

Chapter 11

Non-elite Coin Use and the Convergence of Currency Systems in Peninsular India, 1347-1687

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In a coincidence of some note, the year 1347 saw the foundation of two new states on the Deccan plateau.¹ From its capital in Gulbarga, the Bahmani sultanate quickly came to control most of the peninsula north of the Krishna and Tungabhadra rivers, while its political ‘twin’, the kingdom of Vijayanagara, dominated the southern Deccan from its capital of the same name on the southern bank of the Tungabhadra. Not only were the two polities founded in the same year, but they emerged under remarkably similar circumstances. The founders of both states had earlier served the north Indian sultanate of Delhi, which had succeeded in conquering most of the peninsula during the three decades between 1296 and 1327. Their similar origins notwithstanding, when their respective leaders responded to Delhi’s eroding control by proclaiming their independence, they did so in markedly different ways. Sangama Harihara and his brothers built their fledgling Vijayanagara kingdom by appealing to a predominantly Sanskritic political idiom—adopting lofty imperial titles in Sanskrit, following an older Indic culture of rulership, and presenting themselves as agents ruling on behalf of the Hindu deities Pampa and Virupaksha, whose pilgrimage site on the Tungabhadra River they co-opted to serve as their ‘City of Victory’. In contrast, ‘Ala’ al-Din Bahman Shah appealed to a predominantly Persianate political idiom—favouring Persian as the prestige language of the court, following a Persianate culture of rulership, and wearing on the occasion of his coronation the very robe that was

¹ This essay is in part based on my article ‘Money Use in the Deccan, c. 1350-1687: The Role of Vijayanagara *hons* in the Bahmani Currency System’, *The Indian Economic and Social History Review* 51(4) (2014): 1-24, which was in turn based on my presentation given at the symposium ‘State Formation and Social Integration in Pre-modern South and Southeast Asia: A Comparative Study of Asian Society’, held at the Toyo Bunko in Tokyo on 8-9 March 2014. I am grateful to Professor Noboru Karashima and his co-organizers for the invitation to participate in this rewarding conference. Thanks are also due to Richard M. Eaton, who provided the translation of the *Tarikh-i Firishhta* passage that has been summarized on pages 248-249 and to John Deyell and to Robert Tye for many invaluable suggestions.

purported to have been worn by the Prophet Muhammad on the night of his mystical ascent to Paradise, given to him by the region's most eminent Sufi, Zain al-Din Shirazi. The Deccan thus became a place where two distinct cosmopolitan traditions of political culture coexisted, at times clashing and colliding with one another and at other times complementing each other and blending together harmoniously [Eaton and Wagoner 2014: 27-31].

One place where this pattern can be seen especially clearly is in the currency systems adopted by the two states. In keeping with many centuries of established monetary usage in the Deccan, Vijayanagara's rulers minted an abundant coinage in gold based primarily on the relatively small *hon* or *varāha* weighing 3.42 g. (Fig. 11.1). This coin type featured the image of a Hindu deity or pair of deities on the obverse, and the name and titles of the issuing ruler on the reverse, written in Sanskrit in the Devanagari script. The Bahmanis, in contrast, minted a coinage that closely followed that of the Delhi Sultanate, which had been introduced into the Deccan just decades before, after undergoing a century's prior development under very different economic circumstances in northern India. This was based on the *tanka*, a silver coin that was three times as heavy as the Vijayanagara *hon* (11.016 g) and carried on both its obverse and reverse the names and titles of the ruling sultan, written calligraphically in Persian script (Fig. 11.2). At least initially, then, the currencies of



Fig. 11.1: Gold *hon* of Harihara Raya II (1377-1404)



Fig. 11.2: Silver *tanka* of Muhammad Shah III (1463-1483) Bahmani

the two states were quite different and would have facilitated different kinds of uses. But over the course of the next several centuries, as the Bahmani and Vijayanagara economies became more closely intertwined, we witness a gradual convergence between their respective structures. On the one hand, starting in the late fourteenth century, the Bahmanis had begun minting an expanded range of copper coins, so that there were nine different denominations in circulation by the mid-fifteenth century, and by the 1520s, these copper coins were being matched by issues from the Vijayanagara mint at exactly the same metrological intervals. On the other hand, Vijayanagara gold *hons* appear to have enjoyed wide circulation within the territory of the Bahmanis from the very beginning, and this situation eventually led to the Bahmani successor states' issuing gold *hons* of their own in the latter half of the sixteenth century, as Vijayanagara *hons* became increasingly scarce after the effective collapse of that state in 1565.

