

Indian numismatics' is at once the description of a popular hobby, the title of a widely-subscribed college postgraduate course, and the name of a scholarly discipline of great age and distinction. In the latter guise, it has been pursued in its own right, and also comprises a key component of economic, cultural and political history.

The disciplines that are most informed by numismatics have undergone much change during recent decades. In the 1980s, economic history gained considerable attention, with a number of memorable and well-received conferences laying the groundwork for both national economic histories and the emerging consciousness of global economic history. In that decade, there was a strong emphasis on monetary history and global bullion flows (Richards [1983] 2000, vii).¹ In the 1990s this abated somewhat. Indeed, by the year 2000 there was a crisis in academia, with many economic history programmes around the world terminating or being folded into other disciplines (Economic History Society 1998).² Other compelling concerns emerged that attracted attention, ranging from deconstructionism, world history, women in history, institutional history, Indian Ocean World history, and even a community focus. Numismatics soldiered on regardless, since its mastery was an essential aspect of certain other institutional disciplines like archaeology and museology.

Recently, there have been encouraging signs of an awakening interest in monetary matters. Daud Ali hosted a workshop on monetary history and the cultures of money use in pre-modern South Asia. His premise was that, 'Since the 1980s, cultural history has dominated South Asian historiography, and this conference will resuscitate and build on an earlier generation of scholarly work on monetary history, economic change, and capitalism in non-western societies' (UPenn workshop prospectus 2018). Tellingly, the workshop attracted the participation of eminent numismatists. Thus, the prospect of numismatic studies contributing to broader historical inquiries related to business communities, and their relations with governments in the creation and distribution of tangible money, is promising.

Concerning the interface of numismatics and history, what precisely was the orientation of earlier generations? It was said some time ago by Lallanji Gopal, that Indian numismatists seem more attuned to the needs and methodologies of historians than historians seem to be aware of the nature and utility of numismatic evidence (Gopal [1990] 2009, 162). Likewise, A.K. Narain commented that in his day, the best numismatists were quite scientific in their analysis, and prized objectivity in pursuing their craft (Narain [1973] 2009, 93). Contrarily, he felt that many historians were quite subjective, focused on a compelling narrative that was often quite selective in its use of numismatic evidence (ibid., 94). We must recognise, of course, that these eminent numismatists were reflecting the conditions of their day. Post-Independence India enjoyed a flourishing numismatic renaissance, under the tutelage of the generation of A.S. Altekar. Indeed, D.D. Kosambi, through his new methodologies, promoted 'scientific numismatics' (Kosambi 1981, 145–56). In contrast, the generation of historians before R.S. Sharma, attempting to encourage a proud new

national identity, were sometimes accused of extending patriotic narratives into the past eras they wrote about, with some poetic license. K.M. Shrimali has reminded us that the so-called 'golden age' of the Guptas taught in school textbooks, probably didn't feel that way to the mass of people then alive, who had to cope with many challenges, both natural and man-made (Shrimali 2019, 192).

After Independence, a number of economic histories of India or its regions were published. These tended to be scholastic in form, emphasising encyclopaedic lists of topics and issues extracted from a variety of original sources, many of them normative (Niyogi 1962; Gopal [1965] 2013; Saletore 1973). With some exceptions, not a great deal of emphasis was placed on underlying forces or long-term trends.

With the emergence of the so-called 'Marxist' school of thought in Indian history, which placed stronger focus on the stories of India's people rather than the exploits of their elites, economic aspects of history moved from the periphery to centre stage (Habib 1995). One of the concerns of this school was the nature of the evolution of India's political economy, reflecting specific models of state and economic development. A key premise of this school, championed by R.S. Sharma and a generation of like-minded historians, was the growth of feudalism in post-Gupta India (Sharma 1987; Sharma 2001). This transformation was felt to be characterised by the transformation of revenue collection into service relationships, accompanied by (or perhaps caused by) a slowing of trade and the concomitant withering of urbanisation (or increased ruralisation) in North India. Spirited discussion amongst historians on the major political and social tenets of this interpretive model continue to this day, although the focus is shifting from the evidence of land grants and literature to the nature and quality of the archaeological evidence of that period (Kennet 2013, 336).³

One key premise of this interpretive model was the growing 'paucity' of coinage prior to the second half of the first millennium (Sharma 1969). Sharma and Shrimali have been persistent exponents of this interpretive model (Shrimali 2019, 192–207). There is a large amount of literature on this subject, and the term itself has passed into mainstream historiography. In recent years, the issue of 'paucity' of coinage (as an India-wide phenomenon) has effectively been laid to rest, by a number of detailed numismatic studies (Bhandare 2017, 159–202). Numismatists have noted that, for the narrow topic of coins (physical money), historians have been quite selective in their choice of evidence, and have tended to confuse quality (the aesthetics and purity of coins) with quantity (the volume of coinage produced and placed in circulation) (ibid., 164). Also, it has been demonstrated that there was much regional variation in patterns of coinage use. Numismatists have convincingly demonstrated, that for much of Northern, Western and Central India in the eighth through twelfth centuries, significantly large quantities of crudely-fashioned anonymous or eponymous base silver coins were produced and circulated, leaving their mark in both the epigraphic and archaeological record (Maheshwari 2010). Contrarily, Eastern India, from Bihar to the Meghna River, evolved a governance model in which coinage had no role, relying instead on 'moneys of account' for purposes of evaluating revenue collection, state expenditures and land transfer (Basu Majumdar 2018, 257; Pal 2019, 53–76). This was also the region with the greatest number of land grants in the epigraphic records; hence, this was not incompatible with a feudal analysis (Sharma 1987, 108).

This debate has highlighted the issue of what exactly is meant by the term 'money'*per se*. At the outset it must be admitted that, although the concept is of universal interest, there are many different understandings of the meaning of the word 'money'. Numismatists are concerned with money's physical manifestations, usually coins, but also banknotes, and occasionally exonomia or so-called 'primitive moneys'. Economists have a much broader definition of money. The Bank of

Canada on its website defines money as '...*any asset* that is widely accepted as a means of making payments or settling debts. Whether a tangible object or [intangible], money is based on a social agreement to recognize value' (Bank of Canada 2012, 1). So the scope of the word 'money' depends on the user's field of interest.

