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ORIENTAL NUMISMATIC SOCIETY

Number 250 Winter 2022

Dear ONS members,

It brings me great pleasure to introduce you to this special 50th Anniversary Conference issue of the Society's journal. This double issue is also fittingly the 250th volume of the journal and its antecedents.

As many of you no doubt remember, the Society celebrated its 50th anniversary in 2020 and the conference was originally scheduled to be held in April of that year. Of course, you all know what happened next. The pandemic forced a postponement to 2021 and then, when the pandemic had not yet abated by April of that year, another postponement to 2022. Early this year, there was still a lot of uncertainty about whether things would open up and permit international travel to take place in earnest. The Council decided not to risk the need for another postponement and opted to commit to hold the conference via Zoom only.

Spread over two half-days, to allow more people worldwide to attend, the Conference was held on 25 and 26 June. It brought together speakers from eight countries and covered a wide range of areas within the purview of the Society. There were two keynote speakers, John Deyell and Dai Jianbing, and ten other speakers. Joe Cribb, who organized the conference, also gave a brief historical retrospective on the Society. All but two of these talks are published here in full; many of them are also available as video recordings on the Society's YouTube channel. (If you are not already a subscriber, I urge you to subscribe: just search for Oriental Numismatic Society on YouTube).

I am sure you will agree that the quality of the talks was very high and that Paula Turner has done a superb job of putting together the volume. On behalf of the Society, I thank Joe for having organized a fitting tribute to the 50 years of the Society, to Ed Snible for editing the video recordings for YouTube and to Paula for the editing and printing of the journal itself.

At the Society's Annual General Meeting, held in Oxford (and on Zoom) on 19 November, a new constitution for the Society was adopted unanimously. Work on this constitution has been going on for a couple of years. It updates our previous constitution in areas where the old one was inadequate, particularly in addressing issues presented by an increasingly

digitized world and by the new models for how some of the regional sections are organized. Also at the AGM we marked the retirements of two stalwart members of the Council, Stan Goron and Howard Simmons, and the election of two new members of that same body, John Deyell and Shatrughan Saravagi. I am sure I speak for all members in thanking Stan and Howard for their years of dedicated service and to warmly welcome John and Shatrughan in their new roles as at-large members of the Council, joining Shailendra Bhandare, David Hartill, Terence Hayes and Paul Stevens.

I am also happy to announce the winner of the Ashoka Prize for 2021, awarded annually to the best paper published that year in the journal, as judged by the Editorial Board. The prize, valued at £250, is sponsored by a generous donor who wishes to remain anonymous. The board had a difficult time choosing among the many excellent articles published. The winner for 2021 is

Nikolaus Schindel, 'The beginning of Ottoman Para coinage' (*JONS* 245)

Honorable mentions go to the following (listed in alphabetical order by author):

Tyler Holman, 'A group of Mauryan punchmarked coins, including Mashakas' (*JONS* 244)

N. R. Jenzen-Jones with J. Shanley, 'Pyne, McDermott and the Amir: The advent of machine-minted coinage in Afghanistan' (*JONS* 243)

Seyed Omid Mohammadi and Saeed Soleimani, 'Countermarked Arab-Sasanian copper coins of Jahrom' (*JONS* 243)

As we draw close to the end of the year, I would also like to take this opportunity to wish each and every one of you a very joyous holiday season and a happy, healthy and numismatically rewarding New Year.

Warm wishes,

Pankaj Tandon

Fifty Years of the Oriental Numismatic Society

Joe Cribb, Deputy Secretary General

The society began in 1970 as a consequence of a letter written by Michael Broome published in *Seaby's Coin and Medal Bulletin* in February 1970 (figure 2 overleaf). Michael was a novice collector of Islamic coins and wrote the letter in order to get in touch with people who shared his interest. Michael went on to become best known for his ground-breaking volume *A Handbook of Islamic Coins* (Seaby, London 1985, republished in 2010 by Spink) and for his posthumously published study of Seljuq coins *A Survey of the Coins of the Seljuqs of Rûm* (Royal Numismatic Society, London 2011).

Michael's letter suggested 'setting up a list of students of the various Oriental series, who would be willing and

interested to correspond with each other and with beginners wishing to learn. A small group of people with a like interest could provide a focus for such work as, for example, a listing of museums whose collections contain Oriental coins or a note of the various sources where standard reference books can be obtained on loan.' He went on to volunteer to act as the secretary for such a group and invited people to get in touch. Within a month nine people had contacted him and he sent out the first Newsletter (a single page). A month later with 21 correspondents he proposed in the second Newsletter setting up the group as a society or club and it was agreed that it should be called the 'Oriental Numismatic Society'. In the

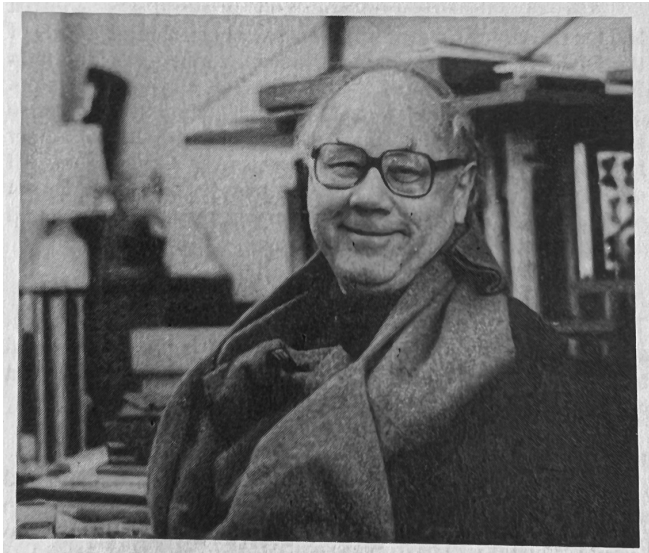


Figure 1 Michael Broome

May Newsletter he said he now had 41 members and proposed establishing an editorial panel to provide information in future newsletters. Michael was keen to restrict the organizational aspect of the Society: 'It seems to be the general feeling that organised activities should be kept to a minimum', but affirmed that membership was open to 'anyone with a genuine interest in some branch of oriental numismatics'. He also invited suggestions for the Society's logo and the current monogram was chosen.

The growth of the Society was rapid and so far over 2,000 people have joined the society, but as one would expect many members have later left or died and the number of members has remained fairly stable at just over 500. Among the earliest members a handful still belong to the Society, including the coin collectors Richard Falkiner (member no. 15) and Bob Senior (no. 21), the coin dealer Howard Simmons (no. 26) and the banknote collector Bill Barrett (no. 40).

Table 1 Number of members joining the society in its first 45 years.

By end of	Number of members joining
1970	122
1972	244
1973	330
1974	504
2005	1850

From Newsletter no. 7 (October 1970), one of the founding purposes began to appear in the form of a listing of books on coins recently published in India. This was printed on the back of Newsletters nos 7–10). Such useful information continued to appear on the back of the Newsletter until no. 40 (December 1975), only spilling over onto a second sheet for no. 37. The newsletters consisted of notices of numismatic news, events and publications, members news, wants and interests and information about the Society's activities. Alongside the Newsletter Information Sheets on particular topics began to be issued, beginning with Terry Hardaker's *India: Silver Punchmarked and Associated Coins* published in October 1971. 29 such Information Sheets were issued, with

obvious that the last word on any numismatic problem has not and never will be written. In putting down my opinions on a subject I am always conscious that I am prone to error and while I am grateful for any other student who adds to my knowledge by correcting these errors I would regard it very differently if the other student used this as an opportunity to display his powers of sarcasm and invective.

We are all students of the subject, liable to error, and discouraging the publication of articles in this way is certainly not the way to advance our hobby. Coin collecting was once the province of gentlemen and it would be a great pity if this was lost sight of.—O. D. Cresswell.

Oriental Coins. It seems possible that there is an increase of interest in the coinages of the Near and Far East. The article by Rev. R. J. Plant (October *Bulletin*) and Dr. M. L. Smith's letter (November *Bulletin*) are encouraging signs as is the impending reprint of W. H. Valentine's 'Catalogue of Modern Copper Coins of the Muhammadan States'.

As a beginner struggling in this field I have been very conscious of my isolation from other students and from comprehensible books and it is possible that others share the same problems. I wonder, therefore, if it would be worthwhile setting up a list of students of the various Oriental series who would be willing and interested to correspond with each other and with beginners wishing to learn.

A small group of people with a like interest could provide a focus for such work as, for example, a listing of museums whose collections contain Oriental coins or a note of the various sources where standard reference books can be obtained on loan.

While in no way qualified for the role, should no other volunteer appear, I would be prepared to act as temporary secretary to such a group if it would fulfil a need.

I should be interested in the opinions of those of your readers who have studied, or have wished to study, this field.—M. R. Broome, 30 Warren Road, Woodley, Berks.

Sino-Christian Medals. Dr. Turk and I will no doubt agree to disagree on the reading of the Sino-Christian medal, but one point, for which I have the evidence in my eyes, needs emphasizing. The character which Dr. Turk reads as "li" (the violent) is plainly "min" (people) as read by van der Chijs and by Stuart ("children of the heathen people"). "Min" occurs on most Chinese Republican coins and is so clear in your photograph that it can be identified by anyone who compares it with one of these coins or with a catalogue which transcribes their inscriptions. It is, in any case, unthinkable that nuns should surround the Blessed Virgin and the Holy Child with a call for retribution on their enemies. The inscription is a prayer, not a cry for vengeance, and contains nothing to upset the reading proposed by the Dutch authorities seventy years ago. The piece is an ordinary Catholic medal and, if a relic of the Jesuit mission, could belong to almost any date between 1583 and 1949. There were even a few former Jesuits at Peking during the years (1773–1814) when the Society was banned by the Vatican. I do not imagine the medal to belong to the early years of the mission.

I keep an open mind on the "lion" medal, as I have made plain already, but if the beast is a "dragon" (ch'iu lung) what Christian significance has this? In Christian iconography the dragon is a symbol not of the Kingdom of Heaven but of the other place. For the present, the origin of the "lion" medal is speculative. It is not recognizable as a Catholic medal and is not acceptable as one unless it can be shown that its seemingly random selection of symbols were actually employed in a particular devotion or by a particular religious order, which may have been the case.

Two medals are at issue and two specimens of each are known. Photographs are needed of the Holy Family medal at Batavia, if it has survived Indonesian vicissitudes, for comparison with the Adelaide medal; as well as of the "lion" medals at Los Angeles and Washington, if the latter is available. (The Grove Collection was much depleted before reaching the Smithsonian Institution). Until the evidence is assembled, discussion of these medals must be inconclusive.—A. Th. Arber-Cooke.

NUMISMATIC SOCIETIES.

Royal Num. Soc. At the meeting held on 18th November, 1969, Mr. D. F. Allen, President was in the Chair.

The President announced the award of the Parkes Weber Prize to Mr. Michael R. Curry for his essay on "Some aspects of Roman plated coins" and of the Lhotka Memorial Prize to Mr. Antony Dowle and Mr. Patrick Finn for their publication "The Guide Book to the Coinage of Ireland".

Dr. J. P. C. Kent read a paper on "The western gold coinage of Justinian II". He discussed the sequence of the coinage of Justinian II, the distribution of types and denominations that important mints could be distinguished in Kapitsene and Gandhara for Vima Kadphises and in Kapitsene, Gandhara and Kapitscia for Kanishka and Huvishka.

Ravenna. Some departures were proposed from accepted attributions, and the transfer to Justinian II's second reign of certain gold and silver pieces was suggested.

Royal Num. Soc. At the meeting held on 16th December the President presented the Lhotka Memorial Prize to Mr. Anthony Dowle and Mr. Patrick Finn for their publication "The Guide Book to the Coinage of Ireland".

Dr. D. W. MacDowall read a paper on the mint organisation of the copper coinage of the Great Kushans. He argued from the distribution of types and denominations that important mints could be distinguished in Kapitsene and Gandhara for Vima Kadphises and in Kapitsene, Gandhara and Kapitscia for Kanishka and Huvishka.

Figure 2 Michael Broome's letter in Seaby's 'Coin and Medal Bulletin', February 1970

the last appearing in 1998. In addition to these the Society also issued Occasional Papers from 1972, beginning with a consolidated version of the list of books on coins published in India by David Briggs. 30 Occasional Papers were published, the last one dated October 1993.

Until the end of 1975 the Newsletters had been compiled by Michael Broome, but for no. 41, issued in February 1976, he appointed a new editor, Michael Mitchiner, the renowned author of a whole library of books on oriental coins. This appointment gradually led to a change in the nature of the Newsletter, as they started to be printed rather than produced on a duplicating machine, creating a more permanent and appealing form. Michael also expanded to a four page Newsletter which allowed short articles including images and book reviews to be published. This aspect of the Newsletter continued to expand and from 1983 (Newsletter no. 85/86) eight page issues began to appear, with articles extending to four pages. In 1985 with Newsletter no. 96, Stan Goron and Howard Simmons took over as editors. Initially the extent reverted to four pages, but still included articles and reviews. From no. 102 (October 1986) Stan was on his own and continued to edit the Newsletter for the next three decades. The Newsletter reverted to eight pages from no. 103, but from no. 137 ((Summer 1993) it occasionally expanded to 16 pages. A new feature appeared with no. 146, the addition of a supplement often expanding the publication to 28 pages.

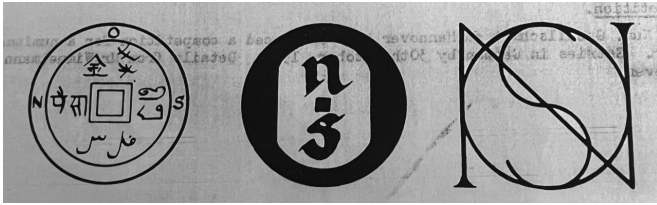


Figure 3 Suggestions for the Society's logo in Newsletter no. 6 (September 1970). The second design was by Steve Cribb, the designers of the others are not known.

In recognition of the transformation of the Newsletter into a substantial resource for the study of Oriental coins, with issues often having 48 pages, the Council renamed the Newsletter so that from issue no. 186 it was called the *Journal of the Oriental Numismatic Society*. A special issue marked the 200th issue (Summer 2009), with 64 pages and over 20 articles, including a history of the Society by its then Secretary General Nick Rhodes.

Nick took over as Secretary General in 1998, after Michael Broome died in 1997. Michael's desire that the organization of the Society 'be kept to a minimum' meant that a committee had to be formed quickly to establish a constitution and organise the formal election of a new head for the Society, new officers and a Council to ensure the continuity of the Society. Before this the Society had officers, but they were appointed by Michael. Apart from the editors, the Society had recruited the Editorial Committee and a treasurer, Victor Brown, in its first year. In 1971 Brian Buckle was appointed as UK secretary, Pat Hogan as North America secretary and in 1973 A. Gorter as European secretary. The regions continued to expand and in today's Society the Council now has seven regional secretaries, beside the six officers and seven ordinary members.

Although Michael Broome had been reluctant to have meetings, members started to organize them on their own. The first was held by my brother Steve Cribb (member no. 38) in June 1973. Following this, meetings in the UK continued to be held in members' homes, hosted by D. P. Chandaria, Nick Rhodes, Michael Mitchiner and myself. The frequency of meetings increased and in 1977 they moved to a hotel in central London. In 1982 Andrew Oddy arranged for the meetings to be held in the British Museum Conservation Section and in 1991 they moved to the museum's Coins and Medals Department and more recently also in the Ashmolean Museum in Oxford. By 1978 meetings were also being organized by members in the USA, where annual meetings are held in New York followed by a popular get together over dinner at the Bukhara Grill, and in Europe where meetings are held annually in Leiden and in Tübingen. The South Asian section has also organized meetings and conferences, normally in Mumbai, and an annual meeting is organized by the Pakistan section in Islamabad. Many other less formal events have taken place such as the regular feature of the Society at coin fairs in the Netherlands and the joint meetings with the Indian Numismatic Society and the Mumbai Numismatic Society. The Society is also pleased to have a close relationship with the French Société de Numismatique Asiatique. We are looking forward to the development of similar activities in the newly formed section in China.



Figure 4 A meeting of the Society in the British Museum in 2012 (in the foreground from left to right: Terry Hayes, Michael Mitchiner and Robert Bracey, behind from right to left: François Joyaux (seated), David Hartill, Howard Simmons (with his back to the viewer), Peter Smith, Helen Wang and Qin Cao)

The recent pandemic has had some impact on the way the Society meets. Members' meetings continue to be held, now with the aid of Zoom, and although members miss the personal contact, it has enabled meetings to reach out internationally. Recent online meetings have enabled members from all sections to join together in the same meetings, so developing a new dimension to the founding aims of furthering co-operation and friendship through our shared enthusiasm for oriental coins. As in-person meetings start again, we hope to maintain the addition of online broadcast to continue to develop the Society's international role. For its 50th anniversary the Council decided to hold a Golden Jubilee Conference in 2020 and invited speakers from around the world to come to Oxford for the event. Unfortunately the pandemic led its postponement and it was not until this year that it could take place and to ensure no further postponements it was decided to hold the conference via Zoom. The meeting was a great success and the quality of the papers delivered by leading experts in oriental numismatics was outstanding. We are delighted to publish them in this issue.

For the Golden Jubilee Conference we also invited a few long-serving members to share their memories of the Society. We heard from Howard Simmons, John Deyell, Michael Bates, Stan Goron and Michael Mitchiner memories of their first encounters with the Society and their thoughts on its future. All of them emphasized the friendships they had made through the Society, and their pleasure at meeting with the experts they revered.

John Deyell particularly focused on the social nature of the Society's meetings, 'The tradition that cemented these friendships of course was that we would meet afterwards at the Bukhara Grill, the one get-together we all valued the most.'

Michael Mitchiner reminisced about his first encounters with members, 'During the 1970s, underneath the arches at Charing Cross station, in London, there was a small group of shops open all week, and also a larger number of stalls, which opened for the Saturday market. All manner of small antiquities, including coins, were on offer. Collectors and dealers mingled and we grew to know each other and to



Figure 5 A lunch-time break during a Society meeting in the Ashmolean Museum, Oxford, in 2012 (from left to right: Peter Smith, Jan Lingen, Shailendra Bhandare, Stan Goron and Paul Stevens)



Figure 6 Joe Cribb congratulating Michael Mitchiner on his latest publication at a Society meeting in the Ashmolean Museum, Oxford in 2013.

share our interests – Stan Goron, Tony Webdale, Howard and Frances Simmons, Nick Rhodes. This was a time when Michael Broome had just founded the Oriental Numismatic Society (ONS). I was enrolled in the ONS, where I met such further members as Michael Broome, himself, Terry Hardaker, Tony Holmes, Les Riches and Mrs Watson.’

Stan Goron remembered the members who had passed on, ‘My fondest memories of the Society are meeting people like Ken Wiggins, Nick Rhodes, Tony Webdale, who became good friends of mine for years, but who sadly are no longer with us.’ Michael Bates was keen that the Society had a future: ‘We want the Society to continue to be the place where people from all interests connected with the history of Eurasia can contribute.’



Figure 7 A joint ONS and Numismatic Society of India meeting in London, August 2010

Stan expressed similar aspirations and hopes for the future: ‘In some respects the Society has evolved well and in others it has stagnated. In terms of membership, initial growth was quite quick . . . but has never exceeded around 600–700 as far as I know. The actual number of members are probably quoted in the report of the AGM for each year and, again, has probably been around 500–600 for a number of years. Moreover, while the age profile of the membership is not known it is probably not getting any younger if UK members are anything to go by. Without younger members the Society will eventually die of old age!’

Michael Mitchiner was more confident about the Society’s future, ‘Communication, and the ability to share with friends our common interests across the broad field of oriental numismatics, has always been a fundamental strength of the ONS. . . . There has always been the facility for members with limited knowledge to seek advice from those who might have more knowledge, or experience.’ The spirit of friendship and collaboration was the original driving force of the Society, as Michael Broome the founder of the Society put it in 1974 (Newsletter no. 31),

‘During the last 15 months almost 150 new members have joined ONS. In welcoming them, it may be a useful occasion to confirm the aims of the Society. Briefly these are to provide a network of contacts and reliable information for people with a genuine interest in non-western numismatics.’

As Michael Mitchiner put it, ‘Long may this spirit of co-operation continue.’

Joe Cribb

On Attribution: Interpretative challenges in Indo-Sasanian (and other) coinages

John S. Deyell

Abstract This essay examines a recently proposed re-attribution of a particular type of Indo-Sasanian coin, called 'Śrī Vi'. It weighs the evidence offered and, on balance, finds the new proposal unconvincing. But the discussion highlights our collective compulsion to 'attribute' all coins, and whether this is always a good thing. What exactly do we mean by attribution, and is it either feasible or even desirable to attempt precise attributions in every numismatic circumstance?

A great coinage took flight with two wings

The Indo-Sasanian family of early medieval coins was the single most important coinage phenomenon of its age, throughout much of north India and the Deccan. It has been thoroughly studied in a long literature over the last century. In our era Dr Michael Mitchiner offered a useful overview (Mitchiner 1979).

Evolving from Sasanian silver *drachm* prototypes, the coin type became known in India in the fifth and sixth centuries through at least two different channels. The first was directly by *sea trade* between the Persian Gulf and coastal Gujarat, and by *land contacts* between Seistan and Sind and upcountry Gujarat. The second was via northern Afghanistan: huge numbers of Sasanian coins passed into the contemporary Hephthalite realm of Bactria, eventually finding their way

directly or via Hunnic/Alchon imitations, into eastern Rajasthan.

Numismatists recognize two distinct local subfamilies that subsequently developed, which Premalata Pokharna has characterized as 'Aravali West' and 'Aravali East' (Pokharna 2006, 6–7). Kamal Maheshwari has shown that each derived from a different Sasanian prototype, in time becoming either the *Bhillamala drama* (so-called 'Gadhahiya Paisa') of south-western Rajasthan, Gujarat, Konkan, Maharashtra and Malwa, around 600–1300 CE, or the *Vigrahapala drama* and *Śrīmadadivaraha drama* series of north-eastern Rajasthan, Haryana, Uttar Pradesh and western Bihar, around 750–950 CE (Maheshwari 2010). The coin names were those used in contemporary epigraphs and literature. Figure 3, overleaf, shows the different circulation realms of the two distinct series.

To the west and south, the prototype drachm of Sasanian emperor Firuz gave rise to a distinctive series characterized by being *anepigraphic* (i.e. bearing no legends) and therefore anonymous. The series remained in production some eight centuries, slowly evolving from thin and broad to thicker and narrower, ending up as small and dumpy, almost featureless. Collectors call them 'Gadhahiya', although contemporaries called them Bhillamala drammas, after their birthplace (figure 1). Along the way there were a few local issues in which a



Figure 1 The evolution of anepigraphic, anonymous Bhillamala drammas ('gadhaiya') from about 500 CE to about 1300 CE (Author's photographs)



Figure 2 The evolution of more easterly, letter-bearing drammas from about 650 CE to about 925 CE (Author's photographs)

ruler was cited,¹ and at the end a secondary series was issued in Malwa that bore some legends and a few letters (Maheshwari 2010, 128–59). But these were the exceptions that proved the rule: by and large these coins were without legend. So classification schemes have never been successful in moving beyond visual features. Since the definition of appearance varies from observer to observer, no agreed classification for this series has been adopted, with the exception of the sporadic issues bearing clear legends.

Initially being associated with the city of Bhillamala (Bhinmal) alias Śrīmāla on the Gujarat/ Rajasthan borderlands, they travelled south into the Konkan and south-eastwards into Maharashtra and Telangana, probably carried by the diaspora of Bhinmal merchants. As a young numismatist I rashly tried to attribute these to individual Gujarātī kings; however we must now recognize that such attribution is sometimes neither possible nor necessary. More on this below.

The north-east coins, on the other hand, are characterized by *partial legends* from their inception until the ninth century, when full titles or names were first introduced. Prior to that, the coins featured a few enigmatic letters or partial words, that have both tantalized and confounded numismatists trying to create a classification system for them. Nonetheless, this

meagre lettering has been sufficient, when other design features are also considered, to create a classification scheme that enables researchers to describe the coins when they are found in hoards. This fact enabled Kamal Maheshwari to create a cogent and comprehensive catalogue of all Indo-Sasanian coin types, supplementing his description of the coins' appearance with metrological and metallurgical analysis, and observation of the distribution patterns of the various types in coin finds (Maheshwari 2010). This second Indo-Sasanian series was based on Sasanian prototypes that were altered by passing through Hephthalite or Alchon Hun intermediaries, and they arose along the eastern flank of the Aravallis, in Merwara according to Maheshwari. They bore some lettering, although seldom full words, and do not comprise a long slow evolution like the Bhillamala coins, but rather appear as a series of distinctive types, each one bearing some elements of earlier prototypes, but also new elements unique to each type. The common element, as seen on the specimens in the top row of figure 2, is a single Brāhmī *akshara*, usually the honorific 'Śrī', atop the crown.

The series terminated with the legend-bearing issues of the Pratihara empire in the tenth century, i.e. 300 years earlier than the first, Bhillamala series, ended. They give the impression of being not the coinage of a single community, but rather the coins of successive polities. Contemporaries called those in the bottom row Vigrahapala drammas and Adivaraha drammas, successively.

¹ Legends appeared on a Silahara issue (Chhittaraja, D-161), Chauhan issue (Somaladevi, D-162) and Paramara issue (Omkaṛa, D-172).

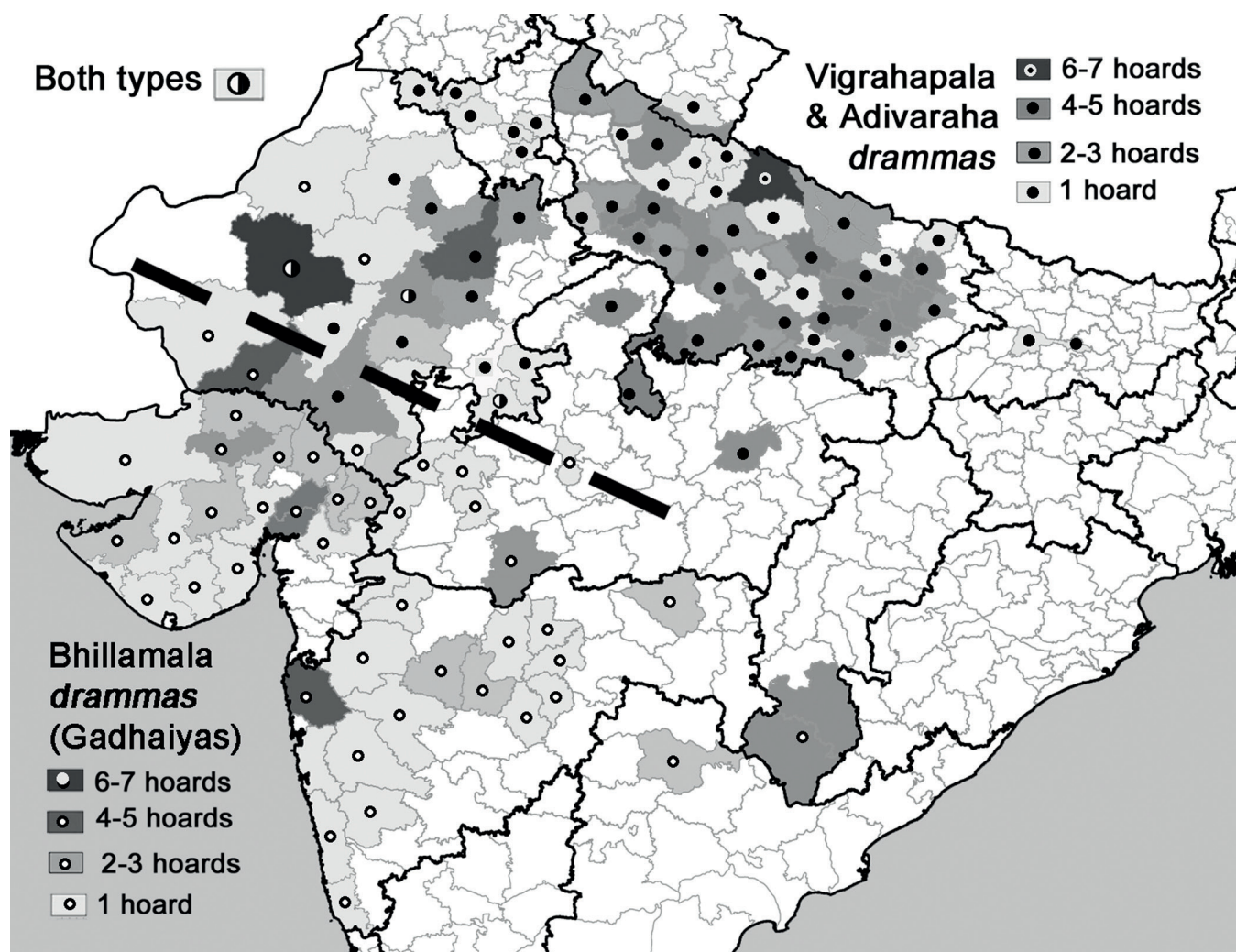


Figure 3 The distribution of coin finds of the Bhillamala drama series (south-west) versus the joint Vighrahapala–Adivaraha drama series (north-east) (Sources: Bhatia (1986), 472; Deyell (1990), 27; Maheshwari (2010), 239)

There is a high degree of certainty about the two separate groups or families of silver drammas, since they tend to be found in hoards that contain coins of either one or the other family, but virtually never both. They had quite distinctive circulation patterns, and this has made it easier to impart some meaning to the otherwise challenging coins.

This classification effort, for example, has enabled numismatists to state beyond any reasonable doubt, that the Gurjara–Pratihara empire of the ninth century had a numerous and broadly distributed silver coinage. Despite resistance from a generation of Marxist historians determined to find, or prove, a dearth of coinage in this region in this period, historians now accept that these coins fulfilled a number of monetary functions for a broad range of people, throughout the empire (Sharma 2017).

Of course, when individual coin types are classified on the basis of very slender epigraphic evidence, there are bound to be differences of opinion. This paper will address a seemingly minor re-reading of one coin type in the Vighrahapala drama family, which has led to a very dramatic re-attribution. If left unexamined, this would fundamentally reshape our understanding of the political framework of the Gangetic Valley prior to the Pratihara empire, as well as alter our understanding of the evolution of this important, but difficult, coin series.

A long-standing identification overturned on a single letter

In our times Professor Pratipal Bhatia has been the most prolific writer on Indo-Sasanian coinage (Bhatia 1986, 1993, 2006–7, 2010a, 2010b, 2010c, 2011). So it is of considerable interest, that in her presidential address to the 99th Annual Conference of the Numismatic Society of India at Pune on 5 November 2016, she proposed a major re-reading and re-attribution of a common type of Indo-Sasanian coin found throughout the upper Gangetic basin (Bhatia 2017). If correct, her proposal would identify a coinage issue for the enigmatic emperor Yaśovarman, who briefly ruled the empire of Kannauj about 725–49 CE.

In a carefully reasoned presentation Bhatia reviewed the available historical evidence for Yaśovarman's career, bringing welcome clarity to an otherwise poorly understood period of post-Gupta history. She then reviewed the numismatic pedigree of a particular coin type, which she called 'Śrī Ya', arguing in the end that it represents the coinage of Yaśovarman. Up to this point, no coinage had ever been ascribed to that king.²

2 In a recent work, I argued that the post-Kidarite base gold dinaras in the name of 'Śrī Yaśovarman' could not be attributed to the king of Kanyakubja, since they are never found in India (Deyell 2017).

Table 1 The coin types of the ‘Indo-Sasanian’ series of the Gangetic basin, about 750–950 CE (Author’s photographs, line drawings by Maheshwari 2010 and Deyell 2015)

Coin type	Full dies	Photograph
<i>Śrī Vīgra</i> (sa on reverse)		
<i>Śrī Vīgra</i> (ma on reverse)		
<i>Śrī Vī</i>		
<i>Śrīmad-adivaraha</i>		
<i>Śrī Vinayaka-paladeva</i>		

Audience members were not likely to be aware that this was a dramatic departure from the classification that Bhatia had advocated throughout her long career. The coin she discussed has in all her earlier writings been read ‘Śrī Vī’, and attributed by her to the evolutionary series she has called ‘Śrī Vīgra’ (Bhatia 1986). This classification has been adopted by Kamal Maheshwari in his definitive catalogue of the series (Maheshwari 2010). I concurred with this identification in my recent review of the geographic distribution of that coin series (Deyell 2015).

Now Bhatia long ago suggested the coins with ‘Śrī Vī’ might be attributed to Vatsaraja Pratihara, about 778–94 CE (Bhatia 1986, 478). She made this suggestion within a timeline and evolution that commenced with ‘Śrī Vīgra’ coins, as pre-Pratihara issues, about 730–80 CE, then these fine-fabric ‘Śrī Vī’ coins, followed by the cruder ‘Śrī Vī’ coins, leading to the ‘Śrīmadadivaraha’ coins of Mihira Bhoja, which she believed shared many of the same design elements as the ‘Śrī Vī’ coins (Bhatia 1986, 474).

To clarify these discussions table 1 shows the various coin types mentioned, which together comprise the ‘Indo-Sasanian’ coins of the upper Ganges in the early medieval period.

In later articles Bhatia continued to read the coins as ‘Śrī Vī’, but thought that this coin type might be earlier than the ‘Śrī Vīgra’ coins. She also noted a number of ‘Śrī Vī’ coins in

which a fuller legend was visible, which she read as ‘Śrī Vīpa’ or ‘Śrī Vipra’ (Bhatia 1993).

As recently as 2010, she continued to read these coins as ‘Śrī Vī’ (Bhatia 2010a). Later, we see the first glimmerings of a reconsideration: in describing a hoard of ‘Śrī Vī’, ‘Śrī Vīgra’ and ‘Śrīmadadivaraha’ Indo-Sasanian coins in the Allahabad Museum collection, she notes that the legend ‘Śrī Vī’ can also be read as ‘Śrī Yī’ on palaeographic grounds (Bhatia 2011, 21).

In her 2016 address, Bhatia fully embraced this change of heart.

Now, we will like to discuss the coins, which I have been so far describing as Śrī Vī series but now by studying the palaeography of the two line legend I am convinced that the legend on these coins is Śrī Ya inscribed in *siddhamatrika* style of late Brāhmī or proto-Nāgarī script which was used on central Indian inscriptions of 7th–8th centuries. (Bhatia 2017, 20).

Her argument was long and well-annotated, but can be summarized as follows.

- 1 There are Indo-Sasanian coin types found together in the Ganga basin, with legends ‘Śrī Vī’ and ‘Śrī Vīgra’.
- 2 Although previously I viewed them as *related*, both dating to the eighth century, I now believe they are *not*.

- 3 I continue to read 'Śrī Vīgra', but now date its paleography to the tenth or eleventh century.
- 4 I now read the other as 'Śrī Ya', and continue to date its paleography to the eighth century.
- 5 There was a ruler of Kannauj around 725–49 CE named Yaśovarman, to whom *no coins have been attributed*.
- 6 So I attribute the 'Śrī Ya' coins [hitherto 'Śrī Vi'] to Yaśovarman.

To see the implications of her re-attribution, note in table 2, following, the relative position of Yaśovarman, early eighth century, vis-à-vis the well-attributed ninth and tenth century coins of the great Pratiharas, Bhoja and Vinayaka. She would now place the 'Śrī Vi' coins about a century earlier than the Adivaraha coins of Mihira Bhoja.

Since this hypothesis is a major departure from what has been accepted to date, it bears closer examination using evidence from palaeographic, stylistic and hoard context sources.

Testing the hypothesis: paleographic evidence

Much of the argument rested on palaeography, i.e. what can be inferred from the style of writing. In this case Bhatia traced a single *akshara*, 'Śrī', in contemporary epigraphs. But perhaps more germane would be comparing letters on contemporary coins. And surely the letter to focus on would be 'Va' or 'Ya', the key to her new identification.



Figure 4 The obverse designs of the 'Śrī Vīgra' (left) and 'Śrī Vi' coins (right)

In figure 4 we see the obverses of the 'Śrī Vīgra' and 'Śrī Vi' coins side by side, and it is noticeable that the form of the letter 'Vi' differs on the two. The right-hand 'Śrī Vi' could certainly be read as being the letter 'ya', except that it bears a short i-matra, meaning it would be read as 'yi'



Figure 5 Legends on three specimens of the 'Śrī Vi' coins (Mitchiner 1979, 62)

On all 'Śrī Vi' coins, this letter uniformly bears an *i-matra*, shown in figure 5 on three specimens from Mitchiner's catalogue. If the letter was intended as a 'ya', it would thus be read as 'Śrī Yi'. But the letter 'ya' in Sanskrit is an '*ant:asht*' or semi-vowel, and there is *no word in either Sanskrit or Hindi that begins with a 'yi'*, i.e. 'ya' modified by a short 'i' or

Table 2 Notable political figures active in the Gangetic basin in the eighth and ninth centuries

<i>Independent</i>	<i>Others</i>
Yaśovarman (about 725–49)	Indrayudha (783)
<i>Pratiharas</i>	Dharmapala of Gauda (about 780s?)
Vatsaraja (about 778–94)	
Nagabhata II (about 794–833)	Chakrayudha (about 780s?)
Mihira Bhoja (about 836–85)	
[coins to 913]	Rashtrakutas:
Vinayakapala (about 913–33)	Dhruva (about 780s?)
[coins to 1000?]	
	Govinda III (about 809–10?)

long 'i' vowel. If the *akshara* is to be interpreted as an initial, e.g. of a name, then it can *never* be read as 'yi'. It *must* be read as 'vi'. Hence it absolutely cannot be the initial letter of 'Yaśovarman'



Figure 6 Variants of the Brāhmī letters 'va' and 'ya' on a north Indian coin type roughly contemporary with the 'Śrī Vi' coins (Deyell 2017, 54)

This ambiguous rendering of the two letters is not a surprise. Note in figure 6, the style of lettering on a contemporary coin, the post-Kidarite issue in name of Vinayaditya, dated by the Rajatarangini to the later eighth century. Here it can be seen that within the king's name, both Vi and Ya are rendered by the engraver as virtually identical. Yet the reading is unequivocal, as is our observation that in this period, engravers sometimes represented the letters V and Y in identical fashion. Only the *context* can distinguish them.

The evidence of comparative fabric and style

To properly assess Bhatia's re-attribution, we must consider as well the comparative fabric within this coin series. Bhatia herself had previously asserted, and I illustrate here, the close relationship of 'Śrī Vi' and 'Adivaraha' coins. Figure 7 shows the reverse of both.



