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aus / from

Journal of Global Archaeology, 2023: pp. 16–49

DOI: https://doi.org/10.34780/h669-p194

Herausgebende Institution / Publisher:
Deutsches Archäologisches Institut

Occupation money

A large 11th century hoard of Rājarāja I Coḷa copper coins discovered in Śrī Laṅkā

Reinhold Walburg

An 11th century coin hoard of almost 7,000 Æ *kācu* struck in the name of the South Indian sovereign Rājarāja I Coḷa and discovered on the west coast of Śrī Laṅkā has been examined thoroughly. Based on the new numismatic evidence and on the critical evaluation of already published material the results of the investigation are in several parts contradictory to the *communis opinio*. Observed die-links touch the monetary history of the two countries involved especially the monetisation of the island by the South Indian occupying power holding sway over a large part of the island for c. 70 years. Finally, the hoard is contextualised with the two, perhaps three only cursory reported finds of the same kind from Śrī Laṅkā in order to shed some more light on the events in the course of the upheaval and final expulsion of the South Indian occupants in AD 1070. As "discards" the change over from the South Indian occupation money to the first original Śrī Laṅkān coinage initiated by Vijayabāhu I, AD 1055–1111 is outlined.

KEYWORDS

South India, Śrī Laṅkā, 11th century, coin hoard, *kācu*, Rājarāja I Coḷa

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»This far you may come and no farther.« (Job 38:11)

Introduction

1 To analyse a hoard of some thousands of worn out coppers is generally not the most amusing task. And when there is nothing at all to be compared with, then a researcher with a lively imagination sooner or later may stand on drift sand. To avoid falling into that trap, the main aim of this study is to provide hard facts gained from the material itself as well as from written record, and then to deduce a hopefully logical scenario. Thus, the subjunctive had to be strained more frequently, and words like ›perhaps, probably, might be‹ were to be used oftener than desirable. And probably, a statistician rather than a historian will rejoice in this article because of the multitude of numerary and spreadsheets.

2 The hoard to be discussed is, on one side, impressive, on the other side of deadly dullness. It consists of 6,868 copper coins of which 5,331 are undoubtedly of the same type (Fig. 1), so that we have good reasons to assume that the remaining 1,536 largely encrusted and agglomerated specimens are of this type as well; in almost all cases physical or iconographic details are recognisable which make this assignment certain. The conjecture is further justified by the Elahera (Elahera District, Central Province, Śrī Laṅkā) hoard of 1,774 coins exclusively of Rājarāja I Coḷa (Walburg 2008: **305**).

3 The one coin left is a puzzling fellow, South Indian too but a Pāṇḍya, not a Coḷa and much younger than these. We will come to it later.

The find spot

4 The hoard was discovered on the Ameen Estate at Pulidiwayal[1] on the Kalpiṭiya peninsula close to the southern end of the Puttalam lagoon in 1998 (Fig. 2 and Fig. 3). The coins were stored in one or more earthenware pot(s) and then buried, unearthed

1 Puttalam District, North-Western Province. Named also Puludiwayal, Puludiviyal and Puluthivayala.

Fig. 1: Coin hoard.

Fig. 2: Place of discovery.

by chance when digging a large waterhole with a dredger. Archaeological remains were not witnessed. Fortunately, the hoard could be secured completely by the Government Agent, Puttalam and the Director of Excavations, Dr W. Wijeyapala, of the Department of Archaeology, Colombo; the pot(s) was / were not secured, it / they was / were obviously totally destroyed.

5 After its discovery in 1998, the hoard was kept safe by Dr N. Perera, Assistant Director Arch. Dept. Colombo until 2009. Due to the initiative of Dr H.-J. Weisshaar of the DAI (*Deutsches Archäologisches Institut*) I was able to examine the coins extensively, considering all relevant aspects. Thank you very much indeed for that golden opportunity – and here is the outcome.

The coin type

6 *Kācu* of this type (Fig. 4[2])[3] have been struck in the name of the South Indian Coḷa sovereign Rājarāja[4] (I), AD 985–1014, from 1003[5] at the earliest, the first year when we meet with the name affix *Śrī* in Indian inscriptions, which gives to us a solid *t. p. q.* for the minting of this type. The obverse inscription reads Śrī / Rāja / rāja, accompanying a seated[6] figure (the king) while the revers shows a standing figure (the king as well, but in another attitude) and no inscription. The side with the name of the minting

2 For the sake of clearness, all coins are figured enlarged (not to scale).

3 Elliot 1886: no.166, Codrington 1924: VII.7.

4 Rājarāja's I Coḷa dating is somewhat complicated as, from an unknown point in time, he allowed co-regency to his son and afterwards successor Rājendra I Coḷa. Hence, the Oxford History of India (Smith 1964: 224), for example, merges these two sovereigns by taking Rājarāja's I Coḷa first year, 985, and Rājendra's I Coḷa last year, 1035. The subsequent kings were Rājādhirāja to 1052/53, Adhirājendra to 1070, and Kulottuṅga to 1118.

5 Schwinghammer 2008: 200 gives AD 1007 (without explanatory statement, perhaps adopting Mitchiner's view, Mitchiner 1998: 142).

6 For this (aristocratic?) posture see Parker 1909: 494 ff. and Fig. 156. The initial attribution of the seal-stone, showing a seated male figure, by the authorities of The British Museum (p. 497) to perhaps 7th century India seems more convincing than the later re-dating to the 3rd century BC. For a completely different interpretation of the design cp. Schwinghammer 2008.

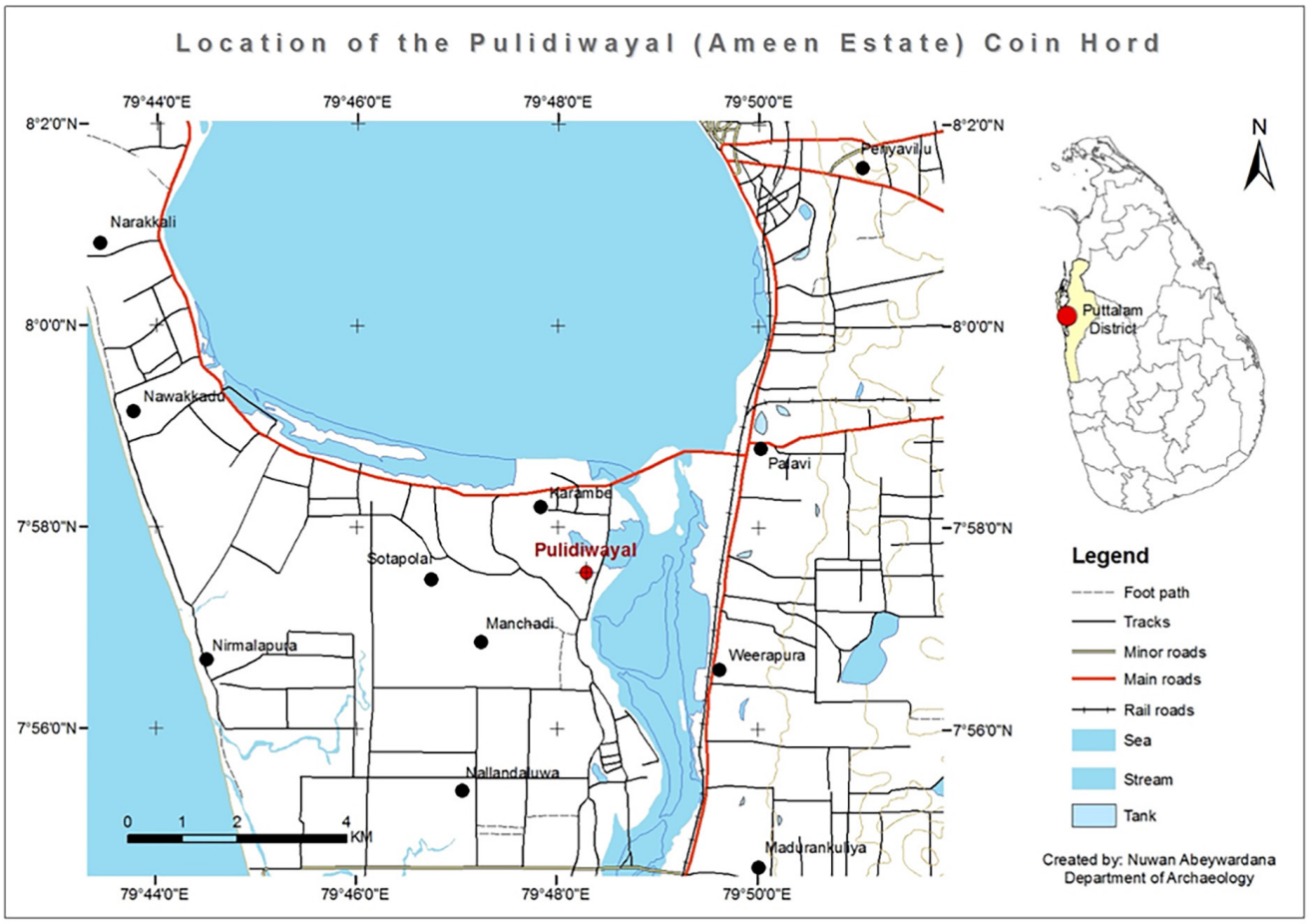

Fig. 3: The find spot.

authority is taken, contrary to the *communis opinio* but in accordance with numismatic methodology[7], as obverse. Doing so is also justified by the fact that frequently the side which bears the name is markedly much more exactly minted than the other side. The coin is commonly known as ›Rājarāja *kācu*‹. Often, but hardly applicable, it is called ›Ceylon man-type‹ (see the chapter on »The minting authority«).

7 Perhaps it might be helpful to recognise remarks from a 19th century authority concerning these coins just to get a rough impression of the topic that we are going to deal with:

»Copper pieces, the more perfect specimens weighing from 50 to 60 grains, bearing the name of Raja Raja, are met with every day [*sc. in South India*]. They are brought in numbers to be melted up by the coppersmiths, and one find within my knowledge in Tanjore yielded upwards of 4000.« (Elliot 1886: 133)

8 … and a century later …

9 »…, and it is probable that the coins were issued by various later kings following the old model without alteration of name.« (Codrington 1924: VII.7)

10 »Rájarája und seine Nachfolger prägten auch enorme Mengen Kupfermünzen mit dem gleichen Bild und Namen.« [*Rájarája and his successors also minted enormous amounts of copper coins with the similar pattern and name*] (Lautz 1986: 6)

11 Apparently, this type of coin is said to have been struck in large quantities in the South Indian Coḷa territories – and possibly in the Śrī Laṅkān areas subdued by Rājarāja I and his son Rājendra I Coḷa, AD 1014–1047, as well. Perhaps, a closer examination of the physical features will shed light on the minting authority and the relevant numismatic and monetary data.