This implies that the term 'monetary history' will have a different connotation to a numismatist, an historian, and an economist. In his review of the so-titled 'monetary history of north India', *Living without Silver*, Shrimali commented that the book was a history of coins, rather than a monetary history (Shrimali 2002, 7). In this observation he was quite right; that early work was very much shaped by the source material available to the author, which by and large comprised hoards of the coins of the period. Ideally, a pre-modern monetary history would concern all forms of money circulating in its region and era, above and beyond coins, including paper money (where it existed), deposits, credit instruments and bills of exchange. The reality is that the older the period, the fewer the surviving written records, whereas coins of all periods have been recovered (being virtually indestructible). So inevitably, the more ancient the focus of a monetary history, the more reliance on coins, to the exclusion of other forms of money. This dilemma of imbalance in the availability of evidence, is more of a problem for historians than for numismatists, who are quite happy if a monetary history only deals with coins. Who would doubt that P.L. Gupta's classic primer, simply titled *Coins*, is not one of the greatest and most useful monetary histories ever written in India?

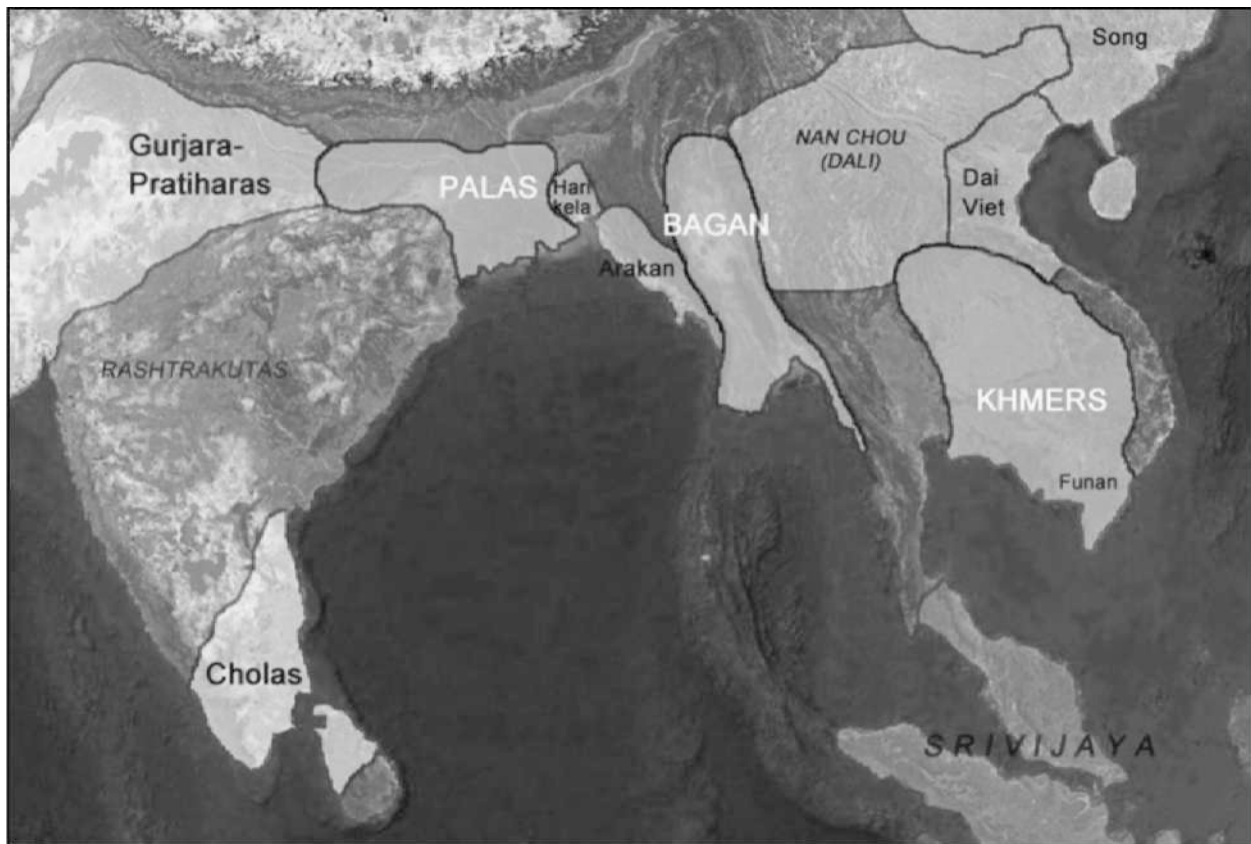
At the same time, numismatists must not lose sight of the fact that historians have a broader meaning in mind when they speak of monetary history. Coins are but one form of money, occasionally the dominant form (as during the Mughal Empire), but sometimes not the most important aspect of money at all (as in the Sena Kingdom which had no metallic currency of its own) (Majumdar 2018, 254–55). We mentioned the modern view that money is at base a social convention, which may take a physical form (Carney 2021, 58; Ferguson 2008, 29; Ingham 2000, 22). Coins help accounting and exchange, but are by no means the only, or even the principal, form of money during many periods and in many places. If we focus only on coins, we leave unexplored many other forms of money like credit, money of account and ledger entries. We also ignore the money forms probably used by the most people over the longest periods of time in pre-modern societies, namely moneys of the people like cowrie shells, bitter almonds, etc. (Flynn 2022).⁴ So we should be clear in our minds that for economic historians, monetary history goes well beyond coins to include all the myriad other forms of credit and debt (Chaudhuri and Denzil 2008; Graeber 2011).