Figure 7 The reverse designs of the 'Śrī Vi' coin and the 'Śrīmadadivaraha' coin.

Note the similar design element of a rectangle bracketed by tumbrels or vases, rendered similarly on both 'Śrī Vi' and 'Adivaraha', but on no other coins of the series. Note as well that the attendants and oval shape at the bottom are similar on the two issues.

Table 3 Uttar Pradesh and Rajasthan treasure-trove hoards of Indo-Sasanian coins. A checkmark (✓) indicates the presence of coins of that type in the hoard; (—) indicates an absence.

Hoard	Quantity	Śrī Vigra (+sa)	Śrī Vigra (+ma)	Śrī Vi	Śrīmad-Adi-varaha	Śrī Vinayaka- paladeva
Ahichchhatra	1,006	✓	✓	✓	✓	—
Allahabad	45	✓	✓	✓	✓	—
Alwar ALW-12	306	✓	✓	✓	✓	—
Alwar ALW-5	194	✓	✓	✓	✓	—
Bawan	10,159	✓	✓	✓	—	—
Bijnor 67/214	1,435	—	—	✓	✓	✓
Gorakhpur	119	✓	✓	✓	—	—
Jaipur RAJ-209	133	✓	✓	✓	—	—
Jhansi	?	✓	✓	✓	✓	✓
Kotah KOT-18	136	✓	✓	✓	—	—
Rae Bareli	109	✓	✓	✓	—	—
Shahjahanpur	300	✓	✓	✓	✓	—
Tehri-Garhwal	36	—	—	✓	—	✓

References Ahichchhatra, Bhatia (1986); Allahabad, Bhatia (2011); Alwar ALW-12, Deyell (2015); Alwar ALW-5, Deyell (2015); Bawan, Bhatia (1993); Bijnor 67/214, unpublished (notes taken by the author at the State Museum, Lucknow, in 2014); Gorakhpur, Deyell (2015); Jaipur RAJ-209, Deyell (2015); Jhansi, Bhatia (2006-07); Kotah KOT-18, Deyell (2015); Rae Bareli, Deyell (2015); Shahjahanpur, Deyell (2015); Tehri-Garhwal, Bhatia (2010a).



Figure 8 The similarity of reverse designs (right-hand pictures) on selected specimens of 'Śrī Vi' (left) and 'Śrīmadadivaraha' (right) coin types (Maheshwari 2010, 240)

This similarity is so marked, that Kamal Maheshwari published specimens of each side-by-side. On the left in figure 8 is 'Śrī Vi', on the right 'Adivaraha'. Note the reverses are virtually identical in execution, size and orientation. Clearly these two coin types were minted in close proximity of time and place and perhaps even rendered by the same engraver. So they cannot be separated by a century as Bhatia now asserts.

Further consideration: hoard evidence

But palaeographical and stylistic comparisons are not the only determinants of classification for these 'Śrī Vi' coins. Equally important, if not more so, is their position in the relative composition of coin hoards. If we combine the old catalogues of coin hoards in each state, either published or in official custody, with Bhatia's publications over the years, adding the erstwhile Rajasthan Museums online database, as well as my own research notes from the State Museum, Lucknow (Deyell 2015), we create table 3.

This table is far from complete, but it does offer a fair sample of coin hoards reported or inspected more recently.³ A number of observations may be made.

The first thing to note is the close association of 'Śrī Vigra' and 'Śrī Vi' coins. They are almost never found alone. Both types are usually present together. But Bhatia now believes that the 'Śrī Vi' coins (her 'Śrī Ya') are early eighth century, while the 'Śrī Vigra' coins are later tenth or early eleventh

century. Their close association in hoards would argue forcefully against this two-century gap. Rather, they seem to be closely linked in time.

As well, we can see from the column of 'Śrī Vinayakapaladeva' coins that these early tenth-century coins are seldom found with 'Śrī Vigra' coins. So the hoard evidence supports the idea that 'Śrī Vigra' coins are distant in time from 'Śrī Vinayakapaladeva', i.e. no later than the ninth century.

Also noticeable is the fact that in no hoard were there 'Śrīmadadivaraha' coins without 'Śrī Vi' coins also being present. This reinforces dramatically our observations earlier about the close proximity of the two types suggested by similarity of fabric.

Conclusions on the hypothesis

So to summarize, with the evidence of palaeography, fabric and hoard association, we *cannot support* Bhatia's contention that the 'Śrī Vi' coinage can be attributed to Yaśovarman. Rather, it is likely the 'Śrī Vi' and 'Śrī Vigra' coins circulated together sometime during the period of the Pratihara rulers Vatsaraja and Nagabhata, although we cannot determine if those persons were associated with their issue. We can re-affirm the attributions of Adivaraha drammas and Vinayakapala drammas to those two Pratihara rulers, although with the proviso that they may have been issued, and circulated, for long periods posthumously.

Clarifying the relationship of 'Śrī Vi', 'Śrī Vigra' and 'Śrīmadadivaraha' coin issues

We must not lose sight of the discovery by Bhatia, that rare 'Śrīmadadivaraha' coins actually bear the 'ma' reverse element of some 'Śrī Vigra' coins (Bhatia 2010). I was able to match this with the discovery of a 'Śrīmadadivaraha' coin bearing the 'sa' reverse element of the other 'Śrī Vigra' type. These provide unequivocal proof that 'Śrī Vigra' and 'Śrīmadadivaraha' coins were struck in close sequence in the same mints or mints (Deyell 2015, 148).

Up to now, it has been assumed by most commentators that 'Śrī Vi' coins evolved from 'Śrī Vigra' coins, becoming the prototype for 'Śrīmadadivaraha' coins (see the sequence in

³ I regret that a number of Pratipal Bhatia's hoard examinations are in publications that are not accessible to me. It is unfortunate as well that some of her published reports discuss coin typology at length, but do not mention the numbers of each type identified.

table 1, above). However, Bhatia has seen hoards where the 'Śrī Vi' coins seemed more worn than the 'Śrī Vīgra' coins, leading her to change her views on their relative order. On the other hand, I have seen one large hoard (Bijnor in the above table), comprising mostly 'Śrīmadadivaraha' and 'Śrī Vinayakapaladeva' coins, where a randomly-selected sample had 'Śrī Vi' coins that were very worn, but others quite fresh and little circulated. So it is clear that different hoards might have had quite different accumulation histories. It is also possible, if not likely, that a single find might contain several groups or packets gathered together before loss or burial. This being so, we must be cautious about over-reliance on weight patterns, especially given the fact of strong style and design similarities.

In an earlier work, I argued that there is a discernible geographic pattern in the composition of Indo-Sasanian coin hoards. Specifically, I was able to demonstrate that the 'Śrī Vīgra' coins with 'ma' and 'sa' were relatively more plentiful in eastern Uttar Pradesh, while the 'Śrī Vi' coins were relatively more plentiful in northwestern Uttar Pradesh and Northeastern Rajasthan. I also suggested tentatively, a conclusion that I am now prepared to offer more firmly, that the 'Śrī Vīgra' and 'Śrī Vi' coins *do not form a succession at all*, but were *contemporary issues from different parts of the Pratihara empire*. This is the best explanation that encompasses and explains all the above-mentioned observations about typology and hoard composition.

In other words, the various forms of 'Śrī Vi(gra)' coins were issues of different mints located throughout the Pratihara empire, and this type was followed by the 'Śrīmadadivaraha' and 'Śrī Vinayakapaladeva' coins in succession.

We leave open the remarkable observation that both the 'Śrī Vi' and 'Śrīmadadivaraha' coin types gradually became cruder as the dies were made much too large for the flans. Given some of the above observations, we may consider the possibility that the crude did not evolve from the fine, but rather both were produced simultaneously in separate ateliers. For the sake of argument, let us assume that production of 'Śrī Vi' coins ceased when production of 'Śrīmadadivaraha' coins commenced. One or more mints that had produced fine-fabric, full-die 'Śrī Vi' coins, began producing equally fine-fabric, full-die 'Śrīmadadivaraha' coins. This would most likely be at the capital, Kanyakubja, if that was indeed the seat of Pratihara imperium. One or more other mints elsewhere in the empire, that had produced crude-fabric, partial-die 'Śrī Vi' coins, began to produce crude-fabric, partial-die 'Śrīmadadivaraha' coins. This could have been anywhere away from the capital, but most likely in northeastern Rajasthan.

It is premature to adopt wholeheartedly such tentative explanations. Suffice to say that the conundrum of conflicting evidence might require new ways of thinking to solve the problem. At the very least, there must be much more detailed and careful reporting of Indo-Sasanian coin hoards, before we have an adequate base of observations on which to fashion new and trustworthy interpretations of this most challenging early medieval coinage.

About attribution

This whole review exercise inevitably raises the question of 'attribution' more generally. When is a coin actually

'attributed'? What constitutes 'attribution'? Must every coin be 'attributed' in order to garner useful historical, economic or cultural evidence?

My major professor, A. K. Narain, taught that 'numismatics is the science of classification'. At the time I thought this an unnecessarily narrow definition, but I think I now understand his intent. We consider a coin 'classified' when it has been described in terms of images, legends, metal, shape, size, weight, edge, die orientation, die identity, etc. In contrast, we consider a coin 'attributed' when its circumstances of issue have been determined, in terms of denomination, date and place of minting, issuing authority, etc.

The two groups of criteria are not alike. The first are objective, i.e. scientifically verifiable and replicable. Examples would be metrology, metallurgy, die orientation and die identity. Once described, they may later be independently tested or verified by other researchers. The second group of criteria are manifestly subjective, i.e. a matter of opinion. We would place in this category such descriptors as the style of the image or lettering, the meaning of legends, or the quality of the coin's engraving. Other observers may agree with the value judgements of the author, or may advance their own, different opinions.

But 'attribution' draws on both types of classification, hence straddling the objective and subjective realms. While a scientist may be capable of describing a coin, attribution also requires contextual knowledge, which draws on the social sciences like geography, history (chronology) and economics.

Now, new and old coins alike can all be studied with the same objective rigour; the laboratory is indifferent to age. However the older the coins, the more uncertainty around subjective and contextual criteria. Where background context is weak or non-existent (as for some periods of ancient or early medieval India), coin attribution can be problematic. In these cases, we may have to be content with the description of coin characteristics and distribution patterns, and accept that 'attribution' to issuing authorities (historical figures) may never be attainable.

This de-emphasis on 'hard attribution' is an issue that Shailendra Bhandare has discussed in his study of so-called 'kachchha paisas' (Bhandare 2019). These were crude copies of 'legitimate' copper coins circulating in many parts of India in the late Mughal, early colonial period. Numismatists have struggled for generations to 'attribute' these coins to issuing authorities or even to informal mints, with very mixed results. But much useful historical research has dealt with these coins as a class, without fully linking historical mentions to known specimens or types. So Bhandare has urged us to look beyond classification and attribution to consider the broader landscape, when dealing with anonymous coins. In other words, to suppress the numismatic urge to always attribute to an historical individual or mint, and rather to emphasize the coin type and geographic distribution patterns.

Adopting this perspective, based on common criteria, we may group unattributed coins into 'types' that allow them to be arranged chronologically or geographically. This in turn assists the study of coin finds, hoards and excavations, helping to determine the distribution pattern of coins in circulation. This fact is graphically illustrated by the data in figures 1, 2 and 3, which manage to classify key physical characteristics,

arrange in chronological order, and plot by geographic distribution, several important series of early medieval coins which by and large remain ‘unattributed’. This was certainly the case with all the Bhilamala drammae lacking specific legends, and it was also the case with the majority of Gangetic valley Indo-Sasanian coin types that bear only truncated letters. As shown so well by Kamal Maheshwari, a thorough articulation of the known characteristics, evolution, and distribution patterns of these ‘unattributed’ coin-types will still yield reliable information of considerable utility in historical and economic studies.

With the addition of context provided by epigraphs, chronicles, travellers’ accounts and archeological evidence, we are able to link the coins to significant actors, groups and historical developments. Hence even ‘unattributed’ coins potentially have value as historical evidence, when adequately classified.

So our foray into Indo-Sasanian coins, triggered by a misattribution, reminds us of a larger truth: ‘unattributed’ coins can still yield valuable insights.

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Recent Developments in Chinese Numismatics

Dai Jianbing

Abstract For decades now, China has seen continuous development in research in ancient Chinese numismatics and in the building of coin collections. Recently, government support has increased the resources and confidence of numismatic researchers. This paper introduces some new trends in the development of Chinese numismatics.

Comparison of artefacts with historical and archive materials

Gold pieces excavated from the tomb of Liu He, Marquis of Haihun

From 2018 to 2020, the Jiangxi Provincial Institute of Cultural Heritage and Archaeology 江西省文物考古研究院 and the School of Archaeology and Museology of Peking University 北京大学考古文博学院 conducted research on 385 pieces of cake-shaped gold 金饼, 48 pieces of horse-hoof-shaped gold 马蹄金 and 25 pieces of ‘unicorn’-toe-shaped gold 麟趾金 unearthed from the tomb of Liu He 刘贺, Marquis of Haihun 海昏侯 in the Western Han Dynasty, and used XRF to analyze the metal composition. The results confirmed the existence of the ‘unicorn-toe’-shaped gold recorded in the Book of Han 《汉书》, and corrected age-old misunderstandings. The details of this research are of great significance for studying the production methods, production techniques, the hierarchical system, and use of gold in the burial systems of the Western Han dynasty.¹



Figure 1 Standard pieces of ‘unicorn-toe’-shaped gold and horse-hoof-shaped gold from the tomb of Liu He, Marquis of Haihun

The application of scientific and technological archaeological methods and techniques has also injected new vitality into coin research.

The earliest minting site at Guanzhuang, Henan province

In 2018 the archaeological team from Zhengzhou University 郑州大学考古团队 used carbon-14 dating technology to test organic compounds and grain residues at the Guanzhuang 官庄 mint site in Xingyang 荥阳, Henan Province 河南, and found it dated to 640 to 550 BC. These results showed that the Guanzhuang site is the earliest minting workshop in the world dated by laboratory evidence. The results also provide important evidence for research for dating the production of hollow-handle spade money 空首布.²

Foreign records of Chinese mints in the nineteenth century

Chinese scholars have been studying first-hand foreign sources of information about nineteenth-century Chinese mints. There

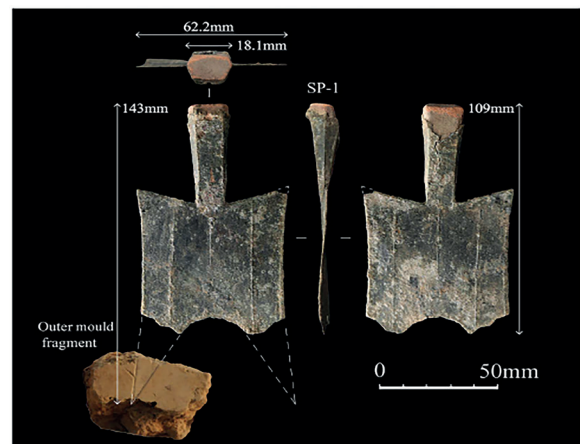
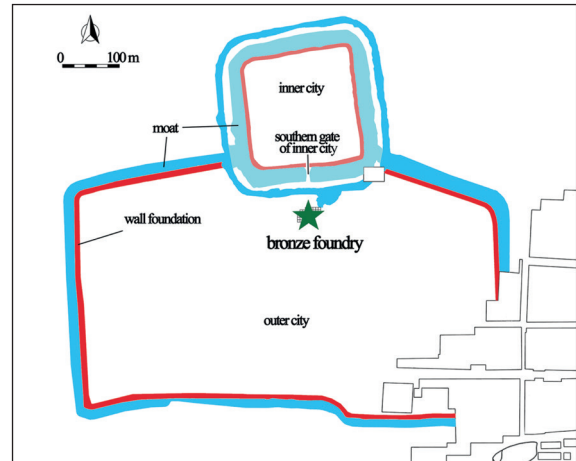


Figure 2 Map showing the location of the bronze foundry outside the inner city of the Guangzhuang site and some of the pointed-shoulder-hollow-handle spade money that was found there

is a large amount of newspaper reports, postcards and publicity about new coins preserved overseas, which is important for researching the modernization of coinage production (e.g. the introduction of machine-struck coinage) in China in the late Qing dynasty. Combining the materials from China and overseas helps us to solve numismatic problems. For example, the rare coin with the inscription *Da Qing gong suo* 大清公所 was for a long time mistakenly thought to have been cast in Kwangchowwan 广州湾 (Guangzhou Bay), a territory leased to the French from 1878. Using Zhang Yinhuan’s 张荫桓 ‘Diary of Three Continents’ 《三洲日记》 for 1899 (Guangxu 25) and the archives of the 1878 Paris World Expo 巴黎世博会, Li Jun 李骏 proved that these coins were, in fact, tokens from the China Pavilion at the 1878 Paris World Expo (figure 3).³

Research on coins in countries of the Belt and Road Initiative

In recent years, not only in China, there has been a new trend in numismatics in the international academic world towards interdisciplinary and transnational research. Silk Road coins have been one focus. Coins of the Belt and Road have become another focus of research.

1 Zhang Yeliang and Li Wenhua (2020).

2 Zhao, H. et al. (2021).

3 Li Jun (2021).

Table 1 Results of XRF analysis on the ‘unicorn-toe’-shaped gold unearthed from the tomb of Liu He, Marquis of Haihun

Object no.	Sample no.	Testing method	Location of test	Metal composition					
				Au	Ag	Pb	Cu	Fe	Hg
1423-21	1423-21-4	Precious Metals	Inscription on base	99.400	0.290	—	0.035	0.258	—
1814-17	1814-17-4	"	"	98.558	0.983	—	0.034	0.175	—
1814-19	1814-19-5	"	"	99.400	0.233	—	0.014	0.053	—
1814-25	1814-25-4	"	"	98.779	1.146	—	0.012	—	—
1423-19	1423-19-2		Welding on decorative part around the rim	91.980	5.358	—	0.181	0.601	—
1423-20	1423-20-2	"	"	90.400	8.120	—	1.170	0.300	—
1814-22	1814-2202	"	"	92.391	5.387	0.780	0.625	0.438	—
1814-24	1814-24-2	"	"	94.103	4.884	0.377	0.329	0.231	—



Figure 3 Da Qing gong suo tokens and illustration of the China Pavilion at the 1878 Paris World Expo. (Simon de Vandière, 'L'Exposition universelle de 1878 illustrée' Paris Calmann Lévy, 1879)

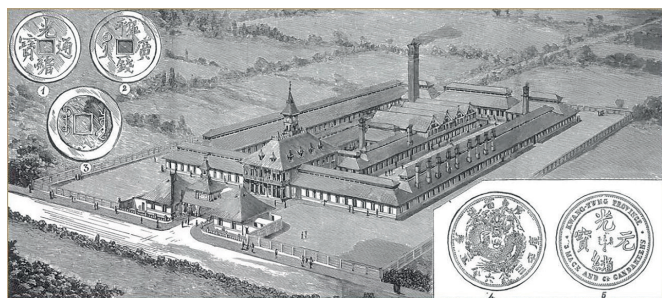


Figure 4 Aerial view of the Canton Mint, published in 'The Graphic' (1888)



Figure 5 'The Chinese Mint, Tianjin', British postcard, nineteenth century

In terms of international academic exchanges, in 2016 Northeast Normal University 东北师范大学, Inner Mongolia Academy of Social Sciences 内蒙古社会科学院, Sun Yat-sen University 中山大学, Hebei University 河北大学 and other institutions and scholars came to Mongolia to jointly inspect several grassland tombs where coins of the eastern Roman empire of the Turkic era were unearthed.

In June 2017 expert numismatists from Greece, Germany, Mongolia, France and other countries gathered in Changchun to exchange the latest research results of ancient coins of the Silk Road with multi-lingual simultaneous interpretation in Northeast Normal University.

In June 2018 specialists such as Dai Jianbing 戴建兵, Yang Fuxue 杨富学 and Li Xudong 李旭东 came together at the Dunhuang Academy 敦煌研究院 seminar on 'Ancient Coins of the Silk Road', the largest specialist meeting on ancient coins of the Silk Road held in north-west China in recent years.

In October 2019 the *Money and Empire: Coin influence and change from a world perspective* conference held at the National Museum of China was the highest academic level conference organized by a museum in China with speakers from overseas, including Jonathan Jarrett and Rebecca Darley (both from the University of Leeds, UK), who spoke about new results in research in British medieval numismatics.⁴

Research by individual scholars has also yielded fruitful results. For example, Qi Xiaoyan's 齐小艳 research on the emergence and development of Sogdian coinage, which looks at four aspects: the geographical scope, the centre of coinage, exchange of coin culture and historical background,

4 The proceedings were published, see Wang Chunfa (2020).

and case studies. She believes that Sogdian coins were the product of the integration of China, Greece, Iran and nomadic cultures, and of great significance for researching the paths and mechanisms of exchange and integration of the diverse civilizations on the Silk Road. (Qi Xiaoyan is now Professor of Numismatics at Hebei Normal University).⁵

Research on currencies of other countries

Coins are the business cards of a country. Foreign coins offer an excellent entry point for understanding the current world and world history – they are a window on the world – and are increasingly receiving attention from Chinese numismatists. For example, Maoyan Coins 猫眼钱币 [Maoyan = Cat's Eye] is a professional blogger, who, in an easy-to-understand way, introduces world coins in all their variety from multiple perspectives, including interesting knowledge about coin auctions and collecting, as well as deep thinking on the history and culture of coin inscriptions. (Maoyan Coins currently has over 300,000 followers.)

Academically, Chinese scholars have also made great achievements on the world stage, and now occupy leading positions. Chenyu David Zeng's 曾晨宇 die-study, for example, of a hoard of Bactrian coins unearthed in Afghanistan proved the existence in Bactria of another king Antiochus, as suggested by Jens Jakobsson, and supplied evidence to solve the chronology of the Diodotus dynasty.⁶



Figure 7 Sequence of the coins of Diodotus II, Antiochus and Euthydemus established by Zeng

Introducing the research on foreign monetary history

Chinese scholars are currently paying attention to research on the monetary history of different countries of the world. A large number of foreign works have been translated by Chinese scholars, which has been important for broadening the horizons of people in China. Below is a list of 20 translations into Chinese published between 2017 and 2021:

- Ian Carradice and Martin Price, *Coinage in the Greek World* 1988, trs Huang Xiwei (Law Publishing, 2017) // 伊恩·卡拉代斯, 黄希伟译:《古希腊货币史》(法律出版社, 2017)
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 Владимир Тульев: *История денег России с X века до наших дней Подробнее (Vladimir Dulyev, The history of money in Russia from the 10th century to the present day)* 2014, trs Cong Fengling (Law Publishing, 2019) // B. 杜利耶夫, 丛凤玲译:《俄罗斯货币史》(法律出版社, 2019)
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 A. W. Hands, *Coins of Magna Graecia: the Coinage of the Greek Colonies of Southern Italy* 1909, trs Huang Xiwei (China Finance Publishing, 2019) // A.W. 汉兹, 黄希伟译:《希腊统治时期南意大利货币史》(中国金融出版社, 2019)
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⁵ Qi Xiaoyan (2019).

⁶ Zeng (2013).

Chinese numismatics: officially an academic discipline and China's first doctoral programme in numismatics

There continues to be a gap with Western numismatics. Many world-class universities have a numismatic discipline and a tradition of awarding degrees in numismatics: for example, University College London, the Universities of Oxford, Cambridge, Munich (alma mater of Dr Werner Burger), Vienna, California (Riverside), and New York. The study of coins and medals at university is as old as scientific archaeology, and both have similarly strong roots. For example, Hilarius Eckhel (1737–98) was professor of numismatics at the University of Vienna from 1773, and his main achievement came from his *Doctrina numorum veterum* [The Study and Teaching of Ancient Numismatics] (8 volumes, 1792–98), in which he arranged coins for the first time in order of their place and date of issue. Today, scientific archaeology originates from the West, and its two pillars of theory are stratigraphy and typology. In fact, typology was drawn on numismatic research. In contrast, China, a country with a very long history, still lags behind the West in this respect.

Within China, money objects and related topics are being selected as directions of research at doctoral level, and this trend is growing year by year. Between 2002 and 2021 the number of doctoral dissertations has risen from less than five to over 25, mainly from Hebei Normal University 河北师范大学, Northeast Normal University 东北师范大学, Zhengzhou University 郑州大学, Northwest University 西北大学, Shaanxi Normal University 陕西师范大学, Nankai University 南开大学, East China Normal University 华东师范大学, all of which are well known.

Recently the Chinese state has increased its emphasis on research on cultural relics and the application of science and protection. On 28 October 2021 the State Council issued The 14th Five-Year Plan for Cultural Relics Protection and Scientific and Technological Innovation 《'十四五'文物保护和科技创新规划》, which will accelerate the establishment of cultural relics systems, academic systems, Chinese discourse systems, and comprehensively strengthen scientific and technological innovation of cultural relics and promote the systematic integration of these as a direction to work towards. The National Natural Science Foundation 国家自然科学基金 and the National Social Science Foundation 国家社会科学基金 will increase their support for interdisciplinary research. As an important measure, the number of people and teams involved in cultural relics research and appraisal will be increased. This will also offer guidance and support to the development of numismatics as a discipline.

Also on 28 October 2021, the State Administration of Cultural Heritage, the National Development and Reform Commission, the Ministry of Human Resources and Social Security, the Ministry of Commerce, the Ministry of Culture and Tourism, and the General Administration of Market Regulation jointly issued their 'Opinions on Strengthening the Management of Cultural Relics Collected by the People and Promoting the Orderly Development of the Cultural Relics Market'. This will strengthen the training of professionals, guide society as a whole on the excavation, interpretation and promotion of the cultural value of objects, cultivate collecting groups, encourage collecting, strengthen auctions, support innovative business models, etc., as an important national

policy implemented in this new period.

In 2016 the Academic Degrees Committee of the State Council approved Hebei Normal University to set up the first doctoral program in numismatics in China. It is an important step to better adapt to the needs of a culturally strong country and the new situation, and narrow the gap with Western counterparts. At present, the numismatic doctoral program is based on the two first-level disciplines of Chinese history and archaeology in the School of History and Culture, integrating related disciplines and institutions such as the College of Literature, the School of Computer Science, the Financial Data Research Center, and the Analysis and Testing Center to provide a high-quality platform for the construction of numismatics. In order to meet the development needs of numismatics, Hebei Normal University has set up an excellent course of numismatics, compiled a large number of corresponding academic works, set up the first numismatics science laboratory to help build up corresponding supporting resources. The doctoral program has now enrolled five outstanding doctoral students in numismatics. Based on social needs, the training will produce people with knowledge of numismatic theory, and practical experience, who will be about to do related research.

'Integration and breaking boundaries': in keeping with the times, there is now a new scenario for new development in Chinese numismatics. It does not merely depend on the inheritance and promotion of ancient traditions, but is also the embodiment of the Chinese people's century-old dream of rejuvenation and the unstoppable trend of the strategy of cultural strengthening. The goal that numismatists have striven for years to attain is now a historical mission for our generation to fulfil.

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The Circulation and Use of Bamboo Tallies in Jiangsu Province with Particular Reference to the Tongcheng Company Issues

François Thierry

Abstract After the fall of the Taiping Empire, authorities in Jiangsu Province were unable to provide an official currency, so local communities devised various forms of currency, including bamboo tallies. These were issued with face value in legal cash, then in 10 cash copper coins and finally in silver currency. The Tongcheng Trading House was a wealthy company involved in the trade of Southern China products. In the early years of Guang Xu (1875–1908), the company issued several types of tallies, with different values; the shapes varied to avoid confusion of 100 and 200 cash tallies. The three different offices of the Tongcheng Company in Suzhou issued different types from 1884 and 1894, and in the 1890s, the face value of the 200 cash tallies was reduced by overstriking the former issues, perhaps as a consequence of the fall of the value of silver versus cash coins in the last years of the nineteenth century. Dates on the tallies suggest that the issues ceased at the beginning of the twentieth century.

At the end of the Tong Zhi 同治 period (1862–74), Jiangsu 江蘇 Province was in a disastrous situation. After about 30 years of war, the two opium wars and the Taiping Rebellion (1851–64), the economy of the lower valley of the Yangzi was devastated. Massacres and destruction changed the prosperous Jiangnan region into a battlefield: according to statistics, the region lost about 60 per cent of its population. One of the richest and most civilized regions of China was ruined.

The restoration of the local economy needed peace for farmers, workshops and local industry and funds for activities and trade. But the existing funds consisted mainly of silver bullion and silver dollars from Chinese and foreign banks in Shanghai. For the local economy and daily use, silver currency was not appropriate as its value was too high. In the countryside and small towns people needed a currency with a low exchange value, in other words, the copper cash. But for 10 or 20 years, the Chinese authorities were unable to cast good coins. To quote the missionary Alexander Wylie (1815–87), ‘The specimens of coinage during this reign [Xian Feng 1851–61], in general circulation, appear to be among the worst that have been issued in China, especially those cast at Soochow’ (Wylie 1858, 61). During the Tong Zhi period, the situation was clearly similar, and the cash coins were mostly of very poor quality. The foreign settlements in China could provide silver in large quantities, but the Chinese government and local authorities were unable to provide a daily currency of good quality. The traditional monetary system was completely disrupted.

Local solutions

As on many occasions in Chinese history, private solutions were launched locally to solve both the confidence crisis in the official coinage and the liquid assets crisis. Two solutions were popular in the Jiangsu, street notes and bamboo tokens. ‘Street notes’, *jietiezi* 街帖子, were issued by small banks (*qianpu* 錢鋪 or *qiandian* 錢店), money changers or pawnshops (*dangpu* 當舖); as their name suggests, these notes circulated in the streets around the issuer’s shop. Contrary to street notes that existed in other regions in China, bamboo tokens, or bamboo

tallies, *qianchou* 錢籌 were a currency specific to the Jiangsu region. At the same time, but especially in Changzhou district in the 1930s, another local form of money was in use, copper tokens with a face value of one or two *jiao* 角, more rarely of one *yuan* 圓, that were struck by private issuers (see Wang 1997 and Yuan Tao 2000).

The first bamboo tallies seem to have been issued by a local bank in Wuxi 無錫 around 1870, after which several companies soon started issuing bamboo tallies in Wuxi Prefecture. At the end of the Tong Zhi period, bamboo tallies were in circulation in southern Jiangsu, in Wuxi, Wujin 武進, Changzhou 常州 and Suzhou 蘇州 prefectures.¹

At first, the tallies were used in a town or a village by the issuer (a company, merchant or shop) to buy arable or animal products from farmers, and by farmers to buy manufactured goods from shops in the town. The tallies could be used by everybody in the community and refunded in cash at the issuer’s desk. These bamboo tallies were issued mainly by shops or trade companies, very rarely by money changers or local banks. The circulation area was restricted to a village, a small town or, in the case of Suzhou, a quarter of town, perhaps only three to four streets in the vicinity of the issuer’s place. Some tallies had only a temporary use, indicated on the tally by the characters *zan* 暫, or *zandai* 暫代, ‘temporary’, or *linshi* 臨時, ‘provisory’, or *linshi liutong* 臨時流通, ‘provisory circulation’.

Bamboo tallies were in use for about 70 years in Suzhou and southern Jiangsu, from 1870 to the 1940s. The face value and units of account used on the tallies followed national and local changes in the currency; at first the main unit was the legal cash, *zhiqian* 制錢, in a variety of different names, then we see the appearance of the *tongyuan* 銅元 (‘copper dollars’) of 10 cash, and finally, the silver standard unit, *dayang* 大洋.

The Tongcheng Company

Among the issuers based in Suzhou, I have focused my attention on the Tongcheng 通成 Company. According to Yu Yantang, Tongcheng was a trading company that specialized in ‘southern goods’ (produce from the warmer, semi-tropical southern parts of China), founded by a certain Tang Xiwang 唐惜忘 of Wuxi in the early Guang Xu period (Yu Yantang 1997, 48). As Tang’s son worked in a local bank, we can assume that Tang Xiwang was not ignorant in financial matters. His company was a very active issuer in the first part of the Guang Xu period. According to the dates shown on the Tongcheng tallies, the company suspended issuing them around 1895. The company continued to exist until the 1940s, with many difficulties and temporary closings in the 1920s, during conflicts between local warlords, known as the Jiangsu-Zhejiang War (*Jiang-Zhe zhanzheng* 江浙戰爭, 1923–5), and during Chiang Kai-shek’s Northern Expedition (*Beifa zhanzheng* 江浙戰爭, 1927) as well. In the 1930s, Tongcheng was just keeping its head above the water and stopped activities at an uncertain date in the 1940s.

1 Although Jiangsu saw the most widespread use of bamboo tallies, they were also used in Shandong, Hubei and Heilongjiang provinces and in the Shanghai surroundings.



Figure 1 Map of Jili Bridge crossroads

The Tongcheng Company was based in the old city of Suzhou, in the Jiaoqu 郊區 district, on the south-west side of the city. The headquarters of the company was located near the Jili Bridge, *Jiliqiao* 吉利橋,² which passed over a small canal along *Fuqianjie* 府前街 (Fuqian street) at the crossroad of this street and the north–south axis, *Yangyuxiang* 養育巷 (Yangyu lane) to the North and *Zhili nanjie* 織里南街³ (Zhili south street) to the South. This location was ideal for business activities: not far from the seat of the city administration (*Suzhou fu* 蘇州府) and on the very busy *Fuqianjie* road.⁴

According to the inscriptions on the bamboo tallies, the Tongcheng Company opened three shops in this area: one in the southern part of *Yangyuxiang* (*Jiliqiao nanhuodian*, *Yangyuxiang nan* 吉利橋南貨店 養育巷南), another to the south of the bridge (*Jiliqiao nan* 吉利橋南) and a third one facing the bridge (*Jiliqiao mian* 吉利橋面). For the convenience of English readers, I will call these shops the Yangyu lane shop, the south-of-the-bridge shop and the facing-the-bridge shop, respectively.

Tongcheng was not the only company that issued tallies in this district: the tobacco shop *Nanhetai* 南和泰 at *Taipingqiao* (Taiping bridge), *Dingsheng* 鼎昇 at *Cibeiqiao* (Cibei bridge), and *Yuanmaozheng* 源茂正 in *Miaotangxiang* (Miaotang lane (Thierry 2022, nos 120, 22 and 305 respectively) also made bamboo tallies. But the Tongcheng Company issued the greatest quantity of bamboo tallies.

The dates seen on Tongcheng tallies are given in the cyclical form, and show that the company issued bamboo tallies from *jia-shen* (1884) until *jia-wu* (1894). Till now, the following dates have been seen on Tongcheng tallies: *jia-shen* 甲申 (1884), *wu-zi* 戊子 (1888), *ren-chen* 壬辰 (1892), *gui-si* 癸巳 (1893) and *jia-wu* 甲午 (1894). It seems that after this date the Tongcheng Company stopped issuing bamboo tallies.

² Known as *Zhiliqiao* 織里橋 (Zhili Bridge) in the Song dynasty.

³ *Fuqianjie* is now *Daoqianjie* street 道前街, and the canal has been filled in. *Zhili nanjie* is now *Siqianjie* street 司前街.

⁴ Yu Yantang questioned the exact location of the *Jiliqiao* bridge, because he found another *Jiliqiao* Bridge outside the walls of the city (Yu Yantang 1997, 48). The mention of *Yangyuxiang* street on some tallies solves the question.

Features of the Tongcheng tallies

The Tongcheng bamboo tallies have the traditional features of Jiangsu bamboo tallies: they are about 83 millimetres high, with a hole pierced at the top; on the obverse, the face value is at the top, and the name of the issuer at the bottom, both struck/impressed into the bamboo; on the reverse, written with Chinese ink, the date is at the top, then the serial character and number, and the location at the bottom. The striking/impression was made on hot bamboo that was swollen with boiling water (*huolao* 火烙). When they were dry, the tallies were given a light coat of varnish (*tongyou* 桐油) or lacquer (*qitu* 漆塗).

The thin sides of the tallies bear Chinese ink inscriptions: the main inscription is the traditional instruction *shi qu bu gua* 失去不掛, ‘if lost, no refund’. Sometimes the character *gua* is written in an abridged local form 卜, a character normally read *bu* in Mandarin. Some tallies specify 南貨店 *nanhuodian*, ‘shop of southern goods’. We have also to note that the tallies of the Yangyu lane shop give the date on the sides, not the reverse (Thierry 2022, no. 185).

Denominations

Two types of Tongcheng bamboo tally with a face value of 100 cash are known, struck with different dies. One was issued by the Yangyu lane shop, the other by the Jili Bridge southern goods shop and the other by the south-of-the-bridge shop. On the first type, the unit of account is the *zukaqian* 足卡錢, and on the second the *zhiqian* 制錢. The term *zhiqian* refers to standard/legal cash (as opposed to the *shiqian* 市錢, ‘market cash’, of half value). The term *kaqian* 卡錢 is a local term and has the same meaning as *zhiqian*. *Zukaqian* has the same meaning as *zuzhiqian* 足制錢, ‘complete legal cash’, ‘full legal cash’, and meant that the tally would be refunded for 100 cash exactly, although when the account was in *zhiqian*, one or two cash (sometimes more) would be deducted. The 100-cash tallies have a concave head, a very useful distinction that enabled illiterate people to avoid confusion with 200-cash tallies.

Three types of Tongcheng 200-cash tallies are known: two types were issued by both the Yangyu lane shop and south-of-the-bridge shop, and the third by the facing-the-bridge shop. All the 200-cash tallies are denominated in *zukaqian*. For convenience, the head was left flat, so there was no possible confusion with the 100-cash tallies. Exactly as seen on the 100-cash tallies, the dies/stamps of the Yangyu lane shop and the south-of-the-bridge shop are different; note the square shaped head of the character *tong* 通 on the Yangyu lane shop tallies and the triangular head on the south-of-the-bridge and facing-the-bridge shops, and the general look of the characters in the three different types.

Other observations

On the Tongcheng bamboo tallies, we find only two serial characters, *ji* 吉 and *li* 利. The choice of these two characters was, naturally, induced from the name of the bridge. But the use was very clear: *ji* for the 100-cash tallies and *li* for the 200-cash tallies.

