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# THE COINS OF THE HINDU PERIOD OF INDONESIA

# THE HINDU SUMATRAN AND HINDU JAVANESE COINS -THEIR ORIGIN, NAME, WEIGHT AND SYMBOLS IN AN HISTORICAL CONTEXT

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### 1 Introduction

Although they have been partly described, little is known of the Hindu Sumatran and Hindu Javanese coins.

Millies<sup>[1]</sup> describes three gold coins, nos 128, 129 and 130 and one silver coin no 131, from Sumatra (figure 1). The weight of the gold coins is respectively 0.73, 0.88 and 0.26 g and the silver one weighs 0.15 g.

He writes: 'On the obverse there is a square forming a star or flower. On the reverse is a Sanskrit letter Ma, Bha or Pra. The letter Ma is the most probable.'





*Fig. 1 – Millies: Sumatra* 

Coins from Java are published by Netscher & van der Chijs (figure 2) and by Millies (figure 3).

Netscher & van der Chijs<sup>[2]</sup> mention two gold coins of 2.4 g, one with a letter on the reverse and one with two parallel lines on the reverse. They only present the coin with the letter as no. 119. They describe the symbol on the obverse as a *lingam* or a lotus flower.

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<sup>&</sup>lt;sup>[1]</sup> Millies 1871, p. 66-77 and illustration xv.

<sup>&</sup>lt;sup>[2]</sup> Netscher & van der Chijs 1864, p. 130-133 and illustrations XII and XIII.

Netscher & van der Chijs describe larger silver coins from Java under nos 121-124, called *half moon* coins, after their shape. These weigh 53.5, 21.9, 14.7 and 19.8 g. The piece published under no.  $124^{[3]}$  is the same as Millies no.  $11^{[4]}$ . This is a one sided silver ingot with a different stamp than on the *half moon* coins. Netscher & van der Chijs also mention two other, smaller, pieces of 15.9 and 17.7 g.

Pictured as nos 125 and 126 Netscher & van der Chijs mention small coins of 2.4 g, on the obverse stamped with a four-pointed star, like the nos 120-122. The reverse shows traces of the letter Ma.



Fig. 2 – Netscher & van der Chijs

They also mention coins of the same shape weighing only 1.1 g. No. 127 is a silver coin of the same shape, only weighting 0.6 g.

Millies knew the publication of Netscher & van der Chijs and he has partly described the same coins. This makes the number of the aforementioned coins less than the total of the two publications simply taken together.

<sup>&</sup>lt;sup>[3]</sup> Figure 2.

<sup>&</sup>lt;sup>[4]</sup> Figure 3.



Fig. 3 – Millies: Java

Millies describes three gold coins from Java with a letter as nos 1, 2 and 3, weighing 2.40, 2.55 and 2.05 g and two coins with *two parallel lines* under nos 4 and 5, weighing 1.20 and 1.24 g. He defines coins of 2.50 g as 24 krisnalas and coins of 1.2 g as 12 *krisnalas*. However, he stated that they were rather light compared to the weight of this number of *krisnalas*. The obverse side of all the Java gold coins has a figure that Millies describes as a *flower*, *sword* or *lingam*. He supposes that the letter on the nos 1, 2 and 3 could be a *Dja*, *Ta* or *Na* (*zie bijlage 12.3*).

Millies made a drawing of the *half moon* coins under nos 7 to 12. No. 7 weighs 61.5 g and no. 9 weighs 28.6 g. The others are the same as described by Netscher & van der Chijs.

Millies publishes quite a number of smaller silver coins under number 13 to 24. Their weights are 2.5, 2.18, 1.18, 1.2 and 0.7 g. There seems to be no systematic relation between the different weights of these Javanese silver coins. These coins show on their obverse a *flower pattern* and on the reverse a letter. Millies supposes that the letter could be the Sanskrit letter *Cri*, *Sa*, *Ba* or *Ma*. Based on this last assumption and because Millies' statement that '*The letter Ma is the most probable*', these coins are often called *Ma*-coins.

They are more commonly known as *djampels*. This name will be used further in this study.

Millies states that all these Hindu coins were named by many obscure words, like *wang* or *ouwang*, *djampel*, *kèpèng*, *kètèng*, *gobog*, *gobang*, *pitjis* or by modern or foreign words as *dinar*, *dirham*, *reyal* (*ringgit*), *roupiyah*, *douwit*, etc.<sup>[5]</sup> He presents, in his illustration of Java coins, as no. 6 a gold coin of 0.9 g that he has copied from Netscher & van der Chijs no. 120. He also mentions this coin in his Sumatra coins under no. 128. Later in this study, it will be made clear that this coin belongs to Sumatra, not to Java. Although the silver coins nos 13 to 24 in the publication of Millies are quite similar to the silver coins, the Javanese silver coins follow a standardized weight system. The study will point out that these are characteristic differences between the Sumatran and Javanese coinage.

### 2 Recent publications on the Hindu coinage

The publications of Netscher & van der Chijs and Millies left many questions unanswered.

This paper will present an overview of the latest insights and answers to unsolved questions. It must start with the latest views as found in recent publications on the Hindu Javanese and Sumatran coinage, *viz.* two publications by Wicks<sup>[6]</sup>, five by Wisseman Christie<sup>[7]</sup> and one by van Aelst.<sup>[8]</sup> Van Aelst follows the assumptions made by Wicks and Wisseman Christie, so it is logic to start with their publications, although they left the subject in a still incomplete state.

2.1 The publications of Wicks and Wisseman Christie

The publication of Wicks has largely influenced how numismatists and coin collectors name the coins and judge their origin. For instance, Wisseman Christie, van Aelst and Mitchiner<sup>[9]</sup>, in their publications, simply follow the assumptions of Wicks without further research.

<sup>&</sup>lt;sup>[5]</sup> Millies 1871, p. 18.

<sup>&</sup>lt;sup>[6]</sup> Wicks 1986 and 1992.

<sup>&</sup>lt;sup>[7]</sup> Wisseman Christie 1984/85, 1991, 1994, 1995 & 1996.

<sup>&</sup>lt;sup>[8]</sup> van Aelst 1995.

<sup>&</sup>lt;sup>[9]</sup> Mitchiner 1998.

Wicks used the existing coin pictures of Millies for his publications and added some photos, but did not add new material. He wrote a well-documented essay about the Chinese trade and the Chinese dominance in Southeast Asia. He supposes that the Chinese culture and dominance has led to the introduction of the Chinese system of weights and measures and the substantial use of Chinese *cash* coins in the Indonesian archipelago.

Although Wicks listed all the works of Cœdès and Wisseman Christie in his 'Selected References', he does not mention the important finding that contradicts the assumed Chinese influence, by the French historian Georges Cœdès from the *École Française d'Extrême-Orient*, who made an extensive research on Sumatra and its kingdoms.

Cœdès writes:<sup>[10]</sup> 'It is astonishing that in countries so close to China – countries that entered into commercial and diplomatic relations with her from the first centuries of the Christian Era – the cultural influence of the Middle Kingdom has been insignificant, although it was intense in the deltas of Tongking and North Vietnam. We are struck by the fundamental difference of the results obtained in countries of the Far East by the civilization activity of China and India.

The reason for this lies in the radical difference in the methods of colonization employed by the Chinese and the Indians. The Chinese proceeded by conquest and annexation; soldiers occupied the country, and officials spread Chinese civilization. Indian penetration or infiltration seems almost always to have been peaceful; nowhere was it accompanied by the destruction that brought dishonour to the Mongol expansion. Far from being destroyed by the conquerors, the native peoples of Southeast Asia found in Indian society, transplanted and modified, a framework within which their own society could be integrated and developed.

The Indians nowhere engaged in military conquest and annexation in the name of a state or mother country. And the Indian kingdoms that were set up in Farther India during the first centuries of the Christian era had only ties in tradition with the dynasties reigning in India proper; there was no political dependence.

The exchanges of embassies between the two shores of the Bay of Bengal were made on the basis of equality, while the Chinese always demanded that the 'southern barbarians' acknowledge Chinese suzerainty by regular sending of tribute. Thus, although China exercised a more or less successful political guardianship over the countries for centuries, her civilization did not spread beyond the area of her military conquests. The peaceful penetration of the Indians, on the other hand, from the beginning extended to the limits of their commercial navigations.'

Wisseman Christie notes:<sup>[11]</sup> 'One of the most striking characteristics of the monumental, artistic and literary remains of the early historic states of western Indonesia is the degree to which they were apparently dependent upon ideas, beliefs and models borrowed from the Indian subcontinent. Given the overwhelming evidence for the impact of Indian court and religious culture upon these early states, few historians doubted that the process of state formation in the archipelago was tied to borrowing from India.'

<sup>&</sup>lt;sup>[10]</sup> Cœdès 1944 [1968], p. 34-35.

<sup>&</sup>lt;sup>[11]</sup> Wiseman Christie 1995, p. 236.

From the publications by Cœdès and Wisseman Christie, it can be concluded that, contrary to Wicks' assumption, the Indian – and not the Chinese – culture dominated daily life on these Indonesian islands.

Concerning the exchange of goods on Sumatra, Wicks writes that from the year 860 on, a number of inscriptions began to provide some insight into the details of purchases. He writes:<sup>[12]</sup> '*The nature of gifts has changed, limited now to gold, silver and different qualities of textiles or garments. Some gifts were only associated with specific amounts of precious metal and no other commodities, giving the sense of 'metallic currency' or Coin.*'<sup>[13]</sup> However, the 'Sense of coin' does not proof the use of *coin.* 

Fig. 4 – Chopped lumps of silver and gold

Wicks points out: [14] 'There are instances in which quantities of cloth are provided with monetary valuations through reference to a specific amount of gold. An inscription of 876, for instance, records the distribution of woman cloth (kain) with a gold value (inmas) of 4 mā. Even more significant is the fact that in the early tenth century, the term for weight (wrat/brat), used in descriptions of gold rings called 'simsim', took on a connotation equivalent to 'monetary value' when applied to cloth, such as man's kalyaga-cloth worth (brat) 5 māssa (of gold).

Argha (Sanskrit for worth, value, price) is likewise found with reference to cloth in the early tenth century'.

This actually proves that payments in barter were common on Sumatra and that they could be expressed in terms of a certain amount of gold.

Wicks also refers to Zao Rugua's account from the 13<sup>th</sup> century which states about the kingdom of Srivijaya: <sup>[15]</sup> 'They have no stringed copper cash, but use chopped lumps of silver in their business transactions.'

Figure 4 displays some of the chopped lumps of silver and gold, found on Sumatra.

The following examples of payment on Sumatra show that the payments were made in weighted gold, silver and other barter and not in local coins or Chinese *cash* coins.

<sup>&</sup>lt;sup>[12]</sup> Wicks 1992, p. 260.

<sup>&</sup>lt;sup>[13]</sup> *Ibid.*, p. 261. Our emphasizing.

<sup>&</sup>lt;sup>[14]</sup> *Ibid.*, p. 262.

<sup>&</sup>lt;sup>[15]</sup> Wicks 1992, p. 232.

Wisseman Christie gives a sample of payment from the 9<sup>th</sup> century:<sup>[16]</sup>

... pirak panumbas ... ikang imah mahapinda ma ka 38: the purchase money ... for that land [was] a total of 38 kati in gold'

*Ka* is translated as *kati*, a Chinese weight of 601 g. The above purchase will be valued at 22.8 kg of gold, an enormous price if correctly interpreted.

Wicks gives another example of a transaction where 7 ka, 12 su and 10 ma' is used.<sup>[17]</sup> In this example, ma should be identified as másha and su as suvarna. These are Indian weights, where másha is a lighter weight than the suvarna. Following the order in which the weights are presented, ka is suggested to be a larger weight denomination than the suvarna. Wicks takes ka as an abbreviation for kati. The Chinese kati would have been more than 60 times the value of the suvarna, the next entity. That is an unlikely big step in any weight system.

As already published<sup>[18]</sup>, the weight system in Sumatra and Java was based on an Indian system. *Suvarna* and *másha* are Indian weights.

The *ka* must be heavier than the *suvarna* (9.6 g) and even heavier than the 12 *suvarna* (115.2 g) in this payment example. However, there is no weight larger than the 12 *suvarna* that can be identified with *ka* in any Indian weight system.

Therefore, *ka* must be something else. While the Chinese *kati* is surely not the right entity, it is not certain what the *ka* stands for. It could be a unit related to an amount of barter goods.

Wicks records another transaction that indicates that the interpretation of ka needs a review: <sup>[19]</sup>

ma ka 2, su 7, ma 3, pirak 1 2 kati, 7 suvarna, 3 masa of gold and 1 masa of silver.

In this transaction the ka, su (suvarna) and ma (másha) are used.

In Wicks' interpretation of *ka* being *kati*, 2 *kati* makes already 1,202 g of gold, and the total transaction 1,271 g of gold and 0.6 g of silver. The addition of 0.6 g of silver gives an unrealistic precision.

Also from this transaction, it seems more realistic that *ka* stands for a certain amount of barter, on top of which 7 *su* (= 67.2 g) plus 3 *ma* (= 1.8 g) in gold and one *pirak* or *ma* (= 0.6 g) in silver was added.

Wicks writes, referring to an offered tribute in the kingdom of Srivijaya: '*They* calculate first the value of their articles according to their equivalents in gold or silver, and then engage in barter of these articles at fixed rates'.<sup>[20]</sup>

'The key to the operation of the market is found in this line, where the value of the articles offered for sale was calculated in terms of gold or silver, after which time the merchants were allowed to trade at those fixed rates.' <sup>[21]</sup>

<sup>&</sup>lt;sup>[16]</sup> Wiseman Christie 1996, p. 266.

<sup>&</sup>lt;sup>[17]</sup> Wicks 1992, p. 253.

<sup>&</sup>lt;sup>[18]</sup> Leyten 2004.

<sup>&</sup>lt;sup>[19]</sup> Wicks 1992, p. 253.

<sup>&</sup>lt;sup>[20]</sup> *Ibid.*, p. 227.

<sup>&</sup>lt;sup>[21]</sup> An *ingot* is a piece of relatively pure material.

The conclusion must be that on Sumatra, during the period of the Srivijaya kingdom daily payments were made in barter articles, like garments and cloth, calculated in their value in gold and silver ingots. The *suvarna* and *másha* (and *kupang*) are names of weights and not the names of coins. The entity *ka* represents the amount of the barter goods. All the older documents refer, as far as payments are mentioned during the Srivijaya period, to payments made by weighing the metal instead of paying with coins.

This system of payment by barter and ingots changed when, after the decline of Srivijaya, the Muslim states of Samudra-Pasai and Aceh came to power.

Wisseman Christie writes on coinage in this period: <sup>[22]</sup> 'Islamitic gold coinage appears to have been minted sporadically by the 14<sup>th</sup> century in north Sumatra. By this time most of the region seems to have succumbed to the spread of Chinese copper coinage and locally cast copies'.

This is incorrect. According to Wicks: <sup>[23]</sup> 'In the first quarter of the 14<sup>th</sup> century the earliest Islamitic coinage in Southeast Asia was struck by Sultan Muhammad (d. 1326<sup>[24]</sup>) of Samudra-Pasai in Northern Sumatra, reflecting a shift in locus of trade in the region. By the early 15<sup>th</sup> century this coinage would become the commercial and accounting standard throughout Southeast Asia, a position it maintained for more than two hundred years'.

From an earlier publication it is known that an extensive and continuously Islamite gold coinage was issued on Sumatra already from 1270 through 1760.<sup>[25]</sup> Thus, gold coins were minted not sporadically, but extensively. The existing large amount of gold coins (called *mas*) is testimony of the fact that these gold coins were common after 1270 and indeed the accounting standard. The *mas* coins form a series of  $0.3 \\ large 0.6 \\ lar$ 

There are no coins from the Hindu period found on Sumatra, which were based on a well-defined weight system. It can be concluded that coins based on a fixed weight system were introduced on Sumatra with the appearance of Islamite gold coins in 1270.

It is further interesting to note that in all the examples of payment given by Wisseman Christie and Wicks during the Hindu period or the later Islamitic period of Sumatra, no mention is made of payments in Chinese *cash* coins.

#### 2.2 The publication of van Aelst

Van Aelst writes mainly about the Chinese *cash* coins, called *picis* on Java. However, some points about the Hindu Javanese coins are of interest. Van Aelst repeats the payments published by Wicks and Wisseman Christie. As already mentioned these payments were not necessarily made with coined money and certainly not in Chinese *cash* coins.

<sup>&</sup>lt;sup>[22]</sup> Wisseman Christie 1984/85, p. 247. Our emphasizing.

<sup>&</sup>lt;sup>[23]</sup> Wicks, 1992, p. 219.

<sup>&</sup>lt;sup>[24]</sup> Sultan Muhammad lived from 1297 to 1326.

<sup>&</sup>lt;sup>[25]</sup> Leyten 2004.

Following Wicks and Wisseman Christie, van Aelst also states that the Hindu Javanese coins date from the 8<sup>th</sup> to 10<sup>th</sup> centuries.<sup>[26]</sup> The supposed early introducing of the gold coinage in Java by Wicks and Wisseman Christie have lead them to the assumption that the use of these coins in the course of the 13<sup>th</sup> century must have diminished and was followed in the 14<sup>th</sup> century by the adoption of the Chinese *cash*.

This is what van Aelst repeats: 'Chinese coins were widely accepted in Java.'<sup>[27]</sup> and 'That, in the course of the 13<sup>th</sup> century, the official custom of using masa units<sup>[28]</sup> lagged behind the common practice.'<sup>[29]</sup>

This led to the following question by van Aelst: 'The period in which the Chinese coins were accepted for official use began in the early 14<sup>th</sup> century, when trade with China came to a virtual standstill for almost a hundred years. Madjapahit then was at its peak. Would it have declared Chinese money valid in its empire if it did not have the means to increase the currency? This does not make sense.' <sup>[30]</sup>

In addition, Bennett writes: 'A gold and silver currency had been in place since the tenth century, and although copper coins imported from China during the late Classical Madjapahit period in the 14<sup>th</sup> century replaced it, this replacement seems to have been more for the convenience of small denominations than because of a shortage in supply of gold. In 1225 AD, the Chinese writer Zhao Ruhuo referred to the Madjapahit's commander in chief and his 30,000 soldiers being paid in gold.'<sup>[31]</sup> There is a contradiction: How can the Javanese gold coins in the 13<sup>th</sup> or 14<sup>th</sup> century be replaced by the Chinese cash coins, as there was a shortage in supply of Chinese cash coins. And why were, according to Zhao Ruhuo, the commander in chief and his 30,000 soldiers being paid in gold in the 13<sup>th</sup> century as this currency was replaced by Chinese cash coins?