This convergent development of Vijayanagara and Bahmani currencies is noteworthy in and of itself, but what is of still greater significance is its potential for illuminating broader patterns in the process of cultural change. Over the past few decades, a growing number of studies have been dedicated to various aspects of the interaction between Sanskritic and Persianate cultural forms in the Deccan, but most of them have shared a tendency to focus on elite cultural manifestations such as architecture, urban planning, court dress, luxury manuscripts, ideologies of rule, and literary forms.² Accordingly, these studies have understandably emphasized the roles played by political elites in bringing about the gradual process of convergence and accommodation between Persianate and Sanskritic cultures of rule. The present study turns away from this exclusive concern with elite expressions to focus instead on money, a cultural product which by its very nature was intended to link elites with non-elites, and to integrate the urban with the rural. The design and production of money as physical objects was largely the prerogative of the state, and thus coinage often embodied elite interests, but as soon as it was put into circulation, money became subject to a very different set of forces as non-elites decided which kinds of money to use and in what ways to do so. Reacting to these market forces, states responded—more or less successfully, as the case may be—by redesigning, revaluing, discontinuing, or otherwise altering the nature of the coinage they were producing. Accordingly, by examining the changing development of currency systems and money use, we have a rare opportunity to witness cultural change in action, as it unfolds through the continuous and reciprocal influence of state and market forces. Thanks to this mutual conditioning, the perceptions and actions of various

² See, for example, Michell 1992, Wagoner 2006, and Sardar 2007 on architecture and urban planning; Wagoner 1996 on court dress; Haidar 2011 and Weinstein 2011 on luxury manuscripts; Flatt 2009 and 2011 on royal ideology; and Petievich 2007 on literary forms (Dakani *gazals*).

non-elite members of society—from rural agriculturalists and artisans to small-town merchants and money-lenders—have the potential to exercise a far greater impact on the changing design and functions of money than is the case with almost any other cultural product.

In this essay, I will address just one aspect of this convergent monetary evolution, examining first the process of asymmetrical currency replacement whereby Vijayanagara's gold *hons* largely displaced Bahmani gold *dinārs* and *tankas* within the Bahmani territory, and then the response taken by the Bahmani successor states (the Bahmani sultanate itself having collapsed in the decades around 1500), which reacted to the attendant erosion in their authoritative domain by starting to mint *hons* of their own.³ The primary evidentiary basis for this study is found in the data provided by coin hoards—that is, accumulations of coins that have been inadvertently lost or hastily buried in the face of impending calamity, never again to be recovered by their owners. Whether in the form of inadvertent losses or intentional deposits, these assemblages of coins constitute small samples of the actual circulating medium at the time and place of their deposit.⁴ Most hoards are recovered not through archaeologically controlled excavation, but instead by chance, in the course of plowing a field or in construction-related digging. John Deyell has estimated that annually, something on the order of several hundred coin hoards are recovered in the Indian subcontinent, although only a small fraction of these, perhaps 5 per cent, escape 'the jeweller's melting pot' and 'the distribution channels of the coin collecting hobby' to be reported to government authorities in accordance with

³ For these useful concepts in monetary geography, see Cohen 1998: 94 (asymmetrical currency replacement) and 25-26 (authoritative domain).