7 It is by now well known that the side of a coin which shows the name, the image or the coat of arms of the minting authority is named obverse.

Fig. 4: Copper *kācu* of Rājarāja I Coḷa.

The physical features

The forms and the manufacture of the blanks

12 Regarding their sizes the blanks can be classified as large and flat (1,187 ex.), midsize (3,576 ex.) and small and thick (568 ex.), with smooth transitions between the groups, these, however, clearly recognisable (*vide infra*). A further subdivision leads to the cross sections of the blanks which are flat, one-sided convex or lenticular. The thickness of the blanks varies with their diameters; as a rough rule of thumb we can say ›the smaller the thicker‹.

13 Perfect roundness is achieved only in some very solitary cases; only 466 large, 239 midsize, and 19 small specimens show a fairly round shape. The norm is a varying degree of irregularity, in its extreme shapeless pieces of scrap (Fig. 5 a and b). Only sporadically (a total of 41 pieces only) we come across blanks of 21 to 22 mm that are nearly large enough to receive the complete designs both of obverse and reverse; and in just 15 cases only smaller parts of the designs are missing. This observation is confirmed by the specimens in the Department of Coins and Medals of The British Museum, London and those in the database of the American Numismatic Society, New York – no piece anywhere large enough for the dies. We can only speculate about the whereabouts of the specimens large enough to show the complete design in its outmost dimensions. Apparently, an adjustment of the dies to cope with shrinking blanks was not carried out.

14 Some of the irregularities may result from the method of manufacturing the blanks. Knobs cast in rods were afterwards cut off and then roughly hammered flat. Another, more accurate way of producing blanks was to cast them in connected clay turrets. Quite a lot of specimens show a deep (rarely two) v-shaped notch (Fig. 5 c), the point where the superfluous metal from the casting procedure had been removed.[8]

15 Many of the coins show a cracked rim, which may result from a too high blocking, inability of the mint worker or a too brittle melt.

16 From the table given below it becomes evident that the preferred diameter lay between 17 and 19 mm – perhaps a compromise due to a demand of coins and a concurrent shortage of metal (Fig. 6).

8 Cp. also Codrington 1924: 83.

Fig. 5: a = ideal, b = suboptimal, c = V-shaped notches at 3^h and 9^h.

Fig. 6: Coins sorted by diameter.

Diameter in mm		Thickness in mm	Quantity
14.5		4.0	1
15.0	small	3.0–4.0	38
15.5		3.0–4.0	111
16.0		2.5–3.5	413
16.5	midsize	2.5–3.5	487
17.0		2.5–3.5	1,159
17.5		2.5–3.0	625
18.0		2.5–3.0	854
18.5		2.0–2.5	449
19.0	large	2.0–2.5	501
19.5		2.0–2.5	313
20.0		2.0–2.5	285
20.5		2.0–2.5	54
21.0		2.0–2.5	37
21.5		2.0–2.5	3
22.0		2.0	1

The dies

17 Dies and blanks have to be regarded as an interacting duo, with the die as the leading part. So, for example, there are some midsize specimens of distinctive vertical oval form and the designs of both obverse and reverse follow this outline – a synchronised procedure between the die-engraver and the manufacturer of the blanks. If, on the other hand, the mint worker encountered blanks of irregular form, he tried to position the blank onto the fixed lower die and then the freehand managed upper die onto the blank in the most effective way, i.e. on the minted coin there appeared as much as possible of the design. In case of the fairly round blanks there are only some solitary coins minted off-centre. These observations argue for an accurate minting with products as good as possible; for further support of this observation see the chapter on die-axes below. However, this is diametrically opposed to the *communis opinio* arguing for a hasty and careless mass-production; the chapter dealing with the die-axes will shed some more light on this.

18 Many coins show a striking wedge-shaped form. This is the result of uneven die sinking, producing coins of irregular thickness, decreasing from thick to very thin – perhaps the hand of a die-engraver or the characteristic of the mint.

19 Generally, the dies produced three basic shapes of coins, viz. (Fig. 7)

- both obverse and reverse even, i.e. a coin of equal thickness (886 ex.),
- obverse or reverse even, the corresponding side being convex (516 ex. with obv. convex, 430 ex. rev. convex),
- lenticular, i.e. both sides slightly convex (1,495 ex.).

Fig. 7: Shape.

shape	small	medium	large	total
obverse and reverse even	126	605	155	886
obverse convex	208	1,570	738	2,516
reverse convex	91	318	21	430
lenticular	141	1,082	272	1,495

20 These data allow interpretations of different plausibility. It is quite evident that convex reverses were not intended and must be regarded either as die engraver's fault or, more likely, as a wrong linking of dies used for striking lenticular and even specimens. This implies that these dies had been at hand together in a mint and were used simultaneously, at least succeeding with a very short time lag.

21 Pieces with a convex obverse distinctly predominate within the hoard, numerically followed by the lenticular specimens. Essentially, the one-sided convex piece is a mutated lenticular piece, emanated from a continuous flattening of the once concave upper die. It was obviously easier in every way to work with such a die so that the new shape eventually prevailed. Judging from the numbers and technical features above the following sequence might be imaginable: From the ›even‹ basic design to deeper engraved ›lenticular‹ dies to finally pieces with an only ›obverse convex‹ side.

The die-axes

22 To spare the reader with long-winded explanations of the die-axis method an annotated table is probably the better way: Column one lists the digits of a clock face, the main directions 12, 3, 6, and 9 additionally marked with arrows. The hour position of the reverse while holding the obverse in the 12^h position indicates the die-axis when twisted around the vertical axe (*Wendeprägung*).

23 The data of the following two tables are unequivocal in their significance. The intended alignment was 12^h, also achieved with a 6^h position of the reverse in case of a *Kehrprägung* (twisting around the horizontal axe). The 3^h and 9^h positions are of distinctly volitional different pattern. The positions (one each up- and downward) around the four basic directions denote the mostly slight deviations when trying to place the reverse (upper) die into the correct position (Fig. 8).[9]

9 Schrötter 1930: 661 (s. v. Stempelstellung): »… eine bestimmte St. zu erzielen war bei Hammerprägung nur bei sorgfältigem Aufpassen möglich, …«.

orientation (hour)	large		medium		small	
12 ↑	178	15.06 %	595	16.97 %	108	19.60 %
1	94	7.95 %	167	4.76 %	49	8.89 %
2	74	6.26 %	298	8.50 %	36	6.53 %
3 →	122	10.32 %	304	8.67 %	55	9.98 %
4	20	1.69 %	103	2.93 %	14	2.54 %
5	111	9.39 %	238	6.79 %	18	3.27 %
6 ↓	142	12.01 %	433	12.35 %	82	14.88 %
7	72	6.09 %	215	6.13 %	26	4.72 %
8	34	2.87 %	65	1.85 %	6	1.09 %
9 ←	126	10.66 %	382	10.89 %	75	13.61 %
10	42	3.55 %	170	4.85 %	18	3.27 %
11	167	14.13 %	536	15.29 %	64	11.61 %
11+**12**+1		37.14 %		37.02 %		40.10 %
5+**6**+7		27.49 %		25.27 %		22.87 %
added	64.63 %		62.29 %		62.97 %	
2+**3**+4		18.27 %		20.10 %		19.05 %
8+**9**+10		17.08 %		17.59 %		17.97 %
added	35.35 %		37.69 %		37.02 %	
12+6	27.07 %		29.32 %		34.48 %	
3+9	20.98 %		19.56 %		23.59 %	

Fig. 8: Coin orientation by hour.

24 Reduced to the four basic axes but more subtle differentiated according to size and workmanship the same relative distribution is observable (Fig. 9).

	12	**3**	**6**	**9**
large / good	27	15	32	23
large / mediocre	122	92	87	96
large / scarce	29	14	23	6
medium / good	31	12	19	20
medium / mediocre	409	228	318	276
medium / scarce	153	64	97	85
small / good	–	1	–	1
small / mediocre	68	41	58	47
small / scarce	38	13	23	26

Fig. 9: Size and workmanship.

25 Summarised, these data reflect the development within *one* mint. Conversely, the numerary would be of markedly less congruence. At this point we can conceptualise a statement of Mitchiners' more precisely. He once postulated (Mitchiner 1998: 142): »It is necessary to determine whether deterioration was purely a progressive change through the course of time, or whether Raja Raja opened provincial mints which struck coins of inferior quality.«, and came to the conclusion: »It is more logical to conclude that, through the course of time, the quality of Raja Raja *kasu* struck at Thanjavur, and

also at other mints deteriorated greatly.« We may now cancel the last clause and confess that there was one mint only – without much doubt at Tanjāvūr – which was capable enough to satisfy the different needs of the different regions of the Coḷa realm (*cp. the chapter on the output*).

26 Judging from workmanship alone is a numismatist's *ultima ratio*, quasi an act of desperation. As an additional resource, however, it can be quite serviceable. And a table is always helpful (Fig. 10):

Fig. 10: Size and workmanship.

size of coins / workmanship	good	mediocre	scarce
large	194	835	152
midsize	169	2,550	818
small	2	367	175

27 This table supports the one-mint-only factum as it concurrently disproves Mitchiner's statement (Mitchiner 1998: 142): »In distant regions of the Empire, coins of the cruder class tend to predominate.«

Die-identities

28 In the course of examination some few die-identities were observed accidentally (Fig. 11). Six coins each of the medium size and good workmanship group and of the coarse, small and thick group are interlinked by their identical obverse and/or reverse dies; there are no intergroup links. With maximum likelihood much more die-identities would emerge by a systematic analysis. However, to compare all of the 5,331 verifiable coins among each other systematically, a total of 14,207,115 comparisons would have been necessary – feasible, of course, but for health reasons not to be recommended.

29 The number of 12 coins is definitely much too small for sound deductions to be based on. However, the numerical factor is in favour of the occurrence of much more die-identities. Being part of the universal set of coins produced exclusively in Tanjāvūr and not ›contaminated‹ by coins from other mints the chance for die-identical coins to ›meet‹ each other in a large quantity of coins even in a faraway Śrī Laṅkān hoard was in no way unimaginable. The casually observed die-links plus the not unfoundedly suspected ones point to a short but extensive output and to a narrow area of circulation.

30 With regard to the two coins reproduced below it is quite obvious that the dies were more outworn when used to strike the right specimen, distinguishable from the broader outlines of the design.

The standard weight of the *kācu*

31 »In the absence of any precisely known [*sc. South Indian*] standard, theoretically acceptable for a study of metrology, the alternative seems to be to concentrate on the actual weights of coins and try to find out whether the weights … convey any idea about the actual standards followed.« (Chattopadhyaya 1977: 155). There is nothing to add – especially when thinking, for example, of the multitude of possibilities to juggle with the weights of the *manjāḍi* seed to ›create‹ a halfway plausible standard.