It is necessary to look into the supply of the Chinese *cash* coins to understand the necessity for the Madjapahit government to produce their own coins instead of using the Chinese *cash* coins.

Wicks, Wisseman Christie and van Aelst all speak of a strong Chinese influence on Sumatra and Java. They give the Chinese cash coins a dominant role in the payments while at the same time stating a shortage in the supply of these coins due to the continuing shorts of copper ore. The export of Chinese *cash* coins was actually prohibited. The following quotes illustrate this situation.

Jen gives an idea about the measures taken by the Chinese government, to overcome this lack of copper. '*Due to a shortage of copper and severe currency control, the regime minted its coinage in rather small amounts, 500 strings annually.* (*Liao dynasty 907-985*).'<sup>[32]</sup>

<sup>&</sup>lt;sup>[26]</sup> van Aelst 1995, p. 366.

<sup>&</sup>lt;sup>[27]</sup> *Ibid.*, p. 368.

<sup>&</sup>lt;sup>[28]</sup> Wicks calls the gold coins of 2.4 g 'masa units'.

<sup>&</sup>lt;sup>[29]</sup> van Aelst 1995, p. 368.

<sup>&</sup>lt;sup>[30]</sup> Ibid.

<sup>&</sup>lt;sup>[31]</sup> Bennett 2009, p. 101.

<sup>&</sup>lt;sup>[32]</sup> Jen 2000, p. 87.

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'In 926-939 AD, the price of copper rising, the melting of cash for making utensils became a profitable business for the public and casting of currency a losing for the government.' $^{[33]}$ 

<sup>6</sup>Due to the reckless issuing of banknotes, prices skyrocket; and coins of small denominations, not capable of adapting to the dire inflation quandary, became practically worthless. By the 14<sup>th</sup> year of Zhi Zheng (1350 AD), all mints were closed down and the random issuing of paper money continued as usual.<sup>[34]</sup>

About the supply of Chinese cash coins Wicks writes: 'By the 8<sup>th</sup> century, the Chinese were feeling the drain of precious metals from their tribute trade. In 713, it was decreed that gold and iron should not be bartered with foreigners.

And in 780 a broader proclamation was issued, prohibiting barter with foreigners using 'silver, copper, iron, male and female slaves.' The copper in the 780 decree would have included Chinese cash. In 785, the Tang decreed that all travellers were forbidden to take 'even a piece of cash' with them into western regions.' <sup>[35]</sup>

'The hopelessness of China's monetary situation during the Song (960-1279) period can be sensed in a decree of about 965 in which the penalty for taking two strings of cash (nominally 2,000 copper coins) out of China was imprisonment for one year. Those who were caught with more than three strings would be executed, while informers were promised rewards for their cooperation.' <sup>[36]</sup>

<sup>6</sup>Extreme measures were taken in attempt to continue to attract the Southern Seas trade while at the same time eliminating the wholesale exportation of Chinese copper cash.<sup>[37]</sup>

'Under the Yuan (1280-1368), even stricter controls on the use of precious metals in trading were placed on foreign merchants. Rockhill observed that as early as 1282 and 1283 measures were adopted to prevent the exchanging of banknotes (chao) for copper cash when offered by foreign traders in the ports; and to restrict the use of cash to purchase of gold, pearls and such like valuable commodities.'<sup>[38]</sup>

Wisseman Christie writes about the shortage of Chinese *cash* coins: 'After the Chinese government lost control of the copper mines in the north in 1127 AD, annual output of coins in China fell to less than 200 million, and continuing outflow of copper to overseas markets began to alarm court officials. The scale of the copper haemorrhage from the ports – much of it heading for Southeast Asia – was considered to be so serious that the government issued edicts in 1163, 1182, 1216 and 1234 prohibiting the export of copper cash by ocean-going ships.'<sup>[39]</sup>

'By the 12<sup>th</sup> or 13<sup>th</sup> century – in response to progressive Chinese government clampdown on the export of copper cash, followed by the near abandonment by the

<sup>&</sup>lt;sup>[33]</sup> *Ibid.*, p. 43.

<sup>&</sup>lt;sup>[34]</sup> *Ibid.*, p. 103.

<sup>&</sup>lt;sup>[35]</sup> Wicks 1992, p. 24.

<sup>&</sup>lt;sup>[36]</sup> Ibid.

<sup>&</sup>lt;sup>[37]</sup> Ibid.

<sup>&</sup>lt;sup>[38]</sup> Wicks 1992, p. 25.

<sup>&</sup>lt;sup>[39]</sup> Wisseman Christie 1996, p. 269.

Chinese of copper coins in favor of paper currency during the late Song and Mongol periods – the Javanese appear to have begun to cast their own copper coins, modelled upon the main  $11^{th}$ -century Northern Song issues.'<sup>[40]</sup>

'Ma Huan's observation regarding Java in the early 15<sup>th</sup> century that, 'in trading transactions the copper coins of successive dynasties in the Central Country are in current use,' and that the Javanese paid for Chinese exports in Chinese cash as well as references in 14<sup>th</sup>- and 15<sup>th</sup>-century Javanese inscriptions and texts to picis in lots up to two million suggest that the quantities of copper coinage in circulation in Java at the time were very large indeed. These coins could not all have appeared in Java in the middle of the 14<sup>th</sup> century, when the transition to their use for official purposes becomes apparent in inscriptions. The Yuan (Mongol) dynasty held very small copper reserves, and the copper coins minted during the Mongol period (1279-1368 AD) in China are so few in number as to constitute numismatic curiosities.'<sup>[41]</sup>

About the trade, van Aelst says: 'India and China produced high-quality industrial commodities like ceramics, textiles and metal wares, while Indonesia was the source of tropical products like spices and dyewood.'<sup>[42]</sup>

'In 1279, the conquest of the [Chinese] Southern Sung empire by the Mongols took place. Although the latter made an effort to continue the profitable sea borne trade, they seem to have failed in this, due to either lack of experience or indifference. The Mongols appear to have concentrated on overland trade with the west, after 1330 leaving the Southeast Asian market for ceramics largely to the Indo-Chinese potters.' [43]

<sup>6</sup>Maritime trade in general did not diminish, but China's trade with Southeast Asia came to a virtual standstill in the early 14<sup>th</sup> century. Java seems to have prospered during Chinese absence. In East Java, a new dynasty arose after a Mongol military expedition to the land in 1292. The name of the new empire was Madjapahit, and its period of florescence coincided with the lull in [Chinese] trade'.'<sup>[44]</sup>

Van Aelst says: 'During the 14<sup>th</sup> century Sino-Javanese trade was at low level, from the 1430's to early 16<sup>th</sup> century trade was either limited or illegal, and until 1567 commerce was reduced to mere trickle. If we combine these dates with the life span of Madjapahit, we have to conclude firstly that whatever Chinese coins reached this empire must have been produced largely during the time of Northern Sung, and secondly that during the period of the greatest economic expansion of Madjapahit, roughly between 1300 and 1400, the supply must have been at a virtual standstill.'<sup>[45]</sup>

'In the 13<sup>th</sup> and 14<sup>th</sup> century there was hardly any coin production.' <sup>[46]</sup>

<sup>&</sup>lt;sup>[40]</sup> *Idem*, p. 270.

<sup>&</sup>lt;sup>[41]</sup> Ibid.

<sup>&</sup>lt;sup>[42]</sup> van Aelst 1995, p. 362.

<sup>&</sup>lt;sup>[43]</sup> *Ibid.*, p. 363.

<sup>&</sup>lt;sup>[44]</sup> Ibid.

<sup>&</sup>lt;sup>[45]</sup> *Ibid.*, p. 365.

<sup>&</sup>lt;sup>[46]</sup> *Ibid.*, p. 368.

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As the Chinese governments from the 8<sup>th</sup> until the 16<sup>th</sup> century regularly prohibited export of these *cash* coins, the supposed use of massive quantities of Chinese *cash* coins before the 16<sup>th</sup> century must be doubted, based on the shortage of these coins and the restrictions on export.

The huge coin finds of Chinese cash on Java must be attributed to the massive imports of these coins after the 16<sup>th</sup> century, when the Chinese trade revived and the Chinese *cash* coins became a more accepted coin in daily use. The Chinese *cash* coins stayed in use in the marketplace until late in the 20<sup>th</sup> century.<sup>[47]</sup> Finding *cash* coins that were issued before the 16<sup>th</sup> century, does not mean that they were 'imported' in the period in which they were issued. *Cash* coins of various dynasties remained valid for centuries, and coins of various dynasties were mixed up in circulation.

The suggestion of van Aelst that on Java the older coins are locally minted: '*modelled upon the main 11<sup>th</sup>-century Northern Song issues*', is not realistic. The conclusion must be that not the Chinese coins but another 'currency' was in use in this period. This currency was based on the coins dealt with in this study.

### 3 Dating the coins

Hindu coins are found on both Sumatra and Java. They show similarities and differences. Coins found on both islands have the same shape and bear the same symbols. This does suggests that the one copied the other.

However, the Sumatran silver coins from the (called by Wicks) *sandalwood* type bear on their reverse another letter than the coins of the same type from Java.

The *coins* found on Sumatra do not follow a weight standard, they are more or less gold and silver *ingots*. As they are usually called *coins*, the term *coins* will also be used for these Sumatran *ingots*.

The gold and silver coins found on Java were produced based on a well-defined weight standard. This does not only suggests that there was a development over time but also that the coins of Java could be from a later date than the coins of Sumatra, whereas Wicks and Wisseman Christie assume that Java was first and Sumatra copied the design of the Javanese coins.

Mitchiner<sup>[48]</sup> also follows Wicks completely, writing that the Sumatran coins are from the Srivijaya period and are copies from the earlier Java coinage. There are strong arguments contrary to this assumption.

### 3.1 The assumptions of Wicks and Wisseman Christie

The assumptions of Wicks and Wisseman Christie are based on the first archaeological data about the burying of the Wonoboyo gold find, discovered in October 1990 in Wonoboyo village on Java.

<sup>&</sup>lt;sup>[47]</sup> See Mees 1851; van Bosse 1863; Berg 1907; Vissering 1920.

<sup>&</sup>lt;sup>[48]</sup> Mitchiner 1998.

Originally, the dating the Wonoboyo hoard was based 'solely on the writing'<sup>[49]</sup> found on a very old artefact that was present in the hoard. The catalogue of the exhibition held in the Queensland Art Gallery in Brisbane reports that: '*This dating is based on the inscription written at the base of a silver umbrella, dated 843 AD*'<sup>[50]</sup> It was then simply assumed that all the artefacts in the hoard were from the same period.

Wisseman Christie writes:<sup>[51]</sup><sup>The</sup> Wonoboyo gold find which apparently represents the contents of the strong room of a branch of the royal family, buried by the eruption of Mt. Merapi in 928 or 929 AD, contains well over 6,000 gold coins and at least 600 silver alloy coins, but only six small ingots of different weight, shape and metallic composition'. The original dating of the Wonoboyo hoard in the 10<sup>th</sup> century explains why Wisseman Christie dates the entire hoard (including the gold coins) from the 8<sup>th</sup> to 10<sup>th</sup> century.

However, the date of the burying of a hoard (its *terminus post quem*) must be determined on the basis of the youngest artefact in the hoard. This has not been done with sufficient care, since younger artefacts than the aforementioned silver umbrella were present.

Wicks and Wisseman Christie agreed that the kingdom of Srivijaya was responsible for the *ingot* currency on Sumatra. In 1097 AD, Srivijaya shifted its capital from Palembang to Muara Jambi, which was chosen because of the presence of gold mines in that area. Srivijaya needed more means to facilitate its increasing trade. This supports Wicks' assumption that the coinage on Sumatra started in or not long after 1097.

Based on the assumption that the Wonoboyo hoard was buried on Java in 928-929 AD and the coinage on Sumatra started not long after 1097, Wicks and Wisseman Christie must conclude that the coinage started on Java, and that Sumatra later copied this coinage.

Wicks writes: 'By the 11<sup>th</sup> century coins (derivative of a type which originated in Java) struck in gold, electrum and silver appeared on Sumatra.'<sup>[52]</sup>

'It is of the earliest specimens of which come from south central Java and date to the late eight century. It is likely that that type originated there and subsequently spread throughout the region. The tradition was maintained through the 13<sup>th</sup> century until replaced by imported Chinese cash and Islamitic gold coinage first issued in northern Sumatra.'<sup>[53]</sup>

'During the 10<sup>th</sup> and 11<sup>th</sup> centuries, it was Java's class of coin that seems to have provided the prototype for the coinage that was struck in gold, electrum and silver in various parts of Sumatra.' <sup>[54]</sup>

Consequently, Wisseman Christie and Wicks must identify an early Javanese kingdom to explain the later introduction on Sumatra.

<sup>&</sup>lt;sup>[49]</sup> *Exhibition* 2005, p. 62.

<sup>&</sup>lt;sup>[50]</sup> *Exhibition* 1999, p. 94.

<sup>&</sup>lt;sup>[51]</sup> Wisseman Christie 1996, p. 249.

<sup>&</sup>lt;sup>[52]</sup> Wicks 1992, p. 217.

<sup>&</sup>lt;sup>[53]</sup> *Idem*, p. 225.

<sup>&</sup>lt;sup>[54]</sup> Wisseman Christie 1996, p. 247, copied from Wicks 1992, pp. 225, 233-234.

Wisseman Christie names the Javanese kingdom of Mataram (Medang kingdom 752-1045) as the origin for the Javanese Hindu gold coinage.<sup>[55]</sup>

Wicks searched for a Javanese Hindu dynasty that ruled in Java before 1097 and came to the Sailendra dynasty (an 8<sup>th</sup>- to 9<sup>th</sup>-century kingdom on Java).<sup>[56]</sup> He states that: '*Two dated inscriptions from Kalasan (AD 778) and Kelurak (AD 782)* belong to the Sailendra dynasty, making it likely that they were also responsible for coinage discovered in the region. The precise function of this coinage remains uncertain.'<sup>[57]</sup>

The Wonoboyo hoard is found in the ash of the volcano Merapi, indicating that it must have been buried during an eruption. According to Wisseman Christie, it was '*buried by the eruption of Mount Merapi in 928 or 929 AD*.'<sup>[58]</sup>

These years were based on the aforementioned but wrong *terminus post quem* of 843 AD of the Wonoboyo hoard, but later eruptions, earthquakes and landshifts can also have buried this gold find. Mt Merapi or *Gunung Merapi* (literally Fire Mountain in Javanese) is an active volcano located on the border between central Java and Yogyakarta. The Merapi is the most active volcano in Indonesia and has erupted 68 times since 1548, the start of documentation of the eruptions. There must have been many eruptions in the preceding centuries also.

There is no physical evidence that the Wonoboyo site can be linked to the Mataram or Sailendra period. There is also no evidence that all the other artefacts in the hoard are from the same early period. Therefore, there is no evidence that the coins in the Wonoboyo hoard are from the 8<sup>th</sup> to 10<sup>th</sup> century.

On the contrary, there is strong evidence that the burying of the hoard did not take place in a volcano eruption in 928 or 929 AD, but much later. If this is the case, the suggestion that the coinage started on Java and was copied by Sumatra will be wrong: it would be the opposite. If so, there will also be no need to look for an early Javanese kingdom that started the coinage; a later kingdom would be responsible. The following paragraph will provide arguments for this thesis.

#### 3.2 Arguments against the early burying of the Wonoboyo Hoard

Citing the catalogue for the Australian exhibition of the find 'Indonesian Gold: Treasures from the National Museum, Jakarta', Sue Smith<sup>[59]</sup> writes: 'The island of Java, once known to the ancients as the golden island, writes historian Kalpana Kartik of the Indonesian province, is today a living treasury of great archaeological findings. The greatest recent discovery of gold treasure was made in October 1990, near Yogyakarta in central Java, in the small village of Wonoboyo, a few kilometres from the renowned temple of Prambanan.

<sup>&</sup>lt;sup>[55]</sup> *Ibid.*, p. 249.

<sup>&</sup>lt;sup>[56]</sup> Wicks 1992, p. 248.

<sup>&</sup>lt;sup>[57]</sup> Ibid., p. 248-250.

<sup>&</sup>lt;sup>[58]</sup> Wisseman Christie 1996, p. 249.

<sup>&</sup>lt;sup>[59]</sup> Smith 1999.

Several village workers were digging in a sugar cane field and struck three sealed terracotta jars. Inside the buried containers was a glittering hoard: over 6,000 gold and silver coins and more than 1,000 ceremonial objects, including bowls and jewellery.

The discovery created excitement in archaeological circles: could Wonoboyo be the site of the lost Javanese palace of the ancient Mataram kingdom? The palace dated from the glorious ninth and tenth centuries of central Java's history, which marked the merging of Hinduism and Buddhism, giving birth to the great temples of Borobudur and Prambanan.

But while the ornamental style of the Wonoboyo trove resembles the baroque richness of Prambanan art, the physical evidence at the Wonoboyo site was insufficient to link it to the Mataram palace. Nevertheless, excavations revealed regal associations and pinpointed the site as an important, even holy, place, probably a hermitage.

Inscriptions revealed the owner of the Wonoboyo hoard to have been a king, who it is thought – based on a golden alms bowl found amongst the treasure – retired from the worldly life to become a Hindu priest. The old king's buried treasure has been dated to the ninth or tenth centuries and the fourteenth and fifteenth centuries.

Some of the objects indeed came from the old Mataram kingdom near Yogyakarta, while the rest came from the Madjapahit kingdom in east Java and from other parts of the island.'<sup>[60]</sup>

Sue Smits refers to the text by Drs Wahyono Martowikrido, head of the Archaeology Department of the National Museum of Indonesia in Jakarta, in the exhibition catalogue, who writes:<sup>[61]</sup> 'The ceremonial objects in the Wonoboyo hoard mostly come from Java, and date from between the ninth or tenth centuries AD and the fourteenth or fifteenth centuries AD. Most of the objects came from the Old Javanese Mataram kingdom in Yogyakarta area, or from the Madjapahit kingdom in east Java, while the rest came from other parts of Java.'

Some of the objects were indeed from the Old Javanese Mataram kingdom (Medang) 752-1045 near Yogyakarta. However, the research of Drs. Wahyono Martowikrido dates objects in the hoard from different periods and consequently the burying of the hoard must be much later, in the Madjapahit period.

3.3 Arguments against the early dating of the coins in the hoard

It is true that the later dating of the burying of the Wonoboyo hoard does not necessarily imply that the 6,396 gold coins in the hoard, which are from the standardized type with the letter *Ta* ( $\overline{a}$ ) and weigh between 2.2 and 2.6 g<sup>[62]</sup>, are also from a later date, closer to the youngest artefacts.