⁴ For general, theoretical statements on the nature of coin hoards and their use as historical evidence, see Burnett 1991: 51-56; Abdy 2002: 7-15; and especially Deyell 1990: 272-291. A basic distinction is often made between 'currency hoards', in which all of the coins are drawn from circulation on a single occasion, and 'savings hoards', in which coins are gradually added to the hoard over a period of years. It is generally assumed that currency hoards provide a more direct reflection of what was in circulation at a given time and place than is the case with savings hoards, but some measure of deliberate selectivity invariably enters into the formation of any grouping of coins, whether in the choice of which denominations will be more useful to take to the market to buy vegetables, or in the choice to add gold rather than silver coins to a savings hoard. Thus, the internal composition of a hoard is never a direct reflection simply of the currency in circulation, but always results from the combination of both availability factors (the types and numbers of coins available in circulation at the time and place of formation), and selectivity factors (culturally structured choices about the use value of the different coins that are available). Hypothetically, given a single hoard and in the absence of any comparative information, it is impossible to determine the nature of the circulating medium just on the basis of the hoard's composition; but in practice, given a sufficient number of hoards, it becomes possible to discern the relative impact of availability and selectivity factors, and thus, to make plausible inferences about what was in circulation at the time of their formation.

the requirements of the Indian Treasure Trove Act of 1878 [Deyell 1990: 279]. It is only in the case of these reported hoards that information about their find-spots and compositions is preserved and published—typically, in the regular ‘Treasure Trove’ section of the annual *Indian Archaeology: A Review (IAR)*. The data set assembled for the present study consists of 307 hoards—reported primarily in the pages of *IAR* between 1953-1954 and 2000-2001, and augmented by a handful of other published notices⁵—that contain any coins issued either by the Bahmanis or their successors, or by Vijayanagara and theirs. For each hoard, the find-spot has been plotted in a GIS database, and data about the hoard’s composition—that is, the numbers of coins it contains, broken down by the issuing authority and by metal (gold, silver, or copper)—has been entered into the associated data table. The resulting database has permitted quantitative statistical analysis not only of the compositions of the hoards, but also of their spatial distributions, thus providing invaluable data on the actual use and circulation patterns of both the Bahmani and Vijayanagara coinages.

1. Characteristics of the Bahmani and Vijayanagara Currency Systems

In order to make sense of the hoard data, however, we must first consider briefly the characteristics of the currency systems that were devised by the two states—that is, the types of metals they employed, the metrology and denominational structures of their coins, and the devices that figured on their individual coin types (Fig. 11.3).

At the time they were founded towards the middle of the fourteenth century, the two currency systems were fully autonomous and shared very little in common. The one significant feature they did share had to do with metrology: in both, a common Indian metrological unit—the *māṣa*—was employed to determine the weights of their denominations, but the value upon which this weight was based differed in each case. In the Bahmani system, the value used for the *māṣa* was 0.918 g., based on the *ratti* of 0.115 g (8 *rattis* = 1 *māṣa*). In the Vijayanagara system, on the other hand, it appears that a more ancient version of the metrology was used, based on a slightly lighter value of the *māṣa* of 0.856 g.⁶

⁵ These dates for *IAR* are those of its inception and of the most recent issue available on the publications website of the Archaeological Survey of India. Although *IAR* is the most important source of published notices of treasure trove finds, its coverage is not always comprehensive. Other sources of hoard information I have used to fill out the data set employed here are Gupta 1970; Reddy 2009; Ahamad 2001; Quddusi 2001; and Syedain 1997.

⁶ For the calculation of the value of the *māṣa* in grams, as used by the Bahmanis, see Deyell 1990: 257-261. For the *māṣa* value employed in the Vijayanagara system, and its continuity with the most ancient surviving metrological system in India that embodied in the weights of the Indus Valley Civilization, the weight of the Mauryan *kārṣāpaṇa*, and described in the *Laws of Manu*, see Tye 2009: 141-142, 147.