If we have alternative definitions of money and monetary history, depending on the horizons of our interests and academic orientations, what might we mean by the term 'monetization'? Context is all-important here: there have been societies and civilizations that were highly monetized, but which used no coins (Aymard 1980, 15; Chattopadhyay 1994, 114, fn 108)⁵. Conversely, there have been coin-using societies that were demonstrably under-monetized (Selgin 2008).⁶ So the presence or absence of coins in the archaeological or historical record may or may not have been an indicator of degree of monetization of the economy.

Some time ago, Robert Wicks undertook a detailed study of the monetary systems of early medieval Bengal, Myanmar and Indo-China. He noted that all these areas utilised broadly similar silver coinages early in their development, but that they progressively abandoned use of coinage in later years (Wicks 1992, 3). Sayantani Pal has done considerable work on this phenomenon in the successive Pala and Sena kingdoms, finding that although the region based its land-record values on the Gupta gold *dinara* in early years, it gradually abandoned notation of values in actual coins,

adopting progressively a notional ancient silver denomination, the *karshapana*, and ultimately a money of account, the *kapardikadramma* based on cowries and long-obsolete coins (Pal 2019, 57; Wicks 1992, 66). Susmita Basu Majumdar furthered this study, and concluded that although the use of cowries was widespread, the successive Pala and Sena kingdoms circulated no coins of their own (Basu Majumdar 2014b, 595–99).

In conventional terms, were these kingdoms thus not monetized? Let us consider these realms, home to the great Buddhist universities and temples adorned with magnificent sculptures, protected on land by armies of horsemen and on water by a powerful navy, in correspondence with overseas monarchs in Southeast Asia (Majumdar 1971, 94–198; Chowdhury and Chakravarti 2018). Who would assert that they ruled a modest economy suffering from poor monetization? Quite the contrary, their economy exhibited all the characteristics of contemporary empires. So in the broader economic sense, the absence of coins cannot be taken as proof of under-monetization. We have to accept that financial systems based on moneys of account (i.e. intangible money) have flourished in the past, as they do in our own times.



Map 1: The late first-millennium kingdoms of South and East Asia. Coin-issuing states are rendered in lighter green non-coin-issuing states are in brown with white lettering. Overlay: the author. Underlay: © Google Earth.

This raises a parallel issue, that of the nature of monetization. Rila Mukherjee has pointed out the roughly simultaneous abandonment of coined money in their economies, by the three kingdoms of the Palas, Bagan and the Khmer, Map 1. She initially posited a common thread of response to a dearth of bullion, due to trade disruptions in Southeast Asia during the eighth and ninth centuries (Mukherjee 2011, 94–98). Now, it's noticeable that all three were riverine civilizations, along the Ganga, Irrawaddy and Mekong River systems, respectively. They were heavily dependent on paddy

cultivation, which through agricultural revenue formed the basis of state finances. All three undertook massive public works, sometimes in the hydraulic sector, but more often focused on prestigious religious buildings, for the most part Buddhist but with considerable Hindu influence (Deyell 2019, 198). Notably, all three had well-defined trade routes with Yunnan, then comprising the Nan Chou and Dali kingdoms in succession. That area was replete with gold and silver mines throughout this period (Deyell [1983] 2000, 225). Thus, easy availability of precious metals was never an issue for the three coinless realms.

It is noticeable that all three kingdoms bordered other states that used coins. The Palas were bordered on their west by the Gurjara-Pratihara Empire, which used an extensive silver coinage (Deyell [2001] 2005, 393–415). On their east they bordered Harikela, which initially used gold coinage, then converted to silver later on (Acharjee 2006; Bose and Nasir 2016, 60–92). By the time of the succeeding Sena Kingdom, Bengal was in close communication with South India's Chola Kingdom, which struck and used gold, silver and copper coinage (Biddulph 1968; Hall 2014, 69–98).

Bagan was bordered on the west by Arakan, which had a prolific silver coinage (San Tha Aung [1979] 1982; Robinson and Shaw 1980, 44–65; Mitchiner 2000, 128–49). The Khmers absorbed Funan, a coin-using state (Wicks 1992, 186)⁷. They bordered Champa, which likewise traded without coinage, but in the late Song period the more northerly Dai Viet used a copper coinage in the Chinese fashion (Barker 2004, 50). The Song Empire of southern China struck immense quantities of copper cash, much of which was exported to Southeast Asia, then under the hegemony of Srivijaya and Majapahit (Wicks 1992, 291; von Glahn 2014, 629–30). The use of coinage was so widespread, that we must conclude that the lack of coinage in these three contemporary states must have been due to economic policy decisions and was not a response to coinage metal shortages.

Perhaps significantly, all three experienced the increasing influence of seaborne Arab traders, bearing gold *dinars*, silver *dirhams* and copper *falus* in their wake (Kholis et al. 2022; Chutamas 2017). While the question is simply posed here, and the research is yet to be undertaken, there is some possibility that the abandonment of metal coinage, or more properly the re-adoption of institutionally-mediated financial accounting systems, was at least in part, a common response of Indianized elites to the threat posed by emerging new realities in the greater Indian Ocean World (Deyell 2019, 198–99). Whether this can be described as 'feudalism' is best left to historians.

Traditionally, Indian numismatics has been concerned with India's coinage. Perhaps this is a tautology, but nonetheless meaningful in its description of a circumscribed horizon. There were some exceptions, due to the cultural biases of the individuals. We note how British officials in India were attracted to any coinage system showing a Greco-Roman influence; likewise, Parsi numismatists were happy to include Sasanian coinages in their purview. But as noted above, the viewpoint of Indian historians has expanded in recent decades, to include, for instance, the broader Indian Ocean World (Chaudhuri [1984] 2005; Das Gupta 2004; Ray and Alpers 2007; Malekandathil 2013; Hall, Ghosh, Gangopadhyay and Mukherjee 2019; Chakravarti 2020). Students of Indian numismatics have considerable scope to do likewise (Haider 2007, 181–205; Bhandare 2007, 206–44; Garg 2007, 245–62).