<sup>&</sup>lt;sup>[60]</sup> Our emphasizing.

<sup>&</sup>lt;sup>[61]</sup> Exhibition 1999, p. 31.

<sup>&</sup>lt;sup>[62]</sup> *Ibid.*, p. 94.

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There are, however, arguments to support that the coins in the Wonoboyo hoard are indeed from a later date than supposed by Wicks and Wisseman Christie:

• Wicks, van Aelst and Bennet<sup>[63]</sup> stated that during the 14<sup>th</sup> century the Chinese *cash* coins replaced the use of the Javanese *sandalwood flower* coins.

Wicks writes: 'The sandalwood flower series were found on Java since the 8<sup>th</sup> century. The appearance of a silver sandalwood flower coinage in south central Java at the end of the 8<sup>th</sup> century provides the earliest indication of monetized transactions in insular Southeast Asia. Subsequent indigenous coinage on the island struck in silver and gold issued between the 9<sup>th</sup> and 13<sup>th</sup> centuries is much more widespread, found in central and east Java as well as Bali.'<sup>[64]</sup>

This suggests that the payments until the 14<sup>th</sup> century were still made with this type of silver and gold coins.

It implies a usage, without any change in form, symbols or standard, for at least four centuries by different authorities and under different governments. This is hard to believe, as during this period, Javanese kingdoms emerged and declined, and governments and authorities shifted, for instance, Mataram (751-1045), Kediri (1045-1221), Singhasari (1222-1292) and Madjapahit (1292-1527).

The assumption is thus not plausible. An introduction on Java much later than the 8<sup>th</sup>-10<sup>th</sup> century is more logical.

• Wicks writes, with regard to a weight standard of the Sumatran coins: <sup>[65]</sup> 'A related concern has to do with why surviving coin series did not adhere to weight standard.'

Indeed, the gold coins of different weight found on Sumatra do not fit into a weight system. The gold coins found on Java follow a well-defined weight system. Why would Sumatra not have copied the weight system as well? Standardization of coin weights develops over time. The coinage on Sumatra consists – due to the lack of a legal weight standard – more of gold and silver *ingots* than of standardized *coins*. A later introduction of *coins* on Java with a well-defined weight system, copying the design of earlier Sumatran *ingots*, is more understandable. This would then support a later date of issue for the Javanese coinage.

• The gold coins of Sumatra are from the same design as its silver and copper coins: they are all from the *djampel*-type.

The Javanese silver and copper coins are from the same design as the Sumatran coins. However, the Javanese gold coins in the Wonoboyo hoard are from a totally different design. Why did the Sumatrans not copy the design of the gold coins as well?

The more logical explanation would be that Java copied Sumatra and introduced a new gold coin.

<sup>&</sup>lt;sup>[63]</sup> Wicks 1992, p. 243; van Aelst 1995, p. 366; Bennet 2009, p. 101.

<sup>&</sup>lt;sup>[64]</sup> Wicks 1992, p. 243.

<sup>&</sup>lt;sup>[65]</sup> Wicks 1992, p. 241.

• Van Aelst asked where the Madjapahit currency, needed for the expanding trade, could be found if there was no supply of Chinese cash coins, and suggests: 'Such shortages would then have required a solution, perhaps in the form of local coin production.'<sup>[66]</sup>

This local coin production in the Madjapahit period could have been the Javanese standard coin in the Wonoboyo hoard with the different design compared to the Sumatran coinage.

All these arguments together make the start of the coinage on Sumatra, followed by the Javanese coinage logical. It explains that Java followed the *djampel*-type coinage of Sumatra, and also why the Sumatran gold and silver *ingots* do not follow a standard weight system, whereas the later Javanese gold and silver coins in the Wonoboyo hoard are coined with a new design and based on a well-defined weight system. It also answers the questions on the introduction of gold coinage on Java in the Madjapahit period, when Chinese cash coins were insufficiently available.

Wisseman Christie and Wicks were probably deceived by the original assignment of the whole Wonoboyo hoard to the 10<sup>th</sup> century. Unfortunately, this has influenced all their publications and has brought much misunderstanding in the numismatic world.

Based on the given arguments and foremost on the dating of the objects in the Wonoboyo hoard, it is certain that the hoard is not buried in the 8<sup>th</sup> to 10<sup>th</sup> century, but much later, somewhere in the Madjapahit period (13<sup>th</sup> to 16<sup>th</sup> century). To conclude: The coinage of *ingots* started on Sumatra. It was subsequently copied on Java in the Madjapahit period into the well-standardized coinage.

## 4 The kingdoms responsible for the coinage

There is no proof of which Hindu Kingdom or Kingdoms were responsible for the striking of the Hindu coins on Sumatra and Java. It could have been one kingdom from either island that also spread its influence over the other island or two independent kingdoms based on respectively Sumatra and Java. A short overview of the Sumatran and Javanese kingdoms from the History of Indonesia<sup>[67]</sup> can probably lead to an answer to this question.

Indigenous kings who had adopted the Hindu or Buddhist religion ruled many well-organized kingdoms with a high degree of civilization from ancient times to the 16<sup>th</sup> century AD. Indian culture and customs were introduced, such as the system of government in a monarchy, the ancestry system, the organization of military troops, literature, music and dances, architecture, religious practices and rituals, and even the division of labourers into castes or *varnas*. The Hindu literary works known as *Vedas*, the *Mahabharata* and *Ramayana* epics were introduced through the wayang, or shadow-play performance, which is still very popular in many parts of present-day Indonesia.

<sup>&</sup>lt;sup>[66]</sup> van Aelst 1995, p. 361.

<sup>&</sup>lt;sup>[67]</sup> From: History of Indonesia series.

The first Indian Buddhists arrived in Indonesia between the 1<sup>st</sup> and 2<sup>nd</sup> centuries AD. Around 502 AD Chinese annals mentioned the existence of the Buddhist kingdom Kanto Li in South Sumatra, presumably in the neighbourhood of present-day Palembang. King Gautama Subhadra ruled it, and later his son Pyrawarman or Vinyawarman who established diplomatic relations with China. What the Chinese called 'Kanto Li' was probably Srivijaya, a mighty Buddhist kingdom.

On his way to India, the Chinese Buddhist pilgrim I-Tsing (I-Ching) visited Srivijaya in 671 AD to study the Sanskrit language. He returned 18 years later in 689 AD.<sup>[68]</sup> Srivijaya was the centre of Buddhist learning and had many well-known philosophy scholars like Sakyakirti, Dharmapala and Vajabudhi.

The kingdom had diplomatic relations with the south Indian kingdom of Nalanda, and the Srivijaya mission in Nalanda built a school on its premises where Indians could learn the art of moulding bronze statues and broaden their knowledge of the Buddhist philosophy. With the spread of Buddhism, Srivijaya's influence reached out to many other parts of the archipelago.

Another well-known Buddhist kingdom was Sailendra on Central Java (750-850 AD). This dynasty built the famous Buddhist temple Borobudur and other Buddhist temples, such as the Mendut, Kalasan and Pawon temples. All these temples are near the city of Yogyakarta. The Sailendra kingdom was known for its commercial and naval power, and its flourishing arts and culture.

West Java knew the kingdoms of Galuh, Kanoman, Kuningan and Pajajaran. King Purana founded the latter, with Pakuan as its capital. It replaced the kingdom of Galuh. The kingdoms of Taruma Negara, Kawali and Parahyangan Sunda came later.

At the end of the 10<sup>th</sup> century (911-1007 AD), the powerful kingdom of Singasari emerged in East Java under king Dharmawangsa. He codified laws and translated into Javanese the *Mahabharata* epic and the basic philosophy, as exposed in the *Bhisma Parva* scripture. He also ordered the twelve translations of the Hindu holy book, the *Bhagavat Gita*.

Meanwhile, king Airlangga, known as a wise and strong ruler, ruled the island of Bali. He had water-works built along the Brantas River that are still in use today. Before his death in 971 AD, he divided his kingdom into the kingdoms of Janggala (Djenggala) and Daha or Kediri. These were to be ruled by his two sons. The Madjapahit kingdom, first ruled by prince Wijaya also known as king Kartarajasa, succeeded the kingdoms of East Java. Under king Hayam Wuruk the Madjapahit Empire became the most powerful kingdom in the history of Indonesia. It had dependencies in territories beyond the borders of the present archipelago, such as Champa in North Vietnam, Kampuchea and the Philippines (1331-1364). King Hayam Wuruk, with his able prime minister Gajah Mada, succeeded in gradually uniting the whole archipelago under the name of Dwipantara. Madjapahit produced many literary works during this golden period. Among them was *Negara Kertagama*, by the famous author Prapancha (1335-

<sup>&</sup>lt;sup>[68]</sup> I-Tsing 1894 & 1998.

1380). Parts of this book describes the diplomatic and economic ties between Madjapahit and numerous Southeast Asian countries including Myanmar, Thailand, Tonkin, Annam, Kampuchea and even India and China.

To conclude: There were many highly developed kingdoms that could be responsible for the Hindu coinage and further research is needed.

The following table lists the most important kingdoms on Sumatra and Java in the period from 358 AD until the end of the 16<sup>th</sup> century that stand out in terms of their development:<sup>[69]</sup>

358-669	Northwest Java
7 <sup>th</sup> -13 <sup>th</sup> century	Central Sumatra
8 <sup>th</sup> -9 <sup>th</sup> century	Central Java
669-1579	West Java
752-1045	Central and East Java
1045-1221	Central Java
1222-1292	East Java and Bali
13 <sup>th</sup> -16 <sup>th</sup> century	East Java
	358-669 7 <sup>th</sup> -13 <sup>th</sup> century 8 <sup>th</sup> -9 <sup>th</sup> century 669-1579 752-1045 1045-1221 1222-1292 13 <sup>th</sup> -16 <sup>th</sup> century

These Sumatran and Javanese kingdoms were highly sophisticated and civilized societies that needed some 'means of exchange' for the daily affairs and trade. At some point in history, these 'means' took the form of coins.

As mentioned before, there are differences as well as similarities in the coins found on Sumatra and Java. This indicates that they are related. The evolution of money was an unconscious and gradual process.<sup>[70]</sup> The development from payments with barter, gold dust, or pieces of gold and silver, into payments with uniform coins of standardized weight, has taken centuries. In this case, discussing Sumatra and Java, it started far before 1097 AD, when Srivijaya shifted its capital from Palembang to Muara Jambi and started the issue of the *djampel* type coins with their undefined weight. Not until the rise of Madjapahit after 1292 AD, coins with a legal weight standard were issued.

Thus: The Java coinage must be of later date than the Sumatran coinage. This would make two independent but in time closely sequential kingdoms responsible for the coinage.

Only two kingdoms existed during a long time and directly followed each other: the first is Srivijaya, from the 7<sup>th</sup> century until the 13<sup>th</sup> century, starting on central Sumatra and spreading it influence over a large area in Southeast Asia – the second is Madjapahit, established in East Java and spreading its influence to the same area in Southeast Asia; it overpowered Srivijaya and was dominant from the 13<sup>th</sup> to the 16<sup>th</sup> century. The influence and trade of these kingdoms included large areas along the Malacca and Sunda straits.

<sup>&</sup>lt;sup>[69]</sup> Source: The Embassy of the Republic of Indonesia.

<sup>&</sup>lt;sup>[70]</sup> Einzig 1951, p. 353.

These kingdoms were powerful enough to draw the conclusions that:

- 1. The Srivijaya kingdom (7<sup>th</sup> to 13<sup>th</sup> century) was responsible for the *ingot* coinage on Sumatra.
- 2. The Madjapahit kingdom (13<sup>th</sup> to 15<sup>th</sup> century), after the decline of Srivijaya, was responsible for the coins on Java, developed from the earlier Sumatran ingot coinage and based on an Indian weight system.

Although there were commercial activities towards China, the orientation of these kingdoms was more to India and not to China. This orientation explains the use of measures and weights originating from the Indian subcontinent. As Coedès mentioned: 'It is astonishing that in countries so close to China – countries that entered into commercial and diplomatic relations with her from the first centuries of the Christian Era – the cultural influence of the Middle Kingdom has been insignificant.'<sup>[71]</sup>

The Appendix gives a short history of the kingdoms Srivijaya<sup>[72]</sup> on Sumatra and Singhasari/Madjapahit<sup>[73]</sup> on Java. It shows the importance of these kingdoms and why they were the pre-eminently kingdoms which may raisonably be expected to have been responsible for the Hindu coinage.

### 5 Payments on Sumatra and Java

This chapter describes the coins used for payments on Sumatra in the Srivijaya period and on Java in the Madjapahit period. There are two series of coins from these periods: the gold coins with on the obverse, what Wicks called *sandalwood flower*, found on Sumatra, and the gold coins with on the obverse, what Wicks called *sesame seed*, found exclusively on Java.



*Fig.* 5 – *The lotus flower* 



Fig. 6 – The lingam

As will be explained later, the names for the obverse symbol on the coins are not correct and should respectively be *lotus flower* and *phallus* or *lingam*. In this chapter, the names *sandalwood flower* and *sesame seed* will still be used to avoid confusion when citing Wicks and other older publications.

<sup>&</sup>lt;sup>[71]</sup> Cœdès 1944 [1968], p. 34-35.

<sup>&</sup>lt;sup>[72]</sup> Appendix 13.1.

<sup>&</sup>lt;sup>[73]</sup> Appendix 13.2.

#### 5.1 Payments on Sumatra

Srivijaya (7<sup>th</sup>-13<sup>th</sup> century on Central Sumatra) was the first kingdom that spread its influence over a large area and became an important seafaring nation. During the rise of Srivijaya, the local economy must have developed significantly. This led to a greater use of precious metals in daily transactions.

It is likely that payments in precious metals and barter were already common on Sumatra long before the rise of the Srivijaya kingdom. The recovery on Sumatra of small pieces of silver and gold, like already shown in figure 4, with cut edges and without the *sandalwood flower* pattern, can support this assumption. Marsden writes in two different places: '*Gold is generally employed as currency* 



Fig. 7 – A daching

instead of coin; every man carries small scales about him, and purchases are made with it so low as to the weight of a grain or two of padi. One grain of padi [rice] is 0.03 grams.<sup>(74]</sup>

'But payments are commonly made in gold dust, and for that purpose everyone is provided with small scales or steel-yards, called daching. (figure 7).

They carry their gold about them, wrapped in small pieces of bladder (or rather the integument of the heart of the buffalo), and often make purchases to so

small an amount, as to employ grains of padi or other seeds for weights.' [75]

On this last, McLean writes: <sup>[76]</sup> 'We are therefore led to the conclusion that weighing and valuing were synonymous in the earliest days, and that weight was only present in the practical minds of commercial men as the test of value, which was determined by the heaviness of a standard measured quantity of a stated precious material'.

To support the increase of transactions, Srivijaya introduced *coins*, stamped with a symbol as a sign of purity, to support the increasing trade, but without standardized denominations.

Album mentioned Indian systems without standardized denominations, similar to the Sumatran situation:<sup>[77]</sup> 'In such systems, the gold and silver coins were struck at essentially random weights, rather than in regular multiples of established denominations. Thus, the coins were more akin to stamped ingots, intended to be weighed and not counted. In general, randomly struck coins seem to be of relatively uniform fineness, so that entire lots of coins could be weighed and tallied together'.

<sup>&</sup>lt;sup>[74]</sup> Marsden 1811<sup>3</sup>, p. 171.

<sup>&</sup>lt;sup>[75]</sup> *Ibid.*, p. 401.

<sup>&</sup>lt;sup>[76]</sup> McLean 1912, p. 19.

<sup>&</sup>lt;sup>[77]</sup> Album 1977, p. 24.

These are the coin-like *ingots* in gold, silver and copper found on Sumatra. The finding on Sumatra of very small gold *ingots* of 0.074 g (2.5 grains of rice) and 0.047 g (1.5 grains of rice), shown in figure 8, confirms that small amounts of gold were used as payments. These small pieces of precious metal, with a mark on them, granting the quality of the essay, made it easier to make payments by weighing. The mark is only a proof of quality and purity and not a weight indication.



Fig. 8 – Small gold ingots from Sumatra (scale 300%)

According to literature, there are gold coins that are exclusively found on Sumatra. Wicks names these coins, based on the flowery pattern on the obverse of the coins, *sandalwood flower* coins.<sup>[78]</sup> Silver and copper coins with this mark are also found on Sumatra. It is likely that the *sandalwood flower coins* replaced the use of lumps of gold and silver and the older gold and silver *ingots*.

Wicks writes: 'The adoption of the coinage probably coincided with the shift of Srivijaya's capital from Palembang to Muara Jamby in 1079'<sup>[79]</sup>

'It is likely that Srivijaya began issuing its own coinage sometime in the eleventh century following the shift of the capital to Jambi. Support for this argument derives from the fact, that while no specimens of native coinage have been reported from the vicinity of Palembang, three gold sandalwood flower coins have been recovered from Candi Gumpung at Muara Jambi, the first recorded find of native sandalwood flower coinage on the east coast of Sumatra.'<sup>[80]</sup>

The findings of the gold and silver *sandalwood flower* coins are all concentrated in central Sumatra.

Cœdès mentions that in the 7<sup>th</sup> century, Srivijaya had its centre at Palembang<sup>[81]</sup>, but the Sumatran ruler Adityavarman, who had an honorific title of Kanakamedinindra, meaning 'Gold Land Lord', shifted its capital in 1097 AD from Palembang to Muara Jambi (on central Sumatra), after destructive attacks from pirates from the Chola region on Palembang. The nearby goldmines in that area made Muara Jamby the logical choice.

In the time of Millies, this was not yet known and it was assumed that the longlost site of ancient Fansour (Barous) was located in central Sumatra. This seems to be incorrect, because, following recent archaeological research, there is in-

<sup>&</sup>lt;sup>[78]</sup> Wicks 1992, p. 249.

<sup>&</sup>lt;sup>[79]</sup> *Ibid.*, p. 241.

<sup>&</sup>lt;sup>[80]</sup> *Ibid.*, p. 232.

<sup>&</sup>lt;sup>[81]</sup> Cœdès 1944 [1968], p. 92.

creasing evidence to suggest that the site of ancient Fansur, a toponym often associated with the Barus region, may be found in the strategically located bay of Pancu, a short distance west of the modern city of Banda Aceh.<sup>[82]</sup>

Silver and copper *sandalwood flower* coins are found on both Sumatra and Java, but the mark on the reverse of the coins from Sumatra differs from the one on the Javanese coins. This helps to distinguish the coins from Sumatra from the coins of Java.

Generally, all these gold, silver and copper coins are called *djampels*.