32 According to Schwinghammer (Schwinghammer 2008: 200) the denomination and its intended weight was a *kācu* of c. 4.30 g. However, the weights given by Elliot, Codrington, Biddulph and Mitchiner as well as those gained during the investigation of our hoard unfortunately cannot support this statement. Elliot (Elliot 1886: 133), Codrington (Codrington 1924: 85) and Biddulph (Biddulph 1968: 23) convey the following data:

Fig. 11: Two coins struck from the same pair of dies.

- Elliot: From 50 to 60 grains (3.2–3.9 g) »for the more perfect specimens.«
- Codrington: Some 63 grains (4.1 g) for the better large and flat, and 58 grains or less (3.7 g) for the coarser and often lenticular specimens.
- Biddulph: 55.4 to 63.2 grains (3.6–4.1 g) for the full *kācu* and 37.7 grains (2.4 g) for the ½ *kācu* – which is in fact a, not uncommon, spike downwards (cp. table below).

33 From Mitchiner (Mitchiner 1998: 143) we gain the weights of six excellently preserved pieces, three of broad shape and very good design (3.47, 3.45, 3.28 g) and three of the small and dumpy class (4.58, 4.07, 2.83 g).

34 The weight distribution within the hoard reads as presented in Fig. 12.

35 The table's entries confirm the data provided by Elliot, Codrington, and Biddulph. For the broad good specimens, maximum weights of 3.9 and 4.1 g are given, while the maximum number of coins in the hoard masses between 3.8 and 4.1 g. The constantly decreasing number of underweight specimens from 3.7 g downwards and the likewise constantly decreasing number of overweight pieces from 4.2 g upwards was to be expected as a normal feature of an *al marco* minting. In this case, a given number of pieces has to be coined from a given weight of metal, and discrepancies in weight around the given normal weight are tolerated. There is no distinct preponderance in favour of certain groups concerning over- and underweight, both occur in all three classes, large, medium, and small size.

36 Concluding, we may presume that the Rājarāja I Coḷa copper *kācu*'s[10] intended standard weight lay between 3.8 and 4.1 g – simplified, about 4 g.[11]

Fig. 12: Weight.

				Summary	
Weight in g	**Quantity**	**Weight in g**	**Quantity**	**Weight in g**	**Quantity**
2.3	1	4.0	603	2.5–2.9	25
2.4	1	4.1	516	3.0–3.4	384
2.6	1	4.2	353	3.5–3.9	2,067
2.7	3	4.3	242	4.0–4.4	1,858
2.8	10	4.4	144	4.5–4.9	207
2.9	11	4.5	109	5.0–5.5	12
3.0	22	4.6	51		
3.1	33	4.7	25		
3.2	68	4.8	15		
3.3	93	4.9	7		
3.4	168	5.0	3		
3.5	217	5.1	6		
3.6	302	5.2	1		
3.7	438	5.3	1		
3.8	515	5.4	1		
3.9	595				

Traces of whitening

37 A number of 73 specimens show a silvery lustre in the deeper parts of the coin relief, as we know it, for example, from the very debased silver-washed Roman *antoniniani* of the 3rd century. Prima facie, this poses a new problem. Normally, silvering (as well as gilding) is used to pretend that a base metal coin is of precious metal down to the core. However, there has never been a silver denomination of the type here under discussion, only gold and copper are attested.[12] In a comparable case of a solitary piece »once silvered« and found in a Śrī Laṅkān *dāgoba*, Codrington (Codrington 1924: 84) thinks of an ancient forgery. Here, however, a religious motivation is more plausible. Alleged silver *kācu* of different kind are described by Biddulph (Biddulph 1968: 22): »Silver *Kāsus*, which were issued from the reign of Rāja Rāja I, varied from pure silver to coins of mixed metal which contained little silver. Some coins were of copper silver washed or plated. Weights vary in consequence from 46.0 [*2.98 g*] to 62.6 [*4.05 g*] grains for impure silver coins and from 61.0 [*3.95 g*] to 62.5 [*4.05 g*] grains for coins which appear to be of pure silver.«

38 At this point, we have to differentiate between facts and fiction with regard to the Rājarāja I Coḷa gold *kācu*. Intended to circulate with the value of a gold coin most of

10 Without any explanation, Codrington 1924: 85, thinks of a double *kācu*, weighing »some 63 grains« (*4.0 g*).

11 The arithmetic mean of 4,555 not encrusted coins is 3.95 g, that of 776 partly encrusted specimens is 3.98 g. Assigned to the three sizes of coins we get means of 4.02 g for 951 large, 3.95 g for 3,091 midsize, and 3.81 g for 513 small specimens – which metrologically corresponds to their artistic deterioration.

12 The alleged silver »kahavanu« of 3.70 g quoted by Schwinghammer (Schwinghammer 2008: 200, Fig. 15) in the collection of the American Numismatic Society (inv. 0000.999.27248) is, according to the ANS database, in fact a copper *kācu* of 4.01 g http://numismatics.org/search/results?q=+0000.999.27248.

these specimens are of such a low gold content that the worst pieces look like silver.[13] In monetary transactions these must have been given and taken as silver coins while the better specimens were transacted with a disagio according to their estimated or tested gold content.

39 In 1886, Sir Walter Elliot donated a specimen to The British Museum (henceforth ›BM‹) (Inv.1886,0803.15), which, as I could see for myself, looked like a coin of pure silver. A second specimen was purchased by the BM in 1888 from William Theobald.[14] An X-ray fluorescence analysis of the two coins, kindly initiated by Robert Bracey, Dept. of coins and medals, The British Museum, unequivocally yielded in both cases very debased but markedly different gold alloys (BM analysis, Fig. 13):[15]

Registration number	Au	Ag	Cu
1886,0803.15 (silver-coloured)	22.9	51.2	25.9
1888,0506.1 (gold-coloured)	40.0	46.0	14.0

Fig. 13: BM metal analysis.

40 In the final stage of this fraudulent manipulation even the silver content was drastically reduced and the ›end item‹ was a silver-coated copper coin.

41 In such a situation, silver washing is the cheapest way to gain coins with a thin silver cover – at least for a certain but not too long period. For comparison: The already mentioned *antoniniani* of the 3rd century Roman Empire, struck from a silver-copper alloy whose final stage of debasement is called ›white copper (*Weißkupfer*)‹ with a silver percentage within the lower one-digit range, show the same appearance like the Rājarāja I Coḷa coins: The silver on the higher parts of the relief is often completely rubbed off while the better protected ground remains longer intact. The whitening of the *kācu* is restricted to the large (43 ex.) and medium size (30 ex.) specimens of rather good workmanship while the small and coarse pieces are free from it; with generally 18–18.5 mm the 30 midsize coins come close to the lower limit of 19 mm of the large size specimens.

42 Whitening and silvering both produce the same effect, whereupon whitening is the cheaper and more effective treatment for bulk objects. At first, blanks are produced from an alloy of copper and a small quantity of silver, then heated and afterwards put into an acid bath. In doing so, the copper particles are dissolved away, thereby producing a surface enrichment of silver. The pressure of the minting process solidifies the rough surface and thus evokes the impression of a solid silver coin. In contrast, silvering (and gilding) are suitable to cover occasionally an already minted coin with a coat of precious metal. Here, silver powder and quicksilver are mixed together and the resulting amalgam is spread over the coin's surface. Subsequent heating dissolves the quicksilver and causes the silver to adhere to the underground. Thus, in our case whitening was the applied procedure. The freshly minted silvery gold *kācu* filled – at least for a while – the gap between the reasonably good gold and copper pieces, all three now – presciently arranged – of identical design and weight.[16] In fact the silvery gold *kācu*

13 See, for example, C(*lassical*)N(*umismatic*)G(*roup*) Electronic Auction 482 (16.12.2020) lot 656 (3.96 g, 19 mm, 2h) https://www.sixbid-coin-archive.com#/de/single/l33244628 and iNumis Mail Bid Sale 29 (2.6.2015) lot 1115 https://www.sixbid-coin-archive.com#/de/single/l28023692.

14 https://www.britishmuseum.org/collection/object/C_1888-0506-1 (without images, but quoted as being a gold coin; 4.29 g, 20 mm, 8h).

15 In the BM Online collection, the Elliot specimen (1886,0803.15) is – probably judging from its appearance – quoted as silver coin (4.37 g, 20 mm, 8h) https://www.britishmuseum.org/collection/object/C_1886-0803-15. A third coin, transferred from the India Office Collection to the BM in 1882, shows the same colour like the Elliot specimen and is also described as silver coin (4.30 g, 20 mm, 11h) https://www.britishmuseum.org/collection/object/C_IOC-1205.

16 Cp. Codrington 1924: VII.4.(2) and VII.7. The assumedly very low percentage of silver did not raise the

only had to ›survive‹ the bringing into circulation in the name of the minting authority at the set value. Gradually, the silver was rubbed-off and the once ›silver‹ coin became without any difficulty an already established copper denomination with ist appropriate validation.[17] Even the denotation as *kācu* in its meaning of »coin cash money[18]« fits. However, to answer the question whether this fraudulent manipulation succeeded on a grand scale, we need much more material evidence – preferably detailed data from the Elahera and Kalpiṭiya hoards as well as from mainland finds; more metallurgic analyses would be appreciated – wishful thinking in case of the coppers, of course.

43 The present-day extreme rarity[19] of Rājarāja I Coḷa gold *kācu* in general and of those of halfway good quality in particular as a result of Gresham's law that bad money drives out good money – the latter sorted out and destined to be melted down in order to secure the gold and silver, thereby escaping the next step of debasement (see BM analysis above) – seemingly provides evidence in favour of the outlined scenario. As usual, we can only speculate about the reasons for the gradual deterioration of Rājarāja's I Coḷa gold (intrinsic value) as well as copper (outside appearance) *kācu*. When things take a turn to the worse two principal reasons are conceivable: acquisitiveness or economic imperative. However, trying to answer the question which motivation(s) applied in the case under consideration merely based on numismatic evidence, is completely impossible – and neither the task of this study. Here, a historian of economics is required.

The coins' state of preservation

44 From ›very good‹ to ›totally worn out‹ all grades of preservation are represented throughout the defined three classes of coins (Fig. 14). However, the very good pieces are markedly underrepresented and confined to large and midsize specimens (70 ex., 3.41 g to 4.61 g, with a majority over 4 g). On the opposite side, the highest number of heavily to almost totally wornout items we come across in the category of the midsize coins. Taking into account the easiest to recognise degrees of ›almost totally worn out‹ and ›totally worn out‹ – both showing faint traces of design, allowing identification – we get in the first case 1,235 specimens and in the second 23 pieces, the rest being ›heavily worn out‹ (3,195 ex.) or ›worn out‹ (807 ex.). At this point, we have to have a closer look at the coin's shapes. In case of the lenticular specimens the central parts of each obverse and reverse are exposed far more to abrasive factors than the rim areas so that a totally worn out centre not necessarily indicates an excessively long time of circulation. The same applies to those pieces having a flat and a convex side. All forms occur in all three classes.