Despite strong regional patterns of coin use, Indian coins did not exist in a geographic vacuum. There is already a strong literature regarding foreign coins found in India, including Greek, Roman, Sasanian, Arab, Persian, and Venetian, to name but a sample (Turner 2023; Codrington 1882–83, 339–70; Digby 1980, 129–38). But equally important was the influence of Indian coinages elsewhere (Mahlo 2012, 15)⁸, and the influence of imported coins on local issues (Bhandare 2021,

24–62). So it is entirely legitimate for Indian numismatists to adopt a wider geographic focus than hitherto has been the case.

Geographic scope aside, some monetary topics are easier to study than others. There are tensions in the study of tangible and intangible forms of money as they are very dependent on the nature of the evidence available to us. It is axiomatic that the closer we get to the present day, the greater the quantity, quality and diversity of source materials available for study. The outstanding work on Mughal monetary history done by generations of historians, notably Irfan Habib (1982, 360–81), Shireen Moosvi (1987, 351–62) and Najaf Haider (1996, 298–364; 1991–2, 309–48), is due in no small measure not only to the availability of contemporary archival material, but also to well-documented hoard evidence. Danish Moin has recently made a presentation on this very topic (Moin 2023).

As we move our purview to earlier periods, the written material diminishes, throwing ever sharper light on the surviving coins. If we had to rely only on written accounts, we would have a very poor knowledge of medieval Bengal. We note that a full study of the coins as historical documents has allowed Syed Ejaz Hussain to prepare his authoritative work on the Bengal Sultanate's economy, politics and money (Husain 2003). Likewise, patient and decades-long sleuthing through museum holdings has enabled Sutapa Sinha to re-create the corpus of hoards of Bengal Sultanate coins discovered over the last two centuries which were, for the most part, dispersed long ago to institutions in India and elsewhere (Sinha 2017). She has, in effect, rescued primary evidence that was inadvertently lost, and in the process created an invaluable database for future studies.

Needless to say, the further back in time we go, the fewer written sources remain, and all the more important become numismatic, epigraphic and archaeological evidence. A study of the early medieval period relies heavily on inscriptions and coins. For some ancient epochs and regions, the coins stand virtually alone as illuminators of past realities.

Sinha, in a recent presentation, advocated the utility of coin hoards for historical analysis (Sinha 2023). This writer is also a firm proponent of the importance and efficacy of the study of coin hoards for economic history (Deyell 1991, 1–15). For numismatists, there is no better grounding in a series than the sifting and sorting of coins, deciphering their legends, comparing physical attributes, sorting out by metal, weight and size, and basically imposing a classification system on the unruly mass of metal. For historians, the comparison of the composition of different hoards by region or era, enables deductions about the production, distribution, circulation pattern and intensity of use of the coins. Indeed, in his Presidential Address to the Numismatic Society of India, Irfan Habib said, 'I intend to... speak about how the numismatists' finds and analyses of treasure-troves or hoards can be used for historians' reconstructions of monetary and economic history' (Habib 2010, 118).

Unfortunately, the analysis and reporting of treasure-trove hoards is often undertaken by officers of archaeological departments or museums who have little or no formal training in numismatics. Habib had a positive view of the utility of hoards, first because Mughal coins themselves were information-rich, bearing issuing authority, minting place, date, regnal year, and sometimes even the month of issue. Second, he was fortunate that when the hoards were being inspected in the early-to-mid twentieth century, the persons undertaking the work, like Richard Burn, Henry Neville, C.J. Brown, Prayag Dayal and C.R. Singhal, were all experts in Mughal coins.

In contrast, the early medieval coin hoards are often full of anonymous coins bearing either no legends or rudimentary enigmatic letters. They bore neither name of issuer nor place or date of issue. Looking through K.K. Maheshwari's massive study of the so-called Indo-Sasanian series, it is clear that only occasionally is there enough information on the coins to enable an attribution

(Maheshwari 2010). Quite often, it is barely possible to sort the coins into different classes based on distinctive features. Thus, the treasure trove reports on these coins are terse, simply classifying the entire hoard by the generic name 'Indo-Sasanian' or, infrequently, 'Gadhaiya'. Hence the utility of the reports of early medieval hoards is greatly reduced. Only personal inspection is adequate, which can be problematic for institutional holdings. For example, by a lifetime of patiently sifting through such hoards found intact in the holdings of cooperative museums, the late Pratipal Bhatia managed to map their distribution (Bhatia 1988, 105–106). Maheshwari has gone a step further and demonstrated some tentative attributions, based on find spots and mentions in archeological digs, that carry forward our understanding considerably (Maheshwari 2010, 69, Map 3).

Of course, there were earlier periods and regions where numismatic conditions analogous to the Mughal era, applied. The wealth of information on the invader coins of India's northwest frontier, specifically those of the Indo-Greeks, Sakas, Pahlavas and Kushans, has enabled generations of numismatists to offer valuable data to historians. The notable work of Robert Senior, sifting through dozens of hoards of Indo-Scythian coins, is one example of this (Senior 2000, 173–96). And of course, the greatest hoard report ever undertaken was by Osmund Bopearachchi, in his reporting on the colossal Mir Zakah deposits, as well as numerous other hoards otherwise lost to posterity (Bopearachchi 2015, 636–76).

As mentioned earlier, not all hoards of utility in monetary studies are still intact. In such cases, patient detective work has enabled numismatists to reconstitute the entire hoard from its parts scattered throughout public and private holdings. One such notable effort was undertaken by Basu Majumdar, in gathering together the details of the remnants of the earliest Gupta gold coin hoard ever reported, the renowned Kalighat hoard (Basu Majumdar 2014a). Its publication has brought together once more these classical Indian coins, enabling future historians to draw their own conclusions from this irreplaceable data.

Over the last several decades, there have been some, although not many, efforts to use hoard analysis to advance historical writing. Moosvi's work on the economy of the Mughal Empire used hoard analysis to gain a sense of the relative volumes of Mughal coinage (Moosvi 1987, 356)⁹. Others could be mentioned.