Wicks writes, with regard to the absence of a weight standard for the Sumatran coins:<sup>[83]</sup> 'A related concern has to do with why surviving coin series did not adhere to weight standards in use elsewhere in Southeast Asia until the emergence of Samudra-Pasai'.

As explained in the previous chapters, the Sumatran coins predate the Javanese coins that do follow a weight system and not the other way around. This corrects Wicks' assumptions and solves the issue.

To conclude: The *sandalwood flower* coins found on Sumatra were used as *ingots* or *barter* in a system were weighing intervened in payments. They date back to the late 11<sup>th</sup> century when Srivijaya had moved its capital from Palembang to central Sumatra's Muara Jambi region. Sumatran ingots with other inscriptions than the *sandalwood flower* and all the small pieces of silver and gold are likely from before 1079 AD and pre- or early Srivijayan.

#### 5.2 Payments on Java

It is realistic to assume that before the Madjapahit period (13<sup>th</sup> to 16<sup>th</sup> century) on Java transactions in barter and precious metals were common practice, similar to the situation in the Srivijaya period on Sumatra. On Java, lumps of silver and silver *ingots* are recovered that support this.



Fig. 9 – Javanese ingot

Examples are the silver *coin* from Millies (no. 11 in figure 3) and the silver *ingot* with a *snake* (figure 9). All examples of payments given by Wicks and Wisseman Christie prove further that gold, silver, copper and barter were in use for payments on Java.

Due to the lack of Chinese *cash* coins and the penalties on exporting *cash* coins by China, the trade between China and Madjapahit must have relied on different means of payment.

Van Aelst writes: But even then the question remains how Madjapahit supplied its expanding empire with additional currency in the 14<sup>th</sup> century?'<sup>[84]</sup>

Van Aelst could not easily give the answer to this question, as he followed the original assumption of Wicks and Wisseman Christie that the Hindu Javanese

<sup>&</sup>lt;sup>[82]</sup> McKinnon 2013.

<sup>&</sup>lt;sup>[83]</sup> Wicks 1992, p. 241.

<sup>&</sup>lt;sup>[84]</sup> van Aelst 1995, p. 368. Our emphasizing.

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coins with the well-defined weight standard dated from the 8<sup>th</sup> to 10<sup>th</sup> centuries.<sup>[85]</sup> Van Aelst supposed that the so-called '*masa* units'<sup>[86]</sup> lagged behind the common practice and thus were declining in importance.

Van Aelst writes: 'Discontinuities in Chinese coin production and in Sino-Javanese trade connections would have resulted in shortage of currency in the Madjapahit Empire. Such shortages would then have required a solution, perhaps in the form of local coin production.'<sup>[87]</sup>

This local coin production was exactly what happened on Java. The fast expansion of Madjapahit and the absence of imports of substantial amounts of Chinese *cash* coins made it necessary for Madjapahit to coin their own money.

The new gold '*masa* unit coins' with their new design and following a welldefined weight standard, were actually the answer to the question on how to increase the currency volume.

After 1567, the Chinese trade revived and the Chinese *cash* became a more accepted coin in daily use. The Chinese *cash* coins stayed in use in the market-place until late in the  $20^{\text{th}}$  century.<sup>[88]</sup>

The Java silver and copper coins were copied from the Sumatran (Srivijaya) *ingot* coins or *djampels*, be it with a little change in the reverse.

The trade of Madjapahit was oriented to the west, towards India, while the trade with China had come to a standstill. That makes it understandable that Madjapahit followed the Indian standard for their new coinage. The new gold standard coin as well as the copied silver *djampels* were based on the Indian *suvarna* weight.

These types of coins are only recorded from finds on Java and can be attributed with certainty to the Madjapahit period.

Wisseman Christie gives a sample from the 13<sup>th</sup> century, in the Madjapahit period:<sup>[89]</sup>

... pinda ning pirak baye samudaya ma su 10 ma 7 ku 1 : 'the total of money paid [was] 10 Suvarna, 7 Masa, 1 Kupang in gold.'

Now that gold standardized coins are introduced on Java, it is acceptable that the payment in this example was made in local produced Hindu Javanese gold coins. The different denominations in the series of Javanese coins prove that daily use in commerce was intended. For the first time, there was a real monetized economy on Java, with coins in daily use.

It also shows that in the 13<sup>th</sup> century on Java, payments were made in local currency and not in Chinese *cash* coins.

<sup>&</sup>lt;sup>[85]</sup> van Aelst 1995, p. 366.

<sup>&</sup>lt;sup>[86]</sup> Wicks' name for the 2.4 g gold coins.

<sup>&</sup>lt;sup>[87]</sup> van Aelst 1995, p. 361.

<sup>&</sup>lt;sup>[88]</sup> See Mees 1851; van Bosse 1863; Berg 1907; Vissering 1920.

<sup>&</sup>lt;sup>[89]</sup> Wiseman Christie 1996, p. 266.

#### 5.3 The coins from Java

The coins of Java exist in gold, silver and copper. Mitchiner gives an idea about the alloy of the coins.<sup>[90]</sup> The gold coins contain about 70% gold, the rest is silver and traces of copper. The silver coins contain about 90% silver, the rest is copper and traces of other metals. Mitchiner also lists the copper coins, but he calls them 'debased silver coins'. These coins contain about 98% copper, less than 1% silver and traces of other metals. In this study, the coins with this high copper content will be called 'copper coins' and not 'debased silver coins'.

Two types of the *sesame seed* gold coins are found on Java: there are coins with a *letter* on reverse and those with *two parallel lines* on the reverse.<sup>[91]</sup> Both are exclusively found on Java. All these coins follow a well-defined weight system.

The gold Javanese Hindu coins in the Wonoboyo hoard were from this standard type with the *letter*. The recorded weights of the Javanese gold coins of 9.6 + 4.8 + 2.4 + 1.2 + 0.6 g point to a binary weight system.

The silver coins of the so-called *sandalwood flower* type of Java exist in two varieties:

the so-called *half moon* coins (Netscher & van der Chijs nos 121, 122 and 123 in figure 2 and Millies nos 7, 9, 10 and 12 in figure 3).
The weight of the *half moon* coins varies from 55 to 20 g. It seems that these

coins do not follow a specified weight system and therefore must be interpreted as *ingots*.

• *djampels* or *Ma* coins (Netscher & van der Chijs nos 125 and 126 in figure 2 and Millies nos 13 to 24 in figure 3). The weight of the *djampels* coins varies from 0.6 to 2.4 g.

The *half moon* coins are exclusively found on Java. It is likely that the value of these coins depended on their weight; they must be dated before the introduction of the standard gold and silver coins in the pre- or early days of Madjapahit. There are finds on Java with *djampels* that seem to follow a weight system. Wicks mentions two finds with the following weight distributions:<sup>[92]</sup>

Weight (g)	2.0	2.1	2.2	2.3	2.4	2.5	2.6
Number of specimens			0	2	10	1	0
Number of specimens	0	1	6	10	64	45	0

Wisseman Christie mentions<sup>[93]</sup> weights of 2.4, 2.5, 1.2 and 0.6 g. The weights of 2.4, 1.2 and 0.6 g for the silver *djampels* point to a similar weight system as found for the Javanese gold coins. Small deviations from the standard weight by some of the *djampels* can be attributed to wear or imperfect fabrication.

<sup>&</sup>lt;sup>[90]</sup> Mitchiner 1998, p. 215

<sup>&</sup>lt;sup>[91]</sup> Wicks 1992, p. 289.

<sup>&</sup>lt;sup>[92]</sup> Ibid., p. 253-254.

<sup>&</sup>lt;sup>[93]</sup> Wisseman Christie 1996, p. 273-274.

The mark on the reverse of the copper *sandalwood flower* coins found on Java differs from the one found on Sumatra. This helps to distinguish the coins from the Sumatran ones. The coin weight of the copper coins varies from 1.3 to 1.8 g. Coins with other weights are known. These copper coins seem not to follow the weight system of 0.6 + 1.2 + 2.4 g as in use for the gold and silver coins of Madjapahit. Copper coins suffer most of wear. This could explain why there is no indication of a system in the coin weights. It is possible that they have circulated as *ingots* with a value depending on their weight.

Generally, all these gold, silver and copper coins are called *djampels*.

#### 6 The coin weights

The recorded weights of the Javanese gold and silver coins is 9.6 > 4.8 > 2.4 > 1.2> 0.6 g, pointing to a binary weight system. Except for some assumptions by Wicks<sup>[94]</sup>, there are no publications concerning a basis of the Hindu Java silver and gold coin weight system. Moreover, Wicks' assumptions are wrong. As mentioned before, the adoption of a standardized weight system for the Hindu Javanese coins is the end of a long process in the development of the way payments were made in the Hindu era.

Thus, identifying and describing the adopted weight system is an essential part in the study of the Hindu coinage.

#### 6.1 The origin of weight standards

As Ridgeway<sup>[95]</sup> has already shown, the need to weigh is the first premise in the determination of the quantity of gold. Gold is such an expensive and desired article that there has always been the need to accurately weigh small quantities. Plants or seeds were used for weighing in the past. The unit of the system of gold was the weight of a seed of a common plant. In England it was the barley corn, used under the name *grain* (*grain Troy*) that nowadays has a standardized weight of 0.0648 g. This unit was also known, albeit under various names, in the rest of Europe and to a lesser extent in Asia and Persia: in Dutch *grein* or *korrel* (Latin *granum*), in Arabic *chabba*, in Hindu *java*.

Another much used grain for weighing was the grain of wheat, known in Dutch as aas (Latin as), with a weight of 0.0486 g.

In Arabia the *kirat* was in use, it is the name of the seeds of the 'Carob' or 'St. John's Bread'. The name is in English *carat*, in Dutch *karaat* (Greek *keraton*, Latin *ceratonia siliqua*). The *kirat* was divided into either three or four parts, both called *chabba*. That there was a division into three or four was not so remarkable since the weight of the *kirat* was equal to 0.195 g and that is three times the weight of the barley corn or four times that of the wheat grain  $(3 \times 0.0648 = 4 \times 0.0486 = 0.195 \text{ g})$ . Nowadays the *kirat* (*carat*) is standardized at 0.2 g.

<sup>&</sup>lt;sup>[94]</sup> Wicks 1992, p. 252.

<sup>&</sup>lt;sup>[95]</sup> Ridgeway 1892.

These numbers, in three decimals, suggest that the system is very accurate and the weight of the seed was uniform. That is not so, however. Irrespective of the mutual differences in the weight of the seeds from one batch, the difference in the weight of the seeds depends on the place where the plant grows. In drier climates the weight of the seeds tends to be higher. The quality of the soil also has an influence. But since the mutual weight ratios between the different seeds are constant, a system based on the ratios of the local seeds can be used over the whole area with the same climat.

In northern India the weights system is derived from that of Persia, which used the *barley corn*. The ancient (Persian) weight of the *barley corn* was around 0.059 g (the old *grain Avoirdupois* of 0.059 g instead of the now standardized grain of 0.0648 g). The *gunjá* seed (*Abrius Precatorius*) common throughout India and with a weight of 0.118 g, is exactly twice that of the Persian *barley corn*. The *gunjá* seed is also found in southern India where it is called *ratti* and where rice rather than barley is the staple food, the *gunjá* became the standard weight throughout India. A grain of rice weighs about 0.03 g and that means that a *gunjá* (*ratti*) can be divided into 4 rice grains (*pady*).

Thus: 1 *gunjá* (*ratti*) of 0.118 g = 2 barley corns of 0.059 g = 4 rice grains of 0.03 g. A recent visit to Myanmar shows that weighing with the *gunjá* and *manjadi* (= 2 *gunjá*) seeds is still in daily use.

#### 6.2 The weight system published by Wicks

Robert S. Wicks<sup>[96]</sup> has published a work on *Markets and Trade in Early Southeast Asia and the Development of Indigenous Monetary Systems.* Most of his work is based on the Chinese trade and the Chinese weight system. He made an essential mistake by assuming a Chinese origin for the Indonesian weight system. He made the same mistake by describing the Islamitic coins of Samudra-Pasai and Acheh.<sup>[97]</sup> This error is of such an importance for this study and the acceptance of the publications of Wicks and Wisseman Christie, that it must be explained further.<sup>[98]</sup>

Wicks writes that the standard for measures and weights for Java and Sumatra was based on the Indonesian *kati*. There are two types of *kati*. The Chinese *kati* (*catty*) of 601 g known on Java from the trade with China, and the new *kati* of 615.2 g, introduced in the East Indies by the Dutch VOC in the 17<sup>th</sup> century. <sup>[99]</sup> The difference between the Dutch *kati* and the Chinese *catty* is explained by the fact that the Dutch made the *kati* equal to 1 ¼ Dutch pound of 492.2 g (or 2 ½ Dutch *mark*), whereas the Chinese *catty* equals 1,600 *candarins* (1 *candarin* = 0.3757 g). Although Wicks supposes a Chinese based system of weights, he uses the Dutch *kati* that was unknown in the early Hindu period of Java.

<sup>&</sup>lt;sup>[96]</sup> Wicks 1992.

<sup>&</sup>lt;sup>[97]</sup> Leyten 2004.

<sup>&</sup>lt;sup>[98]</sup> See also Leyten 2011.

<sup>&</sup>lt;sup>[99]</sup> Doursther 1840, p. 93.

Wicks writes: [100]

1 kati = 16 (or 20<sup>[101]</sup>) suvarna 1 suvarna = 16 másha = 64 kupang 1 másha = 4 kupang

Contrary to Wicks' statement, the Dutch *kati* is divided in 16 *taels* of 38.5 g and not in 16 *suvarna*; the Chinese *catty* is divided in 16 *taels* of 37.6 g.<sup>[102]</sup> By starting from the (at that time not existing Dutch) *kati* he derives (with an impossible precision):<sup>[103]</sup>

1 suvarna	=	38.601 g
1 másha	=	2.412 g
1 kupang	=	0.603 g

As will be shown, this assumption is completely wrong and it is also not the weight system used on Java.

6.3 The weight system of Southern India

The trade of Madjapahit (and also of Srivijaya) was orientated on the west, the southern coast of India. So India is the most obvious place to look for the origin of the weight standard that was used for the Hindu Javanese coins. There are numerous publications about the coins of India and their weight.<sup>[104]</sup> All these sources give a lot of information about the coins, but less about the abundance of underlying weight systems. In this paper only one weight system is explained, as it contributes to the understanding of the system used on Java. The original Hindi weight standards are based on natural seeds. A number of (older) sources provide information on the weight systems in India, but they vary considerably by the actual value of the weight of the *gunjá* seed, resulting in equally spread of the weight for the suvarna.

1. A standard can be found in the Lilavati of Brahmegupta, who wrote his *Algebra and Calculus* in ca. 600 AD. Quoting from the *Algebra*<sup>[105]</sup>, insofar as it relates to the weighing of gold:

<sup>6</sup> Gunjá (or seed of Abrus) is reckoned equal to two Barley-Corns (Yavas). Half ten Gunjás are called a Mashá by such as are conversant with the use of the balance. A Karsha contains sixteen of what are called Másha. A Pala four Karshas. A Karsha of gold is named Suvarna.<sup>2</sup>

The barley-grain mentioned here is the old grain Avoirdupois of 0.059 g. [106]

<sup>&</sup>lt;sup>[100]</sup> Wicks 1992, p. 252.

<sup>&</sup>lt;sup>[101]</sup> *Ibid.*, p. 253.

<sup>&</sup>lt;sup>[102]</sup> The Chinese *tael* was equal to 100 *candarins*.

<sup>&</sup>lt;sup>[103]</sup> Wicks 1992, p. 253.

<sup>&</sup>lt;sup>[104]</sup> Prakash 1968; Prinsep 1858; Elliot 1970; etc.

<sup>&</sup>lt;sup>[105]</sup> Colebrooke 1817.

<sup>&</sup>lt;sup>[106]</sup> See § 6.1.

Thus:	1 gunjá			=	0.118 g
	5 gunjá	=	1 mashá	=	0.59 g
	1 karsha	=	16 mashá	=	9.44 g
	1 pala	=	4 karshas	=	37.7 g

2. Tavenier [107] writes:

'*The ordinary Ratti varied from 1.75 to 1.84 grains troy.*' In the appendix:<sup>[108]</sup>

<sup>6</sup> The ordinary ratti (the seed of the Abrus precatorius) varied from 1.75 up to 1.9375 grains troy, the mean of which is 1.843 grains troy.<sup>2</sup>

Thus a *gunjá* varies between 0.113 to 0.1256 g, with an average of 0.119 g.

This results in the weight of the *másha* between 0.565 and 0.628 g, with an average of 0.596 g. The *karsha* varies between 9.04 en 10.05 g, with an average of 9.54 g.

3. Sircar <sup>[109]</sup> writes in reference to Vincent A. Smith and A. Cunningham that they put the *ratti* (= *gunjá*) at 1.825 and 1.830 *grains* respectively, which makes the *gunjá* respectively 0.1183 and 0.1186 g, the *másha* 0.591 and 0.593 g, and the *karsha* 9.46 en 9.49 g. The average weight of the *másha* is 0.592 g and the *karsha* 9.47 g.

This also reveals that the *suvarna* or the standard gold weight is equivalent to the *karsha* of 80 g*unjás*.

The *gunjá* is also known by the names of *krisnala* and *raktika*.

- 4. According to Codrington<sup>[110]</sup> the old weight system of *ca*. 700 AD is as follows: *The Karsha was usually divided into four Tankas or 16 Máshas. The Mashá is equal to 9 Grains.*' 9 grains = 9 × 0.0648 g = 0.583 g. The karsha is then 9.33 g.
- 5. With reference to the Yuktikalpadruma text of the 11<sup>th</sup> century, Chattopadhyaya<sup>[111]</sup> comes to a weight of the *kalanju* of 30 gunjá equal to 54 grains. The Gunjá is therefore 1.8 grains = 0.1166 g, the *karsha* 9.33 g, and the másha 0.583 g.
- 6. Doursther <sup>[112]</sup> in his *Dictionaire Universel des poids et mesures*, gives for the *gonje* of Bombay a weight of 1.79 *grains Anglais*. That is  $1.79 \times 0.0648$  g = 0.1160 g. This would make the *karsha* 9.280 g and the *másha* 0.580 g.

<sup>&</sup>lt;sup>[107]</sup> Tavernier 1676, II, in footnote on page 69.

<sup>&</sup>lt;sup>[108]</sup> *Ibid.*, I, page 333.

<sup>&</sup>lt;sup>[109]</sup> Sircar 1968.

<sup>&</sup>lt;sup>[110]</sup> Codrington 1924.

<sup>&</sup>lt;sup>[111]</sup> Chattopadhyaya 1977, p. 153.