45 To add to this observation is the possibility of weak striking, especially in case of the thick specimens, so that in the end it is hard – probably even impossible – to say to what an extent a coin is worn out. And there is no chance to decide beyond doubt whether it circulated moderately for a long time or intensely for a relatively short period. This latter alternative, however, applies rather to comprehensively prevalent money-based societies, characterised by numerous small and midsize coin hoards especially of coppers (for daily transactions or the ›piggy bank‹) – which in fact we do not have. Thus, a decision in favour of a modest longstanding circulation seems to be justified.

weights of the low alloyed coins recognisably (3.2–4.8 g); 35 % range between 4 and 4.8 g (cp. the three ›golden‹ specimens in the BM, and the CNG coin, all quoted above: 3.96, 4.29, 4.30, and 4.37 g, 19–20 mm).

17 For Śrī Laṅkān kings, whitening is attested not unfrequently from the time of Parākramabāhu I. Cp. Codrington 1924: 65 ff., esp. 73, where the author describes exactly the same procedure, applied by the Sinhalese kings.

18 https://dsal.uchicago.edu/cgi-bin/app/tamil-lex_query.py?qs=kācu&matchtype=exact.

19 The alleged existence of a certain number of Rājarāja gold *kācu* is based exclusively on the masterly achievement performed by several online recourses to confuse Rājarāja with the more common Rājādhirāja.

Fig. 14: From very good … to … totally worn out.

46 What we can say with certainty is, in which state of preservation coins of distinct classes were when they had been added to the hoard (see Fig. 15 and Fig. 16).

size of coin	workmanship	very good	worn	heavily worn	almost totally worn	totally worn
large	good	30	89	70	5	
large	mediocre	9	266	473	87	1
large	scarce	1	36	93	22	
midsize	good	15	82	66	6	
midsize	mediocre	12	253	1,685	601	8
midsize	scarce	1	51	501	265	
small	good	1	1	–	–	
small	mediocre	1	22	206	138	14
small	scarce	–	5	96	74	

Fig. 15: State of preservation.

workmanship	very good	worn	heavily worn	almost totally worn
good	46	172	136	11
mediocre	22	541	2,364	826
scarce	2	92	690	361

Fig. 16: Summarised state of preservation.

47 The data show that the large and midsize pieces of good workmanship were added to the hoard at an early stage, accompanied by a comparatively small number of mediocre specimens of this size. The by far larger part of the mediocre and scarce pieces of all three classes circulated to the final wipe-out of the design.

48 This composition indicates a constant long-term increasing of the hoard. In case of a one-off taking from the mass of coins circulating close to the time of the hoard's burial, the number of very good preserved and of the worn out pieces should not be so high and vice versa the number of almost totally worn out specimens should be much higher. At this point, time and circumstance of the burial ask for the main focus of attention (see below).

The mint

49 As far as can be seen by now, mainly South Indian mints are hypothesised. So, for example, Schwinghammer (Schwinghammer 2008: 201) assumes Tanjāvūr for the large thin pieces of good workmanship and a potentially ambulant mint for the small thick specimens of coarse design. Biddulph[20] (Biddulph 1968: 23) opts for a Śrī Laṅkān mint in case of the well-executed broad and flat pieces. Mitchiner (Mitchiner 1998: 142 f.) votes in favour of a general gradual decrease in quality in the mint of Tanjāvūr and other mints.

50 In all probability, the Coḷas when initially conquering large northern parts of Śrī Laṅkā (Īḷamaṇḍalam) about AD 1000[21], or between 1001 and 1004[22], at a good pace[23] started to monetise the locations of economic interest, e.g. market towns, within the subdued areas from AD 1003, probably with the help of Indian merchants.[24] This applies especially to economic regions like the Sinhalese kingdom, having no uniform currency of its own; and generally »money was scarce« in 9th and 10th centuries Śrī Laṅkā (Codrington 1926: 42). Prior to the Coḷa conquest payments are only sporadically mentioned in inscriptions, made by weight, i.e. *kalandas* gold.

51 When having a look at the vast extension of the Coḷa realm it is, simply for reasons of logic, justified to assume that the local authorities in the conquered areas, where necessary had to provide their domains with the new Rājarāja I Coḷa *kācu*. These were ›imported‹ from Tanjāvūr as it was a very difficult task to establish a multitude of efficient mints to produce coins of good quality. And Tanjāvūr obviously was in the position to serve the probably modest needs of the Coḷa officials in the just conquered northern Sinhalese territory. The southern dominion of Rohaṇa always remained in Sinhalese hands (Cūlavaṃsa 1929: 55 ff.) whereat the line of the border is not uncontroversial.[25] To provide the Sinhalese overseas territory with the necessary quantity of coins would not have been a difficult task. Except the last c. 10 miles the complete voyage from Tanjāvūr to Polonnaruwa, the new Sinhalese capital city (renamed Jananāthapura) and seat of the Coḷa administration, could have been undertaken by ship: From Tanjāvūr down the Cauvery to the sea, then southwards to the Sinhalese harbour of Trincomalee and then upstream the Mahavali Gaṅga to the immediate vicinity of Polonnaruwa – all things considered a distance of about 300 miles. The fright likewise was unproblematic. If we calculate with the sum of c. 14,000 *kācu* comprising all finds of Rājarāja I Coḷa copper *kācu* hitherto made on the island (even the most uncertain) we end up at a weight of barely c. 56 kg, easy to store, guard and handle in two chests of moderate size – this, nota bene, calculated for *one* load. And even the liberally redoubled quantity of coins to consider the estimated number of unrecorded cases would have caused no problem. However, the coins themselves witness a more or less constant cash flow so that we have to anticipate small-sized batches from the continuous production of the Tanjāvūr mint, shipped several times to Śrī Laṅkā and put there into circulation successively by the local Coḷa officials by paying for commodities and services; being tributary (Cūlavaṃsa

20 Perhaps he thought of a kind of ›Sinhalese hand‹ to be found later again in their own coinage, beginning with Vijayabāhu. There is, however, no evidence to support this assumption (cp. Codrington 1924: VII.4).

21 Cp. for example Kulke 2005: 54 f.

22 Codrington 1924: 51. For the historical details of the Coḷa foreign rule cp. chapters 55 to 58 of the Cūlavaṃsa.

23 Spencer 1983: 60, emanates from an »initial season of plunder«, followed by the establishment of an administration, i.a. the institution of taxes. Cp. also Spencer 1976 (partly identical with Spencer 1983).

24 Spencer 1983: 60: »All that we can reasonably say is that Indian merchant alliances did vastly expand their commercial activities in northern Ceylon in the wake of the Chola incursions, and that they brought their troops with them – certainly to protect their commerce, but possibly also to serve with the Chola imperial forces on an ad hoc basis.«

25 Cp., for example, Cūlavaṃsa 1929: 55.22, with commentary by Nicholas 1959: 126; Cook 1951: 37 Fig. 10; Ranawella 1966: ch. VI.

1929: 58.11), a part of the money flew back from the Sinhalese coin pots and purses into the treasury of the occupying power.

52 The material evidence for this scenario is at hand. Admittedly unfrequently but nevertheless clearly recognisable are those specimens where obvers and reverse designs absolutely do not fall into place, in fact in a twofold way (Fig. 17). The one criterion is ›style‹ the other is ›size‹. Occasionally, there is a marked divergence between the artistic execution of obverse and reverse design, this but only on specimens of the midsize group. Likewise, and on a much larger scale, the blanks are too small for the dies used. Normally, the obverse design with the king's name is fully visible (Fig. 18) while the reverse die is (sometimes much) too large. This applies only to specimens of the midsize and small groups.

53 Both phenomena point to the usage of dies available in a fairly large mint to replace a cracked die, no matter whether it fits together in style or size with the surviving die still in use. The irregularities described are to be expected in the working environment of a professional and experienced mint where skilled labour were intelligent enough to keep the minting process going on. This also applies in the case of so-called double striking where parts of the design show a kind of shadow, resulting from a second strike with the hammer onto the upper die, necessary to completely press the metal of the blank into the engraved relief of the design. From a total of 196 double struck coins 19 coins each belong to the large size group and of the small size group while the remaining 158 are midsize – in other words, only 3.7 % of the 5,331 examined coins showed signs of double striking. This clearly shows that at least semiskilled labour, used to handle the dies, operated in the mint. Likewise, it does provide evidence that perfect coins were expected by the minting authority, refusing only weakly struck, flawed specimens.

54 Excellent craftsmanship was necessary to engrave markedly concave dies for producing extremely convex coins. In one case the other side is not flat but concave, giving the coin the form of a Byzantine *scyphatos*. To engrave convex and concave dies was beyond the ability of a back-alley mint.

55 The following comment touching just upon the internal structure of the mint has to be regarded as highly provisional due to the small number of pieces. Some specimens show marked deviations from the canonical design namely in form of additional marks. The following were observed:

56 **Canonical**

Obverse: Crescent and triangle (above right); dot below right arm

Reverse: Crescent and triangle (above right); crescent and dot (down left)

57 **Deviations**

obverse +

reverse crescent and triangle (above left)

obverse without dot

- dot right and none left
- dot right and left

reverse large X (down right) Fig. 19 a

- flower[26] (down right) Fig. 19 b
- undefinable marks (down right) Fig. 19 c and Fig. 19 d
- halved dots
- four annulets with dots therein Fig. 19 c
- two triangles (above right)

58 Most pieces showing additional marks are of the medium size type, followed by some broad specimens. Only four of the small and thick group show minor anom-

26 Another specimen in Chattopadhyaya 1977: no. 207.

Fig. 17: Markedly divergent dies, in size and style.

Fig. 18: Dies consistent to each other.

alies (three are without the obverse dot, one shows halved dots on its reverse). The obverse variants can be neglected as they have to be regarded as oversights of the die engravers, confusing left with right and adding or omitting a small detail in the form of a dot; the latter could also be due to a clogged die. Substantially informative, on the contrary, are the reverse marks added to the canonical design below the four dots or annulets on the right side. These marks alone though of distinctive forms are not entirely helpful. If, however, we take a closer look at the four designs Fig. 19 a to d, we recognise unequivocally four different styles. In other words, with the style we get the hand of the die engraver and the mark perhaps is his sign; likewise, it may indicate the die, the minting table or the emission. In fact, however, it can denote whatsoever.