Relatively recently, Phillip Wagoner created a corpus of hoards of gold coins in the medieval Vijayanagara and Bahmani kingdoms, using archaeological survey reports as well as other published sources (Wagoner 2014, 457–80). He analysed the coins' physical distribution through a geographic information system or 'GIS' computer program. The GIS takes into consideration the number of coins in each hoard, as well as the location of each hoard by latitude and longitude. Hence it will skew towards the greatest density of coins. Interestingly, he found that the 'centre of gravity' of the coins' distribution was *north* of the border of Vijayanagara, and that Vijayanagara gold coins were the predominant circulating gold of the Bahmani Sultanate, despite the fact the sultanate issued its own gold coins. In turn, he was able to link this to the dominant role of Hindu moneylenders in the collection of Bahmani agricultural revenue, and their preference for coins with familiar religious motifs, regardless of where they undertook their business (ibid., 457, 472–3).

Although hoards proved their utility in the past, can we still encourage young scholars to turn their attention to coin hoards? The answer must be somewhat equivocal. In a sense, much of the low-hanging fruit of previously-published hoard material has already been harvested. And regrettably, not much fresh material is being published nor can this be expected in the near future.

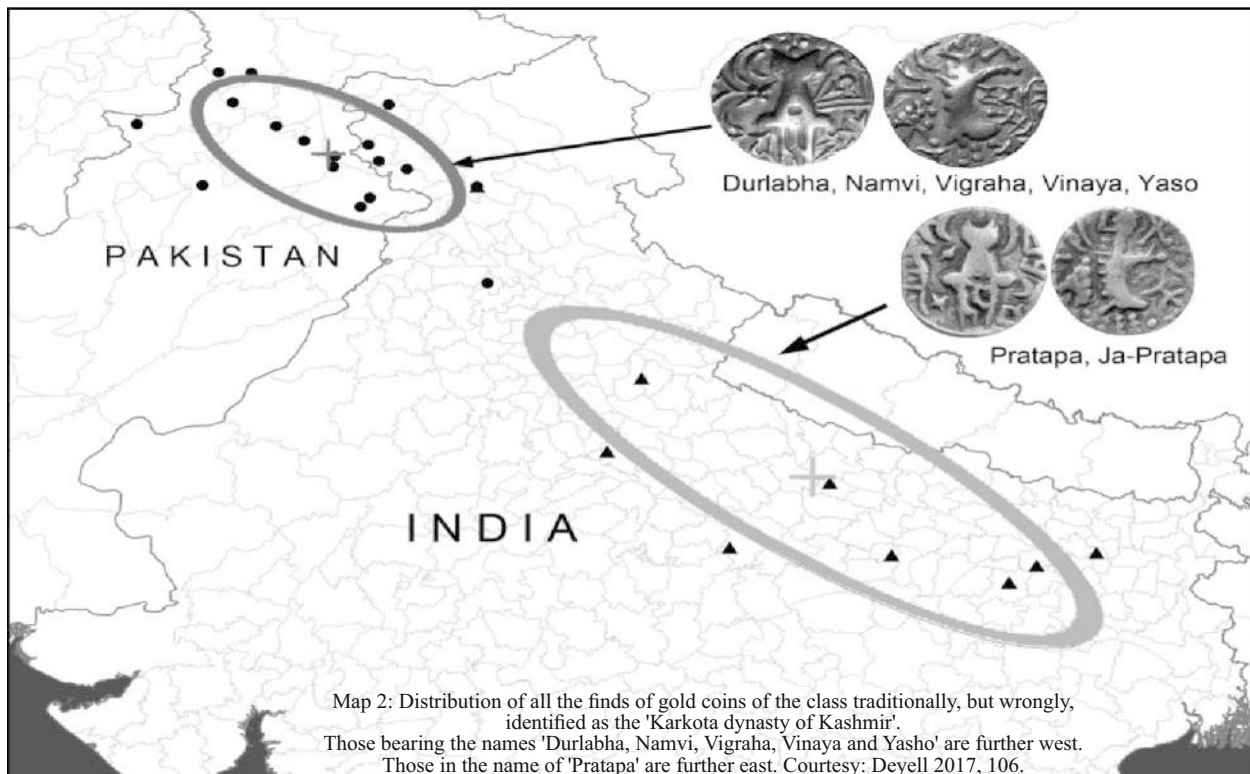
The reporting of Indian treasure-trove hoards has, at the best of times, been very spotty,

differing in intensity and detail tremendously from state to state. For many states, there are simply no published treasure-trove records. For others, the published reports are decades out of date. The quality of reports is uneven, both over time and from place to place. Recently, I had the opportunity to go through the original treasure-trove acquisition records of a state archeological department. They were organized on an as-received basis, that is, year by year. I found the records of the 1950s, 1960s, and 1970s to be terse but adequate, recording the coins' quantity, metal, average weight, type, and find spot. Records in the 1980s became shorter and limited to quantity, metal and find spot. In the 1990s, the type of coin was no longer recorded. More currently, only the gross weight of the whole hoard, metal and find spot are recorded. If published, these records will carry little useful information. Only direct personal inspection can bring any utility to these holdings, but in most circumstances there is little to no likelihood of outsiders ever having access to the officially-held hoards themselves.

This raises a second issue, often highlighted by past Presidents of the Numismatic Society of India in their annual addresses: the poor or non-existent access for serious researchers to the actual holdings of museum coin vaults. Some museums routinely grant scholars access to inspect the coins, and even to sort through hoards. Most others place considerable inventive barriers in the way of such access.

Given the uneven coverage of treasure-trove reports, and the uncertain access to museums, it is noticeable that researchers are seeking information from the coin trade. This has its own perils, as dealers are often hesitant to share accurate information about find spots, or even the complete composition of a hoard. However, there are occasions where there is no alternative, as this case will demonstrate.

Map 2 depicts a class of seventh–ninth century electrum coins of the same post-Kidarite type, clearly comprising two geographic groups, differentiated by hoard content. The geographic information system (GIS) software identified two clusters, giving their radius of concentration and



centre of gravity, seen here. By serendipity, the two groups fall separately into modern Pakistan and India, although no such borders existed in their period of issue, the seventh through ninth centuries.