<sup>&</sup>lt;sup>[112]</sup> Doursther 1840, p. 160.

- 7. Ridgeway<sup>[113]</sup> gives in his book the weight of the *gunjá* at *ca.* 1.75 *grains Troy*. That is  $1.75 \times 0.0648$  g = 0.1134 g, making the *Karsha* a little lighter at 9.072 g and the *másha* 0.567 g.
- 8. Davis [114] says :

' The weight of the kahápana changed of course a good deal, as much as at least as different specimens of the fruit of the karsha (Terminalia bellerica) vary among themselves.'

And in a footnote [115]:

<sup>6</sup> Mr. Thomas considers that this Myrobalan seed formed the basis upon the old Karsha of 140 grains was framed. It constituted an article of extended commerce, in its dry state it was little subject to change, it was readily available in the Bázárs as a countercheck of other weights, and finally the ordinary weight accords closely with the required amount. Indeed selected specimens of desiccated seed from Bhilsa, now in the India Museum, weigh as high as 144 grains.<sup>9</sup>

Davis<sup>[116]</sup> continues with:

'Lastly, it should be mentioned that, according to Mr. Childers, the word kahápana itself meant primarily a small weight, and that it is equal to sixteen máshas, each of which =  $2\frac{1}{2}$  másakas = 5 rattis.'

Thus: according to Davis the *karsha* is 140 or 144 *grains* of 0.0648 g, that is 9.07 or 9.33 g. The *karsha* was 16 *másha* and the *másha* = 5 *rattis*.

To conclude: According to the aforementioned publications the value of the *karsha* (*suvarna*) and *másha* are between 9.04 and 10.05 g for the *karsha* and 0.565 and 0.628 g for the *másha*. The average, rounded off to two decimals gives 9.6 g for the *Karsha* and 0.60 g for the *másha*.

More recent is the publication of Tye<sup>[117]</sup>, who gives for the weight of the *gunjá* or *ratti* 0.107 g<sup>[118]</sup> and 0.115 g<sup>[119]</sup>, resulting in a *suvarna* of 8.56 g and 9.20 g. (If one follows the rule that 5 *gunjás* makes a *másha* and 16 *másha* is a *suvarna*.)

However, he also mentioned a *tola* weight standard of 9.6 g<sup>[120]</sup> for a *suvarna* of 80 *rattis*, resulting in a *másha* of 0.6 g and the *gunjá* or *ratti* of 0.12 g.<sup>[121]</sup>

The Hindu Java gold coins form a series of 9.6 + 4.8 + 2.4 + 1.2 + 0.6 g. The Sumatran gold coins of Samudra-Pasai and Acheh form a series of 2.4 + 1.2 + 0.6 + 0.3 g. Both series correspond very well with the statements of Brahmegupta, Tavernier, etc. and the *tola* weight standard of 9.6 g<sup>[122]</sup> as mentioned by Tye.

<sup>[119]</sup> Idem, p. 154, for the Delhi ratti.

- <sup>[121]</sup> Gunjá, ratti, and krisnala are all names for the same weight.
- <sup>[122]</sup> Tye 2009, p. 154.

<sup>&</sup>lt;sup>[113]</sup> Ridgeway 1892, p. 178.

<sup>&</sup>lt;sup>[114]</sup> Davis 1975, p. 4.

<sup>&</sup>lt;sup>[115]</sup> Ibid.

<sup>&</sup>lt;sup>[116]</sup> Ibid.

<sup>&</sup>lt;sup>[117]</sup> Tye 2009.

<sup>&</sup>lt;sup>[118]</sup> *Ibid.*, p. 152.

<sup>&</sup>lt;sup>[120]</sup> *Ibid.*, p. 154.

The conclusion is: A *másha* weighs 0.60 g and the *gunjá* or *ratti* 0.12 g. The name for gold in Old Java literature is *su*, which is short for *suvarna*. This identifies the *suvarna* as the basis of the weight system and it corresponds to the weight of the heaviest (gold) coin from Java.

As earlier published <sup>[123]</sup>, in the Acheh adat laws, the Islamitic Sumatran coins of 0.6 g were called 'mas', short for suvarna másha. This means that on Sumatra the same weight system was in use from the  $13^{\text{th}}$  to the  $17^{\text{th}}$  century. The wide-spread and dominant use of the Sumatran gold mas coins of 0.60 g changed the name for gold from su to mas in modern Indonesian language.

To conclude: The *suvarna* on Java (and Sumatra) is equal to an Indian *karsha* (*tola, pala*) of 80 *gunjás* and weighs about 9.6 g. A summary of the entire weight system is given below, based on the *gunjá* = 2 *grains* of 0.059 g each<sup>[124]</sup>; the *grain* is the old *grain Avoirdupois* and not the later *grain Troys* of 0.064 g. As it is based on natural seeds, varying in weight at different places, all weights are rounded to two decimals.

	gunja	grain	grams
rice grain = <i>padi</i> = <i>visa</i>	0.25	0.5	0.03
<i>yava</i> = barley corn = 2 <i>padi</i>	0.50	1.	0.06
gunjá = ratti = krisnala	1.	2.	0.12
carat = <i>kirat</i>	1.50	3.	0.18
rupya másha = máshaka = manjadi	2.	4.	0.24
pana = kaha pana = aksha	4.	8.	0.48
másha = suvarna másha	5.	10.	0.60
tanka = sana = dharana	20.	40.	2.4
kalanju = yadyanaca	32.	64.	3.8
gadjana = kalanda = kalanju	40.	80.	4.8
karsha = suvarna = pana	80.	160.	9.6
pala = satamana	320.	640	38.0
dharana	3,200.	6,400	380

Wicks' table can be corrected as follows:

1 suvarna	=	9.6	g
1 másha	=	0.6	g
1 kupang	=	0.15	g

Likewise, Wicks' statement that 'the gold and silver Hindu coins of Java, of 2.4 grams, are struck on the basis of the másha<sup>[125]</sup> of 2.4 grams' needs correcting. The másha weighs 0.6 g. The weight system for the coins as introduced by

<sup>&</sup>lt;sup>[123]</sup> Leyten 2004.

<sup>&</sup>lt;sup>[124]</sup> A different assumption of the original weight of the *gunjá* means that the other weight accounts must be adjusted accordingly.

<sup>&</sup>lt;sup>[125]</sup> Wicks 1992, pp. 249, 255.

Wicks<sup>[126]</sup> and copied by Wisseman Christie<sup>[127]</sup>, van Aelst<sup>[128]</sup>, Mitchiner<sup>[129]</sup> and many others needs correcting.

Also the coins of 2.4 and 1.2 g that Millies called 24 and 12 *krisnala* are in fact 20 and 10 *másha* (or *krisnala* or *ratti*) which makes them ¼ and ¼ *suvarna*.

Mitchiner calls coins of 2.4 g the 'masa unit', *kupang* or 2 *atak* and coins of 1.2 g 1 *atak*.<sup>[130]</sup> A *kupang* is not 2.4 and the '*masa* unit' is not 2.4 g (but the *suvarna* of 9.6 g). However, the value in *atak* is correct, but the name *atak* is not in use in the Malayan or Javanese language.

Wicks' incorrect assumption of the *suvarna* weight has led to a lot of confusion in the understanding of the coinage and the coin weights in the Indonesian archipelago. It is possible that two weights with the same name, the Chinese *mas* (*mace*, *maes*) and the Indian *mas* (*suvarna másha*, *másha*), have led to his error.

The correct comparison between the Indian and Chinese weights is as follows:

weights in India (in g)				weights in China (in g)				
				tael (liung)	100	candarins	37.6	
suvarna	80	gunjás	9.6		25	candarins	9.4	
sana	20	gunjás	2.4	mace (mas, maes)	6.4	candarins	2.4	
másha (mas)	5	gunjás	0.6	kupang (cupang)	1.6	candarins	0.6	
kupang	1.25	gunjás	0.15					

6.4 Conclusions about the Javanese weight system

To conclude: The weight system used during the Hindu period on Java is based on an Indian system that is imported via trade relations with India.

The system is binary and uses the *suvarna* of about 9.6 g as its main entity.

Javanese coins with weights of  $9.6 \rightarrow 4.8 \rightarrow 2.4 \rightarrow 1.2 \rightarrow 0.6$  g are found, thus weighing  $1 \rightarrow \frac{1}{2} \rightarrow \frac{1}{4} \rightarrow \frac{1}{8} \rightarrow \frac{1}{16}$  suvarna. The weights are in line with the well-known nomenclature and standards of traditional Hindu weight systems.

The used weight system and the names of the various weights make it plausible that the aforementioned payment example from the 13<sup>th</sup> century (in the Javanese Madjapahit period), given by Wisseman Christie<sup>[131]</sup>, was made in locally produced Hindu Javanese gold coin: '*the total of money paid* [*was*] *10 suvarna*, *7 masa*, *1 kupang in gold*.' All the mentioned denominations were present (the *suvarna* of 9.6 g, the *másha* of 0.6 g and the *kupang* of 0.15 g).

<sup>&</sup>lt;sup>[126]</sup> Ibid.

<sup>&</sup>lt;sup>[127]</sup> Wisseman Christie 1996.

<sup>&</sup>lt;sup>[128]</sup> van Aelst 1995.

<sup>&</sup>lt;sup>[129]</sup> Mitchiner 1977, 1978, 1979 & 1998.

<sup>&</sup>lt;sup>[130]</sup> Mitchiner 1998, p. 214.

<sup>&</sup>lt;sup>[131]</sup> Wisseman Christie 1996, p. 266.

In India, different names were in use for the same weight. For instance, a *gadjana* and *kalanju* have the same weight. The complete weight system for the Hindu Javanese gold and silver coins is given below.

			Gunjás	Padi corns	Grams
rice grain	padi	visa	0.25	1	0.03
yava	masaka	2 padi	0.5	2	0.06
krishnala	rati	másha	1.0	4	0.12
kupang	¼ másha	¹∕64 suvarna	1.25	5	0.15
2 kupang	½ másha	¹∕₃₂ suvarna	2.5	10	0.30
másha	suvarna másha	<sup>1</sup> /16 suvarna	5	20	0.60
2 másha	atak	¹∕8 suvarna	10	40	1.20
tanka	sana	¼ suvarna	20	80	2.40
gadjana	kalanju	½ suvarna	40	160	4.80
karsha	pana	1 suvarna	80	320	9.60

Although the word *suvarna* means gold (lit. Sanskrit for 'of good quality' or 'of good colour') Thakur<sup>[132]</sup> writes:

'we have, however, reference to suvarna in Kautilya's Arthasastra wherein it is mentioned as a weight, being equal to one karsa or 80 gunjás.'

This means that the suvarna was also used as a weight, not only for gold.

## 7 The names of the Sumatran and Javanese coins

Millies states that all these Hindu coins were named by many obscure words, like *wang* or *ouwang*, *djampel*, *kèpèng*, *kètèng*, *gobog*, *gobang*, *pitjis* or by modern or foreign words as *dinar*, *dirham*, *reyal* (*ringgit*), *roupiyah*, *douwit*, etc.<sup>[133]</sup> In addition, obvious wrong names like *piloncito* coins or *one unit* coins are in use. Therefore it is useful to discuss the names that will be used further.

## 7.1 The Javanese gold coins

According to Wisseman Christie, the character on some of the Javanese gold coins is *Ta* and she writes: '*The character Ta on Javanese gold coins appears to have been an abbreviation of the word tahil, a term with a number of meanings in Old Javanese*.'<sup>[134]</sup>

As explained, the weights used on Sumatra and Java were from Indian origin. *Tahil* is the name of a Chinese weight. The Chinese *tahil* (*tael* or *tail*) weights

<sup>&</sup>lt;sup>[132]</sup> Thakur 1972, p. 34.

<sup>&</sup>lt;sup>[133]</sup> Millies 1871, p. 18.

<sup>&</sup>lt;sup>[134]</sup> Wisseman Christie 1996, p. 251.

37.57 g. There are also coins of 0.6 g bearing the same letter *Ta*. The assumption of *Ta* as standing for *tahil* is therefore unlikely.

Van Aelst followed the above-mentioned assumptions as he writes: 'Weights of gold and silver in the 8<sup>th</sup> to 13<sup>th</sup> century Java were expressed in terms of the tahil, coming from 34.4 grams, which was subdivided into 16 masa of 2.4 grams, which in turn were subdivided into 4 kupang of 0.6 grams each.'<sup>[135]</sup>

Here he is likely misled by the mistake that Wicks and Wisseman Christie made. About the name for these Javanese gold coins, Wicks writes: 'A number of gold coins have been recovered from the island (Java). They are of the piloncito type, which originated in central Java, Bali and the Philippines. Only one find has been reported in any detail, a 1929 discovery of 126 specimen of 1 māsa weight from Gianyar.'<sup>[136]</sup>

Wicks calls the gold Javanese globular coins '*piloncito coins*.' *Piloncitos* are tiny engraved bead-like gold bits unearthed in the Philippines. There is no reason to continue naming these Javanese Hindu coins after a different type of coin found on the Philippines.

It is common practice to describe the weight of the coins as '1 unit' or '14 unit'. The largest coin known to Wicks has a weight of 2.4 g. The coins of the Wonoboyo gold find weigh mostly 2.4 g, and he calls this the *masa unit* in accordance with his assumption that a 2.4 g weight was the Chinese *mas* standard weight. In fact, the unit is the *suvarna* of 9.6 g.

To conclude: The best way to describe the Javanese gold coins is by their weight as fractions of the standard weight unit *suvarna* or *su*.

7.2 The Sumatran gold coins

The Sumatran gold coins have the same shape as the silver Sumatran coins, and do not follow a standardized weight system. As these *coins* resemble the silver and copper *djampels* of Sumatra and Java, it is practical to use the name *djampel* also for these gold coins of Sumatra.

### 7.3 The Sumatran and Javanese silver coins

Wicks writes about what he called the silver sandalwood coins: 'The most common unit mentioned in the early inscriptions of Java and Bali is the mā or māsa. The recorded weights of the silver sandalwood coins from south central Java support the reconstructed 2.4 gram figure for the māsa. In addition to weighing approximately 2.4 grams, these silver coins also contain an inscription reading mā (they are called 'mā-muntjes' by Dutch writers), conforming the fact that on the island of Java in the ninth century the 'māsa' was equivalent to approximately 2.4 grams'<sup>[137]</sup>

Van Aelst follows the assumptions of Wicks about the coin weights and names.

<sup>&</sup>lt;sup>[135]</sup> van Aelst 1995, p. 365.

<sup>&</sup>lt;sup>[136]</sup> Wicks 1992, p. 279.

<sup>&</sup>lt;sup>[137]</sup> *Ibid.*, p. 253.

He also copies Wicks' assumption that: 'The character Mā on a part of the coins refers to 'māsa', the unit of weight commonly used in early Java.<sup>[138]</sup>

However, there are coins weighing 1.2 and 0.6 g with the same letter Ma.

Van Aelst writes: 'Not surprising, archaeology has unearthed gold and silver coins of 1.2 and 0.6 grams each, namely half and quarter 'masa'.'<sup>[139]</sup>

It is unlikely that the character  $M\bar{a}$  stands for a weight entity, given the fact that coins of different weight have the same character. Irrespective of this, the weight of the entity *ma* or *suvarna masha* is 0.6 g and not 2.4 g.

Millies calls this type of coins *djampels*, a name that is widely used.

Therefore, it seems best to describe these silver Sumatran and Javanese coins as *djampel* and mention their weight in g.

# 7.4 The Sumatran and Javanese copper coins

These coins resemble the Javanese and Sumatran silver *djampels* of Sumatra and Java. They do not follow a standardized weight system.

It is practical to use the name *djampel* also for these copper coins.

# 8 The description of the symbols and letters on the coins

The obverse and reverse of the coins depict symbols and letters, which have not yet been satisfactory described in the existing literature and will be explained in the following paragraphs.

Macdonald, citing Thomas Burgon's writing about the symbols on coins, says: 'That from the first striking of money, down to the extinction of the Byzantine Empire, religion was the sole motive of the types on coins; and that is the invariable principle which is to guide our search in endeavouring to explain them.'<sup>[140]</sup>

# 8.1 The symbols

Burgon called them: *Symbolical representations of divinities*.<sup>[141]</sup> The symbols on the ingots and coins of the Sumatra and Java Hindu period can be explained based on the relevant religion of the time when they were struck.

# 8.1.1 The 'wheel' or dharmachakra

Figure 11 shows an *ingot* from Sumatra with the *dharmachakra*, *wheel of dharma* or *wheel of law* It is a symbol that has represented *dharma*, the Buddha's teaching of the path to enlightenment, since the early period of Indian Buddhism. It is a Buddhist emblem of Hindu origin.

The *dharmachakra* symbol is represented as a chariot wheel (Sanskrit *chakram*) with eight spokes, each representing one of the eight tenets of Buddhist belief

<sup>&</sup>lt;sup>[138]</sup> *Ibid.*, p. 290.

<sup>&</sup>lt;sup>[139]</sup> van Aelst 1995, p. 366.

<sup>&</sup>lt;sup>[140]</sup> Macdonald 1905, p. 16.

<sup>&</sup>lt;sup>[141]</sup> *Ibid.*, p. 17.

(Figure 11). The circle symbolizes the completeness of the Dharma; the spokes represent the eightfold path leading to enlightenment. It is one of the oldest known Buddhist symbols found in Indian art, appearing with the first surviving post-Harappan Indian iconography in the time of the Buddhist king Aśoka. The *dharmachakra* has been used by all Buddhist nations as a symbol for Buddhism ever since.



Fig. 10 - Ingot with dharmachakra



Fig. 11 – Dharmachakra on a temple

#### 8.1.2 Lotus flower

Figure 12 shows a gold *djampel* from Sumatra with a symbol that appears on most coins. Millies calls this symbol a four-pointed flower. Netscher & van der Chijs describe it as a four-pointed star, with small round leaves, similar to an open flower.



Fig. 12 – The lotus flower

Wicks describes the symbol on the reverse of gold coins as the *sandalwood flower*<sup>[142]</sup>, possibly due to his assumption of Chinese influence that made him look for a Chinese explanation. Sandalwood has been in use for at least 4,000 years and is a very important ingredient in Chinese and Japanese incense culture.

The symbol actually depicts a *lotus flower*, a religious symbol from India. It is a very important symbol in Hinduism and Buddhism. It is believed that Lord Brahma emerged from the navel of Lord Vishnu sitting on a lotus.

<sup>36</sup> 

<sup>&</sup>lt;sup>[142]</sup> Wicks 1992, pp. 225, 249.

The lotus flower is a symbol of eternity, plenty and good fortune. Lakshmi, the Hindu goddess of wealth, is usually depicted with a lotus flower. Also Saraswati, the Hindu goddess of learning, is shown sitting on a lotus.