59 An optical feature is worth mentioning. Two basic colours are distinctly discernible, each of them interconnected with a special class of coins. The large and midsize specimens generally have a dark to light green patina, while the small and thick pieces are of dark to medium brown colour. This phenomenon points to the use of different copper ores, respectively alloys over the years. It is futile to speculate about their location.

60 The same phenomenon occurs in the subsequent Sinhalese monetary history. According to Still, who examined about 500 Sinhalese copper coins i.a. of Vijayabāhu I and Parākramabāhu I, the pieces of these two kings have a typical light green patina. Coins of other sovereigns are of different metal (Still 1905: 401–403).

61 Except four casts (two midsize, two small), there were no unofficial specimens in the hoard. One of the casts is brass-coloured, as are two further coins in the hoard. Another brass-coloured coin – presumably a cast too – might be of some relevance. This

Fig. 19: Different marks on the reverse down right.

specimen[27] was of the Śrī Laṅkān king Parākramabāhu I, AD 1153–1186 and it proves the existence of forgeries manufactured this way.

The output

62 To avoid misunderstandings: This is *not* an attempt to calculate the mints' output as a numeric value – an undertaking which in any case is doomed to failure. The aim is a relativization of the established statements, beginning in the 19th century. For the purpose of exactness unfortunately extensive citations are inevitable, arranged in chronological order.

63 Tufnell 1887: 41

»So plentiful are they, indeed, that one cannot help being led to the conclusion that all those one meets with bearing his name [*sc. Rājarāja*] could more probably be attributed to a line of kings than all be issues of a single sovereign.«

64 Elliot 1886: 133

»They are brought in numbers to be melted up by the coppersmiths, and one find within my knowledge in Tanjore yielded upwards of 4000.«

65 Codrington 1924: 85

»…, and it is probable that the coins were issued by various later kings following the old model without alteration of name.«

27 The coin was part of a large private collection (cp. Walburg 2008: I.1.3) and the collector noted: "LOKADA: p. 187 (*i.e. the page* in Codrington 1924) says Lokada is Lead; but the pale yellow "bell-metal" is universally so termed."

66 Lautz 1986: 6
»Rájarája und seine Nachfolger prägten auch enorme Mengen Kupfermünzen mit dem gleichen Bild und Namen.« [*Rájarája and his successors also minted enormous amounts of copper coins with the similar pattern and name*]

67 Mitchiner 1998: 140
»It is principally the copper coins (kasu) of Raja Raja Chola type that are found in very large numbers all across the region [*sc. Tamilnadu*]. They are the most abundant of all pre-Nayaka coins.«

68 142: »These coins are found in vast numbers across all of Tamilnadu and in lesser numbers across the South Karnataka hill country. In Tamilnadu they are the commonest mediaeval coins … Among a relatively unselected assembly of some 3 kg. coins recovered from the river Vaigai at Madurai these were the most numerous coins of the pre-Nayaka period. … Smaller numbers of Raja Raja kasu have been found in Southern Karnataka, which was occupied by Raja Raja Chola in 1004 … Small numbers of Raja Raja *kasu* were observed scattered all across southern Karnataka … Stray coins have been found as far north as Badami …«

69 In effect, we have not a single concrete number describing any large amount numerically. As quantifying is impossible, we are confined to relativity. Here, Mitchiner's observations are helpful to a certain degree. Accordingly, the distribution is like this:

Tamilnadu	very large numbers / vast numbers
South Karnataka	in lesser numbers / smaller numbers / small numbers
Northward	stray coins

70 The Sinhalese province is not mentioned.

71 The additional long list of provenances quoted by Mitchiner (Mitchiner 1998: 142) is not entirely helpful as any degree of frequency is missing. And his diction is quite vexing since very large ≠ vast, and lesser than vast is not small. Well then?

72 On halfway solid ground we may stand with this suggestion, considering all compiled information: A lot of coins served the needs in the capital city of Tanjāvūr (Elliot's hoard »upwards of 4000« and – perhaps to a lesser extent – those of the larger southern centres of Madurai, Karūr, and Tirunelveli. With increasing distance from the capital, the number of coins decreases via small numbers to stray finds. For this reason, small and midsize hoards of Rājarāja I Coḷa *kācu* are lacking in Śrī Laṅkā. This differentiation is more realistic than to think of a consistently dense and ankle-deep coin supply all over the Coḷa realm. So much for that.

73 Finally, mention has to be made of a statement made by Codrington (Codrington 1924: VII.7) which is dubious in every respect and evokes simultaneously the impression of an area flooded with coined money: »This [*sc. Rājarāja "crescent" type kācu*] appears first in the inscriptions of Kulottuṅga Coḷa III (A.D. 1178–1217), in whose reign gifts for lamps were reckoned by thousands of this denomination.« The following objections have to be made:

- no references
- royal or private donations?
- gold or copper *kācu*?
- how many donations in which scale each?

74 This concise compilation already shows the problems gated with that statement. This a fortiori as Codrington later (Appendix D.48 and ch. VI n. 1) quotes an inscription from AD 1146 in which a »Gift of 102 kasu for a lamp« is recorded – gold or copper coins, a new lamp or the maintenance of an existing? Just as well, the ›thousands‹ might be one of the typical exaggerations we frequently meet with in the Mahāvaṃsa (Walburg 2008: 307). However, without any reference we are lost, again, in the wide field of speculation. A possible stepping stone in this swamp can be offered when we interpret at least some of the mentioned ›thousands‹ not as real coins but in the meaning

Fig. 20: An advanced stage of deterioration, or an imitation?

of ›equivalent value to the number of *kācu* mentioned‹, i.e. as unit of account or notional equivalent, payable by means of different commodities.[28]

The minting authority

75 In the texts quoted at the beginning, it is already to be heard that these coins were minted during the reigns of Rājarāja I Coḷa and probably an unknown number of his successors, according to Mitchiner (Mitchiner 1998: 142) »circa 1007 to mid 13th century«. This, however, would mean that we deal with a so-called 'immobile' type, produced unaltered from its beginning for a longer period up to an unknown final point in time. That might be a reasonable explanation for the existence of the allegedly vast number of piece and for their varied appearance – if their number is indeed ›vast‹ (*cp. the chapter on the output*). However, there is an alternative explanation. This assumes that we have to take the coin inscription literally, i.e. all specimens with the inscription »Śrī / Rāja / rāja« have been struck exclusively during the reign of this sovereign. The different appearance – broad and flat and of good workmanship to small and clumsy and of more or less degenerated workmanship – then would result from the different modes of operation and artistic skill in the mint of Tanjāvūr over time, to say it with Mitchiner (Mitchiner 1998: 142): »..., the quality was allowed to deteriorate.« At our present state of knowledge, it is impossible to say where the deterioration in the official mint of Tanjāvūr ends and a supposable semi-official or private imitation commences (Fig. 20).[29]

76 Here, we have to explain the striking fact that there are no copper coins known with the names of Rājarāja's I Coḷa direct successors, up to the reign of Kulottuṅga I Coḷa, AD 1070–1118. This, seemingly, permits only one conclusion: There was no need as the quantity of the circulating Rājarāja I Coḷa *kācu* had been completely sufficient to furnish the demand.[30] Thus, just to caress their ego, Rājarāja's two direct successors struck exclusively very debased gold coins, partly indistinguishable from silver and in obviously very small quantities; there are only four specimens reported as having been

28 For a comparable behaviour in Śrī Laṅkān history cp. Walburg 2008: 307.

29 4.33 g, 18 mm, thickness 2.5 mm, die-axis 1h, cross section even, very good preserved.

30 Biddulph's (Biddulph 1968: 18) explanation is underwhelming: »It is possible *Kāsus*, in copper, were also issued in the reigns of Rājendra I, and Rājādhirāja I, which are not readily distinguishable.«

discovered in Śrī Laṅkān soil.[31] However, they used their right to mint and issue coins and inscribed their names on coins of precious metal, intended to be used *not* in petty transactions.

77 By now, it should be evident that the *kācu* being under consideration had been struck during the reign of Rājarāja I Coḷa in the years AD 1003–1014. A period of 12 years should have been sufficient to monetise the provinces of the Coḷa realm according to their individual, in case of Śrī Laṅkā moderate, requirements that only left faint numismatic traces of the c. 70 years lasting occupation (*cp. the chapters on die-identities and on finds*). And: Constant minting after AD 1014 would have produced considerably more well-preserved coins.

78 For the Sinhalese, the imposed foreign coins were a pivotal step towards a uniform copper coinage of their own, created after the South Indian pattern copying design, size, metrology, and in case of the gold coins the dismal metallurgy.[32] The first undoubtedly Sinhalese specimens of this design bearing a sovereign's name are the gold and copper coins of Vijayabāhu I, AD 1055–1111, who liberated the island from the Coḷa rule in AD 1070. Here, we come to the crucial point as the *communis opinio*, created by Codrington[33] – following the quite indecisive Still 1905 – assigns the copper pieces unlike the gold coins of the same appearance to Vijayabāhu IV, AD 1271–1273 – namely exclusively for stylistic reasons; hoard evidence and, much more important, archaeological data do not exist. Thus, it is more than plausible that the Sinhalese after AD 1070 continued issuing the widespread Rājarāja I Coḷa type copper *kācu*[34] now in their own name, than to wait about 80 years with the introduction of the corresponding copper coins during the reign of Parākramabāhu I, AD 1153–1186. By the following description, Still (Still 1905: 403) unwittingly puts the coins of Vijayabāhu I at their right place:
»Extremely prone to vary, and to vary widely. I do not think that any two of my ninety-five exactly resemble one another. In both weight and diameter these coins are considerably smaller than the last three varieties described, and slightly smaller than the coins of Parakrama Bahu. The metal, too, is more like that of Parakrama Bahu, and corrodes light green, with a red crust.«

79 This exactly describes the products of a mint in its infancy with unskilled labour, having as pattern only the still circulating, to a greater or lesser extent worn Rājarāja I Coḷa copper *kācu* and a quite moderate number of gold coins of the early Coḷa sovereigns (see Appendix). The many varieties observed by Still result from the frequent replacements of the dies, cracking easily due to insufficient, unprofessional hardening. Parākramabāhu I, the first king after Vijayabāhu I who struck coins obviously had a better equipped mint at his disposal, as his coins – like those of his successors – are of excellent quality. Diameters and weights increased slightly but remarkably and so differ from the Vijayabāhu I pieces which are geared to the Rājarāja I Coḷa *kācu* – a not uncommon monetary behaviour of a successor to distance himself from his predecessor

31 Rājendra I Coḷa: 1 ex Polonnaruwa, Polonnaruwa District, (Sirisena 2002: p. 39 no. 84); 1 ex Mahiyangana, Badulla District, (Walburg 2008: 313). Cp. also Biddulph 1968: nos. 25–29. Rājādhirāja I: 2 ex Sitawaka, Kegalla District, (Codrington 1924: 84 (5).