The tallies issued by the Yangyu lane shop are bigger than the others, around 90 millimetres for the 100-cash tallies and around 88 millimetres for the 200-cash tallies. This shop issues also seem to be the first ones issued: the date *jia-shen* (28 January 1884 to 14 February 1885), being the earliest date

Table 1 The eight different types of bamboo tallies issued by the Tongcheng Company

	<i>zhiqian</i> 100 (A)	<i>zukaqian</i> 100 (B)	<i>zukaqian</i> 200 (C)	Reformed (D)
<i>South-of-the-bridge shop</i> (a)	Aa		Ca	Da
<i>Yangyu lane shop</i> (b)		Bb	Cb	Db
<i>Facing-the-bridge shop</i> (c)			Cc	Dc

seen on the Tongcheng tallies. All of the Yangyu shop tallies are denominated in *zukaqian*. There are also two calligraphic features specific to the Yangyu shop: the square head of the character *tong* 通 and the abridged form of the character *yi* 壹.

The tallies of the south-of-the-bridge shop are the most numerous and quite common. The 100-cash tallies are denominated in *zhiqian*, but the 200-cash in *zukaqian*. The character *tong* 通 has a triangular head and *yi* is written in the classical way 壹.

The tallies of the facing-the-bridge shop are rarer than those of the other two shops. The dies/stamps show a close typology with the dies/stamps used on the south-of-the-bridge shop, with slight differences. We know only overstruck 200-cash tallies for this shop.

The overstriking of tallies

Till now, there was no major difference between the Tongcheng tallies and the other tallies issued in Suzhou or in the small towns in Jiangsu province. But the Tongcheng is the only one issuer that overstruck its tallies in order to reduce the face value. Several shops or companies overstruck their tallies to change the unit of account according to monetary changes: *zukaqian* (legal cash) was replaced by *dayang* (silver coins) or *tongyuan* (copper dollars); and *tongyuan* was often replaced by *dayang*. Sometimes, issuers had to change the name of the shop or company: for example, if the owner sold his business, or merged with another business. However, the Tongcheng only overstruck the face value numerals.

The Tongcheng 200-cash tallies were overstruck by punching the character *yi* 壹 ('one') over the character *er* 貳 ('two'), thus reducing the face value by half. To match the shape of the 100-cash tallies, the head of the overstruck 200-cash tallies was cut and made concave. In addition, a notch was made on the left hand side, at the level of the overstruck character. The precise date of this operation is not known, but the overstruck 200-cash tallies dated 1894 provide a *terminus post quem*, and indicate that the overstriking must have taken place in 1894–5.

Notches were also made in the original 100-cash tallies. But the notch was made on the right hand side of the tallies at the level of the character *yi* 壹 to distinguish between the original 100-cash and reformed 100-cash tallies. Thus, we find five different types of 100-cash tallies: the original issue in *zhiqian*, the original issue in *zhiqian* with a notch to the right, the original issue in *zukaqian* with a notch to the right (implies an original issue without a notch), and overstruck tallies with and without a notch.

Having studied the bamboo tallies in seven collections,⁵ I have noted eight different types of bamboo tallies issued by

the Tongcheng Company according to the location and face value (Thierry, 2022, Nanhetai, no. 120; Dingsheng, no. 22 and Yuanmaozheng, no. 305; see table 1). Examples of these eight different types (A–D) are illustrated here.

A Tallies in *zhiqian* 制錢 (100 cash)

1 (Aa) Concave head, without side notch

Obv. 制錢壹伯文 *zhiqian yibai wen* ['100 legal cash']; 通成 *Tongcheng* [Tongcheng]

Rev. [ink] 吉字第 [...] 號 *ji zi di . . . hao* [date, serial character *Ji*, and number]; 吉利橋南 *Jiliqiao nan* [south of Jili Bridge (shop)]

Sides [ink] (left) 失去不掛 *shi qu bu gua* ('If lost, no refund'); (right) 南貨店 *nanhuodian* ('southern goods shop')

Height 82.4 mm (wxzB72)

2 (Aa) Concave head, with notch on right hand side

Obv. 制錢壹伯文 *zhiqian yibai wen* ['100 legal cash']; 通成 *Tongcheng* [Tongcheng]

Rev. [ink] date, serial character and number; 吉利橋南 *Jiliqiao nan* ['south of Jili Bridge' (shop)]

Sides [ink] (left) *shi qu bu gua* ('If lost, no refund'); (right) 南貨店 *nanhuodian* ('southern goods shop')

Height 81.2 mm. (wxzB69)

B–C Tallies in *zukaqian* 足卡錢 (100, 200 cash)

3 (Bb) Concave head, notch on right hand side

Obv. 足卡錢壹伯文 (note the simplified *yi*) *zukaqian yibai wen* ['100 legal cash']; 通成 *Tongcheng* [Tongcheng]

Rev. [ink] date, serial character and number; 吉利橋南貨店 *Jiliqiao nanhuodian* ['Jili Bridge southern goods shop', i.e. Yangyu lane shop]

Height 92.3 mm. (wxzB61)

This type probably exists without a notch.

4 (Ca) – Flat head, without notch

Obv. 足卡錢貳伯文 *zukaqian erbai wen* ['200 legal cash']; 通成 *Tongcheng* [Tongcheng]

Rev. [ink] date, serial character and number; 吉利橋南 *Jiliqiao nan* ['south of the Jili Bridge' (shop)]

Sides [ink] (left) 失去不卜 *shi qu bu gua* ('If lost, no refund'); (right) 南貨店 *nanhuodian* ('southern goods shop')

Height 82.3 mm. (wxzB62)

5 (Cb) Flat head, without notch

Obv. 足卡錢貳伯文 *zukaqian erbai wen* ['200 legal cash']; 通成 *Tongcheng* [Tongcheng]

Rev. [ink] serial character and number; 吉利橋南貨店 *Jiliqiao nanhuodian* ['Jili Bridge southern goods shop', i.e. Yangyu lane shop]

Sides date, (left) 失去不卜 *shi qu bu gua* ('If lost, no refund'); (right) 養育巷南 *Yangyuxiang nan* ['Yangyu lane south' (shop)]

Height 88 mm (Yu Jun collection, 18)

⁵ Yu Yantang questioned the exact location of the Jiliqiao bridge, because he found another Jiliqiao Bridge outside the walls of the city (Yu Yantang, *op. cit.*, 48). The mention of Yangyuxiang street on some tallies solves the question.



3 Reformed tallies in zukaqian (100 cash)

6 (Da) Concave head, notch on left hand side

Obv. 足卡錢[壹]伯文 *zukaqian (yi)bai wen* ['100 legal cash']; 通成 *Tongcheng* [Tongcheng]

Rev. [ink] date, serial character and number; 吉利橋南 *Jiliqiao nan* ['south of the Jili Bridge' (shop)]

Sides: (right) 失去 *shì qū* ['if lost . . .']; (left) 不掛 *bù guā* [. . . no refund']

Height 83 mm. (wxzB68)

7 (Da) Concave head, without notch

Obv. 100 wen, 足卡錢[壹]伯文 *zukaqian (yi)bai wen* ['100 legal cash']; 通成 *Tongcheng* [Tongcheng]

Rev. [ink] date, serial character and number; 吉利橋南 *Jiliqiao nan* ['south of the Jili Bridge' (shop)]

Sides [ink] (left) 失去不卜 *shì qū bù guā* ['If lost, no refund']

Height 81.6 mm. (wxzB60)

8 (Da) Concave head, notch on the right hand side

Obv. 足卡錢[壹]伯文 *zukaqian (yi)bai wen* [100 legal cash]; 通成 *Tongcheng* [Tongcheng]

Rev. [ink] date, serial character and number; 吉利橋南 *Jiliqiao nan* ['south of the Jili Bridge' (shop)]

(Yu Jun collection, 1).

9 (Db) – Concave head, notch on right hand side

Obv. 足卡錢[壹]伯文 *zukaqian (yi)bai wen* ['100 legal cash']; 通成 *Tongcheng* [Tongcheng]

Rev. [ink] date, serial character and number; 吉利橋南貨店 *Jiliqiao nanhuodian* ['Jili Bridge southern goods shop', i.e. Yangyu lane shop]

(Yu Yantang 1995, 186).

10 (Dc) – Concave head, notch on left hand side.

Obv. 足卡錢[壹]伯文 *zukaqian (yi)bai wen* ['100 legal cash']; 通成 *Tongcheng* [Tongcheng]



Rev. [ink], date, serial character and number; 吉利橋面
Jiliqiao mian [(shop) 'facing Jili Bridge']
 Sides: (right) 失去 *shī qu* ['if lost. . .']; (left) 不掛 *bu gua*
 (. . .no refund').
 Height 83.5 mm. (wxzB58)

Volume of issues and capital

Why did the Tongcheng Company debase its 200 wen tallies? We have no information either from local oral tradition or documentation. The answer is likely to be found in the monetary context of the fall of the value of silver and the correlative rise in the value of the copper. Between 1884 and 1894, silver lost more than 9 per cent of its value versus cash coins.⁶

The volume of bamboo tallies issued by the Tongcheng Company can be estimated from the serial numbers written on the tallies. On the 100-cash tallies with the serial character *Ji*, the smallest numeral I have recorded is no. 915 and the highest is no. 2,241. For the 200-cash tallies with the serial character *Li*, I recorded numbers from no. 4 to no. 3,040. So, we can safely say that more than 2,000 100-cash tallies and more than 3,000 200-cash tallies were issued. The highest numbers recorded (2,241 x 100-cash and 3,040 x 200-cash) gives a total face value of 832,100 cash, which corresponds to about 562 taels (*liang* 兩) of silver (about 20.8 kg), i.e. eleven ingots of 50 taels (*liang*). That represents a very modest amount of capital, in fact, not much more than the legal minimum required to open a shop or company, which was 500,000 cash.

Conclusion

Bamboo tallies are an example of the suppleness of the traditional currency system in China. Coins are well suited to being a general equivalent (measure of value) and a means of exchange. But, under Western pressure, the role of general equivalent shifted from cash coins to silver and in the 19th century copper coins completely lost this role and served only as a means of exchange. One of the essential qualities of a means

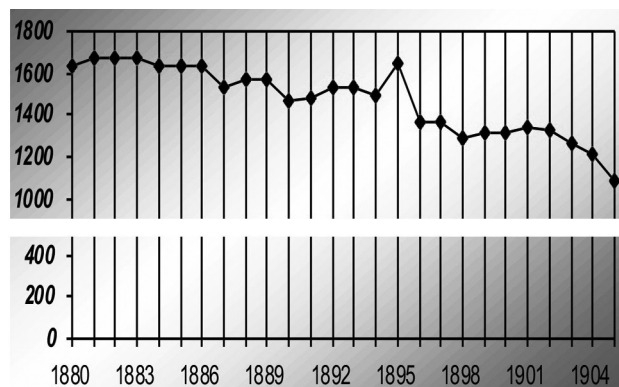


Figure 2 Evolution of the fall of silver vs cash coins (from Peng Xinwei)

of exchange, and probably one of the most important qualities in China, is their 'commodity', ie, their convenience. Coins are described with vocabulary such as *bian* 便 'practical', *yi* 易 'convenient', *yi* 宜 'appropriate', and their antonyms: *bu bian* 不便 'impractical' and *nanyong* 難用 'difficult to use'. This concept courses through all memorials, discussions and reports relating to money, like water running through land. In the second half of the nineteenth century, the situation in the south of Jiangsu province in terms of currency supply and monetary circulation needed a local solution for daily exchange: street notes and bamboo tallies were issued to alleviate the temporary scarcity of copper cash. Bamboo tallies had all the required qualities: they were made in an abundant and cheap material, in a convenient size, appropriate weight and practical shape. For more than half a century, bamboo tallies served as low-value money objects among the local population.

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- François Thierry spent his career at the Cabinet des Médailles of the French National Library and was awarded the Medal of the Royal Numismatic Society (2006). His recent publications include *Les Monnaies de la Chine ancienne* (Paris, 2017) and *Amulettes et talismans de la Chine ancienne* (Paris, 2021).

6 Peng Xinwei (1958).

Cataloguing the Private Cash of Ancient Annam

François Joyaux

Abstract In Annam, privately made coins were often a very important part of the money supply, especially in the seventeenth and eighteenth centuries. It is difficult to date these private coins, and distinguishing between private coinage and counterfeiting is almost impossible. Cataloguing is thus very difficult. This article describes a forthcoming catalogue in which as many examples as the authors could find are listed, including coins in lead and tin so far rarely studied. The classification is alphabetical, by the first letter of the era name, the *nianhao* or pseudo-*nianhao*, as transcribed in Chinese using *pinyin*. For each *nianhao*, the currencies are classified by types according to five criteria, the obverse legend, the metal, the script style, the direction of reading of the legend and the module and weight. The catalogue brings together 203 *nianhao* or pseudo-*nianhao*. The combination of these 203 *nianhao* or pseudo-*nianhao* and the five criteria defining each type leads to a total of 521 different types.¹

In former Annam² the money supply in circulation has always been very mixed. Until the tenth century, it was very small and exclusively made up of Chinese coins, the country being integrated into the empire of China. Indeed, it was only from its independence, during the Đinh (丁) dynasty, 968–80, that Annam began to cast its own currencies, under the reign of Bộ Lĩnh: these are the famous *Đại Bình hưng bảo* 太平興寶, ‘flourishing currencies of the Great Peace’.

However, the issues of purely Annamese cash did not in any way put an end to the circulation of Chinese coins, as both mingled within the money supply. Not only did the Annamese coins never drive out the Chinese coins, but the latter were even, at least until the thirteenth century, the most numerous in circulation. To illustrate this point, the case of the Hanoi hippodrome hoard discovered in 1899, which dates from the end of the twelfth century is generally cited: of the 22,962 identifiable coins, only 37 were Annamese, all the others being Chinese. This overwhelming preponderance of Chinese currency in the monetary mass circulating in Annam can be explained all the better because Annamese monetary issues, during the Lý 李 dynasty (1010–1225), were very limited. They also remained so, from the thirteenth to the beginning of the fifteenth century, during the Trần 陳 (1225–1400) and

Hồ 胡 (1400–1407) dynasties. It will be necessary to wait for the later Lê 黎 dynasty (1428–1789) for Annamese emissions to become more abundant. This explains why throughout this period, Chinese currency was used to compensate for the paucity of Annamese issues.

A permanent lack of money

This massive use of official Chinese currency nevertheless proved insufficient from the Trần dynasty onwards for three main reasons. On the one hand, since the flight of good Chinese currency to Annam was very unfavorable to the Chinese economy, the Chinese tried to limit it. On the other hand, the official currency, especially under the Trần, remained insufficient for the requirements of trade, so that the Annamese state was never able to fully assume its monetary sovereignty. Finally, the official Chinese and Annamese currencies, despite their low purchasing power, nevertheless had values that were often too high for the simplest needs of the peasant population. Thus many factors favoured the development of a third kind of money: low-value private coinage.

Unlike the Chinese empire, Annam under the pressure of these limitations was rarely able to establish an acknowledged state monopoly over the production of coinage, at least until the beginning of the nineteenth century. It was very often forced to allow the circulation of privately issued coins, at best by controlling them, but most often by tolerating them. It was unable to repress private coinage, and even occasionally treated them favourably. In this way there was no clear distinction in Annam between private coinage and counterfeit coinage.

The vast majority of private Annamese cash are copies of Chinese coins, in particular those of the Song 宋 dynasty (960–1279): a large number of them can be found in this catalogue. Nevertheless, some are copies of official Annamese cash. There are also very many others that bear invented legends that had no single prototype. These copies had small modules and were mainly cast in copper alloys, but also examples were made in zinc, tin or lead alloys.

Some of these private currencies are very old. F. Thierry, in his *Catalogue des monnaies vietnamiennes* (1987) based on the Bibliothèque nationale de France collection, accordingly proposes to date some during the lengthy period between the eleventh and sixteenth centuries. However, it seems that it was only under the Trần dynasty (1225–1400) that the production of these private coins began. Indeed, it was a period during which the country was moving from a purely agricultural economy to a more advanced economy in which more monetised urban activity appeared. The official power of the time only issued its currency in small quantities – Trần coins are generally very rare – so the need arose for the additional cash that private workshops produced. Subsequently during the Chinese occupation (1400–28) and during the Later Lê dynasty (1428–1527), this practice continued.

From the second half of the sixteenth century until the end of the eighteenth century, the unity of the empire of Annam was broken, giving rise to the Trịnh 鄭 family (1573–1788) dominating the North and the Nguyễn 阮 family (1558–1778)

¹ A French translation of this talk with illustrations has been published in *Numismatique Asiatique* (43, September 2022).

² The country now known as Vietnam has had many names over the centuries. One of these designations is ‘Annam’ (安南), which means ‘south in peace’, a designation of Chinese origin emphasizing the character of vassalage of the country with regard to the Chinese empire. We have kept this name which is traditional in numismatics, as opposed to the term ‘Vietnam’ which applies rather to the contemporary period. It is moreover the term ‘Annam’ which continues to be used by numismatists in the Far East, in particular in catalogues (notably Japanese) and in the coin trade, including in Vietnam where merchants are often Chinese people. During the French colonial period, the term ‘Annam’ designated the central part of the country, where Huế is located, the imperial capital, as opposed to Tonkin (North) and Cochinchina (South): it is not in this sense that the name ‘Annam’ is used here.

dominating the South. There followed very long periods of internal war, and consequently, great needs for money to pay the armies. To this end, the two camps issued large quantities of currency, as seen in the plethora of issues for the mineral-rich North during the Vĩnh Thọ 永壽 era (1658–61) and, a century later, during the Cảnh Hưng 景興 era. (1740–76). The situation was further complicated with the Tây Sơn rebellion from 1773. One of the rebel brothers, Nguyễn Huệ, also issued large quantities of money, the *Quang Trung thông bảo* 光中通寶 (1788–92). Even when these official coins were abundant, they were nonetheless insufficient and private coinage proliferated. In the North, due to the presence of the ore, private workshops in the seventeenth and eighteenth centuries cast countless small coins of poor quality (*tiền gián* 錢間), especially in copper and alloys, but also in zinc, which largely passed to the South where the monetary shortage was even more serious. In the South, in the stronghold of the Nguyễn, to compensate for the insufficiency of the official currency, private coinage also developed in large volumes, but essentially in zinc. These southern coins in zinc constitute, as we will see, a very considerable proportion of the private Annamese coinage listed in this catalogue. In fact, the vast majority of these private coins (especially those found in collections or contemporary commerce) date from this period of division during the sixteenth to eighteenth centuries.

Private and counterfeit

Private coins are therefore those that have been cast in workshops that are not directly under the public authority, whether with or without permission from the state. Most of the time, these workshops were probably authorized or at least tolerated, as there was a shortage of money. The production of private coinage could become counterfeiting if there was a formal ban on private coinage at a given period, but there are very few official sources mentioning such restrictions. Even if such bans took place, there would still be uncertainty about the status of the unofficial coins, because we almost never know when they were cast. It is thus very difficult to link the periods of prohibition and the periods of casting, so it is difficult to know whether counterfeiting took place. For example, we know that during the second reign of Emperor Thần Tông (1649–62), private casting was prohibited: but it is not known which private coins were cast during these 13 years, and could therefore be considered counterfeit. It is therefore highly probable, perhaps certain, that included in this so-called private coinage, that is to say authorized or tolerated by the state, there is coinage which, *stricto sensu*, should be considered as counterfeit. The major drawback of this situation for this catalogue is obviously to eliminate the category of counterfeit (in spite of many of the coins being seen at the time of production as counterfeit) to promote a single category, called ‘private coinage’, even though in reality these two categories should not be confused.

For the copies of Chinese coins from the beginning of the Manchu dynasty (from 1644), in particular, it is sometimes very difficult to distinguish the Annamese copies from the Chinese counterfeiting. In some cases, it is even almost impossible to distinguish between the Annamese copies and the official Chinese coinage as the latter, in certain periods of great monetary disorder, could be degenerated.

As an example we can consider the cash from the Wan Li era (1573–1620), under the Ming dynasty. While the vast majority of them measure between 23 and 25 millimetres and weigh between 3 and 5 grams, there are some that measure only 22.4 millimetres and weigh around 2.3 grams: these are generally considered as Annamese private copies, but some authors classify them among the official Chinese coins, and to tell the truth, it is impossible to decide between them (Thierry 2004, no. 363). In the Valley of Amur, on the Sino-Russian border, there are reports of finds of copies of Chinese *Chong Zhen tong bao* coins whose characteristics are quite similar to those of the Annamese copies using this *nianhao* (Ivlev 2020). Many other similar examples could be cited. If the fact may seem embarrassing from our Western point of view, attached as we are to rigorous classifications, it was hardly so in the monetary reality of former Annam where these currencies – official, private authorized, private tolerated, false, official Chinese, fake Chinese, even Japanese or other – all circulated together, even if their use in the economy required them to be checked and sometimes removed from circulation if they were too light.

Finally, we should add that Annam was not the only country in the Far East where private coins were issued, in particular copies of Chinese coins, especially those of the Song dynasty. They were also produced, especially for the needs of foreign trade, in Japan (*bitasen*, coins of Kyushu, Nagasaki) and in certain islands of South East Asia (coins of Palembang and the *pis bolong* of Bali). Those of Japan, in particular, were able to mingle with the Annamese money supply. Both normally have enough characteristics to prevent their being confused with Annamese private coins. In some cases, however, confusion is possible. At the beginning of each section in the catalogue, this risk of confusion is noted and illustrations are inserted so as to allow comparisons and, as far as possible, to avoid these errors.

Cataloguing private Annamese cash

Clearly, then, private Annamese cash are extremely difficult to catalogue. The Japanese catalogues, which are the most valuable for the study of these coins, stick to classifications by style (手, Jap. *shu/te*, Chi. *shou*). Thus, for coin A, the Japanese catalogue will consider that it is of the same style as coin B and will group them together within the same set. For example, coins resembling the *An Fa yuan bao* (Viet: *An Pháp nguyên bảo*) coinage, which is the ‘head of group’, will be listed in the ‘*An Fa* style’ coin group (安法手 *Anho shu* in Japanese).

The information is not without interest because it makes it possible to reconcile currencies which may have the same origin or date from the same period; but this information is never certain, because the comparison of coin A could have been made with a coin B which is earlier or later, although of the same style. Let us take the example of the *Ning Min tong bao* / *Ninh Dân thông bảo* coinage: after having dated it to the seventeenth century because of its style (Thierry 1987, 76, no. 1136) now dates it from 1739–41 for quite convincing historical reasons (Thierry 2010). This shows how insecure this classification method is. We therefore remain in uncertainty, even with regard to this relative chronology. The style, generally based on the calligraphy of the characters, is often difficult to identify for the Western numismatist, not only because the styles of calligraphy are numerous, but also

because very often there are delicate intermediate styles to distinguish, for example, semi-seal script styles, heterodox script styles, etc. The most important Japanese catalogue for these coins is that of Miura Gosen (1963) which distinguishes 47 groups. Finally, note that in this classification system, coins with the same legend can be classified, according to their style, in several different groups. For example, the *An Fa yuan bao* coin mentioned above, itself the 'head' of group 15 of Miura Gosen, also appears in group 21 of *Xiang Song yuan bao* coins, or in group 30 of *Yuan Long thong bao* coins, etc. This means that the system is not simple. Finally, most works and articles dealing with the subject are content to classify these coins into three categories according to whether their *nianhao* is Chinese, Annamese or invented. The National Museum of Vietnamese History itself (ex Musée Louis Finot), in Hanoi, which holds the national numismatic collection of Vietnam (ex collection of the French School of the Far East), for its part, classifies these private coins into four categories: copies of Chinese coins, copies of Annamese coins, copies of Japanese coins and coins with unknown legends. This is a possibility, but it in no way solves the numismatic and historical problems posed by this coinage, in particular that of its chronology.

Chronology uncertainties

These classification difficulties result, above all, from the impossibility of dating these coins, sometimes even very approximately. Attempts at dating in the catalogue of the BNF show this well (Thierry 2014): Copies of Chinese coins that were dated from the tenth to the fourteenth centuries in it are dated within an even wider range in the 'Supplement' (Thierry 2001), going from the eleventh to the sixteenth century. A coin such as the *Tian Fu yuan bao* / *Thiên Phù nguyên bảo* 天符元寶, 'primordial coin of Thiên Phù' which was dated to the second half of the fourteenth century in the 2014 catalogue is now dated to the eleventh to the sixteenth centuries in the 'Supplement'. Many other examples could be cited. The uncertainties, as we can see, are considerable. It therefore clearly follows that it is not possible to organize this catalogue according to a chronological plan, even if we were content to distribute the coins according to very long periods. This is also the conclusion reached by F. Thierry himself, on his Transasiart website, says,

L'attribution de ces monnaies à tel ou tel est très difficile. Plusieurs chercheurs, comme Toda, Lacroix, Okudaira en particulier, ont voulu absolument attribuer telle ou telle monnaie à tel ou tel souverain ou à tel ou tel rebelle; en général, aucun argument historique, numismatique ou archéologique n'est fourni à l'appui de ces hypothèses. [The attribution of these currencies to such and such is very difficult. Several researchers, like in particular, absolutely wanted to attribute such or such currency to such or such sovereign or to such or such rebel; in general, no historical, numismatic or archaeological argument is provided in support of these hypotheses. http://www.transasiart.com/Numismatique/numismatique_vietnam/tiengian/nvntiengian.htm]

However, he considered that a certain chronological classification was possible from the metallic composition of these coins, noting '*On peut cependant, en se fondant sur le*

métal établir une chronologie relative.' (We can, however, based on the metal, establish a relative chronology.) This is not our opinion, because these coins, cast outside any public regulation, have too random a composition, often resulting from the melting of the most diverse old coins or recovered objects, which hardly allows specific conclusions to be drawn.

Classification by *nianhao*

It has therefore been decided to present these private Annamese coins, neither by style nor by period, but only in the alphabetical order of the Chinese pinyin of their *nianhao*.

The *nianhao* 年號 (*niên hiệu* in Vietnamese), sometimes called 'reign number' in old French works, or 'reign title' in English works, is the official name of a reign or a part of reign. The origin of this tradition is Chinese; it was rigorously copied in ancient Annam. The *nianhao* is made up of two characters which are the first two of the four characters which constitute the legend of any Chinese or Annamese currency (the other two designating the nature of the currency: current, primordial, holy, etc.) Thus on the official coinage, Chinese or Annamese, the *nianhao* makes it possible to date coins approximately.

But with the private mints this is not the case, because the Annamese private coin makers, to avoid falling under the blow of serious penalties for forgery which could go as far as the death penalty, systematically avoided using the contemporary *nianhao*, but instead took up old Chinese or Annamese *nianhao*, or even invented some that were completely fictitious ('recomposed' *nianhao*). This is where all the difficulty of the chronological classification of these private currencies stems from.

We have therefore chosen to classify them according to their *nianhao*, or more exactly according to the alphabetical order of the contemporary Chinese transcription (known as *pinyin*) of their *nianhao* because the majority of these *nianhao* are indeed Chinese, rather than Annamese, Japanese or recomposed. There is at the end of the catalogue a table of correspondence between these transcriptions in *pinyin* and those in Wade-Giles, which is an obsolete English system often used in old works. In addition, each *nianhao* transcribed in *pinyin* is followed by its transcription in Vietnamese.

This presentation in alphabetical order is simpler, but has obvious methodological drawbacks. By bringing together under the same number types of coins that are sometimes very different in terms of their script style, their metals, their modules, their reverses, etc., we run the risk of obscuring the historical aspect of this private coinage. This results from the difficulties of dating already outlined.

Note that we have chosen an alphabetical classification according to the Chinese transcription and not the Vietnamese transcription, although these coins are indeed Annamese, for three main reasons.

- 1 The majority of the *nianhao* of these coins, when they are authentic, not reconstructed, are Chinese and not Annamese.
- 2 More numismatists know Chinese than know Vietnamese.
- 3 Finally, the market is largely run by Chinese, whether from China or Vietnam, who market these currencies, either in Chinese characters or in Chinese transcription.

With regard to the particular case of so-called ‘recomposed’ *nianhao*, see the website run by F. Thierry which perfectly explains the process by which these *nianhao* are recomposed, based on a faulty reading of authentic *nianhao* (<http://www.transasiart.com/Numismatique/numismatique.htm>).

Type definition

Each *nianhao* generally corresponds to several types, depending on the meaning given to the word ‘type’ in this catalogue. The different types are based on one or more of the following criteria.

- the legend of the currency carried on the obverse (*nianhao*),
- the nature of the metal,
- the script style and calligraphy of the legend on the obverse,
- the direction in which the legend is read (crosswise or in circle).
- by the module and the weight

All the other characteristics of a coin, in particular the differences sometimes appearing on the reverse, are considered in this catalogue simply as varieties, the most important and the most frequent being indicated.

Legend The first criterion defining a type is its legend. This is made up of the four characters appearing on the obverse, above and below, to the right and to the left of the central hole. Generally, the two characters above and below are the *nianhao*, that is to say the ‘cipher’ (the appellation) of the reign; the other two, on the right and on the left, indicate the nature of the currency. On the Annamese copies as on the models from which they are inspired, the character ‘currency’ (Ch: 寶 *bao*; Viet: *bảo*) appearing on the left, is always preceded by a qualifier, appearing on the right: most often, this qualifier is ‘current’ (Ch: 通 *tong*; Viet: *thông*) – it is then a ‘common currency’ – or ‘primordial’ (Ch: 元 *yuan*; Viet: *nguyên*) – it is then of a ‘primary currency’. There are a few other qualifiers, rarer, which will be indicated when they appear. Each of these qualifiers, resulting in a different name for the coin, is considered, in this catalog, as being at the origin of a particular type. These different designations do not imply any difference in monetary value, neither for the models, nor for their Annamese private copies.

Metal The second criterion defining a type is the metal. Indeed, in this catalogue, the differences of metal are considered to be at the origin of different types.

In Chinese, the character 銅 *tong* means both copper, brass and bronze. Also, in the Japanese catalogues which are the most adequate for these private Annamese coins, the indication of the metal by the Chinese character 銅 *tong* is in fact very imprecise.

Among the metals that concern this type of coinage, only zinc is precisely indicated, by the term 白鉛 *bai qian* (鉛 *qian* itself designating lead). Moreover, while for the official currencies, the content of the different metals constituting the alloy was more or less precisely defined, with regard to the private currencies, this was by no means the case. Finally, many of these private coins were cast from scrap metals, so they are made of very variable alloys. These various considerations have

led us to unite under the single term ‘copper’, in the Chinese and Japanese manner, all copper alloys, including bronze and brass (*huang tong* 黃銅, ‘yellow copper’, more rarely *tou* 銅). Even this simplification does not solve all classification problems, because it is not uncommon to find in a series of so-called ‘copper’ coins, a specimen whose analysis shows, for example, more than 50 per cent zinc.

On the other hand, zinc is considered separately, giving rise to particular types, especially since a very large part of this private coinage is in zinc. There are a few rare cases of private coins in various other alloys in which lead or tin are dominant: they will be indicated.

Calligraphy. The third criterion defining a type is the calligraphy of the legend, or simply the style of script used. For the Chinese, and after them, for the Annamites and other peoples of the Sinicized world, the calligraphic style of a coin is an essential criterion, to such an extent, as we have recalled, that the Chinese or Japanese catalogues, old and contemporaries, very often classify coins by calligraphic styles. These styles are numerous and each have countless variations. For simplicity, we only retain the following four calligraphies (*shu* 書) in this catalogue.

- Seal script or *zhuan shu* 篆書, more archaic, but frequent on coins from the Chinese Song dynasty (960-1279) which served as models for private Annamese copies.
- Official script or *li shu* 隸書, which derives from the previous one, but simplifying it, making it an intermediate style with the next.
- Regular script or *kai shu* 楷書, the most frequent since the Song dynasty, but which has many variants found on coins.
- Cursive script or *xing shu* 行書, widely used on coins from the Song dynasty, which served as models for private Annamese copies.

There are also coins whose script styles are called ‘mixed’ (*za shu* 雜書), that is to say that the legend is written with different script styles. In this case, the characters which are written in a different style are specified and this constitutes, in this catalogue, a type in itself. Finally, some characters can be written in a completely barbaric way – the engravers did not necessarily know how to write – and in this case, we speak of heterodox script (*yi shu* 異書), which will be indicated. Within each style of calligraphy (regular, cursive, seal, etc.), the boundary between orthodox and heterodox styles is very often difficult to specify, hence certain classifications on the basis of calligraphy can always be disputed. Other styles or variants of the previous ones exist, but are more rarely found on the coins catalogued here: they will be indicated where appropriate.

It will be remembered that these currencies are of private origin, that is to say unregulated. As a result, there are, for a given type, a multitude of possible variations of script style. Therefore, just because a particular variation is not featured in the description of a type, does not mean it should be excluded from that type.

Reading direction The fourth criterion defining a type is the reading direction of its legend. Most often the four characters

of the legend are read crosswise (*duidu* 對讀, 'opposite reading'), that is to say up / down / right / left. In this case, as indicated above, the first two characters (top / bottom) correspond to the *nianhao*, while the other two (right / left) correspond to the nature of the currency (current, primordial, etc.). But there are also many coins whose legend is read in a circular direction (*xuandu* 旋讀, 'reading by turning') clockwise (up / right / down / left). In this case, the *nianhao* corresponds to the two characters on the top and on the right, while the nature of the currency is indicated by the two characters on the bottom and on the left. Consequently, the same four characters to be read crosswise will correspond to a certain type A, while when they have to be read in circle, they will correspond to another type B. Quite exceptional are the coins whose legend reads counter-clockwise. It results from this situation that in certain cases, the characters having been chosen in a perfectly random way, one does not know in which direction to read the currency: we then indicate the direction retained, for example crosswise, while mentioning the possibility of another, for example, circular reading.

Module and weight The fifth criterion defining a type is its greater or lesser module. This last criterion is difficult to specify, but it is nevertheless decisive. The module of coins of value 1 (a cash) are generally with a diameter between 23 and 25 millimetres. Moreover, with regard to Annamese private copies, there are many coins whose module is around 20–22 millimetres in diameter (which in English language catalogues can be called 'diminutive coins' for the larger examples, and 'floaters' for the smallest). In this catalogue, the module of the first will be referred to as 'normal module', and that of the seconds as 'small module'. These two types of currencies are more or less clearly differentiated. Weights are generally based on modules, but exceptions are common. The difficulty results from the fact that there are very many examples with intermediate sized modules which complicate the classification: a coin may be rather heavy but 'small', and vice versa. Thus, deciding whether to designate the module as 'normal' or 'small' needs to take account of its weight. For example a coin with an intermediate module but relatively light weight would be classified as having a 'small module', but with a relatively heavy weight as a 'normal module'.

In this catalogue the module diameters are indicated in millimetres, to the nearest tenth (greater precision being superfluous given the irregularity of the modules of these coins). The modules indicated are all modules found in collections or identified in catalogues; we can therefore find modules lower than the smallest modules mentioned and modules higher than the largest modules mentioned. The same goes for the weights (indicated in grams, to the nearest hundredth). Unfortunately, there are many types for which we have not been able to observe either module or weight.

A large part of the extreme weights and modules indicated in this catalogue results from the study that we carried out on two French collections, which included hundreds of private Annamese coins, namely that of the Fathers of Pirey (see bibliography below) and that of military doctor Albert Sallet.

Additional points

The following points are noted for each of the types.

Obverse and reverse varieties It can be seen from what precedes regarding the criteria for defining types that in this catalogue, with the exception of the legend, the metal, the calligraphy, the reading direction and the module, all the differences which may affect a coin are considered as simple varieties, such as differences in the size of the central hole, in the dimensions of the characters, the presence of a variation on the obverse or on the reverse, of a character on the reverse, etc. The typical case is that of zinc copies which generally have very many variations on the reverse, and which are nevertheless considered, in this catalogue, as of the same type when there is unity of legend, metal, calligraphy, reading direction and module.

Period or reign We have underlined the virtual impossibility of precisely dating most of the Annamese private coins. However, in some particular cases, it is possible to determine a probable casting period, or even a precise reign. The corresponding bibliography is then indicated. Moreover, some of these private coins are found in old catalogues, most often Japanese, which already constitutes a significant chronological indication. Craig Greenbaum, in particular, has noted many cases, which are also indicated in this section.

Furthermore, this catalogue excludes copies of Chinese and Annamese coins from the nineteenth century. Indeed, the Nguyễn 阮 dynasty (1802–1945) always refused the circulation of old private currencies and constantly reaffirmed the state's monopoly in terms of coinage (even if there were sometimes significant relaxations in this rule). All Annamite copies of nineteenth-century coins are therefore, by definition, to be classified as counterfeit coinage and not private coinage.

Bibliographic references The bibliographical sources relating to Annamese private coins are not very numerous. This catalogue includes a detailed critique and list of sources available, from ancient Chinese books to recent and contemporary works.

Rarity

The Japanese catalogues mentioned above give indices of rarity that we have reproduced. The indices proposed by Miura Gosen (from 1 for the rarest to 10) are those of a fairly abundant Japanese market in private Annamese currencies; rarity is often greater in the Western market. Tominaga Masayoshi's rarity indices range from 1 (the rarest) to 20. In addition, we have proposed our own indices (from 1 for the rarest, to 10 for the most common): they are always placed after indices of previous authors, in the form J: x/10. However, it is quite obvious that these rarity indices are very approximate. They are based on the occurrence of each type in collections and sales, as well as on prices in Japan, where the market is most abundant. The greater or lesser number of these coins in the collections of the de Pireys and Dr. Albert Sallet, already mentioned, also served us as a criterion.

Note that these rarity indices cannot be fixed. They inevitably evolve according to the finds of coins, which are frequent in contemporary Vietnam. This is how private lead Annamese copies were rare, but since around 2015, discoveries have brought to light large quantities which will automatically lead to a modification of their rarity index.

Finally, it should be noted that the rarity index and price are two very different concepts. There is obviously a link between the two, but for these private currencies quality of which is often very defective, the quality multiplier is very high, ranging from 1 to 10, or even more. Moreover, it should not be forgotten that the prices reached at public sales are prices offered, by definition, only by a single bidder, which are therefore higher than the average market prices.

A few figures

The following catalogue counts 203 *nianhao* or pseudo-*nianhao* (recomposed *nianhao*). This number can be compared to that of the *nianhao* of the official currencies as it appears in Barker's catalogue (*The Historical Cash Coins of Viet Nam*), which lists 98 for the entire historical period prior to the Nguyen dynasty, during which Vietnam produced money (970–1802). This means that the population, during these eight centuries, used private currencies comprising nearly twice as many *nianhao* and pseudo-*nianhao* (minus the *nianhao* of the official currencies included in the private currencies) than did the currency official.