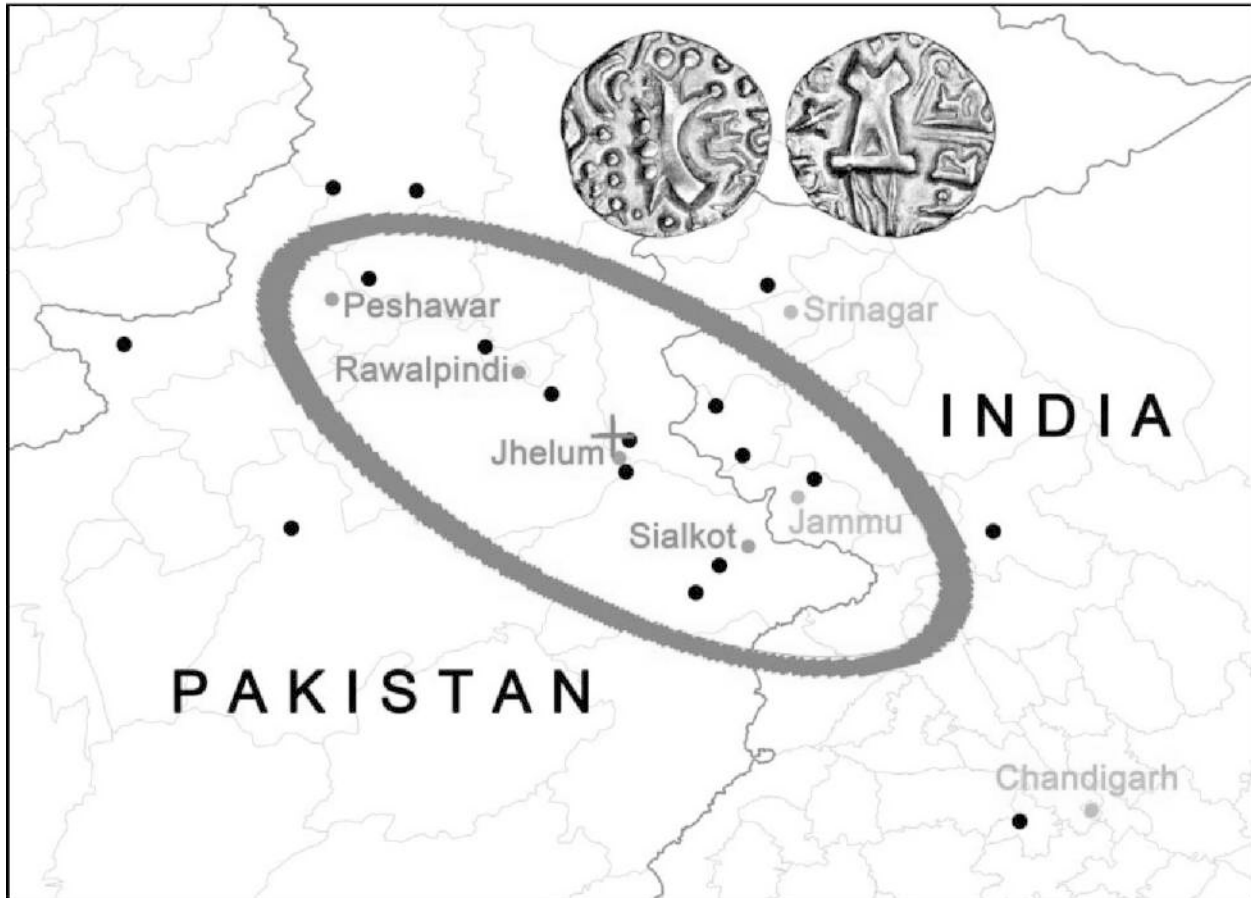
Map 3 gives a closer look at the eastern concentration, which was comprised exclusively of electrum (base gold) and copper coins in the names 'Sri Pratapa' or enigmatically, 'Sri Ja-Pratapa'. Conventionally, these had been attributed to a Kashmir raja, Lalitaditya, who was claimed to have conquered all of North India as far east as Kashi. But as the distribution shows, the Pratapa coins were limited to the Ganga valley, from eastern Bihar to Rohilkhand. A few reached Chamba, but there is no known distribution into Jammu-Kashmir. So clearly the coins were issued by a Gangetic ruler, not a Kashmiri interloper.



Map 3: The eastern group, exclusively in the names 'Sri Pratapa' or 'Sri Ja-Pratapa'. Courtesy: Deyell 2017, 184.

Map 4 gives a closer look at the western concentration, which was comprised of all the other five known rulers in this series, two of whom had names of Kashmir rajas. At present, modern Pakistan has no known published treasure trove reports. Thus, except for the lone hoard in the Kashmir valley, the entire hoard data came from Pakistani numismatists, confirmed where possible by Indian numismatists knowledgeable in the series. The GIS analysis is quite dramatic: the coins' distribution lies in the lowlands of north and northwest Pakistan, with a few occurrences in the Punjab foothills and the lone occurrence in the valley of Kashmir. Clearly these coins were not issues

of Kashmir rulers at all, but were issued throughout the territories of the post-Kidarite rulers of the western Punjab and adjacent foothills.



Map 4: The western group, of hoards comprising 'Durlabha, Namvi, Vighraha, Vinaya and Yasho'. Courtesy: Deyell 2017, 195.