Metal	Vijayanagara coin name	Weight in grams	Mint weight in old <i>māṣas</i> 0.856 g (based on <i>ratti</i> of 0.107 g)	Mint weight in <i>māṣas</i> 0.918 g (based on <i>ratti</i> of 0.115 g)	Weight in grams	Bahmani coin name
GOLD	—			14	12.852	<i>dinar</i>
GOLD	—			12	11.016	<i>tanka</i>
GOLD	<i>hon</i>	3.42	4			—
GOLD	<i>pratapa</i>	1.712	2			—
GOLD	1/4 <i>hon</i>	0.856	1			—
GOLD	<i>fanam</i>	0.343	0.4			—
GOLD	1/2 <i>fanam</i>	0.171	0.2			—
SILVER	—			12	11.016	<i>tanka</i>
SILVER	—			8	7.344	(2/3 <i>tanka</i>)
SILVER	—			4	3.672	(1/3 <i>tanka</i>)
SILVER	—			2	1.836	(1/6 <i>tanka</i>)
SILVER	—			1	0.918	(1/12 <i>tanka</i>)
SILVER	<i>tara</i>	0.26	2.5 <i>ratti</i>			
SILVER	1/2 <i>tara</i>	0.13	1.25 <i>ratti</i>			
COPPER	? <i>gani</i> ?	16.524	18	18	16.524	? <i>gani</i> ?
COPPER	(2/3 <i>gani</i>)	11.016	12	12	11.016	(2/3 <i>gani</i>)
COPPER	(1/2 <i>gani</i>)	8.262	9	9	8.262	(1/2 <i>gani</i>)
COPPER	(1/3 <i>gani</i>)	5.508	6	6	5.508	(1/3 <i>gani</i>)
COPPER	<i>chital</i>	3.672	4	4	3.672	? <i>falus</i> ?
COPPER	(1/6 <i>gani</i> ; 3/4 <i>chital</i>)	2.754	3	3	2.754	(1/6 <i>gani</i> ; 3/4 <i>falus</i>)
COPPER	(1/2 <i>chital</i>)	1.836	2	2	1.836	(1/2 <i>falus</i>)
COPPER	(1/4 <i>chital</i>)	0.918	1	1	0.918	(1/4 <i>falus</i>)
COPPER	(1/8 <i>chital</i>)	0.459	0.5	0.5	0.459	(1/8 <i>falus</i>)

Fig. 11.3: Table of Vijayanagara and Bahmani coin types and weights

The Bahmani system originated as an adaptation of the Persianate system of north India, which, by the time it was introduced to the Deccan with Delhi's conquests of the region in about 1300, had already been refined through nearly a century's use in north India.⁷ It included two heavy gold denominations, the *dīnār* and the *tanka*, weighing 14 and 12 *māṣas* respectively, and minted at close to 100 per cent purity. Because of the amount of gold they contain, these are obviously high-value coins that would have been useful only for the highest value monetary transactions, or else as a medium for storing wealth. For other purposes, the silver *tanka*, weighing 12 *māṣas* would have been used, together with four fractional denominations from the 2/3 unit down to the 1/12th. Initially, a copper coin—the *falus*, minted at 4 *māṣas*—and its fractions would have served as small change for everyday transactions in the bazaar. This was soon augmented with a growing array of both larger and smaller denominations, until by the middle of the fifteenth century there was a range of nine different copper denominations. Regardless of their metal and weight, however, all

⁷ The information in this paragraph is primarily based on Goron and Goenka 2001: 285-310. See also Raja Reddy and Suryanarayana Reddy 1983.

Bahmani coins are aniconic, as is the norm in most Islamic traditions of coinage. Instead of bearing figural imagery, they carry a calligraphic device consisting of the names of the ruling sultan and his titles, covering both obverse and reverse in Persian script (Fig. 11.2). Religious formulas—so common in many other periods of Islamic coinage—are conspicuously absent, with the sole exception of two types of gold *tanka*, one inscribed with the *shahada* or profession of faith, and the other with an excerpt from the *Fatiha* or opening chapter of the Quran (issued respectively by Firuz Shah and by Humayun Shah).⁸