We can also compare this number with the 203 *nianhao* or pseudo-*nianhao* appearing in this catalogue, with the 176 *nianhao* or pseudo-*nianhao* appearing in that of Miura Gosen, considered the most complete. Behind the 203 *nianhao* and pseudo-*nianhao* listed, there are 521 different types, as defined above (legend, metal, calligraphy, reading direction and module weight). To go further into detail, i.e. to list the varieties within each type, would require considerable work, the number of such varieties amounting to several thousand. We would probably be quite far from the number of 708 varieties listed by Miura Gosen.

Finally, the 203 *nianhao* or pseudo-*nianhao* and the 521 types we have reached are distributed as follows:

Annamese: 30, i.e. 14.6 per cent
 Chinese: 62, i.e.: 30.4 per cent
 Recomposed: 92, i.e. 45.2 per cent
 Miscellaneous: 19, or 9.8 per cent

From these statistics, it therefore follows that it was the coins with *nianhao*, neither Annamese nor Chinese, but recomposed, which were the most numerous (45.2 per cent). We can think that this partly resulted from the desire to avoid

any copying of existing Annamese coins, which could have given rise to an accusation of counterfeiting. Next came the Chinese *nianhao* coins (30.4 per cent), the copy of which could not be accused of counterfeiting, since they were foreign. These preceded the Annamese *nianhao* coins (14.6 per cent) which risked falling under the accusation of counterfeiting and whose models were less numerous in current circulation than the models of Chinese *nianhao* coins.

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Obviously, we do not claim to present a catalogue that is error-free and exhaustive: errors and omissions will be regularly listed in the *Numismatique Asiatique* review. We also invite interested numismatists to inform us of errors and omissions (numis.asia@orange.fr), being well aware that this catalogue can only be the modest beginning of further research.

Acknowledgement

We thank our friend Craig Greenbaum for the help he has given us, especially for the examination of the Japanese catalogues.

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Fresh Light on the Copper Coins of the Vemakis

Amiteshwar Jha

Abstract The present paper brings to light, for the first time, large number of copper coins of the Vemakis, a tribal/republican state in the hilly regions of north India in the post-Mauryan period. It shows that the Vemakis, after an initial silver issue, also struck coins in copper in good numbers. These copper coins, as per our current knowledge, were issued by at least four rulers and, judging by the number of coins now known and more particularly by the number of dies employed for making these coins, were quite substantial in numbers though perhaps not as prolific as some other contemporary tribal copper coins of the Audumbaras, Kunindas, Yaudheyas etc. The shape, fabric and weight of these coins point to their similarity and contemporaneity with the Audumbara copper coins.

The post-Mauryan or more correctly post-second century BCE coins of north India, in contrast to the coinage of the preceding period, was predominantly issued in base metals like copper/bronze and also occasionally lead, and were localized. Only a few so-called tribal/republican states, located in the hilly regions of north India, issued silver coins in this period. But even among them only two tribes, the Kunindas and, to some extent, the Vemakis, considered in conjunction with the typologically related coins without the name of the tribe, issued silver coins in good numbers; silver coins of some other tribes are exceedingly rare and were perhaps ceremonial in nature. The Kunindas, however, issued a prolific currency in copper as well, as was the norm of the period and like the other tribal states. The Vemakis, in contrast, have hitherto been known principally by their silver coins only, their copper coinage being represented by only two or three specimens.

The question as to why did the Vemakis not issue a prolific copper currency like the other contemporary tribal states had bothered me for a long time, as I found it went against the monetary norms of the period and region concerned, and I had thought of it as an aberration. But then I got a chance to see the Hinduja Foundation Antiquity Collection, Mumbai, one of the finest collections of ancient Indian coins if we exclude the gold coins, and it contained as many as 71 copper coins of the Vemakis. It is now clear that the Vemakis, too, after an initial silver issue, did strike coins in copper in good numbers. These copper coins, on current knowledge, were issued by at least four rulers and, judging by the number of coins now known and more particularly by the number of dies employed for making these coins, were quite substantial in numbers though perhaps not as prolific as some other contemporary tribal copper coins of the Audumbaras, Kunindas, Yaudheyas, etc. The shape, fabric and weight of these coins point to their similarity and contemporaneity with the neighbouring Audumbara copper coins. This paper seeks to bring these hitherto unknown copper coins of the Vemakis to light.¹

¹ I am grateful to the authorities of the Hinduja Foundation, Mumbai, for readily making the coin images published in this paper available and permitting me to publish them. All the coin images published in this paper are Courtesy: Hinduja Foundation Antiquity Collection / Source: Hinduja Foundation Antiquity Collection.

Vemaki coins: what is known so far?

Before we discuss the copper coins it will be worthwhile to have a brief review of what is known about Vemaki coins so far.² So far only two Vemaki rulers, namely Rudravarman and Bhavavarman are known to have issued silver coins. These coins, perhaps struck on the Indo-Greek drachm standard, are extremely rare. The silver coin type is described here.

Obv. Elephant with upraised trunk (holding a parasol on Bhavavarman's coin) standing right; a straight line below; trident with battle-axe (on Bhavavarman's coin, it appears to be rising from a base shaped like a *pūrnaghata* or *stūpika*) in front; Brāhmī inscription (10) *R[ā]jñ[o] V[e]makisa Rudravarmasa (/ Bhavavarmasa) V[i]jayaka*.
Rev. Humped bull standing right; a wavy line below; lotus in front; Kharoṣṭhī inscription (4) *Raṇa Va[e]makisa Rudravarmasa (/ Bhavavarmasa) and vijayaya* below in exergue.

Typologically related to this is another group of silver coins that are much more prolific. They have been found in very good numbers. These coins have the same major motifs i.e. elephant and humped bull and the same set of ancillary symbols as on the Vemaki silver coins but without the name of the tribe, Vemaki, in the inscriptions on them. From the direction of the major motifs and on the basis of the presence or absence of ancillary symbols, and slight variations in the inscription, these coins have been grouped into several types, varieties and sub-varieties.³ The inscriptions on these coins read,

Brāhmī *Bhagavata mahadevasa* (or *māhādevasa*) and below in exergue (anti-clockwise) *rajaraja* (or *rājarāja* or *rajaraṇa* or *rājarājñah*)
Kharoṣṭhī *Bhagavata mahadevasa* and below in exergue (clockwise) *rajaraṇa*

On the basis of the word 'Mahadeva', seen on the Audumbara copper coins, many scholars have attributed these silver coins to the Audumbaras. On the other hand, because of their typological similarity with the Vemaki silver coins, some others identify them as Vemaki issues. Handa, who has discussed and analysed the various views on the affiliation of these coins, thinks that these are neither Audumbara nor Vemaki issues and that they were neither issued by a king called Mahadeva nor in the name of the god Mahadeva (Siva). He is inclined to believe that these were issued by an independent ruler named Rājarājan, who must have been a quite powerful ruler, judging by the extensive coinage, though he did not rule an extensive territory as all the known provenance of this type are from the old Kangra district.

² I have refrained from citing individual references. One can find them all along with detailed discussions and analysis in Devendra Handa's magnum opus, *Tribal Coins of Ancient India*, New Delhi, 2007.

³ These are discussed by Handa (2007) in detail in appendix 1, 221–33.

Whatever the affiliation of these coins might be, the overall typology of these silver coins leaves no doubt that these were very closely linked to the Vemaki silver coins in terms of time and space. Judging by the number of varieties and dies employed for making these coins, these were the only silver coins, apart from Kuninda silver coins, that were minted in large numbers in north India in the post-Mauryan period.

As regards the copper coins of the Vemakis, so far only two or three coins are known, all issued by a ruler named Śivaghoṣa. These coins are rectangular or square in shape but contain the same major motifs and the ancillary symbols that are seen on the silver coins. The Brāhmī inscription on these coins was correctly reconstructed by Handa as *Rājño Vemakisa Śivaghoṣasa*. The Kharoṣṭhī inscription on these coins was not clear and was seen only in traces. It is, however, seen on many coins published below. So, this is in nutshell what we know about the Vemaki coins so far. Now, let us see what new information is revealed by the copper coins, under study.

Copper coins of Vemakis

As mentioned above, the present study is based on 71 copper coins of the Vemakis in the cabinets of Hinduja Foundation Antiquity Collection. No information about the provenance of these coins is available. It is also not known whether they, or some of them, formed part of a hoard. The majority of the coins in the collection, however, showed a similar patina and there is a strong probability that a major chunk of the collection might have formed part of a hoard. Incidentally, it may be mentioned here that the late Lance Dane, in whose collection these coins were originally, and who later donated his entire collection to the Hinduja Foundation, Mumbai, always preferred to buy coins in lots from coin dealers, if and when they were available. This is amply borne out by even a fleeting analysis of the collection. So, there is a strong possibility that many of these Vemaki coins, if not all, might have come from a hoard.

All these coins are rectangular or square in shape. The die is usually bigger in size than the coin flan, and the full die is rarely accommodated on the coin. Both of these features they share with the neighbouring contemporary Audumbara copper coins. Save for some minor variations, all the coins are essentially of the same type. The general type of these coins is,

Obv. Elephant standing right holding a stalk of flower of dots in upraised trunk; a straight line below; trident with battle-axe (axe is very often not clear) in front of the elephant; a motif comprising lion and ploughshare⁴ above the elephant; Brāhmī inscription (left and top margin) *Rājño Vemakisa* followed by the name of the issuing ruler.

Rev. Humped bull standing left; a wavy line below; *nandipāda* and svastika above the bull's back; lotus in front of the feet; Kharoṣṭhī inscription (right and top margin) *Raṇa Vemakisa* followed by the name of the issuing ruler.

In addition to Śivaghoṣa, at least three more rulers, Vijayaghoṣa, Ajitaghoṣa and Rudraghoṣa, issued these coins. Among them Vijayaghoṣa seems to have been the earliest as

⁴ I am thankful to my friends Joe Cribb and Shailendra Bhandare for suggesting the correct identification of this symbol.

his coins are the most worn and heaviest, and Rudraghoṣa was perhaps the last as his coins are lighter and have cruder palaeography. The largest number of coins, however, belong to Śivaghoṣa, who perhaps had the longest reign among the four.

Vijayaghoṣa

There are five coins of this ruler in the collection. They are in varying conditions of preservation. The heaviest coin weighs 4.07 grams while the lowest weighs 2.62 grams. Although not all the motifs are visible or clear on all the coins, they all appear to be of the type described except that on the reverse perhaps only svastika is there above the bull's back. A few minor variations may, however, be seen; these are noted here.



- 1 *Obv.* The stalk of flower in the upraised trunk of the elephant is effaced as is the first part of the Brāhmī inscription in the left margin. The trident with axe in front and the motif above the elephant's back are, however, clear. The Brāhmī inscription reads . . . *k[i]sa V[i]jayaghoṣa[sa]*.

Rev. The part to the left of svastika is rubbed off and it is not clear if *nandipāda* was also there. The Kharoṣṭhī inscription reads *Raṇa [Ve]makisa* (right margin) *Vijaya* . . . (top margin).

Acc. no. 11752 2.62 g; size 21 x 14 mm



- 2 On this coin, the ancillary symbols are mostly rubbed off and only the main motifs – elephant and bull are identifiable. The Kharoṣṭhī inscription is also almost completely effaced. The Brāhmī inscription, however, is almost fully legible and reads as *[Rāj]ño Vemak[i]sa V[i]jayaghoṣa[sa]*.

Acc. no. 11777 4.07 g; size 16 x 19 mm



- 3 Here too the ancillary symbols are mostly effaced though trident and the motif above the elephant on the obverse can be made out. The Brāhmī inscription reads as . . . *Vemak[i]sa V[i]jayaghoṣa[sa]*. The Kharoṣṭhī inscription is only partially legible and reads as *..ṇa Vē.śasa*

Acc. no. 11702 2.68 g; size 13 x 17 mm



- 4 On this coin too, most of the ancillary symbols are rubbed off and even the elephant and bull are faintly seen. Inscriptions on both the sides are almost completely effaced. On the obverse, only *jaya*. . . is seen in the top margin and on the reverse *..ña Ve*. . . . can be made out in the right margin.

Acc. no. 11712 .96 g; size 15 x 17 mm



- 5 It is not clear if it is overstruck on an earlier flan or something is overstruck on it. Something which looks like Brāhmī letters are seen above the back of the elephant. The Brāhmī inscription is generally effaced though *Rājño Ve* in the beginning on left margin and the letter *ya* in the top margin are clear. The Kharoshti inscription, however, begins in the top margin instead of the usual right margin and *Raña Vema* is seen in the top margin. It is not clear if it continued in the left margin or not as that part is out of flan.

Acc. no. 11763 3.61 g; size 14 x 21 mm

Śivaghoṣa

As mentioned above, the greatest number of coins in the collection belong to this ruler; 48 coins out of a total of 71 are definitely attributable to this ruler. All of them, except for one minor variation noticed in one coin, are of the type described above. The inscriptions on his coins can be reconstructed as

Brāhmī *Rājño Vemakisa Śivaghoṣasa*
Kharoṣṭhī *Raña Vemakisa Śighoṣasa*

Most of the coins of Śivaghoṣa weigh between 1.8 and 2.2 grams though the highest and lowest weight noticed are 2.84 grams and 1.46 grams respectively. Some coins of Śivaghoṣa that are somewhat better preserved and show the various motifs and inscriptions described below:



- 6 Brāhmī *[Rāj]ño Vemak[i]sa Ś[i]vagoṣa[sa]*.
Kharoṣṭhī *[Ra]ña Vemak[i]sa Śighoṣa[sa]*.
Acc. no. 11696 1.94 g; size 17x14 mm.



- 7 Brāhmī *[Rāj]ño Vemak[i]sa Śivaghoṣasa*.
Kharoṣṭhī only some letters are visible.
Acc. no. 11692 1.99 g; size 15 x 15 mm



- 8 Brāhmī *Rājño Vemak[i]sa Ś[i]vagoṣasa*.
Kharoṣṭhī *[Ra]ña Vema[k]isa [Śi]ghoṣasa*.
Acc. no. 11732 2.08 g; size 14 x 16 mm.



- 9 Brāhmī *[Rāj]ño Vemakisa Ś[i]vagoṣa[sa]*.
Kharoṣṭhī *[Ra]ña Ve[ma]ki[sa] Śighoṣa[sa]*.
Acc. no. 11725 1.74 g; size 14x11 mm



- 10 Brāhmī *Rājño Ve[makisa] Ś[i]vagoṣa[sa]*.
Kharoṣṭhī *[Ra]ña Vemaki[sa] Śighoṣa[sa]*. This coin was perhaps struck over an earlier flan for on the obverse below the Brāhmī inscription in the top margin, two Kharoṣṭhī letters *śasa* are seen towards left, and on the reverse also part of elephant (?) seems to be the undertype on the left side near the head of the bull.
Acc. no. 11704 2.08 g; size 18 x 15 mm



- 11 Brāhmī *[Rāj]ño Vemak[i]sa Ś[i]vagoṣasa*.
Kharoṣṭhī *Raña Vemakisa [Śigho]ṣa[sa]*.
Acc. no. 11700 2.18 g; size 17 x 14 mm



12 Brāhmī *Rājño Vema[kisa Śivaghośasa]*.
Kharoṣṭhī *[Raña Vema]ki[sa] Śighośasa*.
Acc. no. 11697 2.84 g; size 15 x 16 mm



13 Brāhmī *Rājño Vema[i]sa Ś[i]vaghośasa*.
Kharoṣṭhī rubbed off and out of flan.
Acc. no. 11714 2.14 g; size 14 x 12 mm



14 Brāhmī *[Rā]jño Vema[i]sa Ś[i]vaghośasa*.
Kharoṣṭhī *[Ra]ña Vema[i]sa Śighośasa*.
Acc. no. 11720 1.46 g; size 14 x 12 mm



15 Brāhmī inscription is written in very bold letters: *[Rā]jño Vema[i]sa Ś[i]vagho[śasa]*. Kharoṣṭhī out of flan.
Acc. no. 11729 2.13 g; size 14 x 11 mm



16 Brāhmī *[Rā]jño Vema[i]sa Ś[i]vaghośasa*.
Kharoṣṭhī *Raña Ve[ma]kisa [Śighośasa]*. On the reverse, an unidentified motif seems to be overstruck on the bull. Near the neck, part of what looks like a wheel is seen. Other parts of the overstriking device are not clear.
Acc. no. 11730 1.99 g; size 12x14 mm.

There is one coin of Śivaghośa in the collection, which shows

a minor variation from the normal type. On this coin, the position of *nandipada* and svastika above the bull's back is reversed from the normal type; here the svastika is on left and *nandipada* is on right. Besides, the svastika here is anti-clockwise. This coin seems to have been overstruck on an earlier flan as the Brāhmī letters *Vemaka* are seen in the top margin on the reverse. Details of the coin are as under:



17 Acc. no. 11707 1.70 g; size 17 x 15 mm

Ajītaghośa

This ruler is known from a solitary specimen. The coin type shows some differences from the general coin type in which the coins of the two rulers, described above, were struck. The details of the coin are as under:



18 *Obv.* Elephant standing right, perhaps holding a stalk of flower of dots (stalk is faintly seen) in upraised trunk; two parallel lines – one a straight line and above that a line of dashes below the elephant; trident (left arm is seen) in front of the elephant; *nandipāda* above the elephant's back; Brāhmī inscription (left) *Rājño Aj[i]tagh[o]*. . . . It is not clear if it continued in the top margin.
Rev. Humped bull standing right; a wavy line below (faint traces seen); *śrīvatsa* above the bull's back; not clear if a lotus is there in front of the bull as that part is effaced; Kharoṣṭhī inscription (top and left margin) *[Ra]ña Vemaki[sa] Ajītagho[śasa]*.
Acc. no. 11718 2.04 g; size 14 x 15 mm

As is clear from the above description, the coin of Ajītaghośa shows several changes from the general type. First, the composite motif of lion and ploughshare above the elephant's back is replaced by *nandipāda*. Second, an extra dashed line, parallel to the straight line, is placed below the elephant. In the Brāhmī inscription, the name of the tribe, Vemaki, after *rājño* is dropped here. It is not clear if it was there in the top margin or not. On the reverse, the direction of the bull is changed to right and the motifs above the back of the bull, *nandipāda* and svastika, are replaced by *śrīvatsa*. The position of the Kharoṣṭhī inscription also shows some change. Instead of the usual right and top margins, it is written in top and left margins.

Notwithstanding these typological differences, the occurrence of the name Vemaki in the Kharoṣṭhī inscription and similarity of the issuer's name-ending with the other chiefs leave no doubt that Ajītaghośa was another Vemaki ruler in the

same line of succession, who issued copper coins. Whether he preceded or succeeded Śivaghoṣa is difficult to answer on the basis of the evidence of a single coin. But, the extreme rarity of his coins perhaps indicate that his reign was short-lived. At the same time, the changes effected in the type hint that here was a chief who, while maintaining a façade of typological continuity, was trying to stamp his own unique identity.

Rudraghoṣa⁵

This ruler is known from two coins only. At the present stage of our knowledge, he seems to have been the last Vemaki chief. His coins are smaller in flan, lighter in weight, and cruder in execution of symbols and inscriptions. He seems to have followed Ajitaghoṣa as his coins share typological similarity with the latter's coin, particularly with regard to the motifs above elephant and bull on obverse and reverse respectively.

Obv. Elephant standing right; trident in front; *nandipāda* above the elephant's back; it is not clear if it shares the other details with the earlier coin type or not as these are not visible; Brāhmī inscription (left and top margins) . . . *Vemak[i]sa Rudraghoṣa[sa]*

Rev. Humped bull standing left; *śrīvatsa* above the bull's back (other details not clear); Kharoṣṭhī inscription (right and top margins) . . . *Vemakisa* . . .



19 *Acc. no.* 11734 1.75 g; size 10 x 14 mm



20 *Acc. no.* 11715 1.64 g; size 12 x 12 mm

Unattributed new types

Apart from the above, there are a few coins that show some typological variations, particularly with regard to the direction of the main motifs – elephant and bull. Unfortunately, the inscriptions on these are not clear. Hence, precise attribution is not possible. But it is worthwhile to note them here:



21 *Obv.* Elephant standing right, holding a small *chhatra*

5 I thank Shailendra Bhandare for suggesting the reading of this ruler's name.

(parasol) in its upraised trunk; trident in front; an indistinct symbol above the elephant's back – it is not clear if it is the combined motif of lion and ploughshare; traces of truncated inscription (Brāhmī ?) in the top margin are seen. There is something seen below the hind legs of the elephant which suggests that the coin might have been overstruck on an earlier flan.

Rev. Humped bull standing right; svastika above its back; lotus in front of the feet; inscription is completely effaced but faint traces of some letters are seen in the top margin. There are some unidentified symbols / letters (?) seen behind the bull and perhaps might have been part of the undertype device.

Acc. no. 11746 3.05 g; size 13 x 17 mm



22 *Obv.* Elephant standing left; a straight line below; an indistinct motif above its back; other details and inscription, if any, are completely effaced.

Rev.: Humped bull standing right; an indistinct symbol above its back; lotus in front of its feet; inscription, if any, is completely effaced.

Acc. no. 11747 1.57 g; size 12 x 12 mm

Concluding remarks

It is evident from the above that the Vemakis, after an initial silver coinage, issued, as was usual in this period, the bulk of their coinage in copper. Although, the only provenance known for the Vemaki coins is Jwalamukhi in Kangra district for the first silver coin of Rudravarman, it is quite probable that even copper coins of the Vemakis were issued and circulated mainly in the Kangra region. This is suggested by the similarities in their copper coins with those of the Audumbaras, who must have been their close neighbours. The coin palaeography would suggest the time frame of around the first century BCE to the first century CE as the most probable date during which the Vemaki coins, like the neighbouring Audumbara coins, would have been issued.

Notwithstanding the fact that now three previously unknown Vemaki rulers are now known to have issued copper coins, in addition to the one earlier known, the number of Vemaki copper coins known is still on the small side. However, the die variations seen in these coins clearly indicate that the Vemakis would have struck a substantial copper coinage.

The similarity in the shape, fabric, and weight of the Vemaki copper coins and the neighbouring Audumbara copper coins suggest that they would have been issued in the same time frame and in areas which were close to each other.

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The Evidence of Gold Content for the Attribution of the Coins in the Name of Candragupta

Pankaj Tandon

Abstract This paper uses the results of XRF metal analysis to shed light on the attribution of Gupta gold coins in the name of Candragupta. Two samples, including coins tested by Sanjeev Kumar and coins tested for this study, are merged and shown to be mutually consistent. In this way, a sample of 363 coins is constructed. We see that the so-called King and Queen coins seem to form a special group with much higher gold content than other types. The attribution of the coins with goddess on throne to Candragupta II is supported, with results of the correct sign although they are not statistically significant. The attribution of the so-called Belted coins to Candragupta III is strongly supported with results that are highly significant statistically.¹

The attribution of the Gupta gold coins naming the king Candra or Candragupta present the numismatist with a particular challenge: to whom should the coins be attributed? The king lists that we know² record two different kings named Candragupta, the father (reigned about 319–50)³ and son (about 376–415), respectively, of the king Samudragupta (about 350–76). In addition, over the last 30 years or so, scholars⁴ have increasingly accepted the theory that there was a third king who also named himself Candragupta on his coins (about 447–56)⁵, as these coins appear to have been issued *after* the reign of Kumāragupta I (about 415–47), the son of the aforementioned Candragupta II. We therefore have three potential kings to whom the coins naming Candra can be attributed. The fundamental arguments for attributing the coins are usually based on considerations of style, paying attention to how the designs evolved over time. However, considerations of style are open to differences of opinion, leaving us with a situation in which attributions remain controversial and subject to debate. To this day, therefore, there is no clear agreement on the correct attribution of at least some of the coins.

In a recent paper (Tandon 2020), I proposed a new approach that would apply statistical techniques to a measurable property of the coins: their weights. There is general agreement that most of the Candra-naming coins were issued by Candragupta II. The idea then is that, if a certain group of coins are theorized *not* to have been issued by that king, the weights of those coins should be different from the weights of the large bulk of the coins of Candragupta II. This test

uses the widely made observation that Gupta coins seem to increase in weight over time. Using this approach, I was able to show that certain coins that so far have been universally assigned to Candragupta II, but which show stylistic affinity to the coins of Candragupta III, should in fact be reattributed to that later king. In the process, I also examined the question of the correct attribution of the so-called King and Queen type and also the coins naming Candra(gupta) which feature on the reverse a goddess seated on a throne. The weight data in all cases supported the attributions that I would have made based on style.

In this paper, I attempt to extend the use of statistical techniques to another measurable aspect of the coins: their gold content. The technique used to measure the gold content is X-ray fluorescence (XRF). This is a non-destructive method to study metal content, although it suffers from the drawback that it tests only the surface metal. Since gold is not very reactive with environmental contaminants, this may not be too serious a drawback when looking at gold coins.

XRF testing

For the study I tested 167 coins, which included coins of all the known Gupta kings except for Vainyagupta. The sample included four coins that would now be regarded as Hun issues, one of Toramāṇa (Prakāśāditya) and three of the ‘Nameless’ Archer coins.⁶ All but one of the coins were from my own collection; one coin was from the collection of P. Hari Prasad, who kindly permitted his coin to be tested also.

The testing was carried out on a desktop X-ray fluorescence (XRF) analyser made by Olympus called the GoldXpert, which is optimized to test precious metals. Each coin was tested twice, once on the obverse and once on the reverse, with the two readings being averaged to get to an estimate of the metal content of the coin. The diameter of the test area used was 10 millimetres and each test was run for 30 seconds.⁷ The analyser itself is a roughly 30-centimetre (1-foot) cube weighing 10 kilograms, making it relatively easy to use and transport if necessary. It is technologically similar to another Olympus-made analyser, the Delta hand-held analyser, which was evaluated by Gore and Davis (2016) in their thorough-going study of the XRF method to analyse the metal content of ancient Greek silver coins. Gore and Davis found that the Olympus machine performed on almost a par with the full-size spectrometers they tested in its measurement of the key elements, such as silver, gold, copper, iron, lead and bismuth. It did not perform as well in its ability to fully identify the trace amounts of lighter elements present.⁸

To check the accuracy of the analyser, I tested two coins of known metal composition: a modern (1989) United States \$50 (Liberty/Eagle) gold coin and a modern (2001) US \$1 silver

1 This paper has benefited from extremely helpful email exchanges with Ellen Raven. I also wish to thank John Deyell for sharing his transcription of Sanjeev Kumar’s XRF results and for his detailed comments on an earlier draft of the paper, Ed Snible and Harold Edwards for helpful suggestions and P. Hari Prasad for allowing me to test his coin.

2 The best source for Gupta genealogy is the Bhitari pillar inscription. For a complete summary of the genealogy and chronology of the Guptas, see Gupta (1974), 169–98.

3 The chronology is still somewhat unsure. I have relied largely on the chronology presented by Willis (2005).

4 The literature on Candragupta III is now quite large and growing. I have reviewed most of the early work in Tandon (2014).

5 This dating fills the ‘gap’ in Willis’s chronology.

6 See Tandon (2015) on the assertion that Prakāśāditya was none other than Toramāṇa and Tandon (2018) for the argument that the ‘Nameless’ coins were also issued by the Huns.

7 I experimented with shorter and longer exposures but concluded that the 30-second exposure was perfectly adequate.

8 Such as Ti, Cr, Ni and Zn.

coin and found it to be reasonably accurate. On the gold coin, the instrument measured the gold content to be 91.81 per cent with a 95 per cent confidence interval of (91.67 – 91.95)⁹, as compared to the US Mint stated content of 91.67 per cent.¹⁰ Thus, although the actual gold content falls within the 95 per cent confidence interval of the estimate, we can note, at least on this evidence, a slight tendency for the analyser to overestimate the gold content. Similarly, with the silver coin, known to be 99.9 per cent silver according to the US mint, the analyser returned a reading of 100 per cent, with a lower bound on the 95 per cent confidence interval being 99.63 per cent.

The overestimation of the principal metal probably stems from the analyser's inability to identify and measure the quantities of trace elements, as was noted by Gore and Davis in their study. Small machines like the GoldXpert are not sensitive enough to accurately measure the minor trace elements. If there are several of these trace elements, as there are very likely to be in ancient gold, they could collectively add up to a noticeable percentage. Setting the content of all these elements to zero means that the estimated percentage of the elements that are measured will be overestimated. For example, suppose the actual composition of a coin is 90 per cent gold, 6 per cent silver, 3 per cent copper and 1 per cent trace elements. If the trace elements are all set to zero, we would actually be measuring only 99 per cent of the contents. The estimated gold content would then be declared as 90.91 per cent (= 90/99), an overestimate of roughly 1 per cent. The silver and copper would be estimated as constituting 6.06 per cent (= 6/99) and 3.03 per cent (= 3/99). Thus, we overestimate all the declared constituent elements by the same percentage, with the biggest absolute error falling on the main constituent element.

In a study of Kushan gold coins (Tandon, 2022a), I was able to confirm this tendency for the GoldXpert to overestimate the gold content by comparing my results with those of other studies. Figure 1 and table 1 show the estimated average percentage gold content of the gold coins of three kings, Vima Kadphises, Kanishka, and Huvishka, in three studies. Other than my own study, I looked at the results of Maity (1970), who used specific gravity (SG) to estimate gold content, and Blet-Lemarquand (2006), who used proton activation analysis. What I found was that the XRF results are higher than those from proton activation analysis, which are in turn higher than Maity's SG results, although the pattern of results is roughly the same in all three cases. I suspect that the Blet-Lemarquand results are the most accurate, given the use of sophisticated laboratory equipment, indicating that the XRF results are overestimates and that the SG results are underestimates. It is important to point out that the three studies analysed different sets of coins, of varying sample sizes, and that these differences could account for the differences in average gold content observed. However, I do suspect that there may be biases in the estimation techniques as well.

Table 1 shows the numerical values of the average percentage gold content and calculates the degree of over—

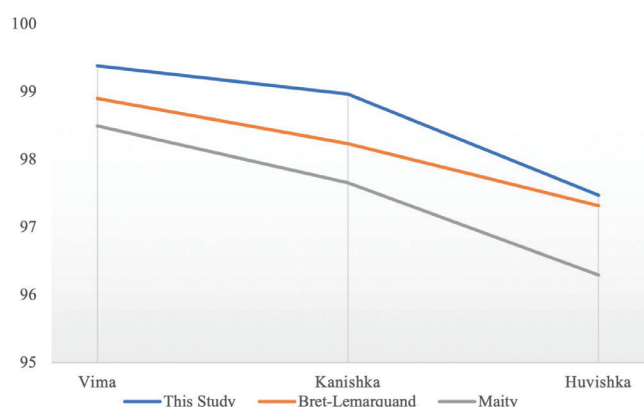


Figure 1 Average Percentage Gold Content: Three Kings, Three Studies (Source: Tandon, 2022a, Chart 6)

Table 1 Average percentage gold content in three studies and size of differences

	Vima	Kanishka	Huvishka
XRF results	99.38	98.97	97.47
Deviation from B-L	0.49%	0.75%	0.16%
Blet-Lemarquand (B-L)	98.90	98.23	97.32
Maity	98.50	97.66	96.29
Deviation from B-L	-0.40%	-0.59%	-1.06%

estimation compared to the Blet-Lemarquand study, which varies from 0.16 per cent to 0.75 per cent. This is a small, but not insignificant, difference.

Having said this, it is important to note that, for my present purposes, the overestimation of gold content is of little significance. In what follows, I am focused on the *relative* gold content levels in different groups of coins, specifically, on whether the average gold content in different groups is the same or different. The fact that the *absolute* levels of gold content are slightly overestimated in all cases would not affect such comparisons.

Merging my sample with that of Kumar

Kumar (2017) published results of XRF tests he conducted on a sample of Gupta coins, and I thought it would be a good idea if possible to merge his results with mine in order to increase the sample size. In statistical analyses, the larger the sample size the more robust the results. So, I needed to see if my results were more or less in line with his so that I could merge the two samples. I expected that, in principle, the results ought to be similar, because Kumar used an instrument very similar technologically to the one I used, although his procedure was slightly different.¹¹

Kumar's results were published in his book (2017, 93–6), and John Deyell had transcribed these results into an Excel file,

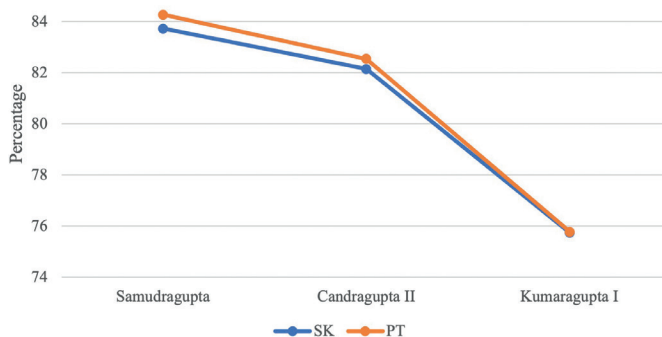
9 The analyser provides the estimate with a standard deviation; I then calculated the confidence interval based on the data provided.

10 Viewed online at <https://www.usmint.gov/coins/coin-medal-programs/american-eagle/gold-proof>.

11 Kumar used a hand-held analyser made by Thermo Fisher Scientific called the Niton X3t (Kumar 2017, 73). His procedure was slightly different from mine. He took five readings on each coin, two from different parts of the obverse, two from different parts of the reverse and one from the edge. Each reading lasted 10 seconds. Kumar did not tell us the diameter of the X-ray beam he used. I did not expect this procedural difference to matter much, and it turned out that it did not.

Table 2 Comparison of average gold percentage in Kumar and Tandon samples

King	SK sample		PT sample		<i>t</i> -test <i>P</i> -value comparing means
	Average Au %	no. coins	Average Au %	no. coins	
Samudragupta	83.729	54	84.276	39	64.47%
Candragupta II	82.152	76	82.543	50	50.02%
Kumāragupta I	75.745	36	75.790	35	97.54%

**Figure 2** Average percentage gold content of three principal Gupta kings comparing results from Kumar and Tandon results

which he kindly shared with me. Results for a total of 225 coins were presented. Of these, 11 coins belonged to the post-Gupta period, 17 coins were of the repoussé type of Mahendraditya belonging to the Sarabhapuriya series,¹² 2 coins were fakes according to Kumar, and one coin was a half dinar, which I also regard as being of suspect authenticity. Excluding these 31 coins left 194 in the sample,¹³ and these were the coins I included in my analysis. I of course reattributed Kumar's coins in ways I consider correct. Thus, the King and Queen coins and the Kāca coins were assigned to Samudragupta, the coins of Candra with the goddess on a throne were assigned to Candragupta II, and coins belonging to the 'Belted group' which I studied in my 2020 paper were separated and assigned (provisionally) to Candragupta III.

Because both the Kumar sample and mine contained very few coins of the kings after Kumāragupta, I decided to compare results only for the three kings for whom both samples were reasonably large and meaningful comparisons could therefore be made. Collectively the coins of these three kings account for 80 per cent of the coins in the two samples together. Table 2 and figure 2 summarize the results. We see that the results from the two studies are indeed very close to one another, and the statistical tests were very clear that we could not reject the hypothesis that they were drawn from the same population (i.e., that the average estimated gold content was the same in both samples). Detailed results are presented in appendix 1, but the table shows just how high the *P*-values¹⁴ of the tests were; any *P*-value greater than 5 per cent is considered sufficient to say we cannot reject the null hypothesis. Here the *P*-values ranged from 50 per cent to over 97 per cent.

The appendix also shows scatter diagrams of the coins of

the three kings, which provide a visual confirmation of the statistical result that the two samples are very similar. Thus, the studies were very much compatible with one another, and the results can be merged without hesitation. With my sample containing 169 coins and the Kumar sample containing 194 coins, we now have a total sample size of 363 coins.

Having established that the two samples can safely be merged, I created an Excel file containing the results of both samples, arranging the coins in roughly chronological order. The coins were arranged of course by king, in their proper order. Within the coins of Samudragupta, the King and Queen coins were placed first, followed by the other coins in alphabetical order by type. Within a type, the coins were arranged randomly. With the coins of Candragupta II, coins with the goddess on a throne were placed first, followed by all the others. Within these two groups, the coins were arranged in alphabetical order by type, and randomly within a type. The coins of Kumāragupta I were arranged in alphabetical order by type and randomly within each type. For Candragupta III, the belted coins were listed first (in the order belt – sash – sword), followed by the symbol coins (in the order sun – crescent – cakra – altar). The Horseman coins were listed last. The coins of Skandagupta were sorted by their weight standard. Coins of roughly 8.5 grams weight were listed first, in alphabetical order by type, and the 9-gram coins followed. The rest were simply arranged randomly by king. The Hun coins were placed after those of Budhagupta.

Figure 3 is a scatter diagram showing the percentage gold content of each of the coins, illustrated in the order of the list I had created.¹⁵ In the figure, vertical dividing lines separate the coins of different kings. The coins of Candragupta III (CG 3) are divided into the Belted group and the Symbol group. The H stands for Hunnic coins. The other minor kings are not identified in the diagram. Looking at the pattern of dots, we see a slight tendency for the percentage gold content to decline over time, exemplified by the trend line drawn in the graph. In what follows, I will use that as a provisional marker for the temporal order of the coins, although this assumption is not necessary for the conclusions I want to reach. All I need to study is whether the average gold content for two groups is the same or different. We can turn now to the specific comparisons.

King and Queen Coins

I will examine the three questions about the coins in the name of Candra(gupta) in chronological order. The first question concerns the attribution of the King and Queen type. Figure 4 illustrates the type. The obverse features images, identified by the legends, of Candragupta and Kumāradevī. We know from

¹² See Bakker (2019) for an argument why these coins should not be attributed to Kumāragupta.

¹³ This number is greater than the 179 coins for which Kumar gave summary results on p. 81.

¹⁴ The *P*-value is an estimate of the probability that two samples drawn from the same population would have a difference of averages as great or greater than the one we have in our study.

¹⁵ Detailed results for the coins in the Kumar sample are in Kumar (2017, 93–6) and those in my sample will be published in Tandon (2022b).