The roots of a lotus are in the mud, the stem grows up through the water, and the heavily scented flower lies pristinely above the water, basking in the sunlight. This pattern of growth signifies the progress of the soul from the primeval mud of materialism, through the waters of experience, and into the bright sunshine of enlightenment.

Figure 13 is a picture of the Kailaçanatha Temple<sup>[143]</sup>, where the same symbol is four times placed on the pillars.

The lotus flower is also a symbol of purity. All the coins with the lotus flower are ingots used in payment through weighing. The lotus symbol can be seen as a mark for the purity of the metal.



*Fig.* 13 – *Lotus figures on the temple pillars* 

#### 8.1.3 The tree of life or waringin tree with hanging branches

Millies<sup>[144]</sup> calls this figure: 'un fruit, qui ressemblerait à celui du 'Jambosa', surtout du 'Jambosa aquea', le 'Djambou âyèr' des Malais'. (English name: waterapple.) In fact, it is the representation of the tree of life, a well-known symbol in Indonesia. It is a mythological, wish fulfilling divine tree, said to satisfy all desires. It is mentioned in Sanskrit literature from the earliest sources onwards. It is also called the *tree of heaven*, world tree, wishing tree, waringin tree or kalpataru.

Figure 14 shows the *ingot* as published by Netscher & van der Chijs (no. 124 on figure 2) and by Millies (no. 11 on figure 3). It is not a *coin* as it is not a denomination fitting within the Javanese binary system of coin weights and possibly dates from the time before the coin standardization of Madjapahit.

There are two different representations of the *tree of life* or *waringin tree*: this one is pictured with hanging branches; <sup>[145]</sup> the other presentation of the *waringin tree* with three arms, as it appears on the Javanese standardized gold coins, is discussed in paragraph 8.1.4.

<sup>&</sup>lt;sup>[143]</sup> Bosch 1947, pl. 7a.

<sup>&</sup>lt;sup>[144]</sup> Millies 1871, p. 13.

<sup>&</sup>lt;sup>[145]</sup> Bosch 1947, p. 178.





Fig. 14 – Tree of life on an ingot

Fig. 15 – Tree of life on the Borobudur temple

Indra, the king of the gods, returned with this tree to his paradise. The unique property of the tree is that it never loses a single leaf by itself; it is evergreen and is said to be emanating the deep-seated devotion of Shankaracharya for the Supreme Godhead Vishnu.

The symbol is used in both Hinduism and Buddhism. After Buddhism penetrated Indonesia, the name of the tree became associated with the *banyan* or *waringin tree*.

Figure 15<sup>[146]</sup> shows a relief of the *tree of life* with hanging branches on the Borobudur temple.

## 8.1.4 The tree of life or waringin tree with three arms

The *waringin tree* or *tree of life* appears in two different representations: with hanging branches as discussed in the previous paragraph, and with three arms as it appears on the Javanese standard gold coins.<sup>[147]</sup>

The so-called *half moon* coins from Java depict a specific symbol that Millies calls a *'vase'* or *'candlestick'*. Wisseman Christie calls it a *'flowering vase'* pattern. <sup>[148]</sup>

Netscher & van der Chijs describe the symbol on the half moon coins as: 'A vase with three lotus flowers.' Further, they write: 'About the age of the coins we dare not make a suggestion. We only will say (without our consent, unless later proof)

<sup>&</sup>lt;sup>[146]</sup> Bergema 1938, pl. 9.

<sup>&</sup>lt;sup>[147]</sup> Bosch 1947, p. 178.

<sup>&</sup>lt;sup>[148]</sup> Wisseman Christie 1994, p. 252.

what the feeling was of the late sultan Pako Nata Ningrat of Sumanap, whose knowledge about antiquities is valued by some persons, although critics not always agreed with him.



Fig. 16 – A part of a half moon coin

Fig. 17 – Waringin tree on a temple

Fig. 18 – Waringin tree with deities

This sultan saw in the vase with flowers, a vase from which a smoke column raises and besides two flowers. According to the tjondra-senkala or time reckoning by figures of the Old Javanese, he explained the vase by 9, the flowers by 6 and the smoke by 5, so that the represented year would be 569 AD.<sup>[149]</sup> This is an entertaining story, but it is rather strange that all coins with this symbol should bear the same year and it is very odd to suppose that the old Hindu kingdoms used the Christian calendar. Therefore, there must be another explanation.

The Indian literature often mentions two holy trees, both of the Ficus-species, the *Ficus religiosa* (in Sanskrit *açvattha* or *pippala*, the *bodhi*-tree of Gautama Buddha) and the *Ficus bengalensis* or *indica* (in Sanskrit *nyagrodha* or *vata*, the *banyan*-tree or *waringin tree*, the *bodhi*-tree of *kaçyapa*).

These *Ficus* trees belongs to the largest trees growing in Southeast Asia and they are called *vanaspati* or 'lord of the forest'. On Java, the *bengalensis* is called the *waringin* and is considered a magical tree. Therefore, it may not be planted near the house. When the tree is planted, it is consecrated in total silence and calling its name is prohibited. It is also believed that the spirits of the ancestors house in these trees and that the tree is the abode of the gods.

There are different symbols representing this waringin tree. The figures represent the tree with three branches. Figure 17 is the representation of the *warin*-

<sup>&</sup>lt;sup>[149]</sup> Netscher & van der Chijs 1864, p. 132-133.

*gin tree* as can be found on temples, in this case on the temple in Tj. Sewoe. <sup>[150]</sup> Figure 18 is the symbolic representation of the *waringin tree*, with the branches ending in lotus flowers with seated deities. <sup>[151]</sup>

The importance of the waringin tree in the Hindu religion and the frequent use of the three-armed symbol of the *waringin tree* explain the symbol on the coin in Figure 16 with certainty as a stylized *waringin tree* or Holy Tree.

### 8.1.5 The development of the waringin tree symbol on the coins

Netscher & van der Chijs describe a coin with a very stylized or simplified symbol: 'The Batavian Society<sup>[152]</sup> has an example of this coin. It has the form of a maizegrain and instead of a letter it bears on its reverse two fairly deep and parallel grooves.'<sup>[153]</sup> Wicks describes the reverse of these Javanese gold coins as: 'Two indented or inscribed curves following the surface of the cone.'<sup>[154]</sup>

The symbol depicted on these gold coins is a degenerated form of the *waringin tree* symbol.



Fig. 19 – Coins with the waringin tree (scale 350%)

Figure 19 shows the development of the *waringin tree* as shown in Figure 16: the first coin on the first row has a rather complete design of the *waringin tree*; there is less on the second coin in the first row, and through number three, the design evolved into coin four, the shape described by Netscher & van der Chijs<sup>[155]</sup> and Wicks<sup>[156]</sup>. The second row shows another example of this 'degeneration'. The conclusion is that all of these coins belong to the type with the *waringin tree*. Over time, the *waringin tree* on the coins evolved into a practically unrecognizable symbol.

<sup>&</sup>lt;sup>[150]</sup> Bosch 1947, pl. 35c.

<sup>&</sup>lt;sup>[151]</sup> *Ibid.*, pl. 34c.

<sup>&</sup>lt;sup>[152]</sup> Het Bataviaasch Genootschap.

<sup>&</sup>lt;sup>[153]</sup> Netscher & van der Chijs 1864, p. 131.

<sup>&</sup>lt;sup>[154]</sup> Wicks 1992, p. 289.

<sup>&</sup>lt;sup>[155]</sup> Netscher & van der Chijs 1864, p. 130-133 and illustrations XII and XIII.

<sup>&</sup>lt;sup>[156]</sup> Wicks 1992, p. 289.



#### 8.1.6 Coins with only a part of the waringin tree

Fig. 20 – Part of the waringin tree on the larger coins

There are larger gold coins of full *suvarna* weight on which only a part of the *waringin tree* appears. The left side of Figure 20 shows a so-called *half moon* coin from Java. The middle of this figure shows two different cuts of this *half moon* picture. The right side of the figure shows the reverse of two different gold coins of about 9.6 g.

To conclude: These two gold coins show a part of the *waringin tree* and belong to the type with the *waringin tree*.

### 8.1.7 The phallus or lingam symbol



Fig. 21 – The lingam



*Fig. 22 – A stone lingam* 



Fig. 23 – 10<sup>th</sup>-century stone lingam

The gold coin from Java (figure 21) depicts a symbol that Millies describes as a *flower, sword* or *lingam*. Wicks and Wisseman Christie call it a *sesame seed*, possibly based on their Chinese interpretation.<sup>[157]</sup> Wicks describes the Javanese gold coins as follows: 'On the obverse is a rounded or angular square incuse with two beads (shaped like a sesame seed) and a central line between them in relief.'<sup>[158]</sup> Netscher & van der Chijs describe this symbol as a *lingam* (phallus) or a lotus flower.

The symbol on the obverse of the Javanese gold coins is a *lingam* or *phallus*, as mentioned by Netscher & van der Chijs. This is also an Indian religious symbol. The Sanskrit term *lingam*, transliterated as *linga*, has diverse meanings. The *lingam* or *phallus* is a symbolic representation of the god Shiva, although it is also more than a symbol. Like other images of the gods, it is seen as an actual embodiment of the god. In other words, it is not a symbol of the god, it is the god. It is one of the most prevalent images in all of Hinduism and can be found in almost all Shiva temples. See also figure 22 and figure 23.

Vaman Shivram Apte's Sanskrit dictionary gives a second meaning for the symbol: *A means of proof, a proof, evidence.* This proof or evidence could be the meaning of the use of the *lingam* on coins: evidence of the real value in weight and purity.

### 8.1.8 The nāga symbol

A silver *ingot* from Java (figure 9) depicts this figure of a snake, or *nāga*. It weighs 8.9 g and is not a denomination fitting into the Javanese binary system of coin weights. It is possibly from the time prior to the coin standardization of Madjapahit.

 $N\bar{a}ga$  ( $n\bar{a}ga$ ) is the Sanskrit word for a deity or class of entities or beings, taking the form of a (very big) snake (specifically the king cobra) found in Hinduism and Buddhism. The concept of  $n\bar{a}ga$  is prevalent in the Hindu period of Indonesia, before the introduction of Islam. The  $n\bar{a}ga$  primarily represents rebirth, death and mortality, due to its casting of its skin and being symbolically 'reborn'.

A favorite motif of sculptors from approximately the  $12^{th}$  century AD onward was that of the Buddha, sitting in the position of meditation, his weight supported by the coils of a multi-headed  $n\bar{a}ga$  that uses its flared hood to shield him from above. This motif recalls the story of the Buddha and the serpent king Mucalinda: 'As the Buddha sat beneath a tree engrossed in meditation, Mucalinda came up from the roots of the tree to shield the Buddha from a tempest that was just beginning to arise'. The symbol can possibly be explained as 'a shield or protection', in case of the coin, from a low purity silver.

<sup>&</sup>lt;sup>[157]</sup> Wicks 1992, p. 289.

<sup>&</sup>lt;sup>[158]</sup> Ibid.



Fig. 24 – A lingam (god Shiva) sheltered by an nāga



Fig. 25 – Buddha on an nāga

# 8.2 The letters (see also appendix 13.3)

The coins of Sumatra, some of the Javanese gold coins and the silver and the copper *djampels* show letters in the *Nāgarī* or *Devanāgarī* script. The meaning of these letters and why they were used is still unexplained.

The *Nāgarī* or *Devanāgarī* alphabet developped from eastern variants of the *Gupta* script, which first emerged during the 8<sup>th</sup> century. The name *Devanāgarī* is composed of two Sanskrit words: *Deva*, which means God, Brahman or celestial, and *nāgarī*, which means city. The name is variously translated as 'script of the city', 'heavenly/sacred script of the city' or '[script of the] city of the Gods or priests'. Similar to the other religious symbols explained in previous chapters, the use of this script has also a religious meaning.

There are four different letters from the southern India *Devanāgarī*<sup>[159]</sup> alphabet used on different coins types: the Va ( $\overline{a}$ ), Ta ( $\overline{a}$ ), Ma ( $\overline{H}$ ) and Mā ( $\overline{HT}$ ). The Va ( $\overline{a}$ ) is only shown on the reverse of the Sumatran gold coins. The Ta ( $\overline{a}$ ) is only shown on the reverse of some Javanese gold coins. The Ma ( $\overline{H}$ ) character is used on the Sumatran coins. The Mā ( $\overline{HT}$ ) character is on the coins found on Java. The difference between the Ma ( $\overline{H}$ ) and the Mā ( $\overline{HT}$ ) makes it possible to distinguish the Sumatran coins from the Javanese coins.

<sup>&</sup>lt;sup>[159]</sup> See appendix 13.3.

#### 8.2.1 The letter Va



Fig. 26 – The letter Va on a Sumatran coin

8.2.2 The letter Ta



Fig. 27 – The letter Ta on a Javanese coin The letter Va ( $\overline{\mathbf{q}}$ ) is only found on the reverse of the Sumatran gold coins with the *lotus flower* on the obverse. Wicks calls it the letter Pa ( $\overline{\mathbf{q}}$ ), but there is no doubt that this is the Va ( $\overline{\mathbf{q}}$ ).

This character appears on various Sumatran gold coins with different weights, which means that the letter does not indicate the weight of the coin.

This letter is only shown on the reverse of a part of the Javanese gold coins with the *lingam* on the obverse. Wicks describes these Javanese gold coins as follows: 'On the obverse is a rounded or angular square incuse with two beads (shaped like a sesame seed) and a central line between them in relief. The surface of the gold coins is engraved with a script Ja  $[\overline{y}]$ ' <sup>[160]</sup>

Wisseman Christies writes: 'Slight variations in the shape of the character have led to the mistaken reading of the character on some coins as 'Ja' but these readings do not stand up to closer scrutiny. The use of Nāgarī script on Javanese coins is interesting, given the fact that the script was otherwise rarely used in Java.'<sup>[161]</sup> Wisseman Christies writes: 'This is the character Ta ( $\overline{\Lambda}$ ) on Javanese gold coins which appears to have been an abbreviation of the word Tahil, a term with a number of meanings in Old Javanese. In this case the term apparently referred to the use of the coin as legal tender for the payment of tax and the settlement of debts.'<sup>[162]</sup>

There is no doubt that this letter is the Ta ( $\overline{\eta}$ ). However, *tahil* is the name of a Chinese weight. As explained above, the orientation of Madjapahit was directed to India and not to China. This character appears on various Javanese gold coins with different weights. This means that the letter does not indicate the weight of the coin.

The letter  $Ta(\overline{n})$  is only found on gold coins.

<sup>&</sup>lt;sup>[160]</sup> Wicks 1992, p. 289.

<sup>&</sup>lt;sup>[161]</sup> Wisseman Christie 1996, p. 250.

<sup>&</sup>lt;sup>[162]</sup> *Ibid.*, p. 251.

### 8.2.3 The letter Ma



*Fig. 28 – The letter Ma on a Sumatran silver djampel* 

The character found on the Sumatran silver and copper coins is the Ma ( $\mathbf{T}$ ).

This character is only found on the reverse of the Sumatran silver and copper *djampels* with the *lotus flower* on the obverse.

According to Wicks, <sup>[163]</sup> 'the reverse reads ma, written in Early Nagari'.

There is indeed no doubt that this letter is the Nāgarī Ma ( $\mathbf{T}$ ).

Wicks says: '*The coins are generally averaging about 2.5 grams in weight.*' However, only the most common Javanese coin weights 2.4 g.

'The Pallava-derived letter Ma is more rounded and simplified, similar to the Javanese inscriptions'.<sup>[164]</sup> This character refers to Masa, the unit of weight commonly used in early Java.<sup>[165]</sup>

Wisseman Christie repeats Wicks by stating: <sup>[166]</sup> 'This character appears to be an abbreviation of the word Masa, a term borrowed from Sanskrit and applied to the most common Javanese coin weight unit, equivalent to 2.4-2.5 grams.'<sup>[167]</sup>

However, the *másha* (or *mas*) is not 2.4 g, but 0.6 g. This character appears on various Sumatran coins with different weights from 0.85 to 2.38 g. Thus, the letter does not indicate the weight of the coin.

8.2.4 The letter Mā



This letter is only found on the obverse of the silver and copper Javanese coins with the *lotus flower* on the reverse (left in figure 29). It is also on the reverse of a silver *ingot* from Java (right in figure 29).

*Fig. 29 – The letter Mā on two Javanese coins* 

Millies calls this letter Mā (मा), Bhā (भा) or Prā (सा).

Stamping the *lotus flower* on the obverse deforms this letter on the reverse. The reverse of the Javanese silver *ingot* (right in figure 29), on which the letter is clearly written, confirms that this letter is indeed the long  $M\bar{a}$  ( $\Pi T$ ).

- <sup>[166]</sup> Wisseman Christie 1996, p. 251
- <sup>[167]</sup> Wicks 1992, p. 253.

<sup>&</sup>lt;sup>[163]</sup> Wicks 1992, p. 249.

<sup>&</sup>lt;sup>[164]</sup> *Ibid.*, p. 249.

<sup>&</sup>lt;sup>[165]</sup> *Ibid.*, p. 290.

There are two letters *Ma*: a short *Ma* ( $\Psi$ ) which is only seen on the Sumatran coins, and a long *Mā* ( $\Psi$ I) with an extra 'a' line ( $\neg$ I) after the ( $\Psi$ ) that only occurs on the Javanese coins. The comment on Wicks and Wisseman Christie on the short *Ma* applies also to this character. It appears on various coins with different weights and does not indicate the weight of the coin.

For instance, the *ingot* (right in figure 29) bears a very clear  $M\bar{a}$  ( $\Pi T$ ) and weighs 8.9 g or almost 15 *másha*. The *ingot* is likely from the period without a fixed weight system and uses already the same letter as on the later silver and copper Javanese coins. Thus, also the long  $M\bar{a}$  ( $\Pi T$ ) cannot be interpreted as *masa*, and it is still unclear what the actual meaning of the character is.

### 9 The production of the coins

The production of the coins with the *lotus flower* is rather peculiar. First, they are cast in a mould with the reverse sign. This is either a *letter* or the *waringin tree* symbol. This casting does not always result in a sharp and well-readable image. It is obvious from the curved shape of the coin and the deformed image of the letter start the *line* space.

letter or the *waringin tree* that the stamping of the lotus flower or the *lingam* on the obverse is applied after the casting and deforms the coin. This can be seen on the so-called *half moon* coins, where an original flat shape becomes heavily curved. The impact of the stamping, less pronounced but still clear, can also be seen on the smaller coins with the lotus flower, which become more or less cupshaped. The stamping sometimes deforms the reverse image in such a way that it is hardly readable; this is especially the case for the letter symbol on silver *djampels* (See figure 3, nos 13-24).