32 Codrington 1924: VI.15, gives an average diameter of 19.0 mm and a mean weight of 62.7 grains (4.0 g) taken from 64 cleaned pieces of Vijayabāhu I. Analysing 100 copper coins of Parākramabāhu I, Still 1905: 399, obtained 19.4 mm as average diameter and 4.2 g as average weight. Rhys Davids (Rhys Davids 1877: 28 [§ 51]) quotes 4.0 g for the heaviest piece out of 14. For the quality of Vijayabāhu's gold coins see Appendix and Codrington 1924: VI.1.

33 Formerly assigned to Vijayabāhu II, III, or IV (Codrington 1924: 63).

34 So already rightly observed by Tufnell 1887: 43: »The incursions of the Cholas would naturally lead to the introduction of their coins, and it is more than probable that this led to the coinage of the series in the island.« and Rapson 1897: § 126: »This type spread with the extension of Cola power over a great portion of Southern India. Its use was established in Ceylon, as a result of the Cola occupation of the island, and it was continued by the independent Rājas of Kandy.«

by improvement. Finally: If ›style‹ alone is the only criterion for an assignment then one hypothesis is as good as the next.

80 At this point and with only a slight alteration we are in perfect accordance with Rapson who rightly noted already in 1897 (§ 127):

»Ceylon. – The coins of the Rājas of Kandy, who adopted without any important modification the types of their Cola predecessors, represent a period from 1153 to 1296 A.D. … Previous to this period 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.«

81 We only have to substitute the initial year 1153 (coronation of Parākramabāhu I as sole ruler) by 1070 (final expulsion of the Coḷas by Vijayabāhu I).

82 This blasphemous interpretation fits well into the results of the present hoard's analysis. Therefore, it is unnecessary to ask furthermore ›who copied whom‹, and we do not have to think outside of the box to decide, who was the hen and who the egg.[35] Furthermore, if at all necessary, one may point to a certain Sinhalese tradition in copying foreign currencies like punch-marked coins and late Roman copper coins, likewise due to the unavailability of an own uniform currency (Walburg 2008: passim).

83 In this context, although not mandatory, some few words about the contemporary anonymous gold *kahavaṇu*[36] of allegedly Śrī Laṅkān origin seem to be appropriate. The design on both sides is like that of our *kācu* but with another legend in lieu of ›Śrī Rājarāja‹. Different attempts to read were undertaken until eventually Codrington's (Codrington 1924: V.8) proposition »Ṣrī Laṁkā Vibhu, "the fortunate lord of Ceylon"« became generally accepted – perhaps an acknowledged linguist should take a look at this. His additional but unexplained amendment »*Vibhu* is a title of Vishnu« in contrast found no echo in professional literature. Anyway, it rather militates in favour of an Indian Hindu than a Sinhalese Buddhist minting authority

84 A localised hoard of the anonymous Coḷa gold coins should be mentioned. By dint of the Biddell documents we can throw some light on the Nikula find quoted by Codrington (Codrington 1924: 55 f.). Discovered on 15.11.1916, Nikula is situated in the close vicinity of Elahera (only c. 10 miles WNW) where a large hoard of Rājarāja I Coḷa copper *kācu* was made. Assured facts are few: The four specimens quoted by Codrington all ended up in the Biddell collection in the early 1930s; there were no additional pieces in his collection. Consequentially we can deduce that the find was very small as otherwise Biddell would have received one or even more specimens; in this case, however, only Codrington and Bell (the then Archaeological Commissioner) got their share. Without much doubt, there were no ›fractional pieces‹ (in case they are such) of the *kahāvaṇu* or dissimilar pieces in the find as neither Codrington nor Biddell mention Nikula in other context. Remarkably, Biddell quotes different localities for the *kahāvaṇu* and the fractional pieces, except of course Anurādhapura and Kandy.[37] Perhaps, one

35 Lautz 1986: 6 argues undecidedly: »Ob die Chola-Münze eine Nachahmung der ceylonesischen ist oder umgekehrt, ist also nicht geklärt.«, while Chattopadhyaya 1977: 54, speaks tentatively in favour of a South Indian origin: »…, it seems that it was first introduced by him [*sc. Rājarāja I Coḷa*]«. Rhys Davids 1877: § 65, is convinced: »… the coin with the inscription Rájarája (Fig. 8) which is inserted in the Plate, because it is the coin from which I believe the whole of the Ceylon series to be derived.« Cp. also Biddulph 1968: 13–17 for other voices in favour of a South Indian origin. The *communis opinio* erroneously ascribes the inventive part to the Sinhalese, often misnaming the representation as ›Ceylon man-type‹; Codrington 1924: 173 speaks of »the Ceylon standing man.«

36 Codrington 1924: V.8 and pl. 45–54; Mitchiner 1998: nos. 311–312. The few and far between mentioned copper coins of this type (Walburg 2008: 301; Codrington 1924: V.10) in all probability are imitations with a religious setting.

37 Anonymous *kahāvaṇu* (quantity of specimens in brackets): Anurādhapura (3) – Bandarawela (1) – Colombo (1) – Duratiyawa, 5 miles from Mawatagama (1) – Gonagama (1) – Kandy (3) – Kegalle (2) – Kurukkalmadam (4) – Manmunai or Eruvil (1) – Nikula find (4) – Payidikulam / Payindikulama (1) – Phussalkaddiya, Thambagalla Korale (1) – Talawa area (1) – Talgaspitiya (1) – Turuwila (1). Anonymous small denominations: Anurādhapura (1) – Balapitiya (1) – Galnewa (1) – Hambegamuwa (2) – Kandy (2) – Karambewa, S of

should give some thought to the alleged unity of the *kahāvaṇu* and the smaller denominations – especially when one and the same legend is read »Lakshmi« and »Lamka Ma(haraja)«.[38] However, enough already.

85 As ›by-catch‹ we may state the report of the Galpottegama treasure trove more precisely to that effect that the »127 AV coins of c. 10th century date« (Walburg 2008: **306**) evidentially were of the anonymous *kahāvaṇu* type discussed here. The proof is established by three specimens from the hoard donated to The British Museum that can be traced in the museum's online collection.[39] As the pictured second coin[40] is of the anonymous type and no other minting authority is mentioned, and as the Colombo Museum in 1937 gave away more than the half of the »duplicates« (54 sold, 3 to the BM, 6 for assay, and 12 to Biddell) there is no doubt about it that *all* coins had been of the anonymous type. Thereby, we have with Nikula and Galpottegama hoards the only two *definitely assured* Śrī Laṅkān find spots of the anonymous Coḷa *kahāvaṇu*.

876 When commemorating the facts amassed so far it is unimaginable to assume a Sinhalese origin of these specimens instead, rightly, a Coḷa creation. Concerning the dating it is only vaguely stated (Mitchiner 1998: 137) »The series was introduced before submission of the island to Raja Raja Chola (invaded c. 990) in 1001«. Consulting Cūlavaṃsa ch. 53–55, there is no political event at all that vindicates the emission of a gold coin with such an ambiguous inscription. The adjective ›fortunate‹ better suits Rājarāja I Coḷa and / or his coregent and later successor Rājendra I Coḷa after having conquered the northern part of the island, ransacked the capital, seized the imperial insignia and finally captured and deported the Sinhalese king (Mahinda V) to South India (Cūlavaṃsa 1929: 55.16 ff.). It is open for discussion and reserved to the result of an in-depth analysis which of these events finally caused the minting of this coin-type. Concluding one may point to the manifold similarities between the anonymous gold coins and those of the Coḷas, metrologically, metallurgically, epigraphically, and stylistically – and to the observation that the anonymous gold *kahavaṇu* was »once fairly common in Madura District, South India«.[41]

87 It is self-evident that the foreign currency was needed to interact fiscally with the administration officials of the occupying power – not least to pay tributes and taxes, the latter levied in gold[42] that had to be bought with copper (*cp. the chapter on the hoards ›value‹*).

The final coin?

88 The presence of this solitary coin (Fig. 21) in the hoard is an enigma. A *kācu*[43] too and of excellent preservation, it has been nonetheless quite difficult to identify the minting authority unequivocally. Only by the generous help of the late Iravatham Mahadevan I was able to get firm ground to proceed.

89 The essential passage in our mail conversation reads as follows:
»Mr. Arumuga Seetharaman, Thanjavur, Tamilnadu is an expert on ancient Tamil numismatics and has published several volumes in Tamil illustrating coins from the

Kahagama (1) – Kurukkalmadam (1) – Maniyangama (1) – Minneriya (1) – Nikaweratiya (1) – Pandiruppu (1) – Periyakallar (4) – Pokkaveli, 10 miles from Kandy (3) – Sainthamaruthu (1) – Weuda (1). For the east coast localities Pandiruppu, Periyakallar, and Kurukkalmadam cp. the commentary in Walburg 2008: **210**.

38 Mitchiner 1998: 137 no. 313.

39 Inv. 1937,0718.1-3 (»Donated by: Colombo Museum«).

40 https://www.britishmuseum.org/collection/object/C_1937-0718-2.

41 Codrington 1924: V.10 (final sentence) and V.8-10 passim for the similarities.

42 Cp. also Codrington 1924: 85 (uncoined gold to pay fines and taxes in South India and Ceylon).

43 17 mm, 3.41 g.

Fig. 21: Copper *kācu* of Māṛavarman Sundara Pāṇḍya, AD 1216–1244.

Sangam age to the end of the 18th century. I sent him a scan of the Tamil coin you referred to me. After studying it he told me on the telephone that the reading proposed by Dr. R. Nagasamy 'Chonadu Kondan' is correct. Seetharaman has examined several coins of this type. He has also published the coin in his book Paantiyar Kacukal (2006), Pg. 11 No. 6. I translate his description in the book: There is a standing man on the obverse. The reverse has a legend in Tamil in three lines 'Chonadu Kondan'. The provenance is Thanjavur. Metal: Copper. Weight: 2.8 g. The coin was issued by Maravarman Sundara Patiyan (1216–1244 CE). The coin probably commemorates the king's conquest of the Chola country when he burnt Uraiyur and Thanjavur cities. He had a coronation ceremony at Chidambaram. Later he was magnanimous enough to return the Chola country to the Chola king. Hence he had both the titles 'Chonadu Kondan' (he who conquered the Chola country) and Chonadu Vazhankiya (he who gave back the Chola country).«

90 The crucial question to be answered is, whether this coin belongs to the original hoard or whether it is a later, perhaps even modern, intruder. In any case, the supply of the Rājarāja I Coḷa specimens should have ceased as a result of the recapture of the island from Coḷa control in AD 1070, during the reign of Vijayabāhu I, AD 1055–1111, concomitant with the creation of an own coinage – which looks alike the Rājarāja I Coḷa pattern. If we add a certain period of transition we have, in the best case, about one century during which time no other coins had been added to the hoard – until AD 1216 when, at the earliest, the solitary Pāṇḍyan dropped in. This is to be ruled out; this coin by mischance found its way in modern times into the bag containing the Pulidiwayal hoard.