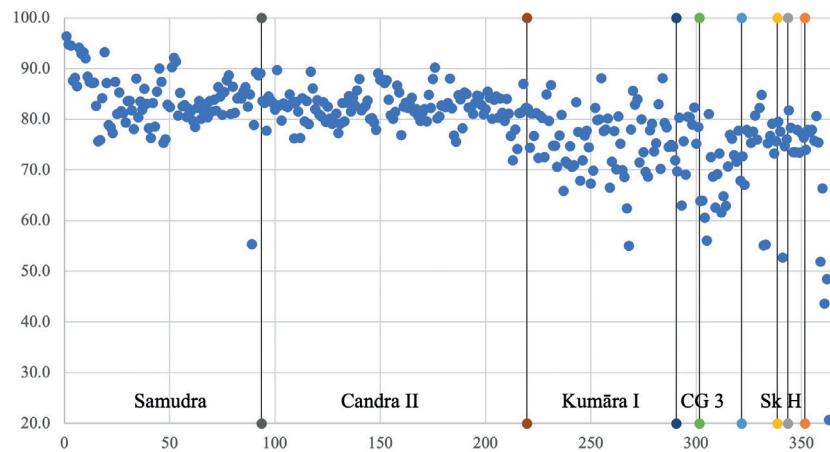


Figure 3 Scatter diagram showing the percentage gold content for each coin in the sample

the Allahabad pillar inscription that Candragupta I married the Licchāvī princess Kumāradevī. It mentions her as the mother of Samudragupta, who is described as *licchavyidauihita*, the son of Licchavi's daughter. The reverse legend, to dispel any doubts about the identification, reads *licchavaya*. It thus seems logical to assume that this coin type must have been issued by Candragupta I, in celebration of his marriage. That is what all scholars believed once the coins were discovered in the nineteenth century. As far as anyone could tell, these were the only gold coins issued by that king, making them the first Gupta gold coins.

Allan (1914) argued, however, that the King and Queen type could not have been the first Gupta gold coins, because Samudragupta's standard type¹⁶ is a close imitation of late Kushan types and therefore must qualify as earlier than the King and Queen type. In any case, the Gupta kingdom was rather insignificant at the time of the marriage being celebrated in the coin, and it therefore seems unlikely that Candragupta I would have been able to issue such a large number of gold coins. Allan therefore suggested that this type was probably issued by Samudragupta in honor of his parents. Raven (1994, 2010) emphasizes a different argument on the matter. By her careful analysis of the styles of the different coin types, what she calls their 'mint idioms,' she shows that the King and Queen coins and the clearly identifiable issues of Samudragupta cannot possibly be separated temporally;

rather, they are obviously the products of the same mints at the same times, thereby supporting Allan's suggestion.



Figure 4 Gold dinar of the King and Queen type (Tandon collection no. 438.02, 7.50 g, 20 mm, die axis 1h)

In my study of coin weights, I showed that the weights of the King and Queen coins matched those of all other coins of Samudragupta very closely. In a sample that included 55 King and Queen coins and 369 other coins of Samudragupta, the average weights were 7.527 grams and 7.519 grams respectively; they were statistically the same. Under the widely held view and observation that the weights of Gupta gold coins rose over time, this result was incompatible with the notion that the King and Queen coins were issued earlier by Candragupta I. Thus, the weight study provided further support to Allan's argument.

Let us now see what the metal content study tells us. We would expect that, if the King and Queen coins were issued by Samudragupta, the average gold content in the King and Queen coins should closely match the average gold content in all other coins of Samudragupta. This is not, however, what we find. Figure 5 is a scatter diagram showing the percentage gold content in all the King and Queen and other Samudragupta coins in the combined (Kumar and Tandon) sample. We see that the percentage gold content appears to be considerably higher in the King and Queen coins, and this is borne out in the numerical data, summarized in table 3. The formal statistical test on whether the two groups belonged together (i.e., had the same mean) was soundly rejected. The P-value was vanishingly small (anything less than 5 per cent is considered strong enough to reject the hypothesis of equal means). The detailed statistical test results are in appendix 2, table A2. Thus, the statistical testing on gold content does not seem to support Allan's contention that the King and Queen coins were issued by Samudragupta.

For someone like myself, who strongly favours Allan's

16 This type has been called many things, including the standard type, the sceptre type, the javelin type, the rajadanda type, and the spearman type, because there is confusion about what exactly the king is holding in his (proper) left hand. Since Gupta coins are usually identified by what the king is doing (such as the horseman type, the lion-slayer type, the lyrist type, and so on), I find it odd that this type is named according to an object he might be holding. The Archer type is not called the Bow type, nor is the Lyrist type called the Lyre type. I propose that we find a new name to identify this type. In a discussion with Ellen Raven on the subject, I proposed that this type should be called the Sacrificing type, as the king is always sacrificing into the fire altar at left. This name has the benefit of avoiding completely the debate on what the king is holding, which varies quite a bit in its appearance. Ellen pointed out that the king is also sacrificing on the Chhatra type coins and proposed King-at-Altar type, although that suffers from the same problem. The search for a good name continues. Perhaps it should be called the Kushan type, or the Kushan imitation type.

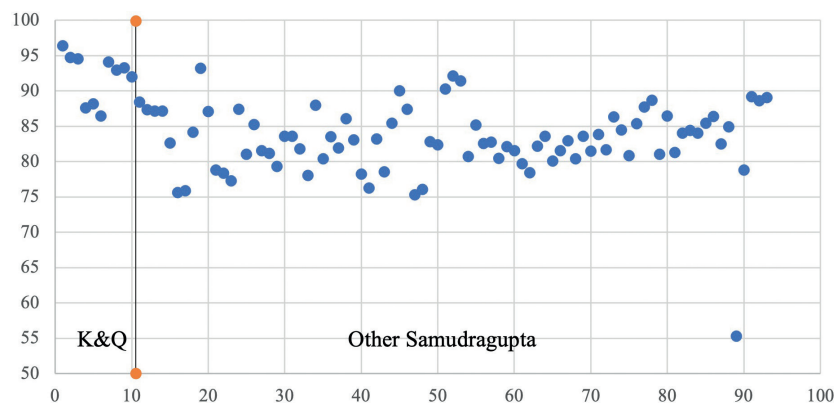


Figure 5 Comparison of the gold content in King and Queen and other Samudragupta coins

Table 3 Summary statistics on average gold content

Group	Av. Au %	no. coins
King and Queen	92.02	10
Other Samudragupta	82.99	83

view, this result is disappointing. Of course, proponents of the old view that the coins were issued by Candragupta I, would be delighted with this finding. The Allan supporters would be forced to look for other explanations for why the gold content of the King and Queen coins is higher than the gold content in Samudragupta's other coins. It is also possible that the result is an artifact of the small sample size of King and Queen coins, of which there were only 10 examples in the sample. In all statistical analyses, we would prefer to have large samples. At least 30 examples of each group would be considered desirable. Hopefully over time we can get more data for analyses of this kind.

One possible explanation for the higher gold content in the King and Queen coins is that perhaps it was regarded as a special issue and therefore merited a higher purity gold. In our sample, the average weight of the King and Queen coins is 7.49 grams, while that of all the other Samudragupta coins is 7.53 grams. A statistical test, however, shows that we cannot rule out the possibility that their average weights are the same. In my earlier study (Tandon 2020) where I had a much larger sample, the average weight of the King and Queen coins was 7.53 grams (based on a sample size of 55 instead of 10 in this study), while that of all the other Samudragupta coins was 7.52 grams (based on a sample size of 369 coins rather than the 82 in this study). Once again, the statistical test showed that we could not rule out the possibility that their average weights were the same. Thus the King and Queen coins are basically the same weight as the other coins of Samudragupta. This means that, given the higher percentage of gold, there is a higher average absolute amount of gold in the King and Queen coins than in all the other Samudragupta coins. The richer gold content then provides support to the idea that the coins were special.

Coins of Candragupta with Goddess on Throne vs other Candragupta coins

The second question I examined in my earlier paper was: should the coins naming Candragupta with a reverse featuring a goddess seated on a throne be assigned to Candragupta I, as suggested by Kumar (2017) or to Candragupta II, as is currently done by most, if not all, other scholars? The analysis

of weights strongly supported the prevailing wisdom that the coins do indeed belong to Candragupta II. We turn now to see what the metal analysis would suggest. If the coins with goddess on throne were issued by Candragupta I, we would expect their gold content to be different from that of the coins with goddess on lotus or other coins of Candragupta II; provisionally, we would expect their gold content to be higher. Indeed, if the goddess on throne coins were issued by Candragupta I, their gold content ought also to be higher than the gold content in the coins of Samudragupta, who reigned after Candragupta I. On the contrary, if they were issued by Candragupta II, we would expect their gold content to be lower than that of Samudragupta's coins.

Figure 6 is a scatter diagram showing the gold content in each of the coins in the three groups Samudragupta, Candragupta with Goddess on Throne, and all Other Candragupta coins, presented in that order. The underlying hypothesis in arranging the coins in this way is that all the Candragupta coins belong to Candragupta II with the Goddess on Throne coins simply being early in his reign and the other coins being later in the reign. This is the order generally taken to be correct and is the order that was suggested by the analysis of weights in my earlier paper. But of course, the task here is to test whether that seems to be the correct order on grounds of the gold content also. Certainly, the scatter diagram seems to indicate that the order is indeed correct, as the Goddess on Throne coins seem to fit neatly between the coins of Samudragupta and the other coins of Candragupta II.

The formal statistical testing weakly supports the conventional view that the Goddess on Throne coins were issued by Candragupta II. I say 'weakly' because none of the tests for differences in the average gold content were statistically significant, but the averages were all in the expected order. Table 4 provides the summary statistics, and the details of the statistical tests are in tables A3 and A4 in appendix 2. What we see is that the percentage gold content is highest in the coins of Samudragupta (average 83.96 per cent), somewhat lower in the coins of Candragupta with goddess on throne (average 83.06 per cent), and lower still in all the other coins of Candragupta (average 82.20 per cent). Although these differences are small (and statistically not significant), they are all in the order to be expected if the Goddess on Throne coins were issued by Candragupta II early in his reign. The consequence of that is the gold content could be falling over time but at a very slow rate, and this is consistent with our

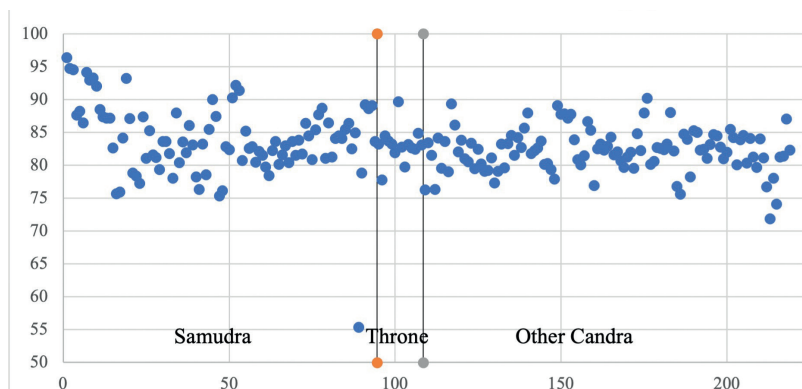


Figure 6 Comparison of the gold percentage of Samudra, Candra with Goddess on Throne and all other Candra coins

Table 4: Summary Statistics Comparing Samudragupta and Candra Coins

Group	Av. Au %	no. coins
Samudragupta	83.96	93
Goddess on Throne	83.06	15
Other Candra	82.20	111

data. The data is not consistent with the theory that the Throne coins were issued by Candragupta I.

Belted Coins vs Other Coins of Candragupta II

The main point of my earlier paper (Tandon 2020), indeed the reason why I started this research, was that I had discovered a group of coins, that had always been assigned to Candragupta II, which I felt on stylistic grounds belonged to Candragupta III. I called this group of coins the ‘Belted group.’ In my paper, I laid out in detail my argument for which stylistic features made this reattribution appropriate. Then I looked at the coin weights to see if they supported my suggestion. They did. Not only were the Belted Group coins significantly heavier than the other coins of Candragupta II, but they were also heavier than the coins of Kumāragupta I, thus strongly supporting the idea that they were issued after the reign of that king. Thus, the attribution to Candragupta III was supported by stylistic considerations and the analysis of weights. Here, I want to now examine whether the gold content data also supports this reattribution.

It does. Figure 7 is a scatter diagram showing the percentage gold content in the coins of the Belted group in comparison to the gold content in the other coins of Candragupta II. From the diagram, we can see that the Belted group coins have a lower gold percentage, with some coins having a gold content clearly lower than ever seen on any other coins of Candragupta II.

Table 5 provides the summary statistics of the numerical analysis. We see that the average gold content in the Belted Group (75.77 per cent) is far lower than the average gold content in the coins of Candragupta II (82.31 per cent). The details of the statistical tests are in table A5 in appendix 2, but I can summarize them here. The tests show that the difference in average gold percentage is statistically highly significant; the P-value of the one-tail test, which is the appropriate test here,¹⁷ is 0.27 per cent. Any P-value less than 5 per cent is

considered significant; a P-value less than 1 per cent is considered highly significant. Thus, the gold content data strongly supports the suggestion that the Belted Group coins are different and were issued after the reign of Candragupta II.

This is not enough. If the Belted Group coins were issued by Candragupta III, who ruled after Kumāragupta I, their gold content should also be lower than the coins of that king. So, we need to compare them. Figure 8 is a scatter diagram showing the percentage gold content in the coins of the Belted group in comparison to the coins of Kumāragupta I. We see once again that the Belted group coins appear to have, on average, a lower gold content, although the difference is not as marked as in the case of the coins of Candragupta II. This is to be expected, because the Belted Group coins were probably issued immediately after the accession of Candragupta III, who would have done so at the death of Kumāragupta I.

Table 5 provides the summary statistics of the numerical analysis; the details of the statistical testing are in table A6 in appendix 2. As we see, the average percentage gold content in the Belted coins (75.766 per cent) is indeed lower than the average percentage gold content in the coins of Kumāragupta I (75.767 per cent), although the difference is small. As one might expect with such a small estimated difference, the statistical test shows that we cannot reject the null hypothesis that the averages are the same (the P-value is 50 per cent). But note that the average gold content is indeed lower; if the coins were issued by Candragupta II, the gold content ought to have been higher. Thus, this data weakly supports the suggestion that the Belted coins were issued after the reign of Kumāragupta I.

As a final piece of analysis, I thought it would be useful to compare the gold content of the Belted group coins with the other coins of Candragupta III, both to see if the two groups have similar gold content as further evidence of my reattribution of the Belted coins and to uncover the possible order in which the

that the averages are different (which it would be if we had no *a priori* reason to think one was higher than the other), we use a two-tail test. When the alternative hypothesis is that one average is higher than the other, so that the difference would be expected to be of particular sign (either positive or negative), we use a one-tail test. Here the null hypothesis is that the averages are the same, which would be the expected outcome if the Belted Group coins were issued by Candragupta II and were therefore like the rest of his coins. But the alternative hypothesis is that the Belted Group coins have a *lower* gold content, if they were issued by Candragupta III. That is why a one-tail test would be the appropriate one in this case.

17 Recall that in a statistical test on averages, we have a ‘null hypothesis’ which is typically that the averages are equal (*i.e.*, that the difference in averages is zero) and against this we have an ‘alternative hypothesis.’ When the alternative hypothesis is simply

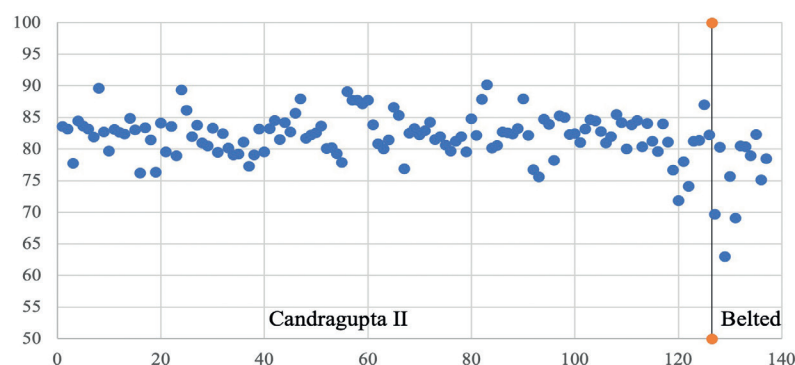


Figure 7 Comparison of the gold percentage of Candra II and Belted Group coins

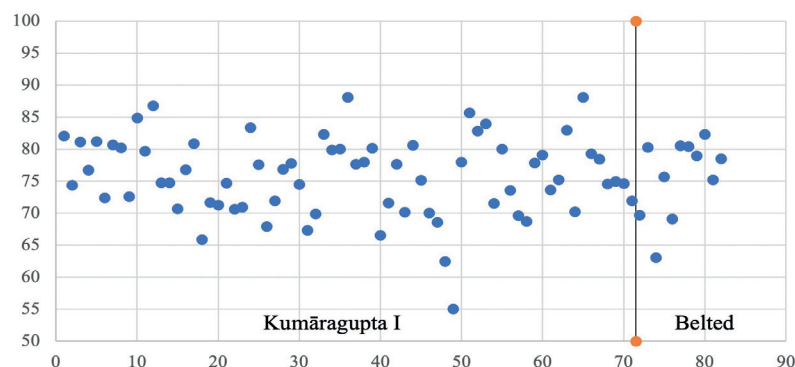


Figure 8 Comparison of the gold percentage of Kumāragupta I and the Belted Group coins

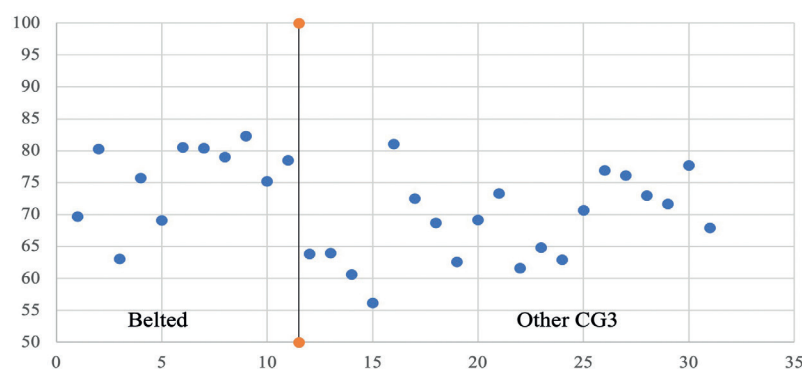


Figure 9 Comparison of the gold percentage of the Belted Group and other Candragupta III coins

coins might have been issued. My *a priori* expectation was that the Belted coins were issued early in the reign of Candragupta III, since they are closer in design to the coins of Candragupta II and Kumāragupta I. In particular, the addition of objects in front of the king's face seems to be a significant innovation that suggests a later date for the symbol coins. Given this assumption, the Belted coins should have a higher percentage of gold than the later coins of Candragupta III.

This is indeed what I find. Figure 9 is a scatter diagram showing the percentage gold content in the Belted coins compared to the other coins of Candragupta III. We see that the Belted coins appear to have a higher gold content than the latter group. This is seen more formally in the summary statistics, reported in table 7. The numbers show that the Belted group coins have a considerably higher gold content than the other Candragupta III coins (75.766 per cent to 68.736 per cent). The difference is highly significant statistically, as we can see from the detailed results presented in table A6.

Table 5 Summary Statistics Comparing Candragupta II and Belted Group Coins

Group	Av. Au %	# coins
Candragupta II	82.3071	126
Belted Group	75.7661	11

Table 6 Summary Statistics Comparing Kumāragupta I and Belted Group Coins

Group	Av. Au %	# coins
Kumāragupta I	75.767	71
Belted Group	75.766	11

Table 7 Summary statistics comparing the Belted Group and other Candragupta III coins

Group	Av. Au %	no. coins
Belted Group	75.7661	11
Other Candragupta III	68.7365	20

The P-value of the one-tail test of significance for difference in means is 0.34 per cent. I confess I found the size of this difference surprising and wondered what it might signify. A speculative explanation I came up with was that this is a sign that the Gupta empire was under some stress at this time. We know from the inscriptions of Skandagupta that the empire was facing an assault, probably from the Huns, and that at times things were very difficult from the Gupta viewpoint. However, Skandagupta was able to prevail ultimately. The low gold content during the reign of Candragupta III, who may well have been on the throne while Skandagupta was waging war as his general, may be a physical manifestation of the difficulties mentioned by Skandagupta.

Conclusion

The paper set out to use XRF estimates of the percentage gold content in various Gupta coins to help answer three questions of attribution of the coins in the name of Candragupta. The results showed that

- The attribution of the King and Queen coins to Samudragupta was not supported by the gold content data, although of course the evidence of style and coin weights remain persuasive. The gold content ‘anomaly’ requires explanation.
- The attribution of the Candragupta coins with reverses featuring a Goddess on Throne to Candragupta II (rather than Candragupta I) was weakly supported. The average percentage gold content of the Goddess on Throne coins was lower than that of the coins of Samudragupta, but the difference was not statistically significant. Nevertheless, the sign of the difference in average gold content was consistent with the attribution to Candragupta II and was inconsistent with an attribution to Candragupta I. Hence my earlier attributive conclusions based on style and weights are supported.
- The attribution of the Belted group of coins, identified in Tandon (2020), to Candragupta III was strongly supported. The average percentage gold content of the Belted coins was significantly lower than that of the coins of Candragupta II, suggesting that we can confidently reject the notion that the coins were issued by him. This conclusion strongly supports the evidence of style and weights.

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Appendix 1

Detailed Results to Compare the Kumar and Tandon Samples

Table A1 Statistical test results with scatter diagrams comparing Kumar and Tandon results

Samudragupta coins

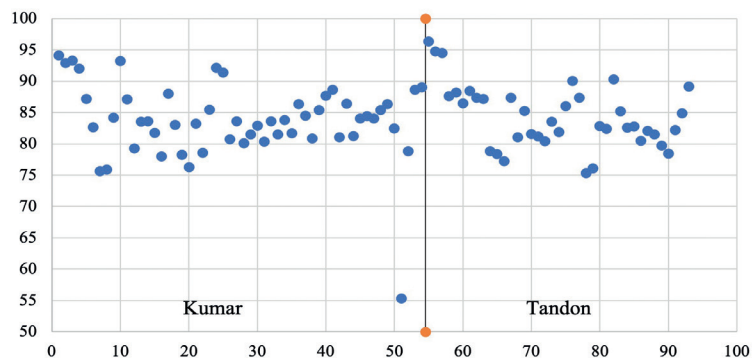
F-test two-sample for variances

	SK	PT
Mean	83.72852	84.27619
Variance	36.52531	25.04991
Observations	54	39
df	53	38
F	1.458102	
P(F<=f) one-tail	0.112211	
F Critical one-tail	1.668353	

t-test: two-sample assuming equal variances

	SK	PT
Mean	83.72852	84.27619
Variance	36.52531	25.04991
Observations	54	39
Pooled Variance	31.73339	
Hypothesized Mean Difference	0	
df	91	
t Stat	-0.462644	
P(T<=t) two-tail	0.644724	
t Critical two-tail	1.986377	

Samudragupta



Candragupta II coins

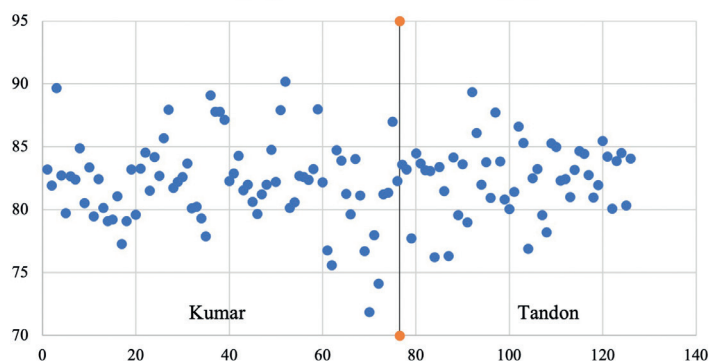
F-test two-sample for variances

	SK	PT
Mean	82.15158	82.5434
Variance	11.67359	7.756699
Observations	76	50
df	75	49
F	1.504969	
P(F<=f) one-tail	0.064005	
F Critical one-tail	1.555997	

t-test: two-sample assuming equal variances

	SK	PT
Mean	82.15158	82.5434
Variance	11.67359	7.756699
Observations	76	50
Pooled Variance	10.12579	
Hypothesized Mean Difference	0	
df	124	
t Stat	-0.676207	
P(T<=t) two-tail	0.500168	
t Critical two-tail	1.97928	

Candragupta II



Kumārāgupta I coins

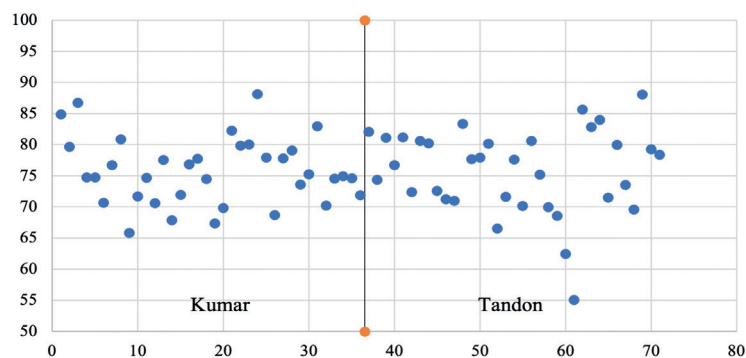
F-test two-sample for variances

	SK	PT
Mean	75.74472	75.79014
Variance	28.99025	47.45566
Observations	36	35
df	35	34
F	0.610891	
P(F<=f) one-tail	0.075931	
F Critical one-tail	0.567462	

t-test: two-sample assuming unequal variances

	SK	PT
Variance	28.99025	47.45566
Observations	36	35
Hypothesized Mean Difference	0	
df	64	
t Stat	-0.030897	
P(T<=t) two-tail	0.975448	
t Critical two-tail	1.99773	

Kumaragupta I



Appendix 2

Detailed Results of Statistical Tests

Table A2 Test results comparing King and Queen with other Samudragupta coins

<i>F-test two-sample for variances</i>			<i>t-test two-sample assuming equal variances</i>		
	<i>Other SG</i>	<i>K&Q</i>		<i>Other SG</i>	<i>K&Q</i>
Mean	82.98723	92.01713	Mean	82.98723	92.01713
Variance	25.14628	11.64674	Variance	25.14628	11.64674
Observations	83	10	Observations	83	10
df	82	9	Pooled Variance	23.81116	
F	2.159084		Hypothesized Mean Difference	0	
P(F<=f) one-tail	0.104861		df	91	
F Critical one-tail	2.766068		t Stat	-5.528283	
<i>Since F < F critical, the variances can be assumed to be equal</i>			P(T<=t) one-tail	1.53E-07	
			t Critical one-tail	1.661771	

Table A3 Test results comparing Samudragupta with Candra/Goddess on Throne coins (all throne vs other Candra)

<i>F-test two-sample for variances</i>			<i>t-Test: Two-Sample Assuming Equal Variances</i>		
	<i>All Throne</i>	<i>Samudra</i>		<i>All Throne</i>	<i>Samudra</i>
Mean	83.064	83.95819	Mean	83.064	83.95819
Variance	6.518458	31.46229	Variance	6.518458	31.46229
Observations	15	93	Observations	15	93
df	14	92	Pooled Variance	28.16782	
F	0.207183		Hypothesized Mean Difference	0	
P(F<=f) one-tail	0.000997		df	106	
F Critical one-tail	0.456257		t Stat	-0.605517	
<i>Since F < F critical, the variances can be assumed to be equal</i>			P(T<=t) one-tail	0.273065	
			t Critical one-tail	1.659356	
			P(T<=t) two-tail	0.54613	
			t Critical two-tail	1.982597	

Table A4 Test results comparing Candra/Goddess on Throne with all other Candra coins

<i>F-test two-sample for variances</i>			<i>t-test two-sample assuming equal variances</i>		
	<i>Other</i>	<i>Throne</i>		<i>Other</i>	<i>Throne</i>
Mean	82.20477	83.064	Mean	82.20477	83.064
Variance	10.53831	6.518458	Variance	10.53831	6.518458
Observations	111	15	Observations	111	15
df 110	14		Pooled Variance	10.08445	
F	1.616687		Hypothesized Mean Difference	0	
P(F<=f) one-tail	0.155261		df	124	
F Critical one-tail	2.181992		t Stat	-0.983564	
<i>Since F < F critical, the variances can be assumed to be equal</i>			P(T<=t) one-tail	0.163623	
			t Critical one-tail	1.657235	
			P(T<=t) two-tail	0.327245	
			t Critical two-tail	1.97928	

Table A5 Test results comparing Belted with all other Candragupta II coins

<i>F-test two-sample for variances</i>			<i>t-test: two-sample assuming unequal variances</i>		
	<i>Belted</i>	<i>CG2</i>		<i>Belted</i>	<i>CG2</i>
Mean	75.76614	82.30706	Mean	75.76614	82.30706
Variance	36.91721	10.08182	Variance	36.91721	10.08182
Observations	11	126	Observations	11	126
df	10	125	Hypothesized Mean Difference	0	
F	3.661759		df	10	
P(F<=f) one-tail	0.000261		t Stat	-3.52862	
F Critical one-tail	1.907226		P(T<=t) one-tail	0.00273	
<i>Since F > F critical, the variances can be assumed to be unequal</i>			t Critical one-tail	1.812461	
			P(T<=t) two-tail	0.005459	
			t Critical two-tail	2.228139	

Table A6 Test results comparing Belted with Kumāragupta I coins*F-test two-sample for variances*

	<i>Belted</i>	<i>KG</i>
Mean	75.76614	75.76711
Variance	36.91721	37.54554
Observations	11	71
df	10	70
F	0.983265	
P(F<=f) one-tail	0.534021	
F Critical one-tail	0.383215	

P(T<=t) two-tail

*Since F > F critical, the variances can be assumed to be unequal**t-test two-sample assuming unequal variances*

	<i>Belted</i>	<i>KG</i>
Mean	75.76614	75.76711
Variance	36.91721	37.54554
Observations	11	71
Hypothesized Mean Difference	0	
df	13	
t Stat	-0.000495	
P(T<=t) one-tail	0.499806	
t Critical one-tail	1.770933	
	0.999612	
t Critical two-tail	2.160369	

Table A7 Test results comparing Belted with other Candragupta III coins*F-test two-sample for variances*

	<i>Other CG3</i>	<i>Belted</i>
Mean	68.7365	75.76614
Variance	43.64322	36.91721
Observations	20	11
df	19	10
F	1.182192	
P(F<=f) one-tail	0.406282	
F Critical one-tail	2.785445	

*Since F < F critical, the variances can be assumed to be equal**t-test two-sample assuming equal variances*

	<i>Other CG3</i>	<i>Belted</i>
Mean	68.7365	75.76614
Variance	43.64322	36.91721
Observations	20	11
Pooled Variance	41.32391	
Hypothesized Mean Difference	0	
df	29	
t Stat	-2.913149	
P(T<=t) one-tail	0.003411	
t Critical one-tail	1.699127	
P(T<=t) two-tail	0.006822	
t Critical two-tail	2.04523	

From Bishapur to Vienna: A note on a hoard of late Sasanian drachms

Ehsan Shavarebi

Abstract This note is a preliminary study of a hoard of 174 silver drachms of the late Sasanian king Khosrow II (r. 590/1–628 CE), recently acquired by the coin cabinet of the Kunsthistorisches Museum in Vienna. 173 pieces in the hoard are issued at the mint of Bishapur (BYŠ) in Khosrow's thirteenth regnal year. The volume of die-links in this hoard produces a unique material basis for a quantitative study of coin production at a mint in late Sasanian Iran.

In the spring of 2021 the Wiener Münzkabinett (coin cabinet) of the Kunsthistorisches Museum in Vienna acquired a large collection of ancient oriental coins, originally collected in the second half of the twentieth century by Austrian physician and pharmacologist Dr Erich Lindpaintner (1914–1989). Having a great interest in oriental history and culture, Lindpaintner had built up his private coin collection not only through purchases in the European market, but also during his journeys in eastern countries. About 30 years after Lindpaintner's death, his family decided to sell this coin collection through the Künker auction house in Germany. It was very fortunate that before auctioning this collection Mr Künker offered the entire collection to the Wiener Münzkabinett. The Lindpaintner collection comprises 1,685 coins from the ancient Indo-Iranian world: 116 Kushan coins (109 gold), 1,283 Sasanian coins, 110 Arabo-Sasanian coins, 39 Tabaristan coins, 82 coins of the 'Iranian Huns', 45 Turk Shahi coins, and 10 Gupta coins (for more details on the Lindpaintner collection, see Shavarebi 2022).

The whole Lindpaintner collection has already been documented and digitized for the museum's internal database, and digital entries of over 1,300 coins from this collection are now accessible on the coin cabinet's online catalogue, Interaktiver Katalog des Münzkabinetts (IKMK) at <https://ikmk.at> (search under Sasaniden. Khusro II). In addition to digitizing images of the coins, the Münzkabinett is preparing an annotated catalogue of the Lindpaintner collection in printed form as a supplement volume in the series *Sylloge Nummorum Sasanidarum* (SNS).

An important part of the Lindpaintner collection is the so-called 'Bishapur Hoard' of silver drachms of the late Sasanian King Khosrow II (r. 590/1–628 CE). The provenance, archaeological context and original content of the hoard are unfortunately uncertain. Soon after Dr Lindpaintner purchased this hoard for his private collection, he made it accessible to the specialists of the Institut für Numismatik at the University of Vienna. The hoard was photographed and documented by Professor Dr Wolfgang Szaivert, who at the time was half way through his doctoral dissertation on the activity of Sasanian mints (Szaivert 1975) under the supervision of Professor Dr Robert Göbl. Szaivert not only discussed the Bishapur hoard in his dissertation, but also wrote a brief but insightful article on this interesting hoard (Szaivert 1978/79).

The documentation and digitization of the Lindpaintner collection provided an opportunity for me to revisit this hoard. The hoard as purchased by Lindpaintner contained 174 silver drachms of Khosrow II. However, it remains uncertain whether this figure represents the entirety of the hoard or is only a part of an originally larger hoard that was offered by an

antiquities dealer to the Austrian collector. Today 171 pieces from the hoard are kept at the Wiener Münzkabinett, the fate of the other three pieces being unclear. These 171 pieces are accessible in online catalogue.

All the pieces in this hoard represent Khosrow II's type II/3 after Robert Göbl's typology, depicting a right-facing bust of the king with winged crown on the obverse, and a Zoroastrian fire altar flanked by two frontally standing figures on the reverse (Göbl 1971, tab. XII, type II/3). Besides the conventional legend *hwslwb – GDE / 'pzw'* ('Khosrow – [who] increased the (royal) splendour'), all the pieces in our hoard bear the marginal legend 𐭥𐭥𐭥𐭥 = *'pd* ('excellent, fine') on the obverse. They all are issued in the thirteenth regnal year of Khosrow, i.e. 602/3 CE. All the pieces are preserved in a good physical condition and barely show any traces of wear or corrosion; one may assume that they had hardly circulated before being deposited. The composition of the hoard reveals that it was probably deposited shortly after the coins were issued, thus a date at or shortly after 602/3 CE might be suggested for the deposition of this hoard. Only one piece bears the mintmark 𐭥𐭥 = *GD* (probably standing for Gay/Jay, present-day Isfahan in central Iran) (figure 1). All other pieces are from the mint of Bishapur, with the mintmark 𐭥𐭥𐭥𐭥 = *BYŠ*, in the Pars/Fars province in southern Iran (figure 2). Despite the lack of information on the hoard's provenance, it might be speculated that it was originally deposited at or near the city of Bishapur.



Figure 1 Drachm of Khosrow II, Mint GD, Regnal Year 13 (= 602/3 CE); 4.16 g, 31.7 mm, 3h (© Kunsthistorisches Museum Wien, Münzkabinett, inv. no. GR 45214)



Figure 2 Drachm of Khosrow II, Mint BYŠ, Regnal Year 13 (= 602/3 CE); 4.14 g, 32.4 mm, 4h (© Kunsthistorisches Museum Wien, Münzkabinett, inv. no. GR 45215)

What is most remarkable about this hoard is the volume of die-links between the specimens from the mint of Bishapur, which provides a perfect material basis for studying the production process and output of a Sasanian mint within a short span of time. The 173 pieces from Bishapur in this hoard, of which 170 pieces are kept in the Wiener Münzkabinett today, are product of only 12 obverse dies and 11 reverse dies (Szaivert 1978/79, 36–7, pls 7–8). Table 1 shows the links

Table 1 Die-links of the coins with the mintmark BYŠ in the ‘Bishapur’ hoard

Rev.	1	2	3	4	5	6	7	8	9	10	11	Total
Obv.												
I	7	1	2								7	17
II			1		1					1		3
III				1	1	9	2			1	2	16
IV							18					18
V					5					3		8
VI							1	1	3			5
VII									1			1
VIII									32	10		42
IX											18	18
X							3		3		6	12
XI										22[+3]	4	26[+3]
XII											4	4
Total	7	1	3	1	7	9	24	1	39	37[+3]	41	170[+3]

between the obverse and reverse dies. The figures given in the following table are based on my revised die study of the hoard, adjusting the figures published by Szaivert. For facilitating a comparison, I use Szaivert's order and numbering of the obverse and reverse dies (cf. Szaivert 1978/79, 37). All the three missing pieces represent the combination of the obverse die XI and the reverse die 10.

The die-links clearly show that all the pieces have been issued in a very short period of time—perhaps only a few days. It also shows that multiple pairs of dies were used simultaneously and changed frequently. Szaivert suggests that the frequent change of dies might have been due to the use of heated flans, which would have quickly increased the temperature of the dies. Thus, in order to avoid damages, each die needed a regular resting time to slowly decrease its temperature after being used for a while. In the meantime, the used die should have been replaced by a fresh cold die; hence the frequent change of dies in a short time-span (Szaivert 1978/79, 37–8).

The density of die-links in this hoard produces a useful dataset for quantification of the production rhythm at a mint in late Sasanian Iran. Here, I would tentatively estimate the actual number of dies used at the mint of Bishapur during the short time-span our sample represents, as speculated above, perhaps only a few days, in the thirteenth regnal year of Khosrow II, using Warren Esty's geometric model (Esty 2011). In the following formulas, n stands for the number of coins in the sample; d stands for the number of attested dies in the sample; and d_1 stands for the number of singletons, singleton being a die that has been attested only by one specimen in the sample.

In Esty's model, the coverage (C_{est}) measures how thorough the sample is (Esty 2011, 49, formula 3).

$$C_{est} = 1 - \frac{d_1}{n}$$

The closer the coverage is to 1, the more thorough and representative the sample is. The coverage of the ‘Bishapur Hoard’ would be $1 - \frac{1}{173} = 0.994$ for the obverse, and $1 - \frac{3}{173} = 0.983$ for the reverse. The coverage of this hoard is evidently quite high for both obverses and reverses; therefore, our sample appears to be strong and representative.