Technology has provided the means to overcome some of these access problems. Increasingly, museums have been posting online the photos and accompanying description of the coins in their possession. The American Numismatic Society is notable in this regard (American Numismatic Society “Mantis database”). Interestingly, one of the earliest and most massive efforts to digitise official holdings was undertaken by the Rajasthan Government Museum, posting large numbers of their treasure-trove hoards online about 2010¹⁰. Each hoard had a text file giving particulars of find, and description of each individual coin (metal, weight and diameter), and a photo file giving a reasonably high-resolution photo of each coin. The project was admirably ambitious: one hoard alone had a lakh of coins posted. About a hundred hoards were fully exhibited. Although the website was not overly user-friendly, this researcher was able to download the particulars of tens of thousands of coins. Then, quite unexpectedly and unannounced, the website went dead about 2013, and has not functioned since. No explanation has ever been given. This ephemeral nature of websites is a concern that we can extend to all digital forms of communication, including video recordings of lectures and presentations. In a century from now, the hardcover books we write will still be accessible, but all our virtual exchanges may have long become inaccessible or forgotten.

Fortunately, there have been notable institutional efforts to compile and make available hoard data and related supporting literature. I would be remiss if I did not mention the former Indian

Institute of Research in Numismatic Studies (IIRNS) near Nasik, now renamed the Indian Numismatic, Historical and Cultural Research Foundation (INHCRF)¹¹. For some forty years, this facility has hosted researchers and students, offering methodological courses, holding research seminars, accumulating an in-depth library holding, compiling a photo collection of coin hoards of all periods, and building a focused collection of coin hoards, mostly in base metals. Over the years it has published both a newsletter and a journal. Significantly, this institution has undertaken on behalf of the central government, the cataloguing and digitization of official coin holdings hitherto hidden in museums, notably of the Asiatic Society in Mumbai, the Sri Pratap Singh Museum in Srinagar, and several Punjab museums¹².

This positive development is mentioned because it has fostered new discoveries, simply by offering easy access to basic data. This writer's recent work on the seated-Lakshmi gold coins of the eleventh to thirteenth centuries benefitted greatly by pioneering work done at IIRNS by a staff member, Biswajeet Rath (1994, 75–116; cited in Deyell 2022, 70, 198–206). Examining their records of the Dalmau hoard, he was able to discover the typological linkages between Kalachuri, Gahadavala and Ghurid iterations of this coin type. More recently, two scholars who met by chance while undertaking research at the IIRNS, Pankaj Tandon and Phillip Wagoner, collaborated on the analysis of a large hoard of Bahmani copper coins on deposit with that institute (Wagoner and Tandon 2017, 227–68). Their joint paper is, in effect, a monetary history of the Bahmani Sultanate, tying the history of the base metal coinage to the major endogenous and exogenous shocks to the sultanate over time.

Of course, perceptive researchers have managed to creatively leverage other numismatic resources to extract new understandings. Basing his study on the published catalogues of coins, Pushkar Sohoni has shown how a complex mixture of residual authority, ritual status and 'consumer bias', resulted in the distinct preference of Bahmani successor states, predominantly in Maharashtra, for obsolete copper coinages, foregoing the minting of their own new coins (Sohoni 2018, 645–59).

Often, it is a new way of looking at old issues that enables breakthroughs even in relatively well-documented periods for which we would not normally expect radical departures. The negative British colonial attitude to Princely State minting privileges was determined by their centralized imperial ambition. The late R.E. Frykenberg and this writer documented this struggle for minting hegemony long ago (Deyell and Frykenberg 1983, 1–25), and more recently Sanjay Garg has produced a superb opus summarizing the whole issue (Garg 2022). But the British orientation permeated our numismatic attitudes to simple local copper coins, which have long been dismissed as crude forgeries. Some decades ago, Frank Perlin, using documents from the Peshwa Daftar, started pushing back on this view, arguing the proliferation of local base metal coins after the break-up of imperial Mughal monetary unity, reflected the growth of local markets and local exchange (Perlin [1987] 2000, 232–373; Perlin 1993, 131–228).

Labour historian Jan Lucassen has gone further, demonstrating that in the nineteenth century, Indian workers' preferences for heavy, simple, crudely-struck copper coinage was a widespread feature of public works projects. This stubborn monetary preference gave rise to a brisk trade in the manufacture and sale of spurious imitation copper coins. East India Company officers, who had their own imperial machine-made coins, were forced to use these local forgeries to undertake their canal-building (Lucassen 2007, 349-90; Lingen and Lucassen 2010-11, 148-83). Shailendra Bhandare has undertaken a long study of these so-called '*kachchapaisas*' and their

emerging role in local economies. So we are learning that the simplest money sometimes had the greatest economic significance (Bhandare 2014a and 2014b).

One orientation or filter affecting numismatic studies, is the usual focus on coins as objects or 'things'. To make our observations more relevant for historians, we must not lose sight of their creators: the mint workers who fashioned them or the financiers who commissioned them. Indeed, this was an intended focus of the project launched by Daud Ali, mentioned earlier. His colleague Sudev Sheth has published a work on the complex interaction of the *sarrafs* of Gujarat, with the Mughal functionaries and Maratha *sardars* who fought for control of that Mughal *subah* (Sheth 2024). His work highlights the importance of the unseen in those military campaigns: the financing of war through control, not only of the revenue collection but the operation of mints, and the complex of financiers who were relied on by both sides of the struggle.

In my own work, it has become evident that in the period 600-1300 CE, the traditional financial communities that operated mints on behalf of some rulers and channeled bullion into them to be fashioned into coin, were central to the very existence of metallic money and its circulation in both revenue and trade. It also identified that this relationship had a social aspect: there are various indications that the coins themselves, specifically gold, featured in the worship practices of their creators. The close association of traditional business communities and the creation and circulation of money is evident as well in the written record later in this period: both the *Dravyaparisksha* and the *Lekhapaddhati* specifically tie the early medieval minting process, undertaken for rulers of disparate backgrounds, to the Jain, Oswal and Shrimali communities (Prasad 2007, 29).

In fact, there are tell-tale signs that show the great longevity of specialized knowledge involved in minting coins, which suggest that minting techniques have survived intact in those communities over great periods of time. To name but one such example, one can trace the Hellenic tradition of placing the ruler's image on the lower or anvil die, through the Indo-Greek, Western Kshatraps and Indo-Sasanian series, which has remained intact for over a thousand years (Deyell 2011, 12–13). In fact, the Calcutta mint, under British rule, followed the same tradition for the same reasons, i.e. to safeguard the carefully-engraved portrait of the nominal ruler. All these instances are revealed by the same tell-tale sign: the fact that brockages (inverse impressions) exist for the obverse portrait only. This is true of the Western Kshatraps *drammas*, and of the imperial rupees.