The date of burial

91 As outlined in the chapter dealing with the coin's state of preservation, the hoard had been built during a considerable period of time. In all probability it closes after the totally worn out pieces had been added. And, logically, no coin of Kulottuṅga I Coḷa, AD 1070–1118, the only minting authority after Rājarāja I Coḷa who issued copper *kācu*, was to be found in the hoard – as his accession to the throne took place not until AD 1070, the year of the Coḷa's final expulsion from the island. Therefore, we unfortunately do not have an explicit final coin, which could provide a proper *t. p. q.* for the hoard's burial.

92 During the time of the Coḷa occupation, after these had captured the Sinhalese king alive (Mahinda V) and »held sway over Rājaraṭṭha« (Cūlavaṃsa 1929: 55.22), i.e. the northern part of the island as far as to the boundary of the southern dominion of Rohaṇa, there were repeated rencouters between the Coḷas and the Sinhalese in Rohaṇa (all fought in Rohaṇa: Cūlavaṃsa 1929: 55.25–29, 56.1–57.2, 57.66–68); the northern part remained untouched. However, things changed dramatically in preparation of the reconquest by Vijayabāhu I in AD 1070. In the Cūlavaṃsa (58.11–15), the referring text reads as follows:

»All the inhabitants of Rājaraṭṭha grew hostile to one another and paid no further tribute. The adversaries of the Coḷa King full of arrogance, left his commands unheeded, illtreated the appointed officials and did what they pleased. When the Coḷa Monarch heard this, he was filled with rage and he sent off one of his henchmen with a great army. The latter landed in Mahātittha, slew many people here and there and subdued the inhabitants of Rājaraṭṭha. Later on he came then, cruel in his commands, to Rohaṇa and fell upon it with his army like the ocean which has burst its bounds.«

93 This took place (shortly?) before Vijayabāhu's I 12th year of reign (AD 1065/1066) (Cūlavaṃsa 1929: 58.18) – and that was only the beginning. In such a time of kleptocracy it is advisable to hide objects of value early enough, from whomsoever – the Coḷa army marching from the port of Mahātittha (modern Māntai) southwards, or a part of the Sinhalese army proceeding northwards on the western coastal road connecting Rohaṇa in the south with Māntai, touching i.a. Puttalam, situated only five miles north of the hoard's find spot (Walburg 2008: 38). The decisive battles were fought in AD 1069/1070.

94 Thus, we do not go astray in assuming the time of burial at a rough estimate in between AD 1065 and 1070. The same applies to the large Elahera hoard of Rājarāja I Coḷa *kācu*, discovered 70 miles as the crow flies SE of Pulidiwayal, and only about 17 miles SW of the hard-fought capital city of Polonnaruwa. Both hoards are strong candidates to be indicators of what is called *Katastrophenhorizont*, i.e. the concentration of similar structured finds indicating a joint reason for their concealment in violent times. And perhaps we dare insert with great reserve the mysterious Attikkuli find (see Appendix, Biddell collection), situated only 10 miles south of Māntai and thereby within a precarious region. Likewise, we have to exercise utmost caution when quoting in this context the »185 Æ coins of c. 11th century date« discovered at Kurunēgala, about 50 miles as the crow flies S/SE of Pulidiwayal (Walburg 2008: **312**). Only if we presume a correct dating this find can be of some relevance in our context; the truth is, perhaps, to be found in the magazines of the Colombo National Museum. The emergence of some more hoards of this kind is to be expected. The same applies to the two located hoards of anonymous Coḷa gold *kahāvaṇu* at Nikula (close to Elahera) and Galpottegama (close to Anurādhapura) (*vide supra*).

95 Nine coins in our hoard may suggest the correctness of this interpretation. Their surfaces are to some extent covered with a, partially thick, layer of rust. It indicates the presence of an apparently small object of ferrous metal, valuable enough for the once owner to be buried together with the coins.

The hoard's ›value‹

96 It is certainly tempting to try to integrate the hoard into the then value system. Alas, the only conversion ratio between copper *kācu* and gold *kalañju* handed down to us dates from the reign of Rājendra III Coḷa, AD 1246–1267, and therefore the applicabil-

ity stands on very shaky ground.[44] However, it might provide an approximate indication for the antecedent.

97 According to Biddulph, the inscription »states a *Kalañju* of gold was equal to 411 7/13 *Kāsus*«. Quantified, this reads: 6,867 (copper) *kācu* ÷ 411.54 = 16.7 (gold) *kalañju* x 4.7 g = 78.5 g gold. This, we may now see in relation to the taxes[45] payable in gold to the temple at Tanjāvūr by two Śrī Laṅkān villages assigned by Rājarāja I Coḷa to that sacred site. Inscription no. 92[46] within the Śrī-Rājarājesvara temple complex preserves, besides the payments in kind, in one case the number of 12½ *kācu* (ch. 12) and 22 *kācu* (ch. 13) respectively. As during the reign of Rājendra I Coḷa the gold *kācu* equals[47] the ½ *kalañju* the hoard would be ›worth‹ roughly 33½ gold *kācu* with an exchange rate of 205¾ copper kācu each. However, the initial caveat has to be repeated – the calculation works only if the gold-copper-ratio mentioned above approximately corresponds to that applied during the reign of Rājarāja I Coḷa. In this case the hoard would represent a not too insignificant value.

Finds of Rājarāja I Coḷa copper *kācu* in Śrī Laṅkā

98 As outlined at the beginning of this study, the here discussed Pulidiwayal hoard is the only item of its kind that was studied in detail.[48] However, two hoards *might perhaps* be compared with the present; alas, only cursory descriptions are available.

99 The first hoard was discovered at Elahera, famous already in mediaeval times for its gem field,[49] in 1952 and it is simply stated that 1,774 Æ coins of Rājarāja I Coḷa were found, no further details are mentioned. The second hoard, discovered 1839 at Kalpiṭiya (Casie Chitty 1845) was so elaborately discussed in 1845 that in the end we only have as ›facts‹, judging from design, more than 5,000 Æ coins of probably South Indian or Sinhalese workmanship. However, one passage in the 1845 publication allows us to think of a second large hoard of Rājarāja I Coḷa *kācu* in the space of this area: »The coins in question, are manifestly of very great antiquity, and appear to have been in extensive circulation, for they are not only frequently met with in Ceylon, but also almost in every part of the south of India. They are found either of gold, or copper« (Casie Chitty 1845: 82). The described state of preservation as well as their distribution is definitely more in favour of the Rājarāja I Coḷa *kācu* than of a Sinhalese coin. To add to this are the high number of specimens and the fact, that Kalpiṭiya lies only about 19 miles as the crow flies north of Pulidiwayal. However, a rest of uncertainness still remains. For the existence of a third / fourth hoard we only have the distant echo in the Biddell documents (Walburg 2008: I.1.3). To complete his collection the antiquarian and collector of minerals bought three Rājarāja I Coḷa *kācu* from the »Attikkuli[50] find« of which, regrettably, nothing is known.

100 As already stated, records of smaller finds hardly exist. Actually, only the Biddell documents (see Appendix) provide actionable insight. Mention has yet been made

44 For the details cp. Biddulph 1968: 24.

45 During the time of the Coḷa conquest there potentially existed a kind of »above tax« as king's share, collected by special officers and to be payed, in all probability, in cash (Codrington 1938: 31).

46 https://www.whatisindia.com/inscriptions/south_indian_inscriptions/volume_2/no_91_93_north_wall_central_shrine_lower_tier.html.

47 For the exchange ratios cp. Codrington VII.8.

48 In previous days, the scientific value of such hoards was not realised. In case of the large Pussellawa hoard of 5,218 Sinhalese copper coins H. W. Codrington, the then undisputed numismatic expert, prejudged: »that they are of no value« so that they were returned to the finder (Walburg 2008: **324**).

49 Walburg 2008: **305**. Gunawardene – Rupasinghe 1986: 80 (gems).

50 Biddell nos. 2600, 2637 and 2646; cp. also Walburg 2008: **70**. For a complete listing of the Coḷa coins in the former Biddell collection see the appendix at the end of this article.

of the apparitional Attikkuli find so that only the evaluation of the further locations mentioned in the documents is the final task on our to-do list. Except one – Kalutara, situated on the SW coast within the border region between Rājaraṭṭha and Rohaṇa – all Rājarāja I Coḷa copper *kācu* Biddell had bought at sites north of the Pulidiwayal – Elahera line, i.e. in Coḷa controlled Rājaraṭṭha; the very few gold *kācu* of Rājarāja I Coḷa and of his two direct successors are to be located outside Rohaṇa too (see Appendix). We have to assume that the site of acquisition was, at least roughly, identical with the find spot; two coins from Polonnaruwa and one from Māntai are to be added. The absence of finds in the South (Rohaṇa) proves the correctness of a statement made by Spencer (Spencer 1983: 62): »But the Chōḷas never really consolidated their control over the south, which in any case lacked large and prosperous settlements to tempt long-term Chōḷa occupation.«

101 To be answered is the question whether our large hoard is exceptional, or not. The two finds from Elahera and Kalpiṭiya (and perhaps Attikkuli) already mentioned indicate that our hoard is no singular phenomenon, this the more when consulting the chronologically following large hoards of Sinhalese copper coins from the end of the 11th to the 13th century: Gampola 7,477 ex., Pussellawa 5,218 ex., Moradana 3,804 ex., Polonnaruwa 2,954 ex., Maligawatta 1,020 ex., and Galagedera 3,000 ex.[51] (obviously a rounded number). Seemingly, large-scale hoarding was practised, but by whom and why …? This question should be answered by the author of an economic and monetary history of the island – elucidating, perhaps, i.a. the economic role of temples. In this context it is noteworthy that we have no account of so to speak normal hoards of say under 50 specimens; likewise, midsize finds are missing – just another enigma beyond the scope of this article. Just as the question why all coins of this type bought by Biddell all over the island were of the coarse sort, except one single »Large thin early type. Fine green patina«, obtained at Kalpiṭiya (Appendix, no. 2636).

102 One principle, however, is clearly recognisable: Mixed hoards consisting of South Indian and Sinhalese coppers do not exist, notwithstanding that hoards of both kind were discovered within the same geographical regions in Rājaraṭṭha.[52] Though non-essential, this is a further proof for the disappearance of the Rājarāja I Coḷa *kācu* in the turmoils preceding the year AD 1070. In case of their recurrence they ended up as most welcome raw material for the Sinhalese coinage, or they rose from the dead in the shape of copper pots and pans – until present age.