The following formula estimates the original number of dies in Esty's geometric model (Esty 2011, 50, formula 5).

$$e_{ic} = \frac{n(d + d_1)}{n - d_1}$$

Based on our sample from the ‘Bishapur Hoard’, the estimated number of dies would be

$$\frac{173(12+1)}{(173-1)} = 13.075 \text{ for the obverse,}$$

and

$$\frac{173(11+3)}{(173-3)} = 14.247 \text{ for the reverse,}$$

meaning that only 1 obverse die and 3 reverse dies from the original output are absent in the sample.

This estimation shows that the actual ratio between the number of obverse and reverse dies should have been rather different from what the hoard's content shows. In other words, although a bigger number of obverse dies than reverse dies is attested in the sample (12:11), originally the number of obverse dies should have slightly lowered that of the reverse dies (13:14). It is in fact a logical result, for in practice the obverse die is fixed in the anvil below the flan, while the reverse die is held above the flan and hammered. Therefore, the mobile reverse die would have been damaged faster and had to be changed more frequently.

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Immobilized Types in Sogdian Coinage: The case of mules between Antiochus imitations and Hyrcodes

Aleksandr Naymark

Abstract Sogdian coin types are famously immobilized, often being used for centuries. The images and legends deteriorated over time. This paper considers why imitations of earlier coins were used without making use of high-quality prototypes. A series of ‘mules’ with a portrait of Hyrcodes on the obverse and imitations of types of Antiochus on the reverse may provide an answer. Around the start of the first century CE, a mint that previously struck one-sided Antiochus imitations started to place a high-quality portrait of a ruler and a legend YPKΩΔOY on the previously blank face. The reverse dies with a distorted image of a horse were produced long after the high-quality portrait occupied the obverse. This image must have been important and was kept to provide a smooth transition to new types. The mint masters seem to have copied coins in circulation because they were recognized, perhaps as a means of maintaining trust in the imitating coinage.

The problem

Early Sogdian coinage is known for its long runs of immobilized types. The reasons for their appearance,

undoubtedly connected with the the Sogdian political and economic situation, were discussed in the classical works by E. V. Zeymal (1975a, 56–61; 1978, 192–4; 1983a, 71–6). He defined this phenomenon, in his time commonly described by the term ‘barbaric imitations’, in the following way,

foreign coins entered areas which had neither their own coinage, nor monetary circulation, and with them came the very idea of the use in trade transactions of metallic roundels of a particular form and appearance. Local mints started reproducing these foreign coins, as a rule at a lower technical and artistic level. From one ‘generation’ to another various mistakes and deviations from the prototype accumulated, images disintegrated and lost their original meaning, while inscriptions became either completely unreadable or disappeared altogether. Usual metrological methods of study cannot be used in the case of ‘barbaric imitations’: their weight is very unstable, most commonly with a tendency to reduction (or reduction is hidden – there is a drop in content of precious metal) (Zeymal 1978, 193).

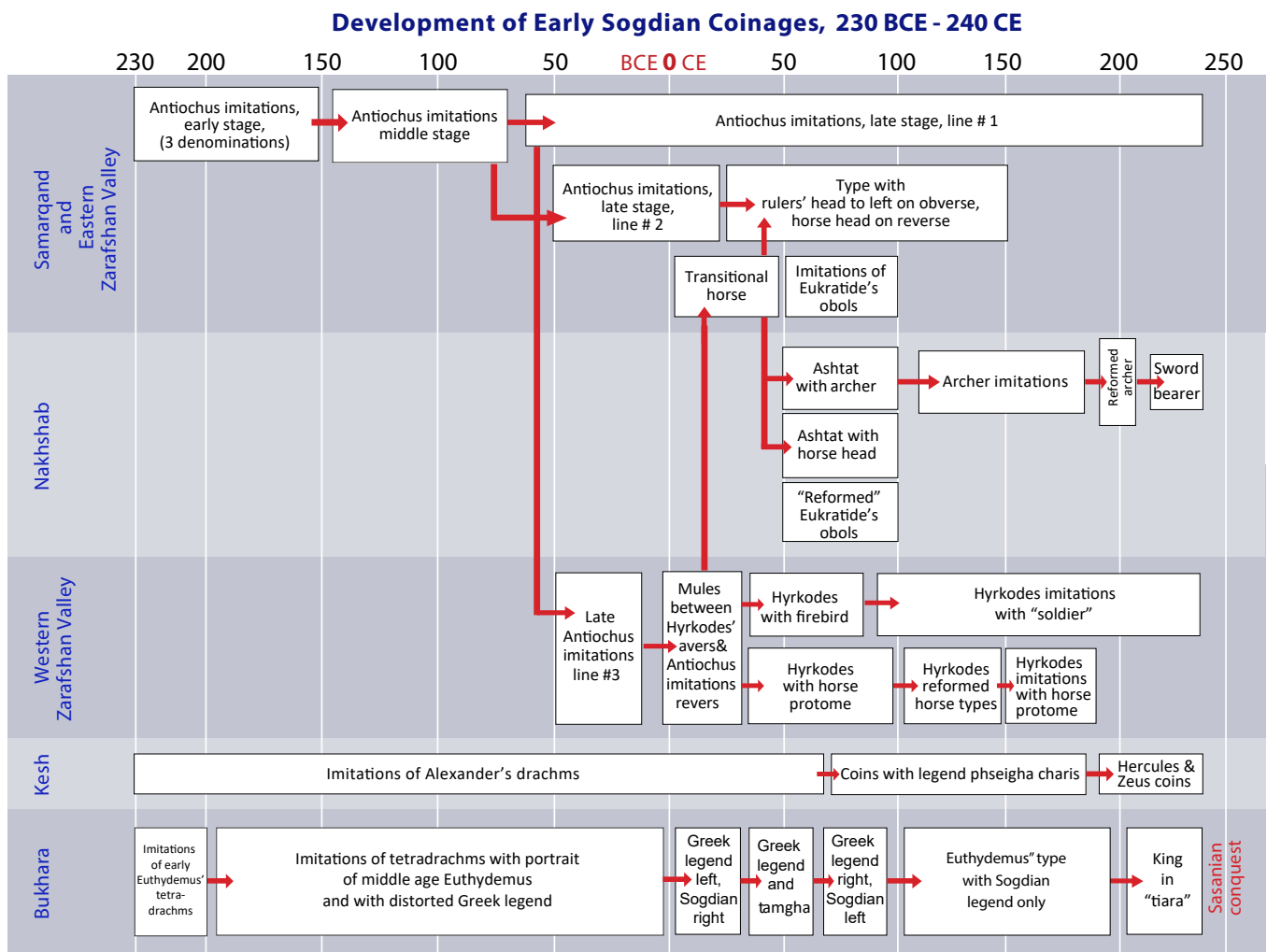


Figure 1 Chart illustrating the development of Sogdian coinages from 230 BCE to 240 CE

Zeymal also noted,

In the majority of cases known to me, the lines of imitations, which have not been interrupted in their development by some external factors such as military/political events, the passing of control over the territories from one power to another, or reorientation of economic ties, transform into local coinage (with the titles and names of rulers and sometimes geographic determinations in the legends). Sometimes we can see in these new coinages (such as early Sogdian coins reproducing the type of the tetradrachms of Euthydemus, or coins with an image of archer on the reverse), the same old tendencies towards weight reduction and other signs of the conditional (by count) circulation. (Zeymal 1975, 58).

Finally, he suggested that the study of the 'barbaric imitations' should be based on the study of typological lines or sequences of type development in which the distance from the initial prototype reflects the order in which were issued (Zeymal 1983a, 75).

There is one question which Zeymal did not discuss: why did ancient die sinkers reproduce the imitations of the previous generation of coins and never bother to return to the initial high-quality prototypes? We now have clues in early Sogdian numismatics that may help us to answer this question.

The prehistory of the Hyrcodes coinage

Sogdia (otherwise Soghd or Sogdiana) remained a part of Hellenistic Oikumene for a good century after Alexander's campaign. Like other eastern lands of the former Persian empire, it came into possession of Seleukos I. With the secession of Bactria and Parthia from the Seleukid empire in the middle of the third century BCE, the control over Sogdia passed to Diodotus. Around 230 BCE, however, the Greeks lost Sogdia to nomads (Naymark, forthcoming 2023), who divided the country into smaller polities, three of which initiated their own coinage (Zeymal 1983a; Zeymal 1983b, Zeymal 1983c; Naymark 2008). The general scheme of the development of early Sogdian coinages is shown here and in figure 1).

- 1 The realm of Kesh struck imitations of drachms with Alexander types (Zeymal 1983b, 75–6; Naymark 2008, 56–8; Belyaev, Naymark, forthcoming 2023).
- 2 Samarkand produced drachms, hemidrachms and obols imitating the type of drachms of Antiochus I Soter (281–261 BCE) from the mint at Bactra with the head of Bucephalus on the reverse (Zeymal 1983a, 81–92; 1983b, 68–74). Only the largest of these three denominations survived to the middle of the second century BCE. In the second half of the 140s BCE the portrait of the ruler was reworked in a format consistent with the coinage of Eucratides II of Bactria (145–140 BCE). After this 'rethought' type we again see a long line of immobilized types.
- 3 Bukhara issued coins emulating tetradrachms of Graeco-Bactrian king Euthydemus I with the image of Hercules sitting on a rock: the first series reproduced the appearance of the early Bactra series (230–225 BCE), but then the type was updated to represent the series minted between 210 and 206 BCE (Naymark, forthcoming 2023),

and further continued without any major type alterations to the middle of the first century CE. (Naymark, forthcoming 2022).

Around the middle of the first century BCE another mint appeared in the Zarafshan Valley to the west of Samarkand. The production of this fourth mint (figure 2, row 2) initially emulated the appearance of contemporary Antiochus imitations of Samarkand (figure 2, row 1), but quite soon the internal development in these two lines moved their designs into different directions (Zeymal 1975, table 2, 16–21; 1983b, 162, nos 97–103). In the first decades of the first century CE, the type struck at the fourth mint underwent serious transformation: the profile portrait on the obverse flipped to the left, and a Sogdian inscription appeared in front of it (figure 2, end of row 2). This unusual departure from the long series of immobilized types, however, was short-lived and did not continue: a long new line of imitations stretched beyond it. Nevertheless, since it was the conscious reformulation of the obverse type, it transformed the production of this fourth mint from being plain imitations to being Sogdian 'immobilized types'. From the 44 specimens currently known to me, the line of 'immobilized types' that stretched beyond this short-lived reform appears to have continued for over a century, probably into the middle of the second century CE (figure 1).

Soon after the appearance of the fourth mint in the Zarafshan Valley, the production of yet another, fifth, mint started circulating in the Bukharan oasis (figure 2, row 3). Initially the coins of this centre, like those of the fourth one, also emulated contemporary Samarkand issues. Yet their prototypes already belonged to the next stage in Samarkand coinage, when highly scyphate coins were already lacking images on their convex obverses. Hence this new fifth mint for a few decades struck only one-sided coins

Around the beginning of the Common Era, this fifth mint introduced obverse dies with a portrait with shoulder of a ruler turned in profile right with the legend $\text{YPK}\Omega\Delta\text{OY}$ placed behind his head (figure 2, starting with third coin of line 3). The reverse of the coins, however, was struck with the dies of Antiochus imitations with completely disintegrated images. Currently, I am aware of ten such mules that combine at least nine different obverse dies with ten different reverse dies. In other words, this initial stage in Hyrcodes coinage was rather intensive. It came to an end with the start of the regular Hyrcodes coinage in two denominations sharing obverse type, but differing in their reverse design (figure 4). The smaller denomination had a protome (the head and upper body) of a bridled horse prancing right with the legend $\text{YPK}\Omega\Delta\text{OY}$ behind it. The reverse of the large denomination features a depiction of a firebird, a creature with the legs and tail of a rooster, but with a human torso, hands and head. It is undoubtedly the Zoroastrian god Sraosha/Srosh, acting as the protector of fire: he is armed and holds a tall torch in his right hand, while flames emerge out of his shoulders. The inscription in two vertical parallel lines ($\uparrow$) $\text{OP}\Delta\text{H}\Theta\text{POY}$ ($\downarrow$) MAKAPOY flanks the image.

Find spots

Almost 200 years have passed since the first publication of a specimen of Hyrcodes coinage (Tychsen, 1828). We now



Figure 2 Flow diagram showing the progression of output from the three centres during the late stage in Antiochus imitation coinage

know the find spots for almost 200 coins from this series. And yet we still do not know the location of the mint responsible for this coinage. Almost all recorded finds of the coins of this minting centre, starting with the 'pre-Hyrcodes' line of Antiochus imitations and 'mules' and going to the tiny billon and copper coins of the first half of the third century, have come from the Bukharan oasis. It is clear now that they are found all over the territory of the oasis, although due to the specific natural conditions the distribution of finds on the map is very uneven – most of them come from the lands of ancient irrigation where thousands of ancient and medieval coins are found on the surface.

However it is very improbable that the mint of Hyrcodes was situated in Bukhara itself. The problem here is the lack of correspondence between the coinage of Hyrcodes and the Bukharan line of coins reproducing the type of Euthydemus' tetradrachms. The imitations of Euthydemus started being

minted in Bukhara between 230 and 225 BCE, i.e. about 200 years prior to the beginning of the work of the mint responsible for the Hyrcodes coinage (Naymark, forthcoming 2023). After the introduction of Sogdian legends into the type in the middle of the first century CE, this line continued being struck until the Sasanian conquest of the Bukharan oasis in the second quarter of the third century CE (Bracey and Naymark, forthcoming). In other words, the Hyrcodes coinage (late first century BCE to the second quarter of the third century CE) ran parallel to the Bukharan coins with the type of Euthydemus (225 BCE to the second quarter of the third century CE) for two and a half centuries. Meanwhile, there are no cross-references between these two coinages. There are coincidences neither in imagery, nor in the palaeography and content of the legends, that is in titles and of the names of rulers.

Most likely we are dealing here with the symbiotic co-existence of two completely independent coinages which served



Figure 3 Early coins of the Hyrcodes series

- 1 Large denomination, Historical Museum, Moscow, inv. 3.368
- 2 Small denomination, British Museum 1894,0506.1782 (ex Cunningham 1782) 1.54 g, 15.6 mm (Photographs courtesy Robert Bracey with the permission of the trustees of the British Museum)
- 3 Small denomination, Bibliothèque nationale de France, Cabinet des Médailles AA.GR. 1035, 1.45 g (Gallica website)
- 4 Small denomination, Zeno 107653, 1.76 g, 15 mm (Photograph by hfrans)

one zone of monetary circulation. One of them was responsible for the 'prestigious', and, possibly, 'international' large denomination; Bukharan coins with the type of Euthydemus are the only early Sogdian coins which were able to travel long distances (Naymark 2008, 57, fn. 7). As to the Hyrcodes series with its two smaller denominations, it was able to satisfy the needs of daily trade and small transactions. There are examples of such distribution of roles between the mints of neighbouring principalities in later Sogdian numismatics.

Where might Hyrcodes' mint be, if it was not Bukhara itself? Zeymal, who was aware only of the finds of Hyrcodes coins in the Varakhsha zone of ancient irrigation, suggested that they were issued by some authority 'in the south-western part of Soghd' (Zeymal 1978, 209; 1983c, 252). Edward Rtveladze (1990, 181) supported this point of view. Yet the fairly comprehensive archaeological surveys of the southern and western parts of the Bukharan oasis conducted in the late 1970s and 1980s did not find any significant centres/settlements that could be responsible for such a major and continuous coinage. As a result, I suggested that Hyrcodes was the ruler of a principality situated in the western part of Zarafshan Valley east of Bukhara, in the area of modern Karmina (Naymark 1991, 161; 2001, 53–4). Besides the 'genetic' connection of Hyrcodes type to the Samarkand line of Antiochus imitations, I based my judgement on the patterns of the political delimitation of the area during the last 2,000 years. Indeed, the Bukharan oasis was more or less



Figure 4 'Mules' with the obverse of Hyrcodes and the reverse of the Antiochus imitations

- 1 Private collection, Tashkent (Photographs courtesy Alexander Mospanov)
- 2 Dmitrii Markov collection, Bedminster, New Jersey, USA (Author's photographs)
- 3 Ashmolean Museum, 1.28 g, 14.8 x 13.9 mm, die axis 10h (Photographs courtesy Luke Treadwell)
- 4 Zeno 258517 ex Steve Album Auction 38, 24–27 September 2020, lot 124, 1.52 g
- 5 Bibliothèque nationale de France, Cabinet des Médailles 6522, 1.51 g (Gallica website)
- 6 Private collection, Tashkent (Photographs courtesy Alexander Mospanov)
- 7 Zeno 217271 Jan Lingen collection, Netherlands, 1.89 g, 16 mm (Photographs by Jan Lingen)
- 8 British Museum, 1902,0608.430 (ex Secretary of State for India, Hoernle), 1.46 g, 15.1 mm, die axis 10h (Photographs courtesy Robert Bracey with the permission of the trustees of the British Museum)
- 9 State Hermitage Museum, Department of Numismatics, inventory no. 530, 1.90 g (Photographs courtesy Konstantin V. Kravtsov)
- 10 Private collection, USA (Photographs by asbar)

politically monolithic throughout most of its history, while the adjacent area around Karmina always had a polity that acted as Bukharan satellite: either as the seat of the Bukharan crown prince, or as a vassal principality with close economic, political and cultural ties to Bukhara.

Unfortunately, the existing corpus of written sources

concerning early Sogdia does not yet allow us to draw the political map of the country in the first centuries CE. The recent discovery of Han period documents on wooden slips at the Xuanquan site near Dunhuang revived interest in the subject, as one of the documents mentions envoys from Kangju and Suxie arriving jointly to Jiuquan (Bi 2019; Huber 2020, 70). The realm of Suxie is known from Hanshu to be one of Kangju's five dependent polities, Suxie, Fumo, Yuni, Ji, and Aojian (Hulsewe and Loewe 1979, 130–1). Most likely Suxie stands for Sogdia and in this text represents Samarkand. As to the four other principalities, there is no information yet that could help us to localize them with certainty. It is worth noting that five major mints functioned on the territory of Sogdia at the time, when Ban Gu completed the text of Hanshu (23 CE), Samarkand, the principality of Hyrcodes (Kharqana?), Bukhara, Kesh and Nakhshab.

Our knowledge of Sogdian historical geography remains very poor up to the early Middle Ages. In the sixth century CE, when we finally receive more or less clear picture of Sogdia's political division from Chinese sources, a separate principality turns up in the area of later Karmana. The Chinese transcribed its name as Hehan or Huohun. In various Chinese sources (Weishu, Suishu, descriptions of Xuanzang travels, Beishi, Tongdiao, Xin Tangshu) it also figures as Dong An (Eastern Bukhara) and Xiao An (Lesser Bukhara) (Bichurin, 1950, 312; Chavannes, 1903, 136–7; Malyavkin 1989, texts 77 and 78, n. 352, 199–200, nn 579 and 580, 262–3; Borovkova 1989, 141–42; Xuanzang, trs Beal 1884, 34; Xuanzang, trs Watters 1904, 97–98; Xuanzang, trs Aleksandrova 2012, 34; Huili, trs Beal, 46; Huber 2020, 29, 44, 54, 57, 58).

The very designation of this principality in Chinese sources suggests its close connection to Bukhara, but the nature of this relationship is unclear. According to Xin Tangshu there was a local dynasty in Huohun (Hehan), which by 627 CE remained in power already for ten generations (Bichurin 1950, 312; Chavannes, 1903, 137; Huber 2020, 58). Yet it is found in the lists of Samarkand dependencies in Weishu, Bei Shi, and Xin Tangshu, albeit along with Bukhara itself (Bichurin 1950, 271; Borovkova, 1989, 138; Huber 2020, 54).

Wilhelm Tomaschek (1877, 99–100) identified the capital of Hohan/Lesser/Eastern Bukhara of the Chinese chronicles, also called Houjin with Kharqana/Khargankath of early Islamic authors. Early Islamic geographers described Kharqana as a town (Istakhri, ed. de Goeje, 314) with a Friday Mosque (Hudud al-'Alam, trs Minorsky, 112) or as a town-sized settlement (Muqaddasī, ed. de Goeje, 280). The name of the ancient city survived in the name of kishlak Xargankat, which, according to the map of 1940 was situated at a distance of 6 kilometres to the north of the site of Old (Medieval) Karmina, i.e. just at a distance of one farsakh, as Yaqut al-Hamawi stated in the early thirteenth century (Kamalitdinov 1993, 71). It looks as though Karmina replaced the old centre of Kharqana/Khargankath as the centre of a large agricultural region. Yet the canals that watered the broad area of the former principality retained the old name Kharqanrud until the late Middle Ages.

It is worth mentioning here that Sam'ani places in the area of Karmina a settlement called Warqud (Waraqud in Yaqut) (Barthold 1963, 149, n. 11; Kamalitdinov 1993, 71). Pavel Lurje includes this name in a group of toponyms, which could be related with anthroponym Irkod/Hyrcodes (other

settlement names in his list are old name of Tawawis, Arqud; Araqud-diza near Nasaf (Nakhshab); and Urgut 40 kilometres south-south-east of Samarkand (Lurje, forthcoming).

It should be noted that all the arguments for the location of Hyrcodes mint in this area are circumstantial. As to the hard data, we still have no information about finds of Sogdian coins in this area; despite the archaeological investigations conducted in the area of Karmina-Navoi between middle of 1990s and the beginning of 2000s, this zone remains a blank spot on the numismatic map of Sogdia. In fact no single pre-Islamic coin from this area has ever been reported in print. I must admit that the suggested localization of Hyrcodes mint in the middle course of Zarafshan river (Naymark, 1991, 161) or more precisely in the area of Karmana/Karmina (modern Navoi) (Naymark, 2001, P. 5354), remains, as decades ago, completely hypothetical.

As the question remains open, I might mention here at least one more possible locality, the town of Tawawis situated in the north-eastern corner of the Bukharan oasis. Descriptions in early Islamic sources suggest it was a significant town (Barthold 1963, 149–150). Its traditional identification with the site of Shahr-i Vairon is likely to be erroneous; judging by its layout and size, Shahr-i Vairon was one of the early fortresses built on the spots through which major roads entered the Bukharan oasis. Much more sensible is a recently proposed identification of Tawawis with the large town site of Buston situated in the same area (Stark and Mirzaakhmedov 2012, 93). It is worth mentioning here that, according to Tarikh-i Bukhara, the old name of Tawawis was Arqud (Narshakhi trs Frye 1954, 11; Narshakhi trs Kamalitdin 2011, 27). As already mentioned above, this early name could have connection to the anthroponym Yrkod/Hyrcodes (assuming that this piece of information from Tarikh-i Bukhara is indeed correct).

Chronology

Even though there is a fairly good record of the find spots of Hyrcodes coins, we have no archaeological dates because none of the registered finds come from stratified archaeological contexts. There is also no hoard evidence. In other words, the dates of this coinage have to be based on typological considerations, comparative analysis and the framework of local history, both general and numismatic.

Let us start with the terminal date of the Hyrcodes coinage as it is the simplest to establish. In the second quarter of the third century CE, the Bukharan oasis was conquered by the Sasanians and incorporated into the Kushano-Sasanian protectorate (Naymark 2001, 69–70; Omel'chenko and Gorin 2019). That caused a drastic change at the heart of local monetary circulation. For centuries Sogdians minted and used only silver coins. The basis of Kushano-Sasanian circulation, on the contrary, was copper: imitations of the Kushans (Huvishka, Vasudeva and Kanishka II), some early Sasanian coins (in the Bukharan case these were mostly the production of the Marv mint) and Kushano-Sasanian copper. As the late series of Hyrcodes coins were severely debased silver, there is little if any doubt that their circulation automatically terminated under the new regime.

It is also highly unlikely that the Hyrcodes coinage could have come to a halt earlier. The fairly massive coin collections gathered on the lands of ancient irrigation around the

Bukharan oasis reveal no coin series that could be squeezed into the history of local monetary circulation between the latest Hyrcodes coins and the introduction of Kushano-Sasanian monetary economy.

The starting date of the Hyrcodes coinage is much harder to establish. It is clear there were three major stages in the development of Antiochus imitations before the portrait of Hyrcodes appeared on the obverses of the mules. The beginning of the first stage is securely connected to the collapse of the Greek control over Sogdiana around 230 BCE. The second stage started with the introduction of the portrait format adopted from the Bactrian coinage, where this specific format was introduced during the reign of Eucratides II (around 145 BCE). Judging by the degree of transformation of images, the second stage was at least as long as the first one and we can make an educated guess that it ended some time around the middle of the first century BCE. The typology of coins in the third stage suggests that it was shorter than the previous two, but it is too risky to base conclusions on such a consideration.

It is, however, possible to start at the other end. The innovative format of Hyrcodes' portrait represented the image of a Central Asian nomadic ruler so well that over a short period of time it was adopted on the coins of three other Sogdian principalities (Zeymal 1973, 71; 1975, 14; Belyaev and Naymark 2015). One of those reproduced an early version of Hyrcodes' portrait from the mules. The coins of this centre went through a long period of development (at least 15 die engravers changed on this mint) before in their own turn they affected the formation of the type of the middle denomination in the Ashtat coinage of Nakhshab (Naymark 2020). The latter, on different grounds, can be dated to the third quarter of the first century CE.

In other words, the position held by the mules combining an obverse with a portrait of Hyrcodes and a reverse of Antiochus imitations within the framework of Sogdian coinage adopted here suggests the date within a few decades around the beginning of CE.

Comparative analysis of the language, content and palaeography of the legends indicates the same date. Besides the name, which finds persuasive comparanda in Sarmatian names from northern Black Sea area (Lurje, forthcoming), there is a two-word legend by the sides of the image of Sraosha/Srosh on the large denomination of Hyrcodes coins. Although rendered in Greek letters, it is in fact bilingual. ΟΡΔΗΘΡΟΥ on the left is an Iranian compound with a Greek genitive ending, in which Iranian *Athar*, 'fire', occupies the second position after the connecting letter *eta*. While it is hard to propose a clear etymology for the first component, the general meaning of this compound can be guessed from the image it accompanies, something like 'protector of the fire' would fit it perfectly, as it would correspond to the major function and, consequently, the epithets of Sraosha/Srosh as a deity. The right line of the legend contains a single Greek word, the epithet ΜΑΚΑΡΟΣ meaning 'happy, fortunate, blessed', given in the genitive form ΜΑΚΑΡΟΥ. A similar combination of Sogdian and Greek in coin legends is recorded on Kesh coins with the legend ΦΣΕΙΙΑ ΧΑΡΙΣ and on Nakhshab coins of Ashtat. These two types are dated to the third quarter of the first century CE. In terms of palaeography, however, the legend on Hyrcodes coins is older than those on the coins of Kesh and Nakhshab, as it displays no

tendency towards the development of the square letter forms or any other features characteristic for the inscriptions of the second half of the first century.

Portrait

As far as we can currently judge, the Hyrcodes coins were the first to introduce a new type of monetary portrait that used the technical and artistic achievements of Hellenistic coin art to create an 'ethnographically' precise portrait of a local Central Asian ruler of nomadic origin (see figure 3).

Among the features obviously going back to Graeco-Bactrian monetary tradition are the technique of die engraving, the general layout of the reverse (standing figure turning to the left between two vertical lines of inscription), the format of the portrait and, finally, the literate Greek inscriptions executed in elegant script. And yet the designer of the type preserved only one element of Greek royal portrait, the diadem, and even this one without traditional ribbons. The drapery on Hyrcodes shoulders also looks very Hellenistic, but this, most likely, was just a rudiment of traditional design rather than a conscious choice.

The most notable among the nomadic features is the torque on Hyrcodes' neck, the traditional nomadic symbol of high status. Even more important are the new local features in the physical appearance of the bust. The shape of his head was obviously defined by the circular deformation of the skull that was widespread among Central Asian nomads of antiquity. Very characteristic is the long face with equally long nose, very far removed from the aesthetic ideals of antiquity but in perfect harmony with the local nomadic art of Central Asia. The hair style of Hyrcodes also reflects a local ethnic style: long straight locks of hair on the back of the head and short bangs above the forehead, lush moustache and goatee beard.

Such a physical appearance is typical for the protagonists of the scenes carved on bone plaques of the first century CE in Sogdian borderlands and the adjacent nomadic world. It is found on the Orlat belt buckles (Pugachenkova 1989a, 148–51, ill. 70–2; Pugachenkova 1989a, 104–6; Ilyasov and Rusanov 1991a, 244–5, 248; Ilyasov, Rusanov 1991b, 176–8, cat. 272–6; Ilyasov, Rusanov 1998, pl. 4, 1, 2, pl. 5, 1), a plate from Kyzylbulak IV (Goryachev et al. 2016, 633–6, figs 1–4), and on an overlay horn plate for a composite bow found in the Kylyshzhazhar burial ground (Podushkin 2022, 192, fig. 8). Judging from the archaeological context of an engraved antler with similar image that was found in Kalaly-gyr 2 at Khorezm, this type might have been formulated in steppe art already by the second century BCE (Vainberg 2004, 186, ill. 5/24, upper). Curiously, there seems to be a piece of evidence suggesting that coins with such a portrait had some influence on steppe art; a round medallion of birch bark with a profile image of man's head in this style turned up in a Xiongnu royal complex in the Tsaraam Valley near Kyakhta in Buryatiya (Miniaev and Sakharovskaia 2007, 51, fig. 12).

Reverse

While the obverse image seems to provide a plethora of information, the reverse with its severely distorted image of the horse head could be expected to produce almost none. And yet it is this reverse that provoked the appearance of this article. In my earlier publications I interpreted the then known mules with

Hyrcores obverse and the reverse of an Antiochus imitation as an attempt of the mint to utilize unused reverse dies after the beginning of the reform (i.e. after the introduction of Hyrcodes' portrait on the obverse). Not Now, however, this explanation of the phenomenon does seem right. First, there are too many of these mules and, what is even more important, they are all produced with different dies. Second, one could expect the upper die to wear out faster than the anvil one; meanwhile, the side with the new portrait of Hyrcodes is convex which means that it carries the imprint of the anvil die. Third, the reverse dies used in the production of the mules demonstrate a progressive distortion of imagery. Fourth, the latest of the reverse dies used in the production of the mules appear to be much further down the line of typological development than the latest dies used in the production of the preceding one-sided imitations. The fifth and the most important consideration is that the portrait on the obverse is gradually evolving and this process goes along with the transformation of the image on the reverse. In other words, despite the obvious dissonance between the two sides of the coins, the reverse dies with their completely distorted image of the horse kept being produced while the obverse had the high-quality portrait of the ruler. This means that the deteriorating reverse image was of particular importance and had to be preserved.

What could cause such an unusual phenomenon? The only sensible answer I can currently offer is that the population was accustomed to the look of Antiochus imitations and, in an attempt to legitimize the new coin type, the mint of Hyrcodes decided to make the transition gradual. If this assumption is correct, we may offer an answer to the principal question posed at the beginning of the article: what caused the gradual degradation of imagery on the ancient imitational issues? It looks like the mint masters intentionally copied coins picked out of the current circulation because such coins were already accepted by the population. Any significant deviation from this appearance might undermine trust in the imitational coinage, which would be very hard to restore, as in the vast majority of cases imitational issues had low intrinsic values and circulated as recognizable units.

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Mints and Urban Dynamics: Baghdād, al-Raqqa and other places

Stefan Heidemann

The large cities of the ‘Abbāsid empire, such as Baghdād, al-Rayy, or al-Raqqa, were not cities in the Western (Max Weber’s) sense, but rather have to be understood as agglomerations of cities.

In the twelfth century the Ḥanafī scholar al-Kāsānī defined a city as where we find one congregational mosque, reflecting earlier debates by Abū Yūsuf and Muḥammad al-Shaybānī.

Large populated cities, such as Baghdād, are naturally structured by several different urban entities, each with a congregational mosque. These cities have thus their own legal quality as *miṣr* (pl. *amṣār*). Baghdād consists of the palace city, Madīnat al-Salām, Karkh, al-Ruṣāfa, and other entities. Al-Raqqa, the residence city of Hārūn al-Rashīd, is an agglomeration of al-Raqqa proper, al-Rāfiqa, the garrison city, and of the palatial area in the north of both. For al-Rayy we have two names, al-Rayy and al-Muḥammadiyya. This list could be easily extended.

Numismatics can help us to understand those urban dynamics. Coins can be used for more than economic and political history or for archaeological stratigraphy and settlement pattern. Often having as many as 150 words, they can offer information about the legal and administrative structure of cities. Mint names used on coins, often the contemporary official name of the place of issue, may corroborate literary sources for urban history. Sometimes the mint of the provincial capital is identified by the name of the province, as in the case

of the mint Ifrīqiya, which is Qayrawān, or the mint of Fārs that is Shīrāz. There may be an honorific use of a name for an entire urban agglomeration, for example, al-Mubāraka for Tāhart in North Africa. However, we often get a precise name of an urban entity within larger urban agglomerations which may reveal the structure of that agglomeration. There is no mint called Baghdād before the Mongols. The main mint was established within a city of its own, the palace city of Madīnat al-Salām. We find also other names of locations within the agglomeration Baghdād on coins. We find two operating mints in the twin cities al-Raqqa and al-Rāfiqa, seemingly within each of the two cities. This suggests that for cities where we have less archaeological evidence, such as al-Rayy or Iṣfahān, but more than one mint name, the mint names could denote urban entities within the agglomeration. The legal model for that can be found in Ḥanafī law, but usually the law reflects positively a reality. Here the city Ktesiphon or al-Madā’in may offer a key for the understanding.

This paper will be published in full at a later date.

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Badshah as the Caliph: Probing caliphal pretensions of the Mughal rulers of India

Sanjay Garg

Abstract A number of Muslim dynasties contemporary to the Mughals professed their allegiance to the Ottoman caliph-sultan, Selim I (1470–1520 CE) and his successors. However, the Safavids in Iran and the Mughals in India continually remained quite indifferent to the temporal authority claimed by the Ottoman rulers. At the same time, to rival the claim of the Ottoman rulers, some of the Mughal rulers even sought to appropriate to themselves the position of the supreme leader of the Muslim world according to Sunni/Hanafi traditions. Whether these Mughal rulers acted to assert their political and religious authority vis-à-vis the Turkish sultan for reasons of imperial pride, or sought legitimacy in Islamic theory which permitted a ruler the privilege of an imam (leader) in the territories under their control, has been a subject of debate. This paper seeks to enter this debate from numismatic and epigraphical view point.

A majority of the early Turk rulers of India (1206–1413 CE) – the Mamluks, the Khiljis and the Tughluqs – accepted the nominal suzerainty of the caliph as part of their state polity and prided themselves as being the ‘helper/ right hand/ deputy of the Commander of the Faithful’ (*Nasir/ Yamin/ Nayab-e Amir ul-Mominin*). Their coins bear testimony to this symbolic relationship between the caliphate and the sultanates of Delhi. However, during the rule of the two non-Turkic dynasties that assumed power in Delhi after the Tughluqs, namely the Sayyids (1414–51 CE), and the Lodis (1451–1526 CE), the

relations between the sultans of Delhi and the caliph were completely redefined.

Even before the Mughals wrested political power in India from the last scion of the Lodi dynasty (1526 CE), the mantle of caliphate had been securely appropriated by the Ottoman ruler, Sultan Selim I (1470–1520 CE). The Mughal rulers, however, ‘regarded the caliphal pretensions of the Turks [Ottomans] with cautious ambivalence’ (Sharma 2017, 3).

While a number of Muslim dynasties contemporary to the Mughals, such as the Shaybanids in Turkistan, the Gujarat sultanate in India (1536 CE), and the Morocco sultanate (1579 CE) professed their allegiance (*baiyat*) to the Ottoman caliph-sultan, the Safavids in Iran and the Mughals in India, continually remained quite indifferent to the temporal authority claimed by the Ottoman rulers. At the same time, to rival the claim of the Ottoman rulers, some of the Mughal rulers even sought to appropriate to themselves the position of the supreme leader of the Muslim world according to Sunni/Hanafi traditions. Whether these Mughal rulers acted ‘to assert their political and religious authority vis-à-vis the Turkish Sultan for reasons of imperial pride [emphasis added]’ (Sharma 2017, 3), or sought legitimacy in Islamic theory which permitted a ruler the privilege of an imam (leader) in the territories under their control, has been a subject of debate.

This paper seeks to enter this debate from numismatic and epigraphical view point.

I

In strict theory, the Muslim State is a pure theocracy; its true sovereign is Allah (God), and the human ruler is merely Allah's agent on earth, bound to carry out the divine will as manifested in the Revealed Book (Quran) and subject to the interpreters of the Quranic law (*Sharia*). (Sarkar 1919, 310)

In the world of Islam *khalifah* or caliph is 'the title given to the successor of Prophet Muhammad, who is vested with absolute authority in all the matters of state, both civil and religious.' The term *khalifah* (pl. *khala'if*, *khulafah*) is derived from the Arabic word *khalf* which means 'to leave behind.' (Hughes 1885, 263).

History of the caliphate

The history of the caliphate might be divided into three unequal parts, viz. the Patriarchal period, the period of the Umayyads, and the period of the Abbasids (Khuda Baksh 1912, 26).

The Patriarchal Period, 632–61 CE

The Orthodox Caliphs

After the death of Prophet Muhammad (11 AH/632 CE), his most-trusted counsellor, Abu Bakr (r. 632–4 CE), who was also the Prophet's father-in-law, succeeded him as the first caliph. He was succeeded by 'Umar (r. 634–44 CE), 'Usman (r. 644–56 CE) and 'Ali (r. 656–61 CE). On the question of succession, Islam was divided into two sects, viz. the Shi'as (literally 'followers') and the Sunnis (literally 'one of the faith, a traditionalist'). The Sunnis far outnumbered the Shi'as, who maintained that 'Ali, cousin and son-in-law of the Prophet, is the first 'legitimate imam' or the successor of the Prophet and, therefore, reject Abu Bakr 'Umar and 'Usman – the first three caliphs of the Sunnis – as 'usurpers'. According to their tradition, only those who have descended from 'Ali and his wife Fatima, daughter of the Prophet, are the rightful imams. However, Abu Bakr, 'Umar, 'Usman and Ali, known as *Al-Khulafah al-Rashidun* (the Orthodox Caliphs) being directly related to the Prophet claim a very high reverence in the Islamic world. An inscription dated 1055 AH (1645–6 CE) found in a mosque at Hijli (West Bengal) quotes a *Hadis* (saying of the Prophet) lauding the importance of the first four caliphs.