In the early sixteenth century, the Bahmani state collapsed and its territories were carved up between five successor states. Bahmani currency, and especially the plentiful copper coinage, remained abundant and thus none of the successor states struck their own coinage until about 1580, when the sultans of Ahmadnagar, Bijapur, and Golconda all started issuing coins in rapid succession, following the established Bahmani standard. Pushkar Sohoni has argued compellingly that this abrupt resumption of minting in the region was conceived as a defiant response to the mounting threat of the Mughals, who had just annexed Malwa (1562) and Gujarat (1576) and imposed their imperial monetary system upon the newly conquered territories.⁹

The Vijayanagara currency system differed from the Bahmani system in practically every respect.¹⁰ Unlike the Bahmanis' imported Persianate coinage system, Vijayanagara's currency represents the end product of over 400 years of local evolution within the Deccan itself, ultimately deriving from the currency system introduced by the Chalukyas of Kalyana around the middle of the tenth century.¹¹ Its centerpiece was a gold unit, variously called *hon*, *varāha*, or *gadyāna*, that was minted at the weight of 4 *māṣas* (3.42 g) at about 89 per cent purity. Not only was the *hon* considerably smaller than either of its Bahmani gold counterparts, but it was additionally provided with four fractional denominations in the form of half, quarter,

⁸ Goron and Goenka 2001: 296, type BH60 (*shahada*), and 302, type BH94 (*Fatiha*).

⁹ Sohoni n.d.

¹⁰ The information in this paragraph is primarily based on Mitchiner 1998: 148-213. See also Narasimha Murthy 1977: 221-305.

¹¹ See Chattopadhyaya 1977: 124-136. The weights of actual specimens show that the Chalukya *hon* gradually depreciated from a standard of 3.69-3.89 g. to 3.35-3.39 g. Chattopadhyaya suggests that the mint weight of the Vijayanagara *hon* was based on that of the depreciated Chalukya *hon* [Chattopadhyaya 1977: 154-162]. It should be noted that even though Vijayanagara coins represent a continuation of Chalukya coinage metrologically, they are quite different in fabric and method of manufacture, being struck with a pair of dies (obverse and reverse) on a compact flan, whereas the coins of the Chalukyas and their immediate successor states use a thinner, broader flan and a number of smaller punches on the obverse only.

tenth, and twentieth units, the tenth unit known as the *fanam*.¹² This meant that the gold *hon* and its fractional denominations could be conveniently used in a broad variety of economic transactions, ranging from purchasing luxury items such as imported Persian warhorses (which, we learn from Duarte Barbosa writing in 1518, sold for between 250 and 375 *hons* each¹³), to less expensive commodities like calico cloths (1 piece for half a *hon*, according to Domingo Paes, writing in 1522) all the way down to inexpensive foodstuffs such as rabbits (1 *fanam* each) and grapes (1 *fanam* for three bunches; these last two prices both reported by Paes).¹⁴ Perhaps because of this adaptability of its gold denominations, Vijayanagara's monetary system was evidently able to function quite well with only very limited numbers of silver and copper coins. For a brief period in the fourteenth century, a tiny silver unit known as the *tāra* and weighing 2.5 *rattis* was minted, apparently to serve as small change for the *fanam* (it equaled 1/6 *fanam* in value); find-spots suggest that its use was largely confined to the districts along the western coast of the peninsula. Copper coins were hardly produced at all until the first half of the fifteenth century, when a 4-*māṣa* copper unit known as the *chital* was introduced, possibly inspired by the Bahmani *falus*.¹⁵ Further copper units were introduced in the early sixteenth century, following exactly the metrological structure of fifteenth-century Bahmani coppers, which doubtless provided their inspiration.¹⁶ Whatever the metal and the denomination, most of these

¹² *Fanam*, which represents a Portuguese corruption of the Indic terms *paṇa* (Sanskrit) and *haṇa* (Kannada), is used here in keeping with numismatic convention.

¹³ These are approximate values. Barbosa states that the Vijayanagara dealers paid between 200 and 300 *cruzados* per horse for those imported from Hormuz. The *cruzado* was valued at 390 *reis* in this period [Codrington 1924: 91ff.], and elsewhere Barbosa states that a *pardao* (from *pratāpa*, which was what the Portuguese called the *hon*) was worth 320 *reis*. The range thus works out to between 244 and 366 *hons* per horse. See Dames 1967: vol. 1, 178, 191.