Wisseman Christie suggests <sup>[168]</sup> that the obverse of the coin was struck: 'with an engraved square punch or die which produced a deep incuse with a raised sandalwood (lotus) flower pattern.'

Moquette<sup>[169]</sup> made a study on the stamping of the lotus flower. He discovered that the flower was made by four times stamping with a chisel in the shape of a 'T', as shown in *fig.*1 of figure 30; the result is shown in *fig.*2 of figure 30 and corresponds with the impression on the coin. The stamp is therefore not made with a single engraved square punch or die but four times stamped with a 'T' formed die. Figure 31 shows that sometimes this is done in such a way that it is hard to recognize the lotus flower symbol.



Fig. 30 – Stamping the lotus flower symbol



Fig. 31 – Deformed lotus flower symbol

<sup>&</sup>lt;sup>[168]</sup> Wisseman Christie 1996, p. 254.

<sup>&</sup>lt;sup>[169]</sup> Moquette 1899.

## 10 The catalogue

Coins or ingots found on Sumatra or Java, like the *ingots* with the *dharmachakra*, the *nāga* or the *tree of life* with the hanging branches, are from an earlier period, probably from before or the early days of Srivijaya or Madjapahit. Little is known about these *ingots*; therefore, they are not recorded in this catalogue.

The gold, silver and copper *djampel* type of coins or ingots found on Sumatra are from the Srivijaya period and are included in the catalogue.

The so-called *half moon* ingots and some gold coins from Java have the *tree of life* with the three arms. These coins are from Madjapahit's period and are also recorded in the catalogue.

The silver and copper *djampel* type of coins with the *lotus flower* found on Java are also from Madjapahit's period and thus recorded in the catalogue.

The coins are described giving their origin, their name and their actual weight.

10.1 The Hindu coins from Srivijaya on Sumatra

From the Hindu kingdom Srivijaya on Sumatra are known:

- Type s1: Gold coins from the type of *djampels* with on the obverse the *lotus flower* and on the reverse the letter  $Va(\overline{q})$ .
- Type s2: Silver coins from the type of *djampels* with on the obverse the *lotus flower* and on the reverse the letter  $Ma(\mathbf{\Psi})$ .
- Type s3: Copper coins from the type of *djampels* with on the obverse the *lotus flower* and on the reverse the letter  $Ma(\P)$ .
- 1. All Sumatra type coins are only found on Sumatra.
- 2. They all have the *lotus flower* symbol on the obverse.
- 3. All the gold coins bear the letter *Va* (व).
- 4. All the silver and copper coins bear the short letter  $Ma(\Psi)$ .
- 5. The long letter  $M\bar{a}$  ( $\overline{HI}$ ) is only found on the Javanese silver and copper coins.

The Hindu coins from Sumatra are all very rare. The copper coin in this catalogue was previously unpublished. Millies shows in figure 1 three gold and one silver coin. He compares these coins to the coins from Java. In fact, the Sumatran coins differ clearly from the coins of Java.

## 10.1.1 Type S1: the gold djampels of Srivijaya

The weight of the gold coins in figure 32 is (from left to right): 0.12, 0.19, 0.33, 0.55, 1.14, 1.82 and 2.27 g. The gold coins published by Millies are 0.15, 0.26 and 0.73 g. From other sources, gold coins are known weighing 2.35, 0.57 and 0.16 g. Therefore, the known coins weigh from 2.35 to 0.12 g.

There is no indication of a system in the coin weights, and the different values obviously do not fit into the weight scheme of 0.6 + 1.2 + 2.4 g.

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Fig. 32 – The gold coins of Srivijaya (scale 225%)

They have circulated as ingots with a value depending on their weight. As these pieces resemble the silver coins that Millies called *djampels*, it is practical to use the name *djampel* also for these gold coins of Sumatra.

*For example*: Type s1: Srivijaya, gold *djampel* of 2.35 g, with the lotus flower on the obverse and the letter *Va* (व) on the reverse.

## 10.1.2 Type S2: the silver djampels of Srivijaya

Millies published only one silver coin from Sumatra weighing 0.15 g. The weights of the coins in figure 33 are 2.0, 0.94 and 0.45 g. Other coins with different weights are known.



Fig. 33 – The silver coins from Srivijaya (scale 350%)

Mitchiner <sup>[170]</sup> lists coins of 2.38, 2.30, 2.20, 2.05, 0.95 and 0.85 g.

There is no indication of a system in the coin weights, and the different values obviously do not fit into the weight scheme of 0.6 + 1.2 + 2.4 g. They circulated as ingots with a value depending on their weight.

As these pieces resemble the silver coins that Millies called *djampels*, it is practical to continue using the name *djampel* for these silver coins of Sumatra.

*For example*: Type s2: Srivijaya, silver *djampel* of 0.94 g, with the lotus flower on the obverse and the short letter Ma (म) on the reverse.

10.1.3 Type S3: the copper djampels from Sumatra



Fig. 34 – Copper djampel from Srivijaya (scale 250%)

The weight of this copper *djampel* in figure 34 is 1.64 g. Mitchiner<sup>[171]</sup> lists two coins of 0.95 and 0.85 g. He does not describe the letter on these coins so it is impossible to know if the coins are from Srivijaya or Madjapahit.

There is no indication of a system in the coin weights, and the different values obviously do not fit into the weight scheme of 0.6 + 1.2 + 2.4 g. They have circulated as 'units' with a value based on the number of units or as ingots with a value depending on their weight.

As these pieces resemble the silver coins that Millies called *djampels*, it is practical to use the name *djampel* also for these copper coins of Sumatra.

*For example*: Type s<sub>3</sub>: Srivijaya, copper *djampel* of 1.64 g, with the lotus flower on the obverse and the short letter  $Ma(\mathbf{T})$  on the reverse.

10.2 The Hindu coins from Madjapahit on Java

The coins known from the Hindu kingdom Madjapahit on Java are:

Туре м1: Gold coins with on the obverse the *lingam* and on the reverse the letter  $Ta(\overline{q})$ .

Type м2: Gold coins with on the obverse the *lingam* and on the reverse the (degenerated) *waringin tree* symbol.

<sup>&</sup>lt;sup>[170]</sup> Mitchiner 1998, p. 215.

<sup>&</sup>lt;sup>[171]</sup> Ibid.

- Type M3: Silver *Half-moon* coins with on the obverse the lotus flower and on the reverse the *waringin tree* symbol.
- Type M4: Silver coins from the type of *djampels* with on the obverse the lotus flower and on the reverse the long letter  $M\bar{a}$ .
- Type м5: Copper coins from the type of *djampels* with on the obverse the lotus flower and on the reverse the long letter *Mā*.

All these coins types are only found on Java.

The name for gold in old Javanese literature is su short for suvarna.

The common name for gold changed to *mas* when the gold coins of Aceh of 0.6 g, with the weight of the *suvarna masha* (and called *mashas*), became dominant.

The name *suvarna* or *su* will be used for indicating the intended value of Hindu-Javanese gold coins. Depending on the intended weight of the coin, it will be a 1,  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$  or  $\frac{1}{16}$  *su*.

## 10.2.1 Type M1: the gold coins with the letter Ta (त) of Madjapahit



Fig. 35 – Large and small coin with Ta (scale 100%)

The coin weights of the coins in figure 35 are resp. 2.4 and 0.6 g. Most of the coins with the letter  $Ta(\overline{\tau})$  are about 2.4 g.

The weight of the other series of Javanese gold coins varies from 0.3 g to 9.6 g. It is possible that coins with the letter *Ta* ( $\overline{\eta}$ ) also exist from 0.3 to 9.6 g. Coins with any other weight than 2.4 g are very rare. All the Java gold coins with the letter *Ta* ( $\overline{\eta}$ ) have on their obverse the *lingam* symbol.



Fig. 36 – The Madjapahit gold coins of 2.4 grams with Ta (scale 275%)

Most of these coins weigh, through wear, a little less than 2.4 g. The Wonoboyo hoard contained 6,396 coins of this type. They are described as follows: *'The weight of the gold coins varies between 2.2 and 2.6 grams. They are*  shaped like slightly flattened dice, and decorated with a stamped design on their opposite sides. The obverse of each is stamped with a Devanagari character, Ta.'<sup>[172]</sup> These gold Hindu coins from Java can be described as (fractional) *suvarna* (*su*) while also specifying origin, metal, name, actual weight and the used symbols.

*For example*: Туре м1: Madjapahit gold  $\frac{1}{4}$  *su* coin of 2.35 g, with the *lingam* on the obverse and the letter *Ta* (त) on the reverse.

10.2.2 Type M2: the gold coins with the waringin tree of Madjapahit



Fig. 37 – The Madjapahit gold coins with the waringin tree (scale 175%)

All the Java gold coins with the *waringin tree* have on their obverse the *lingam* symbol. Figure 37 shows on the left the reverse of the coins with the (deformed) figure of the *waringin tree* and on the right the obverse with the (deformed) figure of the *lingam*.

The weight of the coins on the first row is about 0.6 g, on the second row about 1.2 g, on the third row about 2.4 g, and on the fourth row 4.8 g. A coin with the latter weight has not been published before.

Wisseman Christie says about these coins: <sup>[173]</sup> 'But, although a few smaller unit (less than 2.4 grams) gold coins have been reported from Java, they are both rare and poorly provenanced.' In fact, they are not that rare. Many coins of 1.2 and 0.6 g are found.

Mostly the coins weigh, through wear, a little less than the standard weight.

<sup>&</sup>lt;sup>[172]</sup> *Exhibition* 1999, p. 94.

<sup>&</sup>lt;sup>[173]</sup> Wisseman Christy 1994, p. 250.

These gold Hindu coins from Java can be described as (fractional) *suvarna* (*su*) while also specifying origin, metal, name, actual weight and the used symbols.

For example: Type м2: Madjapahit gold ½ su coin of 4.7 g, with the *lingam* on the obverse and the *waringin tree* on the reverse.



*Fig.* 38 – *The gold coins of suvarna weight (scale 150%)* 

The shape of the full gold coins of 1 *suvarna* weight is different from the previous series: their form is oblong. These larger gold coins, with on the reverse only a part of the *waringin tree*, are also part of the series of gold coins from Java (See paragraph 8.1.6.). Therefore, they belong also to the type M2.

The *lingam* symbol is shown on the obverse of these coins which are of the full *suvarna* weight of about 9.6 g. These very rare coins have not been published before. They also weigh, through wear, a little less than the full 9.6 g.

These gold Hindu coins from Java can be described as 1 *suvarna* (*su*) while also specifying origin, metal, name, actual weight and the used symbols.

For example: Type м2: Madjapahit gold 1 *su* coin of 9.55 g, with the *lingam* on the obverse and the *waringin tree* on the reverse.

10.2.3 Type M3: the silver half moon coins of Madjapahit



Fig. 39 – The half moon coins (scale 100%)

Silver *half moon* coins are very rare.

The *coins* in figure 39 weigh, from left to right: 25.1, 32.5 and 27.1 g. Known are other coins of 14.7 to 63.5 g. There is no indication of a system in the coin weights. These different weights do not fit in the Javanese weight system. They are to be considered as *ingots*. They have circulated with a value depending on their weight. They probably date from the pre- or early days of Madjapahit. These silver Hindu coins from Java can be described as *half moon* coins while specifying origin, metal, name, actual weight and the used symbols.

For example: Type м3: Madjapahit *half moon* coin of 27.1 g, with the *lotus flower* on the obverse and the *waringin tree* on the reverse.

## 10.2.4 Type M4: the silver djampels of Madjapahit

Millies called these coins *djampels*. This name is commonly used and best kept unchanged.

The obverse shows the lotus symbol, the reverse the long letter  $M\bar{a}$  ( $\Psi$ T).



Fig. 40 – The Madjapahit silver djampels (scale 200%)

The weight of the coins, from left to right, is 2.4, 1.6, 1.1 and 0.6 g. The weight of the second coin is obviously too light due to wear.

Millies describes the coins and published the weights as 2.5, 2.2, 1.2 and 0.6 g. Wicks mentions two finds with coins weiging between 2.0 and 2.5 g (*see above*). Wisseman Christie mentions<sup>[174]</sup> coins of 2.4, 2.5, 1.2 and 0.6 g.

These silver Hindu *djampels* found on Java seem to follow the same well-defined weight series as the gold coins from Java. They have circulated as real *coins*, and due to wear, many of them weigh a little less than the standard weight.

Madjapahit copied the silver *djampel* coins from Sumatra and introduced the same weight system for these silver coins as for the gold coins.

The Wonoboyo contained about 600 of these coins, described as follows: '*The silver coins are concave and disc-shaped, about 12 millimeters in diameter.*'<sup>[175]</sup>

<sup>&</sup>lt;sup>[174]</sup> Wisseman Christie 1996, p. 273-274.

<sup>&</sup>lt;sup>[175]</sup> *Exhibition* 1999, p. 94.

These silver Hindu *djampels* from Java can be described by their origin, metal, name, actual weight and the used symbols.

*For example*: Type м4: Madjapahit, silver *djampel* of 2.3 g, with the lotus flower on the obverse and the long letter *Mā* (मт) on the reverse.

## 10.2.5 Type M5: the copper djampels of Madjapahit

On the obverse is the *lotus flower* symbol and on the reverse the long letter  $M\bar{a}$  ( $\P$ T). Although they contain about 99% copper and less than 1% silver, Mitchiner<sup>[176]</sup> calls them debased 'silver' coins. However, it is more suitable to call them copper coins.



Fig. 41 – Madjapahit copper djampels (scale 150%)

The coin weights of the coins in figure 41 are from left to right 1.8, 1.6, 1.5, 1.3 and 1.3 g. Coins with other weights are known. These different weights do not fit in the weight system of  $0.6 \ge 1.2 \ge 2.4$  g as used for the gold and silver coins of Madjapahit. Copper coins suffer most of wear. This could explain why there is no indication of a system in the coin weights. It is possible that they have circulated as *ingots* with a value depending on their weight.

Even though the weights vary, the diameters of the coins are more or less identical. This could indicate that these coins, made from the much cheaper copper, were simply used as the smallest 'currency unit' with a value based on the number of units and not so much on the intrinsic value of their weight in copper. This is not uncommon, as the same can be said of Chinese *cash* coins.

As this type of coin resembles the silver *djampels*, it can be described as copper *djampel* by their origin, metal, name, actual weight and the used symbols.

*For example*: Type м5: Madjapahit, copper *djampel* of 2.1 g with the lotus flower on the obverse and the long letter  $M\bar{a}$  (मा) on the reverse.

<sup>&</sup>lt;sup>[176]</sup> Mitchiner 1998, p. 215.

## 11 Conclusions regarding the Hindu period on Sumatra and Java

### 11.1 General conclusions

- 1. The Hindu kingdoms were more oriented to India than to China. This explains the use of an Indian weight system in Madjapahit.
- In the Hindu period, payments were rarely made in Chinese *cash* coins, but (on Sumatra) usually in precious metals and barter. During the Srivijaya period (7<sup>th</sup> to 13<sup>th</sup> century), currency was introduced to facilitate the commerce. This Sumatran currency consisted entirely of *ingots* with no standardized weight.
- 3. Javanese silver and copper *ingots* without standardized weight exist from the pre- or early Madjapahit period.
- 4. During the Madjapahit period (13<sup>th</sup> to 16<sup>th</sup> century) on Java, real gold and silver *coins* fitting within a well-defined weight system were introduced. Only the Javanese copper *coins* of this period have probably no standardized weight. These silver and copper coins copied the earlier Sumatran *djampel* shape, whereas the gold coins have a new shape, different from the Sumatran gold *djampels*.
- 5. The symbols used on the *ingots* and *coins* are sacred Indian religious symbols. The Hindu symbolism connects the Sumatran coinage to the Javanese coinage. The use of the Devanagari script for the letter-shaped symbols has also a religious origin.
- 6. The symbols probably express the quality of the metal, but they do not indicate a specific weight. For example, the letter *Ma* does not mean the weight of a *masha*.
- 7. The letters and some of the symbols on the Sumatran coins differ from the letters and symbols on the Javanese coins. This makes it possible to distinguish the two series of coins.
- 11.2 Conclusions regarding the Sumatran coins
- 1. The obverse of the Sumatran *coins* or ingots from the Srivijaya period show a *lotus flower* and not as earlier assumed a *sandalwood flower*.
- 2. The reverse of the Sumatran gold coins shows the letter *Va* (व). The weight of the known gold coins from Sumatra varies from 0.11 to 2.35 g.
- 3. The reverse of the silver and copper coins shows the short letter Ma ( $\Psi$ ). The weight of the known silver coins ranges from 0.45 to 2.0 g, that of the known copper coins from 0.85 to 1.6 g.
- 11.3 Conclusions regarding the Javanese coins
- 1. There are two types of Javanese gold coins from Madjapahit. The reverse of the first type shows the letter  $Ta(\overline{\eta})$ . The reverse of the second type shows the *waringin tree*. The obverse of both types of gold coins shows a

*lingam* and not as earlier assumed a *sesame seed*. They are real coins and not ingots.

- The gold and silver coins from the Madjapahit period are based on a well-defined weight system based on the Indian *suvarna* (*su*) of 9.6 g. The known weight units are 0.6 ► 1.2 ► 2.4 ► 4.8 ► 9.6 g. It is possible that also coins of 0.3 g (<sup>1</sup>/<sub>32</sub> *su*) exist.
- 3. The copper coins from the Madjapahit period do not fit within the Javanese weight system.
- 4. The obverse of the silver and copper coins shows the *lotus flower*. The reverse of the silver and copper coins shows the long letter *Mā* (मा).
- 5. There is no system found in the weights of the silver *half moon* coins of the pre- or early Madjapahit period. It is assumed that these coins were *trade coins* or *ingots* with a value based on their weight. The obverse of the *half moon* coins shows the *lotus flower*, the reverse shows the *waringin tree*.
- 6. Coin finds indicate that the Madjapahit kingdom introduced the weight system for the silver coins, copied from the earlier Sumatran examples, probably at the same time as the new standardized gold coins.
- 7. The symbols and letters on the Javanese coins form a 'series' from which can be concluded that the same authority or kingdom was responsible for the whole coinage. Figure 42 shows this underlying relationship.



*Fig.* 42 – *The relationship between the different Javanese coins* 

### 12 Summaries

This article is a study into the background of the Hindu-Sumatran and Hindu-Javanese coinage.

Until the 13<sup>th</sup> century, it was common practice on Sumatra and Java to pay with barter and precious metals, like gold dust and pieces of gold and silver.