The Prophet, may peace be upon Him, said that 'I am the city of knowledge and its ceiling is Abu Bakr and its wall is 'Umar and its decoration is 'Uthman and its gate is 'Ali.'

(Kadri in Khwaja 2011, 65–6, 'Inscription No. IV from Hijli, West Bengal, dated A.H. 1055 (1645–46 A.D.)')

In Fiqh literature or Islamic jurisprudence, *khalifah* is usually interpreted as an abbreviation of *Khalifah Rasul Allah*, i.e., the 'Successor of the Apostle of Allah', not that of *Khalifah Allah*, or the 'Vicegerent of Allah' on the earth. In contradistinction to Abu Bakr and his three successors, *khalifas* 'Umar, 'Uthman, and 'Ali, the Umayyad and Abbasid *khalifas* willingly assumed the title of *Khalifat Allah* which the famous theologian and jurist, Al-Mawardi (d. 1058 CE), regarded to be illegal and impious (Gibb 1982, 151). According to Al-Mawardi, a *khalifah* succeeds someone who is absent or dead and Allah is not absent and does not die (Yate online edn, 27).

The Umayyads, seventh–eighth centuries CE

The Umayyads established their dynastic rule in 661 CE, with their capital at Damascus in Syria. During their rule the nature of the caliphate underwent a change, which no longer followed the rule of succession by consensus but turned into a *Khilafat-e Muluki* or Monarchical Caliphate. The Umayyad caliphs were also first to assume the title *Khalifat Allah*.

The Abbasids, eighth–thirteenth centuries CE

The Umayyads were overthrown by the Abbasids in 750 CE. Later, in 756 CE, Abd al-Rahman I, the lone survivor of the Umayyad dynasty, escaped to Al-Andalus (today's Spain and Portugal), where he established the Umayyad caliphate at Cordoba. The Abbasids initially ruled from Kufa, and later from Baghdad. Their rule is often referred to as the 'Islamic Golden Age,' when science, technology, philosophy, and the arts flourished. Their dynastic rule came to an end in 1258 CE when Mongol forces under Hulagu Khan conquered Baghdad and executed the reigning Abbasid caliph Al-Musta'sim (1242–58 CE). For about three years, the Sunni world remained without a caliph. Later, in 1261 CE, the Abbasid caliphate was restored at Cairo by the Mamluk sultan of Egypt, Baybars I (1223–77 CE), who installed Al-Mustansir II (d. 1261 CE), a scion of the Abbasid dynasty and an uncle of the slain caliph, Al-Musta'sim, as the new caliph. The caliphate at Cairo continued till 1517 CE when the Ottoman sultan, Selim I (r. 1513–20 CE) conquered Syria and Egypt, deposed the reigning caliph, Al-Mutawakkil III (r. 1508–16), and assumed the role of the caliph, thus laying the foundation of the Ottoman Caliphate.

Khutbah and Sikkah in Islamic State Polity:

Two unmistakable insignia of Islamic concept of sovereignty were *Al-Khutbah*, the recitation of the name of the sovereign at the (Friday) sermon at the congregation prayer (*Zuhr*) at the mosques, 'in the course of which a prayer is recited for the welfare of the recognized head of Islam' (Levy 1957, 292); and *Al-Sikkah*, striking the coin in the name of the sovereign. According to 'the greatest theologian of the time', Abu Hamid al-Ghazali (d. 1111 CE), 'any government was lawful so long as its ruler, or *sultan*, made formal acknowledgement of the Caliph's theoretical authority in his domain', which, Ghazali maintained, a sultan could do 'by including the reigning caliph's name in public prayers (*khutbah*) and on his minted coins (*sikkah*)' (Eaton 1993, 29). The omission of the caliph's name from the *khutbah* was taken as the sign of rebellion.

Since the text of the *khutbah* has rarely been preserved, the coinage is usually the only surviving expression of formal sovereignty.

II

Caliphal allegiance of the pre-Mughal Muslim rulers of India, thirteenth to sixteenth centuries CE

Sultans of Delhi

An important source of religious legitimacy for the Muslim rulers of India was the centuries-old idea of the Sunni caliphate. Unlike the early Turk rulers of Delhi (1206–1413 CE) who accepted the nominal suzerainty of the Caliph as part of their state polity (Garg 1995, 2005–6 and 2008–9), the rulers of the Sayyids dynasty (1414–51 CE), professed their allegiance

to the Timurid rulers. Khizr Khan (1414–21 CE), a noble of Amir Timur and founder of the Sayyid dynasty in 1414 CE, did not assume any regal title and preferred to rule his Indian domains as *Rayat-e Ala* (vassal) of Timur, and later of his son Shah Rukh. However, strangely enough, the names of these Timurid rulers were not inscribed on his coins which bear the name of Firoz Shah, and his son, Muhammad Shah, of the extinct Tughluq dynasty together with a caliphal invocation, *Al-Khalifah Amir ul-Mominin Khallda Khilafatah* (the Caliph, Commander of the Faithful, may his caliphate perpetuate). His son and successor Mubarak Shah (1421–34 CE), did assume the title of sultan, and continued the caliphal invocation on his coins, viz. *Fi Zaman al-Imam Amir ul-Mominin Khallda Khilafatah* (During the reign of Imam, Commander of the Faithful, may his caliphate perpetuate). The same practice of inscribing caliphal invocations on coins was continued by the remaining two rulers of this dynasty, Muhammad bin Farid Shah (1434–45 CE) and 'Ala al-Din 'Alam Shah (1445–51 CE).

The Lodis (1451–1526 CE), who succeeded the Sayyids as the sultans of Delhi, were Afghans, and their theory of kingship completely differed from that of their Turk and Sayyid predecessors and was based, at least initially, on the Afghan concept of brotherhood. However, the coins of the rulers of this dynasty, Bahlul Shah Lodi (1451–89 CE), Sikandar Shah Lodi (1489–1517 CE) and Ibrahim Shah Lodi (1517–26 CE), display the continuance of the caliphal invocation found on the coins of their predecessor rulers of the Sayyid dynasty.

It is, however, debatable who this 'Commander of the Faithful' was on the coins of the Sayyids and the Lodis, that is, whether they were referring to the Abbasid caliph at Cairo, or whether it was simply a case of currency conservatism and typological continuum.

Other sultanates

Other pre-Mughal sultans, including contemporary sultans on the Indian subcontinent, included the sultans of Bengal (1206–1574 CE), the sultans of Madura or Ma'bar (1334–77 CE), the Bahmani sultans (1337–1558 CE), the sultans of Kashmir (1346–1586 CE), the sultans of Khandesh (1382–1601 CE), the sultans of Malwa (1392–1561 CE), the sultans of Jaunpur (1393–1493 CE), and the sultans of Gujarat (1396–1573 CE).

A majority of these regional sultans paid their numismatic tributes to the Abbasid caliph and titled themselves, like the sultans of Delhi, as 'helper/right hand/deputy of the Commander of the Faithful' (*Nasir/Yamin/Nayab-e Amir ul-Mominin*).

Sultan as caliph

Apart from the unique example of the Khilji ruler Qutb ud-Din Mubarak Shah Khilji (1316–20 CE) of Delhi, who had proclaimed himself as *Al Imam al-A'zam* ('The exalted Imam'), *Khalifah-i Rab ul-'Alimin* ('The Successor of the Lord of the World i.e. Allah'), *Khalifatu-l-lah* ('The Successor of Allah'), and *Amir ul-Mominin* ('Commander of the Faithful') (Garg 2005–6), there are at least three instances where the regional sultans appropriated the caliphship to themselves.

Madura Jalal ud-Din Ahsan Shah (1333/4–39 CE) not only declared his independence from the Delhi sultanate but also assumed the title of *Khalifatu-z-Zaman* ('Caliph of the

Age'). He also called himself *Sikandar uz-Zaman* ('Alexander of the Age').

The Bahmani Sultans This sultanate was founded in 1347 CE by Ala-ud-Din Bahman Shah (1292–1358 CE). His panegyrist, Isami, goes to the extent of calling his patron *Khalifah Bar Haq* ('The Rightful Caliph') (Ernst 1992, 59). Another chronicler, Firishtah, records that at the time of his coronation, Ala ud-Din Bahman Shah also adopted the black parasol of the 'Abbasid caliphs as part of his court ritual. (Husaini 1960, 19, 136).

Malwa The Malwa sultan, Ghiyas ud-Din Shah, had adopted the title of *Khalifatu-z-Zaman Fi al-'Alamin* ('Caliph of the Age in the Worlds'), even as heir-apparent (1456–69 CE). Later, when he succeeded as king (1469–1500 CE), he further elevated his caliphal title to *Khalifatu-z-Zaman wa al-Ahd Fi al-'Alamin* ('Caliph of the Age and the Times in the Worlds').

III

The beginning of the sixteenth century constituted a landmark in Islamic as well as world history. There were three dominant forces at this time, the Ottomans, the Timurids (later known as the Mughals) and the Safavids. These three Turco-Persianate Muslim empires are sometimes also referred to as the 'Gunpowder Empires', or more specifically 'Islamic Gunpowder Empires'. The Ottomans and the Mughals had a common Turco-Mongol heritage and were orthodox Sunnis, while the Safavids were Shi'ites. Thus, between the Ottomans and the Mughals, the overlordship of the Sunni *ummah* was always an issue of contention and the Mughal emperor was not infrequently called *khalifah* (Alam 2004, 14).

Mughals rulers in caliphal role

The rise of the Mughals was almost contemporary with the rise of the Ottoman Turks, though their acceptance of Islam was later, and the Ottoman ruler Bayazid Yildirim (1389–1403 CE) viewed the newly converted Timur somewhat with disdain. However, Timur was successful in defeating Bayazid in the battle of Angora in 1402 CE and took him captive. Bayazid died as a prisoner in Timur's hands in the following year (Buckler 1923, 594–5).

The Timurids, even before Babur, believed in the theory that each emperor was also the caliph of his own dominion.

Babur (r. 932–7 AH/1526–30 CE)

Babur's memoirs have been preserved in a fragmentary form and there is a gap of nearly eleven years (1501–19 CE) in the extant text. Therefore there is little information available regarding his caliphal pretensions before his invasion of India. We do, however, know that initially Babur's relations with the Ottoman Sultan Selim I (r. 1513–20 CE), were not amicable as the latter had provided military assistance to Babur's Uzbek rival Ubaydullah Khan. Upon his accession to the Ottoman throne in 1513 CE, though, Selim I was reconciled with Babur (fearing that he would join the Safavids). Later, when in 1517 CE Sultan Selim I conquered Syria and Egypt and assumed the role of the caliph, Babur refused to accept him as the leader of the Muslim world.

Babar laid the foundation of Mughal empire in India by defeating Ibrahim Lodi at Panipat in 1526 CE (933 AH). The

silver coins issued from his Indian mints bear the names of the *Khulafah-e Rashidun*, together with their personal titles (*‘alāmat*), *Abā Bakr al-Siddīq/ ‘Umar al-Fārūq/ ‘Usmān al-Affān/ ‘Alī al-Murtazā* (‘Abu Bakr, the Truthful Witness; Umar, the Discriminator between Right and Wrong, Usman, the Forgiving and Ali, the Pleasing to God’) (figure 1).¹



Figure 1 Babur, silver tanka, Agra, AH 936, with names and titles of the *Al-Khulafah al-Rashidun* (the ‘Orthodox Caliphs’), Zeno #151371

After Babur, the practice of including the names of the ‘Rightful Caliphs’ on coins was continued by Humayun, Kamran Mirza, Akbar, Shah Jahan I, Murad Bakhsh, Shah Shuja and Alamgir II.

Later, after his decisive victory in the battle of Khanwa against the Rajput ruler of Mewar, Rana Sanga, on 16 March 1527, Babur lost no time in asserting his claim to the caliphship in his newly won territories. An inscription dated 934 AH (1527–8 CE) on a mosque in Rohtak, Haryana, records its construction ‘during the caliphate of His Majesty Zahir ud-Din Muhammad Babur’ (*dar Khilafat Hazrat Zahir ud-Din Muhammad Babur*) (Hussain 1987, 56–7, ‘Inscription dated AH 934 from Rohtak’).

Hodivala records that coins dated 936 AH (1529–30 CE) issued from Agra, the capital of Babur’s newly acquired kingdom, was given the honorific *Dār al-Khilāfah* (‘Abode of the Caliphate’) (Hodivala, in Garg (ed.) 2014, 172, 177). However, no such coin has been reported. The earliest numismatic evidence of this epithet is found on copper coins of Babur’s son, Humayun, dated 937 AH (1530–1 CE).

Humayun (r. 937–63 AH/ 1530–56 CE)

Like his father, Humayun also issued coins in the name of the *Khulafah-e Rashidun*, but some of his coins also bear distinguished attributes of each one of them, *Bi-Sidq Abī Bakr Wa ‘Adl ‘Umar, Ba-Hayā-ti ‘Usmān Wa ‘Ilm ‘Alī* (‘By the Truth of Abu Bakr and the Justice of Umar; by the Modesty of Usman and the Wisdom of Ali’) (figure 2).

Agra was now called *Dār al-Khilāfah* (figure 3), while Lahore, another prominent city of Humayun’s empire was also allowed to share this epithet on his coins (figure 4).

In 1556 CE Humayun wrote his first, and also his last, letter to the Ottoman sultan, Suleiman (‘the Magnificent’, 1520–66 CE) who continued to hold the caliphal position assumed by his father, Selim I. The bearer of this letter was Sidi Ali Reis, the Ottoman admiral, whose ship was wrecked in Persian Gulf. Abandoning his battered fleet in Gujarat, Sidi reached Delhi on his way back to Istanbul, where he was given a warm reception by Humayun. No less a person than *Khan-e Khanan* Bairam Khan, along with 400 elephants and 1,000 men, was sent by Humayun to receive him. Sidi was offered a *jagir*



Figure 2 Humayun, silver tanka, Agra, AH 944, with names and titles of the *Al-Khulafah al-Rashidun* (the Orthodox Caliphs), Zeno #265986



Figure 3 Humayun, copper bahloli, Agra, AH 937, with mint epithet, *Dar al-Khilafah* (Abode of the Caliphate), Zeno #169675



Figure 4 Humayun, copper bahloli, Lahore, AH 938, with mint epithet, *Dar al-Khilafah* (Abode of the Caliphate), Zeno #252600

and the governorship of a district; this he politely refused. (Farooqi 1989, 16).

Humayun, though proud of his ancestry and power, did not hesitate to accept the greatness of the Ottoman sultan. The letter begins with eulogies and compliments. Humayun addresses the Sultan Suleiman as the ‘*khalifah* of the highest qualities’, and prays for the eternal perpetuation of his *khilafat*. If we are to believe Sidi Ali Reis, Humayun regarded Sultan Suleiman as the only Muslim sovereign worthy to bear the title of *Padshah* (Farooqi 1989, 16, 199).

At the same time, Humayun also asserted his own position as the ‘*Khalifah* of Hind and Sind’. In his letter he says,

throne of *Khilāfah* of the realms of Hind and Sind is once again graced by a monarch [Humayun] whose magnificence is equal to that of Soloman (Farooqi 1989, 173)

We do not know how this letter was received by the Ottoman sultan, as it was never acknowledged or answered. However the fact that the coins do bear testimony to Humayun’s continued assertion of his seat of empire as *Dar al-Khilafat*, attests to his claim to the saliphate.

Akbar (r. 963–1014 AH/1556–1605 CE)

Akbar found that his throne was insecure like his father Humayun’s, so he started by going further in positive friendliness towards the Ottomans. He too had written a letter to Suleiman the Magnificent, and addressed the Ottoman sultan as the *khalifah* on the earth. But as Akbar’s power grew he developed an anti-Ottoman stance. Declining to recognize

¹ All images courtesy <https://www.zeno.ru/>.

the Ottoman sultan as the caliph he put forward his own claim to the title. He never regarded the Ottoman sultans as the sole champions of the Islamic world (Ali 1990, 2).

The contemporary epigraphs place Akbar in the supreme position as the ruler of the world. An inscription dated 19 November 1557 in a mosque in Bulandshahr in Uttar Pradesh, describes him as 'the emperor of the world' (*Shahenshah-e 'Alam*), 'the ruler of the surface of the earth', (*Farman farma-ye ru-ye Zamin*), 'the Shadow of Allah in the world', (*Zill-e Allah fi al-'Alamin*) and 'monarch of the land and the sea', (*Sultan al-Behr wa al-bar*) (Siddiqui and Desai 1973, 63–4, 'Inscription dated AH 965 From Bulandshahr').

Another inscription dated Sha'ban 968 AH (April/May 1561 CE) at the Shahi Jami'-Masjid, locally known as Masjid-e Aqsa, in the village Bari Khatu, in the Nagaur district of Rajasthan, records its renovation 'during the caliphate of' (*dar Ahd-e Khilafat*) of Akbar. (Rahim 1987, 49–50, 'Inscription dated AH 968 from Bari Khatu').

Similarly, another inscription dated March/April 1563 CE, found in a mosque in Sakit in Etah district in Uttar Pradesh, lauds Akbar as 'Lord of the kings of Arabia and Persia' (*Maula Muluk al-Arab wa al-Ajam*), 'Protector of the cities or Allah' (*Hafiz bilad Allah*), 'Helper of His creatures' (*Nasir-e Ibad Allah*) and 'Champion or the religion of the Prophet of Hijaz' (*Hami-e din-e al-Nabi al-Hijazi*) (Siddiqui and Desai 1973, 66–8, 'Inscription dated AH 970 from Sakit').

In another contemporary inscription, dated 23 March 1563, inscribed at Bazarwali mosque in Jhajjar, near Rohtak in Haryana, caliphal titles are formally added to Akbar's name, who is styled as *Umdatul Khilafat* (Pillar of the *Khilafat*) (Phogat 1978, 62–3).

An inscription from Hammam Darwaza mosque built at Jaunpur in 1567–68 CE, claims that the mosque was built 'in the days of the government or the great Lord of Conjunction' (*Dar ayyam Daulat Sahib Qiran 'Azam*), 'Lord of the kings of Arabia and Persia' (*Maula Muluk al-Arab wa al-Ajam*), 'Protector of the cities of Allah' (*Hafiz bilad Allah*), 'Helper of His creatures' (*Nasir-e Ibad Allah*) and 'Means of peace and security' (*Astana-e Amn-wa-Aman*) (Siddiqui and Desai 1973, 68–9, 'Inscriptions dated AH 915 from Jaunpur').

Another inscription, dated 977 AH (1569–70 CE) in a mosque in village Kathoti in Nagaur district of Rajasthan, records its construction 'in the days of the caliphate of His Majesty the king, the shelter of religion' (*dar ayyam-e Khilafat Badshah-e Din Panah*) who is 'Lord of the Kings of Arabia and Persia' (*Maula Muluk al-Arab wa al-Ajam*) (Rahim 1973, 53–5, 'Inscription dated AH 977 from Kathoti').

An inscription dated AH 976 (1668–69 CE) at the Shahi-Masjid at Jaunpur, too exalts Akbar as 'the monarch of the whole of the universe', (*Badshah-e hama kaun-o-makan*) (Siddiqui and Desai 1973, 73–4, 'Inscriptions dated AH 976 and 977 from Akbarpur').

An inscription dated 979 AH (1573 CE) on a mosque in Narwar, district Shivpuri in Madhya Pradesh, lauds Akbar's position as the ruler of the world, 'The lord of the necks of the kings of the East and the West' (*Malik riqab muluk al-Mashriq wa al-Maghrib*), and 'the Sultan of the Sultans of Persia and Arabia', (*Sultan Salatin al-Ajam wa al-Arab*) (Rahim 1987, 57–9, 'Inscriptions dated AH 979 from Narwar').

However, it was not until 1579 CE that Akbar was formally

declared the caliph of his time. In September 1579 (Rajab, 987 AH), the 'Ulama of the Mughal Empire issued a joint *fatwa* (*mahzar*), by which Akbar was solemnly recognized as being superior in his capacity of *Imam-e-'Adil*' (the Just Imam). The titles used for Akbar in this *Mahzar* include *Khalifatul-l-zaman* (*Khalifah* of his time); *Khalifatul-l-lah* (*Khalifah* of Allah), and *Amiru'l-Mominin* (Commander of the Faithful).

The *Mahzar*, as such, was a protest against the Ottoman pretensions. It not only maintained Mughal independence of the Ottoman sultan, but also challenged the latter's right to the title of *Khalifah* (Buckler 1923, 593).

In Mughal histories written after 1579 CE, the words *khalifah* and *khilafat*, are used not only with reference to Akbar personally, but also of his ancestors from Adam. Even 'Abdu'l-Qadir Badaoni, the orthodox Sunni chronicler of Akbar, uses the word *khalifah* for Akbar (Buckler 1923, 606).

Henceforth the Mughal chroniclers, referred to their patrons as the 'Khalifah of the Age' and the Ottoman Sultans simply as *Qaiser-e Rum* ('Caesar of Turkey'), *Khawandkar-e Rum* ('Lord of Turkey') or simply as *Sultan-e Rum* ('King of Turkey') (Farooqi 1989, 200).

The Mughal court was characterized as the *Astana-e Khilafah* ('Threshold of *Khilafat*'), the royal children were called *Samar-e Shajar-e Khilafah* ('Fruit of the tree of *Khilafat*'), and the imperial officials were addressed as *Azd al-Khilafah-e Kubra* ('Pillar of the Great *Khilafat*') (Farooqi 1989, 200).

Abul Fazl, who provided an inventory of Akbar's coins in *Ain-e Akbari*, describes a 100-gold-muhr-piece called *Sahansa*, on which Akbar's name was inscribed as *As-Sultan al-Ala al-Khalifah al-Muta'ali* ('Great Sultan, the Supreme Caliph') (Blochmann 1873, 27–8).



Figure 5 Akbar, gold mohur, Agra, AH 982, with mint epithet, 'Dar al-Khilafah' ('Abode of the Caliphate'), Zeno #123130

Agra, the capital of Akbar's empire, bore the epithet, *Dar al-Khilafah* (figure 5). However, this title was not exclusive to Agra. Coins issued from the following twelve other places, many of them quite insignificant and not very far from each other, also bear this epithet 'Ahmedabad, Akbarpur Tanda, Awadh, Deogir, Dogaon, Gorakhpur, Jaunpur, Lucknow, Lahore, Malpur, and Qannauj *urf* Shahgarh' (Gupta 1950, 220)

P. L. Gupta maintained that this title was essentially used for the mint town where the emperor was present during the issue of those coins (Gupta in Garg (ed.) 1997, 220–1).

Jahangir (r. 1014–37 AH / 1605–27 CE)

According to Sir Syed Ahmed Khan, on the eve of his accession Jahangir had assumed the title of *Khalifa-e Ilahi*. (quoted by Farooqi 1989, 218). We do not know the source of this information but this claim is amply borne out by the surviving epigraphical records where Jahangir is generally described as the 'Asylum of the *Khilafah*' and the 'Khalifah

of the age' (Farooqi 1989, 194).

Thus, an inscription dated 1014 AH (1606 CE) on an Idgah in Udaypur, Vidisha district, Madhya Pradesh, records its construction 'during the reign of Asylum of the Caliphate, Nur ud-Din Muhammad Jahangir' (*dar ahd-e Khilafat Panahi Nur ud-Din Muhammad Jahangir*) (Rahim 1987b, 61–2, 'Inscription dated AH 1014 from Udaypur').

Another inscription dated 1016 AH (1607–8 CE) on a public bath near the Akbari Sarai (inn), at Burhanpur in Madhya Pradesh, likewise records its construction 'during the reign of the Caliphate of the Shadow of God in both the worlds' (*dar Zaman-e Khilafat Zill Allah fi al-Arzin*). (Verma 1960, 115–16, 'Inscription from the Bath near Akbari Sarai, Burhanpur').

Two inscriptions in Jhajjar (Haryana), dated 1020 AH (1611 CE) and 1036 AH (1626 CE) respectively, clearly record the construction of those specific structures 'during the time of Caliph Nur ud-Din [Jahangir]' (*dar Zamana-e Khalifah Nur ud-Din*) (Phogat 1978, 65–6, Inscription no. 2.28 and 67–8, Inscription no. 2.32).

However, unlike the inscriptions, the coins of Jahangir do not bear any claim to his being the caliph; even the caliphal epithet of his capital city, Agra, was dropped from his coins. There is, however, one exception. On his presentation coin of 1,000 *tola* weight (1,094.5 grams), the mint name Agra bears the epithet *Dār al-Khilāfah* (figure 6).



Figure 6 Jahangir, gold 1,000 mohur, Agra, AH 1022/Ry 8, with mint epithet, *Dār al-Khilafah* (Abode of the Caliphate), Zeno #119784)

Shah Jahan (r. 1037–68 AH / 1627–58 CE)

Timur had assumed the title of *Sahib-e-Qiran* ('Lord of the Conjunction'). Shahjahan's title of *Sahib-e Qiran Sani* ('Second Lord of the Conjunction') indicates his desire to emphasize his ancestry from Timur. While Timur did not use his title on his coins, Shah Jahan liberally employed his title on his coins.

On his inscriptions, Shah Jahan is hailed not only as 'the shadow of the Almighty and the King of the land and the sea' (*Saya-e Parwardigar-o-Badshah-e Behr-o-bar*) (Kadiri in Khwaja 2011, 62–3, 'Inscription no. I from Vidisha, Madhya Pradesh, dated AH 1045 (1635–36 AD)'); but also as 'King of Kings, the asylum of Caliphate' (*Shahenshah Khilafat Panah*) (Desai in Khwaja (ed.) 2011, 21–2, 'Inscription no. VII from Hindaun, dated 19th of the month of Muharram, AH 1050 (1 May 1640 AD)').

An interesting inscription dated 1060 AH (1655 CE), originally part of the now extinct Akbarabadi mosque in Delhi, styles Shahjahan as the 'King of Islam' (*Padshah-e Islam*) and 'the chosen [lit. the central or chief] Khalifah of the Almighty' (*Khalifsha-e markaziyah-e Kirdgar*) (Khan 1966, 66–7 'Inscription no. 43'; also quoted in Farooqi 1989, 218, fn. 143).

Similarly, an inscription on the Pearl Mosque situated in

the Agra fort that was built in 1063 AH (1652–3 CE), styles Shahjahan as 'the founder of the pillar of Khilafat' (*Muasis Arkan-e Khilafat*) (Carlleyle 1874, 146; see also Latif 1896, quoted in Farooqi 1989, 218, fn. 143).

In 1653 CE Shah Jahan sent a diplomatic mission to the court of Ottoman sultan. The letter carried by the Mughal ambassador, Haji Ahmad Saeed, refers to Shah Jahan's youngest son, Prince Murad Baksh as *Mahinpur Khilafat* ('youngest son of the *Khalifa*') (Ansari 1980, quoted in Farooqi 1989, 219, fn. 147). Shahjahan also assumed the title of *Amir al-Muminin*, thereby showing his disregard for the Ottoman claim to *Khilafat* (Farooqi 1989, 228).

Shah Jahan issued coins in the name of the *Khulafah-e Rashidun* (figure 7). The seats of the empire, Agra (figure 8) and later Delhi (Shahjahanabad), were designated as *Dār al-Khilāfah* ('Abode of the Caliphate') on his coins (figure 9).



Figure 7 Shah Jahan, silver rupee, Ahmedabad, AH 1043/ Ry 6, with names and invocations of the *Al-Khulafah al-Rashidun* ('the Orthodox Caliphs') (Zeno #242118)



Figure 8 Shah Jahan, silver rupee, Agra, AH 1038/ Ry Ahd, with mint epithet *Dār al-Khilafah* ('Abode of the Caliphate') (Zeno #221107)



Figure 9 Shah Jahan, gold mohur, Shahjahanabad, AH 1069, with names and invocations of the *Al-Khulafah al-Rashidun* ('the Orthodox Caliphs') and mint epithet *Dār al-Khilafah* ('Abode of the Caliphate') (Zeno #142350)

Aurangzeb (r. 1068–1118 AH/ 1658–1707 CE)

Aurangzeb, often described as the 'last effective Mughal emperor', adopted the title *Muhyi ud-Din* ('Reviver of Religion') at the time of his accession. Describing the rituals followed at the time of his coronation, his biographer, Sir Jadunath Sarkar records that

The courtiers did homage by bowing low and raising their hands to their forehead, while they shouted 'Long live the Khalif of the Age!' (Sarkar 1912, 297)

In 1689 the Ottoman Sultan Suleiman II (1687–91 CE) sent Ahmad Aqa as his envoy to Aurangzeb's court (Farooqi 1989, 65). The letter sent by the Ottoman sultan is full of references to the sultan as the *khalifah*. According to Farooqi,

In fact, it is perhaps the only letter from an Ottoman Sultan to a Mughal Emperor in which such a strong exposition to the Ottoman claim to Khilafat has been made (Farooqi 1989, 66)

However, it seems that Aurangzeb did not pay any heed to the Ottoman sultan's claim to caliphship, and upheld the stated position of his predecessors as the caliph of Hind and Sind. This fact is borne out with the inscriptional and as well as numismatic evidence.

An inscription dated 1116 AH (1704–05 CE), found in Kanchipuram in Tamil Nadu, records the construction 'During the Caliphate of the Great King of Delhi, the Conqueror of the World' (*dar Khilafat Khusro Dehli Gaiti Sitan*). (Khawaja 2011b, 76–7, 'Inscriptions No. II & III dated AH 1116 and 1117 (1704 & 1705–06 AD)').

The author of *Mirat al-Alam* has used the epithet *Tuttuma-e Rashidin* for Aurangzeb. This could be translated as 'the successor of the pious *Khalifas*' (Quoted in Farooqi 1989, 219 f.n. 149).

Like his father, Aurangzeb also titled himself as *Amir al-Muminin* ('Commander of the Faithful'), a title used exclusively for the caliph. This title, together with *Zillillah* ('Shadow of God') is clearly visible on the seal stamped on certain documents (Bilgrami 1984, document nos 3 and 4, quoted in Farooqi 1989, 219, fn. 150).

Unlike the coins of his father Shah Jahan which invariably bore the Muslim confession of faith (*Kalimah*), Aurangzeb forbade its inscription on his coins, lest the holy text should be defiled by the touch of infidels! (Sarkar 1912, 297). Both the previous and the later seats of the empire, Agra (Akbarabad) and Delhi (Shahjahanabad), were designated as *Dār al-Khilāfah* ('Abode of the Caliphate') (figure 10). However, from the regnal year 28 of Aurangzeb (= 1684/85 CE), coins minted in Akbarabad bore an exclusive epithet *Mustaqir al-Khilafah* ('Resting Place of the Caliphate') (figure 11), which perhaps signifies that Shahjahanabad was the permanent seat of the empire while Akbarabad was the second capital. The epithet *Mustaqir al-Khilafah* had been used for Akbarabad earlier by Shah Jahan (Carlisle 1874, 146).

Conclusion

The Mughal rulers did not accept the claim of the Ottoman sultans to be caliphs of the Islamic world. Rather they believed in the conviction that a *Badshah* was also the *Khalifah* in his domains. This was very much in line with the Turko-Mongol theory of kingship where a ruler is considered as the representative of God on earth and to whom kingship is bestowed by God. As such, the rulers are directly answerable to God and nobody could question their act.

Thus, Babur was first Mughal emperor to assert his claim to the caliphship of his Indian domains. Humayun's stand on the *Khilafat* in fact, became the cornerstone of the future Mughal policy towards Ottoman pretensions to the universal *Khilafat*. Akbar substantiated his claim as the 'Caliph of the Age' by obtaining the *Mahzar* from the Ulemas. Jahangir did



Figure 10 Aurangzeb, gold mohur, Shahjahanabad, AH 1097/ RY 29, with mint epithet *Dar al-Khilafah* ('Abode of the Caliphate') (Zeno #294588)



Figure 11 Aurangzeb, gold mohur, Akbarabad, AH 1107/ RY 40, with mint epithet *Mustaqir al-Khilafah* ('Resting place of the Caliphate') (Zeno #294593)

not make any overt attempt to claim caliphship, but his son Shahjahan prided himself as being called the caliph.

Aurangzeb not only styled himself as caliph but also strove to fulfil the duties and obligations that the Islamic law imposes upon the position holder. Thus proselytization became an important part of the state's activities, which eventually accelerated the fall of the Mughal Empire.

All the later Mughals merely continued the tradition of being called the caliph and designating their seat of administration as *Dar al-Khilafah* and *Mustaqir al-Khilafah*.

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A Biography in Banknotes: The life and career of Alfred Joseph Bull, 1876–1950

Richard Morel

Largely unknown within the numismatic community, Alfred Joseph Bull was a polymath and security printing advisor employed by the India Office, Crown Agents, Bank of England and the Treasury. As a group these organizations were responsible for the production of paper currencies across the United Kingdom and most of the British Empire. Bull's contributions to in this field were incredibly significant.

The paper pays particular focus on his work for the paper currencies of the East African Coast, Indian Ocean, South Asia, Southeast Asia and Hong Kong and provides a brief summary of Bull's life and career, assessing his impact on Asian paper currencies as well as contextualising them within a wider imperial setting. It is hoped that the paper will be published in a future edition of *JONS*.

Bombay Tolas

Michael Mitchiner

Abstract Tolas were pieces of stamped gold or silver, manufactured to a stated weight and purity, and sold among the business community in Bombay for nearly a century. They were used as a private currency among bullion dealers and jewellers. This article considers their history and provides a representative catalogue of types for the first time.

Tolas can be described as stamped pieces of metal with a stated gold, or silver, purity and with a stated weight denominated in tolas. They were a form of private currency circulating within the Bombay business community, particularly among the bullion dealers and jewellers.

Tolas were popular among the business community in Bombay for nearly a century. They were introduced as a reaction to the British government's creation of a tax on paper hundis in the aftermath of the suppression of the East India Company in 1858. The hundi was a handwritten promise to pay. Hundis were widely used in business circles, which made the new tax especially unwelcome. Tolas would retain their popularity until the Indian government decimalized bullion transactions in 1952, although their role had changed by that time.

Many of the makers and retailers of tolas ran businesses concentrated in Bombay's Zaveri Bazaar. Less than half a mile long, the Zaveri Bazaar was, and still is, Bombay's focus for dealing in precious metals – principally gold and silver, both bullion and jewellery.

Adjacent to one end of the Zaveri Bazaar, one retailer of tolas worked in the Fort area of Bombay. Close to the other end of the Zaveri Bazaar another maker and retailer of tolas had premises in Mumbadevi, which acquired this name from the popular Mumbadevi Temple.

One factor to consider in the context of bullion dealing was the small number of accurate scales available in the business community for weighing heavy weights of bullion. During the second half of the nineteenth century, only two private companies in Bombay possessed heavy weight bullion scales of accepted accuracy. Both companies had premises in the Zaveri Bazaar.

Before discussing tolas in more detail, it is worth listing companies that fall into the categories just mentioned and are mostly still active.

- 1 *Possessors of accurate heavy weight bullion scales*
Gordhandas Ranchordas Bhagat, 127 Zaveri Bazaar
Bombay Bullion Association (now Bombay Shroff's Association), adjacent to 233 Zaveri Bazaar
- 2 *Makers and retailers of signed tolas*
Narrondass Manordass, 135 Zaveri Bazaar
Pratap & Bros, 235 Zaveri Bazaar
Pratap Bros & Sons, 233 Zaveri Bazaar
Deep: perhaps Deepchand & Sons, 96 Zaveri Bazaar
Tribhovandas Bhimji Zaveri, 241 Zaveri Bazaar
Kirtilal Jeshinglal, – Zaveri Bazaar (closed about 1970)
Podar Sons Ltd, Podar Chambers, Fort, Bombay-1
Valli Mohammed Ghulam Hussain, 6 Mumbadevi,
Bombay-2 (fl. 1940s; d. 1960s)

The great majority of tolas were manufactured and retailed in Bombay. A few were made in Calcutta.

Two traditional ways of transferring wealth

Tolas were a new vehicle for transferring wealth, used principally within the Bombay business community. Two well-tried methods for transferring wealth had already existed since Mughal times.

Paper hundis were well suited to transferring wealth across substantial distances in a manner that was both safe and reliable. They were handwritten paper bills of exchange on which the person writing the hundi states that he will make payment to the recipient in a stated place on a stated date. The place of payment could be local or distant, and the transfer of funds would commonly be organized through the banking system. The arrangement had similarities with later cheques.

An alternative way for transferring wealth was the physical transfer of precious metal in the form of either coin or bullion. This was suitable for local transactions, but was unreliable across any distance.

A person who possessed precious metal could take the metal to the authorized local mint or refinery. The same person would later take home either newly minted coins (minus the coining fee), or they would take home an ingot of refined metal stamped with the signature of the refinery, which included a statement of the metal purity.

The great majority of refined ingots have been melted down long ago. Two surviving silver ingots of the Jodhpur Sarrafas are catalogued and illustrated at the end of this paper.

The economic reason for introducing tolas about 1860

One of the first financial changes introduced by the British government after suppression of the East India Company in 1858 was the introduction of a revenue tax on financial instruments. The financial instruments included paper hundis. The standard rate for the new tax was 1 anna per 100 rupees value of the hundi.

Although hundis remained in use for transacting business at a distance, a new tax-exempt vehicle was soon introduced for making balancing payments within Bombay's densely packed business community.

The transition from ingots to tolas was technically simple. The ingots of variable weight, like those of the Jodhpur Sarrafas, were replaced by tolas of standard weight and guaranteed purity. No tax was payable. Bombay's new tolas were in use by 1864 (Pridmore 1980, 94).

The gold tola weighed 11.664 grams, the same as the gold mohur. The silver tola had the same weight.

Metal purities and sizes of tolas

Some comments have already been made about the silver purities of 994 and 996 that prevailed during the second half of the nineteenth century, and the general ability to refine silver to 999 purity from around the start of the twentieth century. This can be discussed in slightly more detail.

At a time when a silver purity of 994, or 996, was regularly achieved, these numbers were often included on the die with

which the tola was stamped. It was often considered necessary to assay a batch of refined bullion in order to confirm the silver purity that had actually been achieved. The last digits of the silver purity were then stamped on the flans of the tolas minted from that batch of silver. An example is a tola of Devkaran Nanjee with '99' on the flan, plus '93' stamped after assay – a purity of 9993 (99.93 per cent).

By the early twentieth century, a silver purity of 999 could regularly be achieved. It became normal practice to include the numbers '999' on the die, but some tolas still had the final digits of their silver purity stamped on the flan after assay of the batch of bullion.