Concluding remarks

103 The outcome of this treatise is of ambivalent character. On the one hand we got unequivocal results from analysing the coins, namely:

- The Rājarāja I Coḷa *kācu* of the seated / standing king type was struck from AD 1003 to 1014 i.e., exclusively in the lifetime of the king.
- There was only *one* mint, namely in the Coḷa capital city Tañjāvūr.
- The intended standard weight of the copper *kācu* lay between 3.8 and 4.1 g, the exact standard is still obscure.
- Whitening was applied to produce silvery looking coins, imitating the utterly debased gold *kācu*.
- The hoard was buried about AD 1069 / 1070 on the eve of the final expulsion of the Coḷa occupying power.

51 Walburg 2008: **307**, **324**, **318**, **323**, **314** and Biddell no. 2210.

52 Cp. Walburg 2008: 279–282.

104 But then there are still topics to deal with:

- Who amassed such a huge amount of coins, and why?
- Which was the purchasing power of the gold and copper *kācu*?
- Metal analyses, at best wet-chemical, would answer questions concerning alloying elements, minting technic, and, perhaps, the origin of metals.
- A systematic checking of the inventories of Śrī Laṅkān museums and archaeological departments might broaden the material basis.

105 The here discussed coin hoard answers some questions as well as it raises some. A part of these might be answered after having studied the coins of the comparable Elahera and Kalpiṭiya hoards, stored wheresoever – if still existing. The results of investigation would either confirm, modify, or disprove the manifold suggestions outlined in this treatise. Thitherto, we have to be content with Job 38:11.

Appendix 1

106 The Coḷa coins from Śrī Laṅkā in the former Biddell collection:

Kat. 1

107 Cf. Fig. 22, Fig 23

Fig. 22: Rājarāja I Coḷa *Æ kācu*.

Rājarāja I Coḷa *Æ kācu*

Reference Codrington 1924	Reference Biddell	Place of finding / acquisition	Date of acquisition	Biddell's remarks
p. 85 no. 7	2611	Anurādhapura, Anurādhapura Dist.	Nov. 1924	degraded still more
	2646	Attikkuli find, Mannār Dist.	13.1.1917	as above (flat) but consid.(erably) smaller
	2600	Attikkuli find	13.1.1917	degraded copper / really small and lent(icul)ar; green patina
	2637	Attikkuli, Mannār Dist.	13.1.1917	Attikkuli find
	2655	Balaluwewa, n(ea)r Kalawewa, Anurādhapura Dist.	6.10.1923	coarser and lenticular
	2652	Jaffna ...?...	29.12.1930	coarser and lenticular / not really lenticular
	2657	Jaffna ...?...	28./29.12.1930	coarser and lenticular / not really lent(icul)ar but small and very thick
	2658	Jaffna ...?...	28./29.12.1930	coarser and lenticular
	2610	Jaffna ...?...	28./29.12.1930	degraded still more
	2653	Joonoos (n(ea)r. Cr. O. H.) [*A jeweller in Colombo?*]	23.7.1921	coarser and lenticular / lenticular
	2636	Kalpiṭiya, Puttalam Dist.	1.3.1931	Large thin early type. Fine green patina
	2638	Kalpiṭiya	1.3.1931	oval : flat : no patina
	2612	Kalpiṭiya	Feb. 1931	degraded still more
	2601	Kalutara South, Kalutara Dist.	28.3.1931	degraded copper / Poor, but included for southerly location
	2656	Karaitivu, opp.(osite) Kalpiṭiya, Puttalam Dist.	1.3.1931	coarser and lenticular
	2654	Māntai or Kantarōḍai	27./30.6.1925	coarser and lenticular / large „rusty" surface
	2639	Tirukē(ti)śvaram, Mannār Dist.	21.1.1917	

	2613	?	2613	? (Mantai or Kantarodai)
	2630	unknown	11.10.1932	HCPB(ell) „AE Gilt" (*bought, exchanged?)*

Fig. 23: Rājarāja I Coḷa gold coins (all of base gold).

Rājarāja I Coḷa gold coins (all of base gold)				
Reference Codrington 1924	Reference Biddell	Place of finding / acquisition	Date of acquisition	Biddell's remarks
p. 84 no. 4	2621	Namunukula, allegedly, Badulla Dist.	5.6.1931	
	2623	Balapiṭiya, Galle Dist.	15.7.1932	
	2624	Near Hanguranketa, allegedly, Nuwara Eliya Dist.	1.8.1932	
	2622	unknown	10.2.1931	„Pierced"
	2625	unknown	July 1932	HWC(odrington) (*bought, exchanged?*)
	2626	unknown	11.10.1932	HCPB(ell) (*bought, exchanged?*)

Kat. 2

108 Additional single finds of Coḷa coins: Fig. 24

Fig. 24: Rājarāja I Coḷa Æ coins.

Rājarāja I Coḷa Æ coins		
Walburg 2008: **65.2**	Māntai, Mannār Dist.	Single find from archaeological excavation
Walburg 2008: **322**	Polonnaruwa, Polonnaruwa Dist.	Two coins in the intact *cella* of Topawewa dāgoba
Rājendra I Coḷa gold coins (all of base gold)		
Walburg 2008: **313**	Mahiyangana, Badulla Dist.	Allegedly a silver coin as part of a religious deposit, but presumably a very debased gold coin, hardly distinguishable from silver
Sirisena 2002: 84	Polonnaruwa, Polonnaruwa Dist.	One debased AV, metal indistinguishable from AR
Rājādhirāja gold coins (all of base gold)		
Codrington 1924: 84 (5)	Sitawaka, Kegalla Dist.	Two specimens

Kat. 3

109 Vijayabāhu I gold coins in the former Biddell collection: Fig. 25

Fig. 25: Vijayabāhu I gold coins.

Vijayabāhu I gold coins				
Reference Codrington 1924	Reference Biddell	Number & metal	Place of finding / acquisition	Date of acquis.
63/I-III	1703-07 1709-10	7 base gold [*perhaps part of a hoard*]	Udamattala, Hambantota Dist.	May 1925
	1708	1 gold	Minneriya, Polonnaruwa Dist.	5.10.1933
	1701	1 silver [*most likely base gold*]	Batticaloa, Batticaloa Dist.	20.2.1917

	1702	1 silver [*most likely base gold*]	Kurukkalmadam, Batticaloa Dist.	9.2.1918
	1718	1 good gold	unknown	HCPB(ell) October 1932
	1711-12	2 base gold	unknown	HCPB(ell) October 1932
	1714	1 gold, almost silver	unknown	HWC(odrington) July 1932
	1715	1 gold or silver	unknown	HWC July 1932
	1713	1 silver [*most likely base gold*]	unknown	HWC July 1932

Appendix 2

110 Coordinates of localities mentioned (north-east, decimal degree [WGS84]): Anurādhapura: 8.35°N, 80.3833333°E | Attikkuli: 8.85°N, 80.0°E | Balaluwewa: 7.9844444°N, 80.5302778°E | Balapiṭiya: 6.2666667°N, 80.0333333°E | Bandarawela: 6.8369444°N, 80.9855556°E | Batticaloa: 7.7166667°N, 81.7°E | Duratiyawa/ Mawatagama: 6.6833333°N, 80.0333333°E | Elahera: 7.7244444°N, 80.7883333°E | Galagedera: 7.5333333°N, 80.1333333°E | Galnewa: 8.0166667°N, 80.4833333°E | Galpottegama: 8.45 °N, 80.35°E | Gampola: 7.1647222°N, 80.5766667°E | Gonagama: 7.9°N, 80.1833333°E | Hambegamuwa: 6.5408333°N, 80.9422222°E | Hanguranketa: 7.1772222°N, 80.7786111°E | Kalpiṭiya: 8.2333333°N, 79.7666667°E | Kalutara: 6.5761111°N, 79.9658333°E | Karaitivu: 8.2166667°N, 79.8°E | Karambewa, S of Kahagama: 6.7033333°N, 80.3583333°E | Kegalle: 7.2530556°N, 80.3505556°E | Kurukkalmadam: 7.5833333°N, 81.7833333°E | Kurunēgala: 7.4866667°N, 80.3647222°E | Mahiyangana: 7.3166667°N, 80.9827778°E | Maligawatta: 6.9372222°N, 79.8719444°E | Maniyangama: 6.9333333°N, 80.2333333°E | Manmunai or: 7.6333333°N, 81.7333333°E | Eruvil: 7.512102°N, 81.783518°E | Māntai: 8.95°N, 79.9666667°E | Minneriya: 8.0333333°N, 80.9°E | Moradana: 7.1666667°N, 80.3666667°E | Namunukula: 6.8666667°N, 81.1166667°E | Nikaweratiya: 7.7166667°N, 80.1166667°E | Nikula: 7.7333333°N, 80.65°E | Pandiruppu: 7.4166667°N, 81.8166667°E | Payindikulama: 8.2°N, 80.3333333°E | Periyakallar: 7.4666667°N, 81.8166667°E | Phussalkaddiya, Thambagalla Korale: ?, ? | Pokkaveli, 10 miles from Kandy: ?, ? | Polonnaruwa: 7.9333333 °N, 81.0333333°E | Pulidiwayal: 7.96555556°N, 79.81166667°E | Pussellawa: 7.1088889 °N, 80.6338889°E | Puttalam: 8.0333333°N, 79.8166667°E | Sainthamaruthu: 7.3833333°N, 81.8333333°E | Sitawaka: 6.9666667°N, 80.2166667°E | Talawa area: ?, ? | Talgaspitiya: 7.4°N, 80.2833333°E | Tanjāvūr / Tanjore / Thanjavur: 10.786999°N, 79.137827°E | Tirukē(ti)śvaram: 8.95°N, 79.9666667°E | Trincomalee: 8.5666667°N, 81.2333333°E | Turuwila: 8.2333333°N, 80.4166667°E | Udamattala: 6.3333333°N, 81.1333333°E | Weuda: 7.4°N, 80.1666667°E

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METADATA

Titel/*Title*: Occupation money: A large 11th century hoard of Rājarāja I Coḷa copper coins discovered in Śrī Laṅkā

Band/*Issue*: 23/2

Bitte zitieren Sie diesen Beitrag folgenderweise/*Please cite the article as follows*: R. Walburg, Occupation money: A large 11th century hoard of Rājarāja I Coḷa copper coins discovered in Śrī Laṅkā, JoGA 2023/2, § 1–110, 16–49, https://doi.org/10.34780/h669-p194

Online veröffentlicht am/*Online published on*: 20.04.2023

DOI: https://doi.org/10.34780/h669-p194

Schlagwörter/*Keywords*: South India, Śrī Laṅkā, 11th century, coin hoard, kācu, Rājarāja I Coḷa

Bibliographischer Datensatz/*Bibliographic reference*: https://zenon.dainst.org/Record/003037335