

Except in one case, each find consisted of only one type of currency, or of plaques. Supposing that all types were used as money in the common meaning of this word, then we would have to ask why they were not collected together in a single container, although perhaps separated from each other inside. That all these types were in use simultaneously is proven by the results of the Tissamahārāma excavations. The logical interpretation of this phenomenon seems to be that separately kept coins and plaques had different functions. Compared with other Roman hoards, the two mentioned here must be classified as large; both far too large to be interpreted merely as the contents of a moneybox.

Concerning the general storage of coins and tokens in ancient Śrī Laṅkā we are, unfortunately, confined to a very few archaeological examples. From personal examination, I know only five cases where traces of the storage material were still visible on the metal artefacts. Textile fragments were observable on four

[209] Schlingloff 1987: 323; Mhv. 27.37 n.2. Vermeule 1962: 79 n. 6, when discussing ancient offering boxes from the Mediterranean, points to the fact that they are often manufactured in the form of a temple or shrine.

[210] According to Codrington 1924: 54, "Vibhu is a title of Vishṇu", who is strongly associated with the conch symbol (Mitchiner 1991: 65).

Fig. 55. Coin from Tissamahārāma (enlarged × 4).

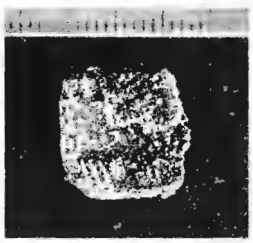


Fig. 56. Coin from Tissamahārāma (original photograph from excavation, enlarged).

coins excavated at Tissamahārāma, and on one maneless lion token unearthed at Jētavanārāma in Anurādhapura (Figs. 55, 56).

Although finally inconclusive, these examples seem to point to the storage of money or valuable objects within textile fittings.