In the case of gold tolas, two slightly different purities were in regular use throughout the period from the 1860s until Indian independence in 1947. The use of gold tolas then ended. The two purities for gold tolas were commonly cited as 'pure gold' and as 'guinea gold'.

'Pure gold' was 24 carat gold, with a cited purity of 9950.

'Guinea gold' was 22 carat gold, with a cited purity of 9166 (91.66 per cent).

Another term used on a few tolas, mainly those produced by small businesses, was '100 Touch'. This refers to pure gold as assessed by using a touchstone.

Nearly all gold tolas that have survived the melting pot are of 1 tola weight. Significant numbers of $\frac{1}{2}$ tolas and some $\frac{1}{4}$ tolas are also known. Sizes larger than one tola are rarely seen. They include a few 5 tolas and there are occasional reports of 10 tolas.

Silver tolas were issued across a much wider range of weights than the gold issues. The silver tolas span the range from 100 tolas (1,166 grams) down to 10 tolas (11.66 grams) and 5 tolas (5.830 grams), plus a few smaller pieces. The 100 tolas, 50 tolas and 25 tolas pieces have mostly been melted down for their metal, but the smaller sizes are not uncommon.

Manufacturers and retailers

Some of the jewellers and bullion dealers who sold their tolas from retail premises in the Zaveri Bazaar made their own tolas. Other retail jewellers and bullion dealers commissioned the manufacturing to third parties – often to Her Majesty's Mint, Bombay.

Silver tolas normally have larger flans than the gold tolas, so their designs can provide more information. In addition to providing the retailer's design and inscription, silver tolas often cite the manufacturer.

In the case of Devkaran Nanjee, the manufacturing was commonly performed by H. M. Mint, Bombay (Her Majesty's Mint, later, His Majesty's Mint). In the case of one issue, the manufacturing was by the 'Royal Mint Refinery, London'. The contract may have been lodged with the Bombay Mint and subcontracted to London. The last tolas issued by Devkaran Nanjee were manufactured at the 'I G' Mint / Bombay', the Indian Government Mint. They were issued between Indian Independence in 1947 and the decimalization of bullion transactions in 1952 (a few years before the 1957 decimalization of coinage).

Manilal Chimanlal was a fairly prolific retailer of tolas. The company's gold tolas date from the beginning of the twentieth century onwards, whereas its silver tolas illustrate the Gateway of India in Bombay whose construction was completed in

1927. The company contracted the manufacturing of some silver tolas to the Bombay Mint (H. M. Mint / Bombay) and it struck other tolas at its own premises (M. C. & Co., Bombay, Manilal Chimanlal & Co.).

The changing role of tolas during the 1930s

Times changed and the economy evolved, so by the 1930s, there were adequate supplies of paper banknotes, a situation that had not existed in the 1860s. There were also plenty of silver coins for smaller transactions.

Tolas steadily lost their role in facilitating business transactions, but they found a new role among the steadily growing middle-class community as a reliable vehicle for storing wealth. A father might seek to accumulate some gold tolas, which he would later use to commission a jeweller to make the jewellery for his daughter's marriage.

They were also acquiring a role as presentation pieces, partly because they fulfilled the accepted norm that the gift should have an intrinsic value appropriate to the giver and the receiver. This role is exemplified by the coronation 2.5 tolas silver bar commissioned by Maharani Shantadevi of Baroda in 1938. She was married to Pratap Singh (1938–51), the Gaikwar of Baroda. Maharani Shantadevi would have presented these tolas to guests whom she had invited to attend the coronation.

The new concept is also expressed on a post-decimalization 50-gram piece issued by Pratap & Bros as 'A sterling investment for a prosperous future'.

From Indian independence in 1947 to the decimalization of bullion transactions in 1952

The tolas made during this time can only be defined when they cite a weight in tolas alongside manufacture at the Bombay Mint. His Majesty's Mint, Bombay changed its title to the Indian Government Mint, Bombay at the time of independence. A silver 5 tolas of Devkaran Nanjee dates from this period.

The final tolas minted after the decimalization of bullion transactions in 1952

The last tolas are restricted to silver issues, as India's economic problems led to restrictions being placed on the possession and use of gold. The late silver tolas show similar forms to earlier issues, but they are denominated in grams, instead of in tolas. The repertoire of jewellers and bullion dealers selling tolas was changing.

The Bombay Bullion Association (BBA) has already been noted for possessing, along with Gordhandas Ranchordas Bhagat, accurate scales for heavy weight bullion. Neither of these companies issued any tolas denominated according to the traditional tola weights. The BBA issued small numbers of tolas after decimalization. The 1,000-gram pieces of the BBA were manufactured at the Indian Government Mint, Bombay. The 25-gram pieces do not cite manufacture and may have been struck by the Company. The BBA later changed its name to the Bombay Shroff's Association and has premises adjacent to number 233 Zaveri Bazaar. The association's members help fix the day-to-day bullion prices for the Bombay market.

The firm of Narrondass Manordass had earlier minted both gold and silver tolas. It continued minting pieces of tola form whose sizes were normally 10 grams or 5 grams. The company remains one of the most important bullion dealers in Bombay

and it still sells 10 g and 5 g pieces from its premises in Zaveri Bazaar. The modern pieces have a uniface design and are sold in plastic envelopes. These pieces have no business function. They are small medals to save, or to give away as presents on auspicious occasions.

The National Refinery issued tolas both as the 'National Refinery' and later as the 'National Refinery Private Limited'. The company was incorporated under the latter style in 1955 and has premises close to Marine Drive in the south of Bombay. The earliest observed tola is a 10-tola piece citing the 'National Refinery'. Originally minted before decimalization, this 10-tola piece was never issued in that form. It remained in storage until decimalization in 1952, after which it was countermarked with the appropriate weight in grams, 118.4, and passed into circulation. The National Refinery also issued comparable 100-gram pieces around 1952, or shortly after. In the meantime, the National Refinery had issued signed medals both for Indian Independence on 15 August 1947 and for the proclamation of the Republic of India on 26 January 1950.

As the 'National Refinery Private Limited', the company manufactured 50-gram tolas for Deep, which could be Deepchand & Son of 96 Zaveri Bazaar.

The market continued to evolve and new kinds of popular medals, normally circular and bearing auspicious and attractive

designs, became the norm by the late 1960s. Both Narrondass Manordass (signed NM) and the National Refinery Private Limited (signed NR) were active in the new field.

The catalogue is not intended to be exhaustive. Actual sizes of tolas are cited in the catalogue.

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Auctions
 Baldwin's Auctions. 11 Adelphi Terrace, London WC2N 6BJ
 St James's Auctions, London

Catalogue of Representative Gold Tolas, about 1860 to 1947

The catalogue is not intended to be exhaustive. Actual sizes of tolas are cited in the catalogue.

1 Pure gold Fine 995 or 996

Her Majesty's Mint, Bombay until 1947

One tola, gold Fine 996



- 1 *Obv.* Crown, accosted by sprays: H. M. MINT / BOMBAY
Rev. ONE / TOLA / FINE / – 996 –
 Gold, scalloped edge, 23 mm, 11.64 g
 Baldwin's Auctions, Argentum 6 June 2009, lot 177;
 Mitchiner (2012), 618; see also Krause-Mishler (1991), 1548, 496A (11.70 g); (1999), 906, 496a; Bruce (2007) X#24

Bombay Mercantile Co-operative Bank Limited

This bank issued tolas both before and after Indian Independence. Some of its silver tolas are catalogued below. This bank is still active.

Half tola, gold Fine 99.50

- 2 *Obv.* Badge of the bank, showing woman pouring water for a poor man; label around, inscribed: BOMBAY MERCANTILE CO-OPERATIVE BANK LIMITED; below, PURE ½ TOLA (in beaded circle) GOLD / FINE 99.50
Rev. Ornamental margin made up of repeating monogram BMB, in field: in Gujarātī: ½ tōlō [half tola] / śud'dha

sōnu [fine gold]

Gold, plain edge, die axis 12:00, 22 mm, 5.85 g



Mitchiner (2012), 619

Habib Bank, Bombay Branch until 1947

The Habib Bank closed its Bombay branch, where these tolas were made, at the time of partition, in 1947. The bank remained active in Pakistan.

One tola, gold Fine 9950



- 3 *Obv.* Lion standing left, holding uplifted sword: rising sun in background: left, right in Gujarātī: ēka tōlā [one tola], above in Gujarātī: habīb bēnk līmīṭēḍ [Habib Bank Ltd.], below Gujarātī: śud'dha sōnu [fine gold]
Rev. Centre: 1 / TOLA, on band, to left FINE and right 9950, above, HABIB BANK LTD, below: PURE GOLD

Gold, plain edge, die axis 12:00, 24 mm, 11.70 g
Mitchiner (2012) 620, see also Bruce (2007) X#56.1 and 56.2. This style of lion emblem of the Habib Bank also appears on their silver tolas (see below). For a similar type, but with scalloped edge, see Baldwin's Auctions 63, 30 Sept. 2009, no. 1890; St James's Auction 13, May 2010, 158; Bruce (2007) X#55.

Half tola, gold *Fine 9950*



4 *Obv.* Same as previous, but in Gujarātī: *ardhō tōlō* [$\frac{1}{2}$ tola]
Rev. Same as previous, but: $\frac{1}{2}$ / TOLA

Gold, scalloped edge, die axis 12:00, 22 mm, 5.83 g
Mitchiner (2012), 621; see also: St James's Auction 14, September 2010, 713; Bruce (2007) X#54

Kirtilal Jeshinglal, Bombay

This company, which was active in Bombay's Zaveri Bazaar, closed for business around 1970.

One Tola, gold *Fine 9950; Touch 100*



5 Elephant standing left, emblem of the company.

M / S KIRTILAL JESHINGLAL & CO. / BOMBAY

Rev. Centre: TOUCH 100 / 1 / TOLA; Margin: GUARANTEED FINE 9950 / * ELEPHANT *

Gold, plain edge, die axis 12:00, 23 mm, 11.63 g
Mitchiner (2012), 623. The gold purity is cited both as 'Touch 100' and also as 'Fine 9950'. Another specimen weighs 11.67 g (St James's Auction 13, May 2010, 218). See also St James's Auction 14, September 2010, 712; Bruce (2007) X#78, and with modified inscription X#57.

Manilal Chimanlal, Bombay

The same company issued silver tolas from the late 1920s until the time of Indian independence. It closed for business in 1980.

One tola, 'diamond' gold *Fine 9950*

6 *Obv.* Legend in band around eight-pointed star: M's.

MANILAL CHIMANLAL & CO. / + BOMBAY +

Rev. Centre: 1 TOLA, on band, to left FINE and right 9950; Above Diamond, below Fine Gold

Gold, plain edge, die axis 12:00, 23 mm, 11.72 g



Mitchiner (1998), 663; (2012), 627. The official weight of the gold tola was 11.664 g (180 Troy grains). Tolas with this 'diamond fine' design were issued with the obverse inscription on a ribbon around the star (as here), and with the same inscription in a plain field around the star.

5 tolas	(ribbon)	Bruce (2007), X#43
5 tolas	(plain field)	Bruce (2007), X#42.1; 42.2
1 tola	(ribbon)	Shown here
1 tola	(plain field)	Bruce (2007), X#45
Half tola	(plain field)	Bruce (2007), X#40
Quarter tola	(ribbon)	Bruce (2007), X#44

Narrondass Manordass, Bombay

On its gold and silver tolas, the company states that it was founded in 1788. On the gold tola catalogued here, the business is stated as 'Bullion Refiners & Assayers'. Narrondass Manordass has long been one of the foremost bullion houses in Bombay's Zaveri Bazaar. An early association with the bullion weighers, Gordhandas Ranchordas Bhagat has been suggested. Narrondass Manordass remains active and has retail premises at 135 Zaveri Bazaar, Mumbai (2010).

One tola, (pure) gold *Fine 995.0*



7 *Obv.* Monogram NM; around: NARRONDAS MANORDASS / BULLION / REFINERS & ASSAYERS

Rev. Centre: FINE 995.0 / rising sun / 1 / * TOLA *
Above, in Nāgarī *nārandās manordās* / below: * *sthāpanā* 1788 [established 1788] *

Gold, plain edge, die axis 12:00, 23 mm, 11.65 g
Mitchiner (2012), 629.

2 Guinea gold *Fine 9166*

Manilal Chimanlal, Bombay

One tola, 'guinea' gold *Fine 9166*



- 8 *Obv.* Five-pointed star, STAR below, M.S.MANILAL CHIMANLAL & CO. + BOMBAY +
Rev. Centre: 1 / TOLA, above: GUINEA GOLD, below: FINE 9166 Gold, square with rounded corner, plain edges, die axis 12:00, 25 x 25 mm, 11.69 g

Mitchiner (2012), 628. See also: Bruce (2007) X#39. From around 1927, Manilal Chimanlal issued gold tolas with the 'gateway of India' / 'map' designs used on their silver tolas catalogued below.

5 tolas Bruce (2007), X#32

1 tola Bruce (2007), X#41

3 Gold, 100 touch *Fine 100 Touch*

Valli Mohammed Ghulam Hussain, Bombay around 1940s

The issuer was a goldsmith with premises at shop no. 6, Mumbadevi, Bombay 2. This is in the heart of the goldsmiths and silversmiths district of Bombay, just beyond the western end of the Zaveri Bazaar. It has been suggested that he was making gold tolas and fractions during the 1940s. He died in the 1960s. According to a nearby silver dealer who used to know the issuer, his sons had no interest in the business, and it went into decline.

One tola, gold *Fine 100 touch*



- 9 *Obv.* Centre: issuer's monogram in circle, VG; above: MUMBADEVI / BOMBAY 2, below: (REGD) / MADE IN INDIA
Rev. Citation of purity in English, Gujarātī, Nāgarī and Urdu: RAHIM TOOLA 100 TOUCH; below citations of purity: FINE GOLD / 1 TOLA in Gujarātī *ēk tōlō*
 Gold, plain edge, rectangular, die axis 12:00, 25 x 20 mm, 11.70 g

Mitchiner (2012), 630. The term '100 touch' indicates pure gold insofar as a goldsmith can estimate gold purity using a touchstone. In practice, 995 gold, 996 gold and 999 gold are all of '100 touch' quality.

Quarter tola, gold *Fine: 100 touch*



- 10 *Obv.* Same description, smaller size
Rev. Same general description as previous item, with English language purity in two lines (RAHIM TOOLA / 100 TOUCH) and weight cited in English: 1/4 TOLA, and in Gujarātī *¼ tōlō*
 Gold, plain edge, square, die axis 12:00, 23 x 23 mm, 2.94 g

Mitchiner (2012), 631. Several specimens have been seen.

4a Silver patterns for gold tolas, pure gold *Fine 995*

Maganlal Maneklal, Bombay

Pattern: Five tolas, gold *Fine 9950*



- 11 *Obv.* Badge of the Company: Swan swimming left; margin: MAGANLAL MANEKLAL & CO. / * BOMBAY 2 *
Rev. In 8-pointed star: 5 / TOLAS, left FINE and right 9950, above, * * * SWAN * * *, below * FINE GOLD *
 Silver, die axis 12:00, 38 mm, 4 mm thick, 34.85 g
 Mitchiner (1998) 674; (2012) 624. Five tolas weigh 58.32 g. The pattern, like the following pieces, has a lower weight than that of the projected gold issue.

Pattern: One tola, gold *Fine 9950*



- 12 *Obv.* As previous
Rev. Similar design, but 1 / TOLA
 Silver, die axis 12:00, 23 mm, 2 mm thick, 6.50 g
 Mitchiner (1998) 675; (2012) 625. One gold tola weighs 11.664 g.

4b Silver patterns for gold tolas Guinea gold *Fine 9166* Habib Bank, Bombay Branch until 1947

Pattern: One tola, 'Guinea' gold *Fine 9166*



- 13 *Obv.* Lion standing left, holding uplifted sword: rising sun in background: HABIB BANK / * LIMITED *
Rev. Between sprays: 183 / GRAINS / 9166 / FINE, Above: GUINEA, below: GOLD
 Silver, septagonal, die axis 12:00, 25 x 23 mm, 6.30 g, ex Bombay: cut and bent
 Mitchiner (1998), 673; (2012), 622. 183 grains is 11.858 g. For a 'guinea gold' 1 tola with different designs, see Bruce (2007) X#61

4c Silver patterns for gold tolas Gold: *Fine 100 Touch*

Maganlal Maneklal, Bombay

Pattern: One tola, gold *Fine 100 Touch*



14 *Obv.* Badge of the company: swan swimming left; margin in Gujarātī: *maganalāl māṇēklāl nī ku / • 100 taca* [100 touch] •

Rev. In circle M M, in band on either side BOM BAY, above: swan, below: ONE TOLA

Silver, die axis 12:00, 23 mm, 6.52 g

Mitchiner (1998), 676; (2012) 626. 100 taca = 100 touch = 100 per cent pure. The gold purity of the Valli Mohammed tolas is also cited as '100 touch'.

5 Calcutta's gold tolas with Bengali inscriptions

The business climate in Calcutta differed from that in Bombay. During the second half of the nineteenth century, Bombay was India's growing business hub and it was becoming the principal port for ships trading with India. Calcutta's trade was declining, but the city was still the capital of British India and the seat of its administration. Whereas Bombay businessmen tended to circumvent the unwelcome new tax on hundis, the Calcutta businessmen accepted the new tax.

The British administration lost no time introducing pre-taxed embossed paper hundi forms. These could be purchased from the Calcutta Stamp Office. The forms bore an embossed stamp naming the Calcutta Stamp Office plus a circular embossed stamp citing the amount of tax paid. The embossed paper hundis were used in large numbers from the 1860's onwards (e.g. Mitchiner 2012) and were later replaced by pre-paid hundi forms bearing Queen Victoria's portrait in 1881.

Tolas never became popular in Calcutta. A few small-size gold tolas are known, but no silver tolas. The two gold half tolas catalogued here have Bengali inscriptions and cite the traditional fineness of 9950 for pure gold.

Kamal Narayan's tola states that it was made in 'Pure Mysore' gold. The Kolar gold field in the north-east of Mysore State (now in north-east Karnataka) was a traditional source of gold. Production increased after electricity generated from the Sivasamudra Falls became available in 1902. These tolas are best dated between 1902 and the economic problems that followed India's independence in 1947. The terminus could have been even earlier, when Calcutta lost its role as India's capital in 1911.

a. Kamal Narayan *about 1902 to 1947*

Half tola, gold *Fine: 9950*

15 *Obv.* Business emblem: rising sun above tiger standing to left; margin in Bengali: above *kamal nārāyaṇa*, below *pākā sōṇā* [pure gold]

Rev. Centre: ½ TOLA in beaded circle; to left FINE and to right 9950; above: KAMAL NARAYAN, below: PURE MYSORE, sprays above and below.

Gold, die axis 6:00, 20 mm, 5.82 g



Mitchiner (2012), 649; Baldwin's Argentum, 5 June 2010, 249. Also quarter tola, St James's Auction 13, May 2010, 156; St James's Auction 14, September 2010, 714

b Sham Lal Sen *about 1902 to 1947*

Half tola, gold *Fine: 9950*



16 *Obv.* Business emblem: rising sun above deer running to left; margin in Bengali: above * *sham lal sen*, below *pākā sōṇā* [pure gold] •

Rev. Centre: ½ TOLA in beaded circle; to left FINE and to right 9950; above: SHAM LAL SEN, below: PURE GOLD, sprays above and below.

Gold, die axis 12:00, 20 mm, 5.79 g

Mitchiner (2012), 650, see also St James's Auction 13, May 2010, 157. Also quarter tola, St James's Auction 14, September 2010, 715

6 Catalogue of representative silver tolas

Silver bullion was traded as pure silver. During the second half of the nineteenth century, pure silver had a fineness of 994 to 996. Improvements in refining technique led to a standard silver purity of 999 from the early twentieth century, and until the present day.

The Bombay Mercantile Co-operative Bank Ltd

5 tolas, silver *Fine: 999*



17 *Obv.* Bank's emblem: genius giving water to seated man, aeroplane, ship and factory in background; THE BOMBAY MERCANTILE CO-OPERATIVE BANK LIMITED in band around; below: 5 TOLA in beaded circle; to left PURE and

to right SILVER, below FINE 999

Rev. In beaded circle in Gujarātī: 5 tolā, below *śud'dha chāndī* [pure silver], margin: BMC monogram repeating Silver, plain edge, die axis 12:00, 39 mm, 6 mm thick, 58.40 g

Mitchiner (2012), 632. A gold half tola has been catalogued above, no. 2. Later silver tolas (from 1952) were denominated in grams.

Devkaran Nanjee, Bombay

First type; without Lakshmi. This type appears to date from the late nineteenth century.

20 tolas, silver *Fine: 99(9.3)*



18 *Obv.* Left, crown in circle with H. M. MINT / + BOMBAY + in band around, to right DEVKARAN NANJEE / BOMBAY / FINE (on die) 99, (stamped) 9.3 20 TOLAS Silver, oblong, plain edge, plain reverse, 76 x 35 mm, 9 mm thick, 233 g

Mitchiner (2012), 633, see also Bruce (2007) X#76. Made at Her Majesty's Mint, Bombay, on commission from Devkaran Nanjee.

Definitive type with Lakshmi

The tolas, which are 'Fine 996' were probably made at the end of the nineteenth century. The tolas, which are 'Fine 999' and were struck at Her Majesty's Mint / His Majesty's Mint, or at the Royal Mint, were probably made during the period circa 1900 to 1947.

100 tolas, silver *Fine: 996*



19 *Obv.* Left, crown in circle with H. M. MINT / + BOMBAY + in band around; right, Lakshmi standing on lotus, 4 arms, two holding lotus; top and centre, DEVKARAN NANJEE / BOMBAY / 100 TOLAS, below, left in rectangle, FINE 996. Silver, oblong, plain edge, plain reverse, 89 x 57 mm, 21 mm thick, 1,166 g

Mitchiner (2012), 634. Made at Her Majesty's Mint, Bombay on commission from Devkaran Nanjee.

50 tolas, silver *Fine: 996*



20 *Obv.* General description as previous, but 50 TOLAS

Silver, oblong, plain edge, plain reverse, 70 x 45 mm, 18 mm thick, 583 g

Mitchiner (2012), 635.

10 tolas, silver *Fine: 999*



21 *Obv.* As no. 20 but in circle LONDON with ROYAL MINT / + REFINERY + in band around and 10 TOLAS, below, left in rectangle, FINE 999.

Silver, oblong, plain edge, plain reverse, 54 x 32 mm, 7 mm thick, 117.8 g

Mitchiner (1998) 666; (2012) 637. Made at the Royal Mint, London, on commission from Devkaran Nanjee. The commission was probably lodged with His Majesty's Mint, Bombay, and its execution transferred to London. See also Bruce (2007) X#75, made at H. M. Mint Bombay.

5 tolas, silver *Fine: 999.(2): minted 1947–51*



22 *Obv.* DEVKARAN NANJEE / 5 TOLAS FINE 999.2

Centre, Lakshmi, with four arms, standing on lotus; mint emblem on left, lion capital with I. G. MINT / BOMBAY and on right, monogram, ?DENABC, with DENA BANK / * BOMBAY * in band around.

Rev. Blank

Silver, 36 x 22 mm, 7 mm thick, 58.50 g

Mitchiner (1998) 667; (2012) 891. The silver purity, 'fine 999.2' has the numbers '999.' on the die, and the decimal '2' stamped on the tola (after the batch of silver had been assayed). Several earlier tolas of this company, struck at H. M. Mint, Bombay, and at the Royal Mint in London, have been catalogued above. This late issue was struck at the Indian Government Mint after independence in 1947.

Habib Bank, Bombay branch until 1947

The Habib Bank closed its Bombay branch at the time of partition, in August 1947. It remained active in Pakistan. Gold tolas, and a pattern for a gold tola, have been catalogued above.

5 tolas, silver *Fine: 99(9)*



23 *Obv.* Lion standing left, holding uplifted sword, rising sun in background; above in Gujarātī: *habīb bēnk līmītēd* [Habib Bank Ltd.], left: *pāñcha* [5], right: *tolā* [tolas], below: *śud'dha chāndī* [fine silver]

Rev. Centre in beaded circle 5 / TOLAS, on band, to left and right, FINE (on die) 99, (stamped) 9; above, HABIB BANK LTD. and below PURE SILVER

Silver, plain edge, die axis 12:00, 38 mm, 6 mm thick, 58.70 g, ex Bombay

Mitchiner (1998) 669; (2012) 638, see also: Bruce (2007) X#52.

Manilal Chimanlal, Bombay issued from 1927

Gold tolas issued by this company have been catalogued above. In around 1927 the company adopted the Gateway of India as its emblem. Some gold tolas and all silver tolas bear this design. The gateway has a realistic form, suggesting that the company adopted its emblem, either when the building was nearing completion, or when it had actually been completed.

The Gateway of India, situated beside Bombay Harbour, was conceived to commemorate the visit to India of George V and Queen Mary (1911). It was completed in 1927.

Silver tolas with the format '(on die) FINE 99, (stamped) 9.2' (FINE 999.2) were probably made shortly after 1927). Tolas with the format 'FINE 999 (on die)' are best dated from the 1930s onwards. A silver fineness of 999 parts per thousand was normal by the time the Gateway of India tolas were introduced.

The issuing of silver tolas made by the company may have continued during the first few years after Indian Independence (1947–51).

25 tolas, silver *Fine: 99(9.2)*



24 *Obv.* Left, crown in circle with H. M. MINT / + BOMBAY + in band around; in field, pre-Partition map of India, radiate, at centre INDIA; above MESSERS MANILAL CHIMANLAL & CO / 25 TOLAS and in Gujarātī: *unchō māl'* [high (quality) product] ; on label, FINE (on die), 99 (stamped) 9.2, below, in Gujarātī: *mesars manilāl chimānlāl ni ku*

Rev. Gateway of India; below, GATEWAY OF INDIA / BOMBAY

Silver, plain edge, die axis 12:00, 59 x 40 mm, 11 mm

thick, 293 g

Mitchiner (1998) 664; (2012) 639. Made at His Majesty's Mint, Bombay, on commission from Manilal Chimanlal. See also Bruce (2007) X#34, made by M. C. & Co., Bombay.

10 tolas, silver *Fine: 999.0*

See: Bruce (2007) X#33 made by M. C. & Co., Bombay

5 tolas, silver *Fine: 99(90)*

25 *Obv.* General description as no. 24 but circle has at centre MC monogram and M. C. & CO. • / • Bombay, legend is MS MANILAL CHIMANLAL & CO / 5 TOLAS, on label, FINE (on die) 99, (stamped) 9.0

Rev. AS no. 24

Silver, plain edge, die axis 12:00, 30 x 22 mm, 10 mm thick, 58.50 g



Mitchiner (1998) 665; (2012) 640. Tolas of this issue were made by the company, rather than being made on commission at the mint.

5 tolas, silver *Fine: 9990*



26 *Obv.* A slightly later issue. Same general description, but fineness expressed as FINE (on die) 9990

Silver, plain edge, die axis 12:00, 30 x 22 mm, 10 mm thick, 58.40 g

Mitchiner (2012), 641

Narrondass Manordass, Bombay

10 tolas, silver *Fine 999*



27 *Obv.* In triangle, NM monogram, NARRONDASS MANORDASS REFINERS in band around, below, BOMBAY; weight in 4 corners, 10 (English, Hindi, Gujarātī, Urdu) *Rev.* NARRONDASS MANORDASS / ESTD 1788 / 10 TOLAS / 999. (line above and below) FINE / in Gujarātī: *nāranadās*

manoradās

Silver, oblong, plain edge, die axis 9 h, 45 x 31 mm, 9 mm thick, 117.0 g
Mitchiner (2012), 644

5 tolas, silver *Fine: 999*



28 *Obv.* As no. 27 but weight is 5
Rev. As no. 27 but 5 TOLAS / 999-0
Silver, oblong, plain edge, die axis 9h, 39 x 26 mm, 5 mm thick, 58.50 g
Mitchiner (1998) 668; (2012) 645, see also Bruce (2007) X#35

A gold tola has been catalogued above. This company continued to make tolas, from 1952 onwards, denominated in grams. It also made Diwali medals and other medals.

7 Podar Sons Ltd, Bombay

The company's premises were located in the main business area of Bombay (Fort to Zaveri Bazaar). The tola catalogued here was made at Her Majesty's Mint, Bombay. It was probably made during the late decades of the nineteenth century, when a fineness of 994 parts per thousand was acceptable for 'pure silver'.

10 tolas, silver *Fine 99(3.9)*



29 *Obv.* Left, in circle: with crown at centre and leafy spray to each side, H. M. MINT above, BOMBAY below; in field, 10 TOLAS / FINE (on die) 99, (stamped) 3.9
Rev. PODAR SONS LTD. / PODAR CHAMBERS / FORT / BOMBAY 1.
Silver, oblong, plain edge, die axis 12:00, 41 x 28 mm, 10 mm thick, 117.0 g, ex Bombay
Mitchiner (2012), 646.

The changing pattern of use in the 1930s the use of tolas as gifts and presentation pieces

Coronation silver 2.5 tolas presentation pieces of Maharani Shantadevi: 1938

She was married to Pratap Singh (1938–51), the gaikwar of Baroda. Maharani Shantadevi would have presented these tolas to guests she had invited to attend the coronation.

30 *Obv.* Facing veiled bust of the Maharani: above, MAHARANI, below SHANTADEVI
Rev. Across field: CORONATION / 2 / ½ / TOLA / SILVER / BAR
Silver, die axis 12:00, 31 x 22 mm, 5 mm thick, 28.86 g



Mitchiner (2012), 558

7 Catalogue of representative late silver tolas denominated in grams

These have the same form as traditional tolas, but were minted after the decimalization of bullion transactions. In 1952 the Indian Government mint for coins was moved from Bombay to Alipore, but the Indian government's Bombay mint continued executing commissions for around a further decade.

Bombay Bullion Association

1,000 grams, silver *Fine: 999*



31 *Obv.* Mint signature, left: lion capital: I. G. MINT / BOMBAY; issuer's signature, right: BBA monogram / INDIA; below: 1000 g SILVER 999. FINE
Rev. Plain

Silver, 89 x 60 mm, 18 mm thick, 1,000 g, ex Bombay
Mitchiner (2012), 893

25 grams, silver *Fine 999*



32 *Obv.* Company emblem: BBA monogram, around THE BOMBAY BULLION ASSOCIATION LTD., in field: PURE SILVER / FINE 999 / 25 GRAMMES
Rev. Plain

Silver, rectangular, 39 x 26 mm, 24.92 g, ex Bombay
Mitchiner (1998) 679; (2012) 894

The place of manufacture is not cited on the 25 gram tolas.

The Bombay Bullion Association is now the Bombay Shroffs Association, with premises adjacent to 233 Zaveri Bazaar, Bombay (2009).

Devkaran Nanjee

100 grams, silver *Fine: 998.5*

— Centre: Lakshmi, with four arms, standing on lotus, mint emblem on left: lion capital: I. G. MINT / BOMBAY; right: monogram, DENA BANK / * BOMBAY *; in field DEVKARAN NANJEE / FINE SILVER / 100 GRAMMES 998.5
Not illustrated here.

See Bruce (2007) X#10

Also, 50 GRAMMES known, similar description. Bruce (2007) X#9

National Refinery

10 tolas, silver: decimalized to 118.4 grams *Fine 999*

Manufactured **before** decimalization; countermarked and issued 1952, or shortly after. The new gram weight of 118.4 grams has been substituted for the old tola weight of 10 tolas.



33 *Obv.* Five stamps and cancellation mark; stamp 1, centre: NR monogram, around: NATIONAL REFINERY; below: III BOMBAY III; stamp 2 (cancelled by overstamp) FINE[NES] s; stamp 3 (partly cancelled) 999; stamp 4 (partly cancelled) (italic) ** ELECTRO / (small letters) REFINED; stamp 5 (grams replacing tola cancellation) 118.4
Rev. Plain

Silver, 45 x 30 mm, 9 mm thick, 118.5 g, ex Bombay
Mitchiner (2012), 892

National Refinery, Bombay

100 grams, silver *Fine: 999*



34 *Obv.* Top stamp, centre: NR monogram, around: NATIONAL REFINERY; below: BOMBAY; centre stamp: 999; bottom stamp: 100.0
Rev. Plain

Silver, 58 x 30 mm, 5 mm thick, 100.0 g, ex Bombay
Mitchiner (2012), 896

Deep, Bombay

Manufacturer, National Refinery Private Ltd from 1955

50 grams, silver *Fine: 999*

35 *Obv.* Lamp, with five flames, foliage at edge below: DEEP

Rev. In Gujarātī *śud'dha chāndī* [fine silver]/ 999 *ṭanch* [999 touch]/ 50 *grām* [50 grams] / — — / PURE SILVER / 999 FINENESS / 50 GRAMS / (on label below) NR monogram in circle) NATIONAL REFINERY PRIVATE LTD Silver, rectangular, die axis 12:00, 29 x 21 mm, 9 mm thick, 50.20 g, ex Bombay; the side is engraved: Best wishes good luck



Mitchiner (1998) 688; (2012) 897

The retailer may have been Deepchand & Sons, 96 Zaveri Bazaar

Bombay Mercantile Co-operative Bank

50 grams silver *Fine: 999*



36 *Obv.* Bank's emblem: woman pouring water from jug into hands of kneeling man; 50 GRAMS (in beaded circle), FINE SILVER and FINE 999 to left and right; around, THE BOMBAY MERCANTILE CO-OPERATIVE BANK LIMITED
Rev. In Gujarātī: in circle, 50 *grām* [50 grams], below, *śud'dha chāndī* [fine silver]; around, BMC monogram (repeating)

Silver, die axis 12:00, 37 mm, 5 mm thick, 50.05 g
Mitchiner (1998) 680; (2012) 899

This bank had earlier issued both gold and silver pieces denominated in tola weights (see above). with related designs.

The 50 gram issues of this bank come in two forms. Their designs are closely related. The 38 mm pieces with thick compact flans appear to be successors to the earlier pieces denominated in tolas.

The 50 gram medals struck on broader, 45 mm flans, were issued later. They are medals (rather than tolas), and have a more modern context.

Narrondass Manordass, Bombay

Narrondass Manordass (see earlier tolas) has premises at 135 Zaveri Bazaar, Bombay (2009).

The issues bearing a reverse inscription probably date from 1952 to the 1960s, after which their issues with a plain reverse are modern pieces with an investment, rather than a business, function.

100 grams, silver *Fine: 999*



- 37 *Obv.* In triangle, NM monogram, NARRONDASS MANORDASS ESTD. 1788 in band around; in beaded circle left, FINE / 999 and right 100 / GRMS
Rev. In Nāgarī: above: *nāranadās manoradās*, below: *śud'dha chāndī* [fine silver], in centre 999.0
 Silver, rectangular, die axis 12:00, 45 x30 mm, 8 mm thick, 100.00 g, ex Bombay
 Mitchiner (1998) 681; (2012) 901

5 grams, silver *Fine: 999*

- 38 *Obv.* Same description, but smaller size and 5 / GRMS
Rev. In Nāgarī: *nāranadās manoradās* / 5 grām / *śud'dha chāndī* [fine silver]
 Silver, rectangular, die axis 12:00, 24 x17 mm, 5.10 g



Mitchiner (1998) 683; (2012) 902

Pratap and Bros, Bombay

Pratap continues in the form of two contiguous businesses. These are: Pratap and Bros, 235 Zaveri Bazar, Mumbai 2, and Pratap Bros and Sons, 233 Zaveri Bazar, Mumbai 2 (2008)

50 grams, silver *Fine 999*



- 39 *Obv.* Company emblem top left, in circle SILVER HOUSE / PURITY / IS OUR TRADITION; field 50 gms, below A / STERLING INVESTMENT / FOR A PROSPEROUS / FUTURE / PRATAP & BROS. / BOMBAY - 400 002; at left, 999 P. B.; in Nāgarī: *chāndī* [silver]
Rev. Plain
 Silver, rectangular, 50 x 35 mm, 3 mm thick, 50.21 g
 Mitchiner (1998) 684; (2012) 904
 '999 P. B. *chāndī*' means 99.9 % pure bullion silver.

5 grams, silver *Fine 999*

- 40 *Obv.* 999.0 FINE / 5 GRAM (in cartouche) / PRATAP / & BROS / 233/35 ZAVERI BAZAR / BOMBAY - 2
Rev. Same inscription in Gujarātī: 999 *śud'dha chāndī* [pure silver] / 5 grām [5 grams] (in cartouche) *pratāp* / *ēṇḍ bradhars* [Pratap and brothers] / 233/35 *Javērī bajāra*

[jewellery bazaar] / *mumbaī-2* [Bombay-2]

Silver, rectangular, die axis 12:00, 19 x16 mm, 5.00 g



Mitchiner (1998) 685; (2012) 905

Catalogue: silver ingots of the Jodhpur Sarrafas
Silver ingots *Fine 9940*, around the second half of the nineteenth century
 Jodhpur Sarrafa Association Limited



- 41 Thick oblong silver ingot cut from a bar
Obv. Elephant standing left, above *om*, around in Nāgarī *dī jodhapur sarāphā ḗsosiyeśan limited* / [swastika] *ṭan* 99[?? touch 99??] [swastika] [The Jodhpur Saraf Association Limited]
 Silver, 57 x 33 mm, by 29 mm thick, 436 grams, ex Bombay

Mitchiner, IIRNS Newslines 37 (2003), 7, no. 1; (2012) 615
Di., at the start of the legend, may stand for 'Diwan', the building or establishment of the Jodhpur Sarrafa Association.
ṭan, in the lower section of the legend, stands for *ṭanch*, meaning purity.

The names are written phonetically in Nāgarī characters.

The official sarrafa stamp confirms the silver purity of 99xx (probably 9940, as on the next ingot).

Jodhpur Sarrafa Traders Limited



- 42 Thick oblong silver ingot cut from a bar
Obv. Elephant walking left, with realistic ground beneath, above *om*, around in Nāgarī: *śrī jodhapur sarāphā treḍars limited* / [swastika] *ṭan* 9940 [touch 9940] [swastika] [Sri Jodhpur Sarrafa Traders Limited]
 Silver, 58 x 48 mm, by 29 mm thick, 607 grams, ex Bombay

Mitchiner (2012), 616

The stated silver fineness is 9940, which is 9940 parts per thousand, or 99.40 per cent. The number is clear on one ingot and likely on the other.

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