To facilitate this practice, pieces of metal with varying weight, so called *ingots*, were introduced on Sumatra. They were stamped with a mark to guarantee their purity. Their value depended on their weight.

After the 13<sup>th</sup> century, Java produced *real coins* in gold and silver. The basis of this coinage is a weight system derived from India.

This study starts with comments on the existing relevant literature.

Crucial for the study of the Hindu Sumatran and Hindu Javanese coins is the date of the burying of the Wonoboyo Hoard that was discovered on 17 October 1990 on Java. The hoard contained Javanese gold and silver coins from the Hindu period. If the hoard was buried in the 8<sup>th</sup> to 10<sup>th</sup> century as Wicks<sup>[177]</sup> and Wisseman Christie<sup>[178]</sup> assume, then the Javanese coins were the prototype for the later Sumatran coins. However, if the Wonoboyo hoard was buried somewhere in the 13<sup>th</sup> to 16<sup>th</sup> century, during the Madjapahit period, then the Sumatran coins were the prototype later copied for the Javanese coins. The study proves, with strong evidence, that the old Hindu kingdom of Srivijaya was responsible for the Hindu-Sumatran coinage and the later kingdom of Madjapahit for the Hindu-Javanese coinage, thereby copying the Sumatran design for their silver and copper coins.

An historical overview of the early Hindu kingdoms in Indonesia shows that only the kingdoms of Srivijaya and Madjapahit could have been responsible for issuing the Hindu *coins* or *ingots*. The Appendix gives a more extensive history of Srivijaya and Madjapahit. This history is in itself not necessary for the study of these Coins. However, it gives an insight on the level of civilization and the power of these early kingdoms.

A short review on the way payments were made in these early kingdoms is followed by an introduction on the weight system for the coinage on Java. This is important given the widespread misconception that the weight system for the Javanese coinage is based on the Chinese *mas* or *mace* of 2.4 g. It is proven that the system is based on the Indian *suvarna* of 9.6 g and that the weight of the Indian *mas* or *másha* is 0.6 g.

The study for the first time explains the symbols on the Hindu coins.

Gold coins from Java weighing 4.8 and 9.6 g, copper coinage of Sumatra and Java and an ingot from Java from the Hindu period are published for the first time.

The illustrated catalogue describes the different coin types systematically.

Finally, the many conclusions that can be drawn from this study are summarised.

### ★

<sup>&</sup>lt;sup>[177]</sup> Wicks 1992, p. 248-250.

<sup>&</sup>lt;sup>[178]</sup> Wisseman Christie 1996, p. 249.

Dit artikel is een studie naar de achtergrond van de Hindoe-Sumatraanse en Hindoe-Javaanse muntslag.

Tot de 13<sup>e</sup> eeuw was het op Sumatra en Java gebruikelijk dat betalingen werden verricht met goederen, z.g. ruilhandel, en edelmetaal in de vorm van stofgoud en stukjes goud en zilver.

Om deze vorm van betalen te faciliteren werden op Sumatra stukjes metaal van verschillend gewicht, z.g. ingots geïntroduceerd. Als garantie voor de zuiverheid werden ze gestempeld met een teken. De waarde van deze ingots werd bepaald door hun gewicht.

Na de 13<sup>e</sup> eeuw introduceerde Java 'echte' munten van goud en zilver, met een gestandaardiseerd gewicht. De basis voor deze muntslag was een uit India afkomstig gewichtssysteem.

Deze studie start met commentaar op de bestaande relevante literatuur.

Cruciaal voor de studie van de Hindoe-Sumatraanse en Hindoe-Javaanse munten is het tijdstip waarop de op 17 oktober 1990 ontdekte Wonoboyo-schat werd begraven. De schat bevat gouden en zilveren munten uit de Hindoe-periode. Als de schat tussen de 8° en 10° eeuw werd begraven, zoals Wicks<sup>[179]</sup> en Wisseman Christie<sup>[180]</sup> veronderstellen, dan zijn de Javaanse munten het prototype voor het later op Sumatra gekopieerde ontwerp. Echter, als de Wonoboyo-schat tussen de 13° en 16° eeuw, in de Madaahit-periode, werd begraven, dan zijn de Sumatraanse munten het prototype dat later door Java werd gekopieerd.

De studie bewijst, met sterke argumenten, dat het oude Hindoe-koninkrijk Srivijaya verantwoordelijk was voor de Hindoe-Sumatraanse munten, later gevolgd door het koninkrijk Madjapahit, dat het uiterlijk van Sumatraanse munten kopieerde voor hun zilveren en koperen munten.

Een historisch overzicht van de Hindoe koninkrijken in Indonesië toont aan dat alleen Srivijaya en Madjapahit in aanmerking komen voor de uitgifte van de Hindoe ingots en munten. In de bijlagen wordt een meer uitgebreid overzicht van de geschiedenis van Srivijaya en Madjapahit gegeven. Dit overzicht is op zichzelf niet noodzakelijk voor de bestudering van de munten, maar het geeft een inzicht in het niveau van civilisatie en de macht van deze koninkrijken.

Na een kort overzicht met betrekking tot wijze waarop betalingen in deze koninkrijken werden verricht, volgt een introductie van het op Java voor de muntslag gebruikte gewichtsysteem. Dit is van belang, gelet op de misconceptie dat het muntgewichtsysteem gebaseerd is op de Chinese mas of mace van 2,4 g. Aangetoond wordt dat de basis de Indiase suvarna is van 9,6 g, en dat de Indiase mas of másha 0,6 g weegt.

*In deze studie worden voor het eerst de symbolen op de Hindoe munten verklaard.* 

Eveneens voor het eerst worden gouden Javaanse munten van 4,8 en 9,6 g, de koperen munten van Sumatra en Java, en ingots van Java uit de Hindoe periode gepubliceerd.

De geïllustreerde catalogus beschrijft de verschillende munttypen systematisch.

Tot slot volgt een samenvatting van de vele conclusies die deze studie heeft opgeleverd.

<sup>&</sup>lt;sup>[179]</sup> Wicks 1992, p. 248-250.

<sup>&</sup>lt;sup>[180]</sup> Wisseman Christie 1996, p. 249.

#### 13 Appendices

#### 13.1 The history of Srivijaya



Fig. 43 – The Kota Kapur

The 'Empire'<sup>[181]</sup> of Srivijaya existed from the 7<sup>th</sup> to the 13<sup>th</sup> century.

Srivijaya (pronounced *Srividjaya*, also written Shrîvijaya, Sriwiaya or Sri Vijaya,), means 'Bright' or 'Brilliant Victory'.

After Srivijaya fell, it was largely forgotten, and historians had not even considered that such a large United Sumatran Kingdom could have existed in Southeast Asia. The kingdom of Srivijaya was not even mentioned in the  $2^{nd}$  edition of the *Encyclopaedia of the Dutch East Indies* of 1919 or the *Dutch Encyclopaedia* of 1921. It was not until 1918 that the French historian Georges Cœdès from the *École française d'Extrême-Orient* suspected the existence of Srivijaya. The first publication about Srivijaya was in the *History of the Dutch East Indies* from 1938. <sup>[182]</sup> Therefore, it is understandable that Millies in 1871 could not attribute the Sumatran coins to Srivijaya, as at that time no one knew of its existence.

The first inscription in which the name *Srivijaya* appears, is the *Kedukan Bukit*, dating from 16 June 682. It was found in the neighbourhood of Palembang on Sumatra.<sup>[183]</sup>

The *Kota Kapur* inscription was the first Srivijayan inscription discovered.

It is one of the five inscriptions edicted by Daputa Hyang, the ruler of Srivijaya. The inscription was carved on a pinnacle stone, 177 cm tall, 32 cm wide at the base and 19 cm wide at the top. Cœdès translated the content. The inscription is in old Malay language written in Pallava script. It is one of the

oldest surviving written evidences of ancient Malay language.

The *Kota Kapur* inscription is engraved *'in this province of Srivijaya*', after Srivijaya had conquered the island of Banka. It is dated at the first day of half moon Vaisakha in the year 608 Saka (28 February 686 AD)<sup>[184]</sup>. It stated that the army of Srivijaya had just left on an expedition against the unsubdued land of Java.<sup>[185]</sup>

Most of the inscriptions also contain curses for crime, trespassing and treasons against Srivijaya.

<sup>&</sup>lt;sup>[181]</sup> Zakharov 2009.

<sup>&</sup>lt;sup>[182]</sup> De Geschiedenis 1938, deel 1, p. 142.

<sup>&</sup>lt;sup>[183]</sup> Cœdès 1944 [1968], p. 82.

<sup>&</sup>lt;sup>[184]</sup> Idem, p. 83.

<sup>&</sup>lt;sup>[185]</sup> Ibid.

In about 1992, Pierre-Yves Maguin proved that the center of Srivijaya was located between Bukit Seguntang and Sabokingking (South Sumatra) at the Musi River. Only from then on was Srivijaya recognized as the base of the earlier greatness of Sumatra. It is supposed to have been even greater than Madjapahit on Java.

The Sumatrans call it the 'Empire' of Srivijaya. It was a powerful ancient thalassocratic, primarily maritime realm, an empire with the island of Sumatra as its heartland, which influenced much of Southeast Asia. Between the late  $7^{\text{th}}$  to the early 11<sup>th</sup> century Srivijaya rose to become the ruling force in Southeast Asia, involved in close interactions – often rivalries – with neighbouring Java, Kambuja and Champa. It was an important center for Buddhist expansion in the 8<sup>th</sup> to 12<sup>th</sup> century.

The earliest reference to its existence dates from the 7<sup>th</sup> century: a Chinese monk, I Ching (or Yì Jīng)<sup>[186]</sup>, wrote that he had visited Srivijaya in 671 for 6 months.

Srivijaya's main foreign interest was nurturing the lucrative trading rights with China that spanned from the Tang to Song era. It also had religious, cultural and trading links with the Buddhist Pala Empire of Bengal, and relations with the Islamic Caliphate in the Middle East.

The Chinese Chou-Ju-Kua reported in the early 13<sup>th</sup> century that Srivijaya had fifteen colonies and was still the mightiest and wealthiest state in the western part of the archipelago.

According to this source, Srivijaya ruled Sumatra, Malay Peninsula, and western Java (Sunda). The book describes further that the port of Sunda (probably referring to Bantam or Sunda Kelapa) is really good and strategic. Pepper from Sunda is among the best quality. People worked in agriculture and built their houses on wooden piles (*rumah panggung*). However, robbers and thieves invested the country.

The kingdom ceased to exist in the 13<sup>th</sup> century due to various factors, including the expansion of the Javanese Madjapahit Empire.

Srivijaya was not a 'state' in the modern sense with defined boundaries and a centralized government to which the citizens own allegiance. Rather Srivijaya was a confederacy centred on a royal heartland. It did not extend its influence far beyond the coastal areas of the islands of Southeast Asia. Trade was the driving force. The Srivijayan navy controlled the trade that made its way through the Strait of Malacca.

By the 7<sup>th</sup> century, the harbours of various vassal states of Srivijaya lined both coasts of the Strait of Malacca. Around this time, Srivijaya had established suzerainty over large areas of Sumatra, western Java, and much of the Malay Peninsula. Dominating the Malacca and Sunda straits, the empire controlled both the spice route traffic and local trade.

As a stronghold of Vajrayana Buddhism, Srivijaya attracted pilgrims and scholars from other parts of Asia. This spread the ethnic Malay culture throughout Sumatra, the Malay Peninsula, and western Borneo. It remained a formidable sea power until the 13<sup>th</sup> century.

<sup>&</sup>lt;sup>[186]</sup> I-Tsing 1894 & 1998.



Fig. 44 – Srivijaya influence

Foreign piracy and raids, that disrupted the trade and security in the region, contributed to its decline. In 1025, attracted by the wealth of Srivijaya, Chola king Rajendra of Coromandel in South India launched naval raids on ports of Srivijaya. The Cholas, known to benefit from both piracy and foreign trade, executed a series of raids and conquests of parts of Sumatra and the Malay Peninsula for twenty years. They conquered Kadaram (modern Kedah) from Srivijaya and occupied it for some time. Their seafaring led to outright plunder and conquest in the whole of Southeast Asia. An inscription of the Chola king Rajendra states that he captured Sangrama-vijayottungga-varman (the king of Kadaram) and took a large heap of treasures including the *Vidhyadara-torana*, the jeweled 'war gate' of Srivijaya which was adorned with great splendour.

The Chola raids in the 11<sup>th</sup> century weakened the Srivijayan hegemony and enabled the formation of regional kingdoms, like Kediri, that was based on intensive agriculture rather than coastal and long distance trade. Srivijayan influence waned by the 11<sup>th</sup> century.

The island was in frequent conflict with the Javanese kingdoms, first Singhasari and later Madjapahit. Srivijaya ceased to exist completely by 1414, when Parameswara, the kingdom's last prince, converted to Islam and founded the Sultanate of Malacca on the Malay Peninsula.

#### 13.2 The History of Singhasari and Madjapahit

The 'East Java Period' started with the great monarch Airlanga (1016-1049) who established the kingdom of Kediri. In 1222, the king of Kediri was assassinated by an adventurer, Kern Arok, who founded the new kingdom of Tumapel, better known by the name of its capital Singhasari, and named himself king Kertanaga. It was a short-lived entity, which flourished on the prosperity generated in the days of Kediri.

After Singhasari drove Srivijaya out of Java in 1290, the rising power of Singhasari came to the attention of Kubla Khan in China, who sent emissaries demanding tribute. Kertanagara, ruler of the Singhasari kingdom, refused to pay, and the Khan sent a punitive expedition, which arrived off the coast of Java in 1293. By that time, a rebel from Kediri, Jayakatwang, had killed Kertanagara.

Kertaradjasa, founder of the Madjapahit Empire, was the son-in-law of the ruler of the Singhasari kingdom, also based in Java. He allied himself with the Mongols of Kublaq Khan against Jayakatwang but, once the Singhasari kingdom was destroyed, turned sides and forced his Mongol allies to withdraw in confusion. The place of Singhasari was to be taken by the kingdom of Madjapahit.

Although the Madjapahit rulers extended their power over other islands and destroyed neighbouring kingdoms, their focus seems to have been on controlling and gaining a larger share of the commercial trade passing through the archipelago<sup>[187]</sup>.

Gajah Mada, an ambitious Madjapahit prime minister and regent from 1331 to 1364, extended the empire's rule to the surrounding islands. A few years after Gajah Mada's death, the Madjapahit navy captured Palembang, putting an end to the Srivijayan influence.

Little physical evidence of Madjapahit remains, and some details of the history are rather abstract. The main sources used by historians are the *Paraton* ('*Book of Kings*') written in the Kawi language, and the *Nagarakertagama* in Old Javanese. *Paraton* is focused on Kern Arok, but it includes a number of shorter narrative fragments about the formation of Madjapahit. *Nagarakertagama* is an old Javanese epic poem written during the Madjapahit golden age under the reign of Hayam Wuruk. Madjapahit is also mentioned in some inscriptions in Old Javanese and Chinese.

Despite a lack of historical evidence, it is known that Madjapahit was the most dominant of Indonesia's pre-Islamic states. This Hindu kingdom was founded in eastern Java in the late 13<sup>th</sup> century. It was a vast thalassocratic ('ruler of the sea') empire, experiencing its 'Golden Age' from 1293 to about 1520. It reached its peak of glory during the era of Hayam Wuruk, whose reign from 1350 to 1389 was marked by conquest throughout Southeast Asia. His achievement is also credited to his prime minister, Gaja Mada.

According to the *Nagarakretagama* (*Desawarñana*) written in 1365, Madjapahit was an empire of 98 tributaries, stretching from Sumatra to New Guinea, con-

<sup>&</sup>lt;sup>[187]</sup> The map of the Madjapahit influence is from Wikipedia.

sisting of present day Indonesia, Singapore, Malaysia, Brunei, southern Thailand, the Sulu Archipelago, and East Timor. The full nature of the Madjapahit sphere of influence is still the subject of studies among historians. Madjapahit is one of the last major empires of the region, and is considered one of the greatest and most powerful empires in the history of Indonesia and Southeast Asia.



Fig. 45 – Surya Madjapahit

*Surya Madjapahit*<sup>[188]</sup> or 'The Sun of Madjapahit' is the emblem commonly found in temples and ruins dated from the Madjapahit era, and some scholars suggested that this sun disc was the royal emblem, probably the coat of arms, of the Madjapahit Empire.

The sun disk is stylized with carved rays of light, surrounded by eight Lokapala gods, the eight Hindu gods that guarded eight cardinal points of the universe.



Fig. 46 – Madjapahit influence

The capital of Madjapahit was in the neighbourhood of present-day Modjokerto, or more precise the desa Trowoelan. The name of Madjapahit is derived from the name of a fruit, the *madjat*, that has a very bitter *pahit*<sup>'[189]</sup> taste.

Prince Widjaja, the later king (1294) Kertaradjasa, founded his capital in 1292 AD in the Brantas plain. It remained the capital until 1400. After that year, the reigning Hindu lords probably lived elsewhere.<sup>[190]</sup>

<sup>&</sup>lt;sup>[188]</sup> Surya Majapahit, taken from Majapahit temple ruins, National Museum Jakarta.

<sup>&</sup>lt;sup>[189]</sup> Meijboom-Italiaander 1924, p. 61.

<sup>&</sup>lt;sup>[190]</sup> Encyclopaedie, 2<sup>e</sup> druk, 2<sup>e</sup> deel, 1918, p. 634.

There is a detailed description of the capital of Madjapahit and the state of things under the reign of Hayam Wuruk in 1365 AD in the *Nagarakertagama*, which shows the layout of streets, squares, temples and palaces. Today little remains of this capital.

In Madjapahit the Indian Hindu culture was dominant.

The oldest inscriptions on monuments on Java show that the Hindus, who lived there, had their origin in the south of India (the Dekhan). The later inscriptions on the monuments, in a Nagari script, point towards the north of India. This also supports the notion that the culture was based on the Indian customs and culture, explaining why the Javanese coinage follows Indian standards for their weights and measures. Around the same time that Madjapahit was founded, Muslim traders began entering the area. After its peak in the 14<sup>th</sup> century, Madjapahit power began to decline and it was unable to control the rising power of the Sultanate of Malacca. A large number of courtiers, artisans, priests, and members of the royal family moved east to the island of Bali at the end of the Madjapahit era.

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13.3 The Devanagari Alphabet

An extra line behind the letter gives it a long sound (see first two characters). The short Ma ( $\Pi$ ) is only seen on the Sumatran coins and the long  $M\bar{a}$  ( $\Pi$ T with an extra *a* stroke | after the  $\Pi$ ) only on the Javanese coins.

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