What is the scope for future work? Evolving technology has at last allowed us to focus on the metallurgy of coins. In the past, it was extremely difficult for numismatists to gain access to chemical laboratories. When on rare occasions they were able to obtain lab services, significant findings resulted. One notable example was the use of Atomic Absorption Spectrophotometry (AAS) by Amiteshwar Jha and Dilip Rajgor, who determined that over a period of three centuries, there was only a slow and gradual reduction of the net silver content of *drammas* issued by the Western Kshatrapas of Gujarat (Jha and Rajgor 1992, 57-67). That work was an exception. Fortunately, nowadays the wide availability of X-Ray Fluorescence (XRF) scanning technology, now commonly used in jewellers' bazaars, allows us to determine the metal content of coins much more frequently. The equipment is more accurate for gold than for silver, but even that has allowed significant new work in otherwise tired old fields. An early adopter of this technology was Alex Fishman, a numismatist who is also a scientist specializing in chemistry. He tested hundreds of tiny, hitherto poorly-studied silver so-called 'three-dot coins' of early medieval Sind and Multan. The resulting correlation of metrology, metallurgy and stylistic analysis enabled him accurately arrange these coins in a temporal series, and to catalogue them in depth for the first time (Fishman and Todd 2018).

Recently, Tandon has published the first fruits of the metallic analysis of almost 400 gold *dinaras* of the Gupta emperors, scanned either by himself or by Gupta expert Sanjeev Kumar (Tandon 2022, 33–43). Preliminary results raise the possibility of a refinement of the Gupta chronology and sequence of rulers that has been unsettled and contentious for generations. Science may bring objective precision to bear where previously subjective judgments ruled. My own work greatly benefitted from access to this metallurgical data, in recent studies of seventh through ninth century post-Kidarite coins, and the eleventh to thirteenth century seated-Lakshmi coins. Metal testing helped me realise the coins were trimetallic, i.e. gold-silver-copper alloys, a fact not known to S.K. Maity when he performed his classic specific gravity tests of ancient and early medieval gold coins (Maity 1970, 80–90). Interestingly, this fact was well known to Thakkura Pheru, the Khalji mint's assay master, who in 1318 CE labelled these coins 'trimetallic' (Jinavijayaji [1961] 1996, 17–38; English tr. Agrawala 1966, 87–101)¹³. The fact of varying and complex precious metal content, unobservable to modern numismatists and contemporary users of the coins, has raised the whole question of the financial intermediaries involved in the minting and circulation of the coinage of that era.

In Summary

Indian numismatics has evolved considerably, and continues to evolve, as fresh perspectives are adopted, creative techniques are refined, new technologies are brought to bear, new linkages to other disciplines are reinforced, and better collaborations between scholars, museums and collectors are forged. While a local or regional focus remains valid, wider horizons and broader perspectives add great value to numismatic work. Young scholars can certainly expect to meet pitfalls in their journey, but should also seek out and recognize possibilities for new and effective pathways for their research.

Notes

- 1 John Richards hosted a conference on inter-regional flows of precious metals during the period 1200 to 1750 CE in Madison, Wisconsin, in 1977: 'To my knowledge this was a first attempt to convene a meeting of scholars to consider both medieval and early modern monetary history on a world scale.'
- 2 Chairman's preamble: '...the origins of the conference lay in the ...crisis in economic and social history in UK higher education - a crisis which was also occurring in Europe, Australia and Canada and stemmed from a fall in demand for the services of teachers of economic and social history'.
- 3...if there was a general shift in urban centres at many sites towards the end of the Early Historic period, and if many of those locations continue to be occupied to the present day, the Early Medieval and later occupation history of many sites would remain completely obscured from archaeological investigation. Unfortunately, it seems highly probable that this is exactly what has happened. It is partly this coincidence of archaeological strategy and historical events that has led to the fact that hardly any medieval urban sites have been excavated in the whole of the subcontinent.'
- 4 'Why did specific cowries accumulate only in certain specific geographical locations? Yang establishes a general answer: *cultural preferences* for holding specific objects, including specific monies, determined where the shells were concentrated... Yang demonstrates repeatedly that distinct market locations and distinct market prices existed for specific cowrie and other shell monies (plural) throughout global history. His evidence starkly demonstrates inadequacies of mainstream monetary theory'.
- 5 'Maurice Aymard suggests that the role of money could be 'infinitely greater than the actual circulation of coins might suggest; even when physically absent, money dominated the core of economic activity and social relations'.
- 6 Throughout much of its history, England was chronically short of copper money, a deliberate policy of the Royal Mint that focused on high-value gold and silver coin production. This became a crisis during the Industrial Revolution of the

- 1780s, when new manufacturing enterprises needed large quantities of low-value coins for their burgeoning workforce.
- 7 Silver coins of Thai and Myanmar origin were found in excavations at the Khmer site of Oc Eo, so 'coin-using' but not 'coin-issuing'.
- 8 Of ancient Pyu/Mon coins of Myanmar: '...borrowing, reinterpretation and mixing from Indian-influenced prototypes...!'
- 9 I have constructed a 5-yearly histogram from my own sample... drawn from the coin-find reports'.
- 10 This is the website that is now unresponsive: <http://www.ancientcoins.rajasthan.gov.in/>.
- 11 Founded by Dr K.K. Maheshwari and maintained by a foundation he heads. Website: <http://inhcrf.org/>.
- 12 Information provided by Dr Amiteshwar Jha, former IIRNS director and project head.
- 13 Literally, *tridhatumishritamudrah* ('coins of three metals'), title of the section comprised of *gathas* 62-72, pp. 24-5, in Thakkura Pheru, *Dravyapariksha* (1318 CE).

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