¹⁴ Sewell 1962: 248-249.

¹⁵ 'Chital' is the term applied to the coin by Abd al-Razzaq Samarkandi (at Vijayanagara in 1443). Since he transliterates the local Indian names for all other coins—*varāha*, *partāb*, *fanam*, and *tār*—it is reasonable to assume that 'chital' reflects the actual local name used for the copper coin [see Thackston 1989: 309]. Prior to the reign of Devaraya II, copper coins were issued at this weight at the subsidiary mint at Mulbagal, but not at the central imperial mint at Hampi [Mitchiner 1998: Part One, 169-170]. Given that Devaraya II was known to have been especially receptive to the Persianate culture of the Bahmani kingdom, and was responsible for hiring many Turkic archers and horse troops, it seems plausible that the 4-*māṣa* Bahmani *falus* might have served as the *chital*'s immediate inspiration.

¹⁶ See Mitchiner 1998: Part One, 186. From the limited number of reported weights for the later Vijayanagara multi-denominational copper coins, it is not certain whether the Vijayanagara mint was using the 0.918 g value for the *māṣa*, as the Bahmanis were, or the 0.856 g value it was employing in its own gold and silver issues. If the Bahmani value is assumed, then the number of overweight coins is about what would be expected; the number would become greater if it were the Vijayanagara value that was being used. Using the Bahmani value would have facilitated the interchange between the two copper currencies.

Vijayanagara coins shared a common typological format, bearing on the obverse an image of a Hindu deity or a pair of deities, and on the reverse, the name and titles of the ruling king, generally in Sanskrit written in Devanagari script (Fig. 11.1).

After the Battle of Talikota in 1565, the Vijayanagara state collapsed, and although a shadow court was maintained for another century or so under the Aravidu house, real power devolved to the various Nayaka successor states, all of which issued coinage, which in general followed the Vijayanagara standard. In the present sample, however, the number of hoards containing coinage minted by the successor states is quite limited, which may be a reflection of the limited volume of Nayaka issues in comparison to the output of the earlier Vijayanagara mint.

Figure 11.3 summarizes this information in a tabular form. Metrologically speaking, the most important point to note is that in contrast to the copper issues of the two coinages, which share the same denominational spectrum and even appear to exhibit a one-to-one correspondence in terms of their weights, there is absolutely no overlap between the weights of Bahmani and Vijayanagara denominations of gold and silver coins. For each of these two metals, the Bahmani coins occupy the upper range of the weight spectrum and Vijayanagara the lower. This points to the very different geographic, cultural, and economic conditions under which the two currency systems had evolved, and underscores the point that they were ultimately adapted to different kinds of transactions, as suggested above.

2. Distribution and Composition of Reported Coin Hoards

Let us turn now to the evidence of the coin hoards and what it reveals about the circulation patterns of these two coinages. First, it must be noted that of the 307 relevant hoards identified from *Indian Archaeology: A Review* and other sources, it has thus far proven possible to determine the precise locational coordinates for only 275 of them. Accordingly, for investigation of the spatial parameters of the hoard data, the smaller data set of 275 hoards has been used; the full data set has been retained, however, for statistical calculations relating to overall hoard composition. The map in Fig. 11.4 plots the find-spots of the 275 hoards of the restricted data set. Each point represents the location of a hoard containing coins issued by the Bahmanis or their successor states, or by Vijayanagara or their Nayaka successors. It should be noted that at this scale, the size of the points is such that, in some cases, several adjacent find-spots appear to merge together into a single irregular shape.

Given the tendency of Bahmani and Vijayanagara coinage to remain in circulation even many centuries after it was minted, it appeared advisable to further trim the data set so as to exclude those hoards that were most likely deposited after the end of the period of Bahmani and Vijayanagara ascendancy, and are thus products of a different era and of a different set of social and economic forces. One convenient

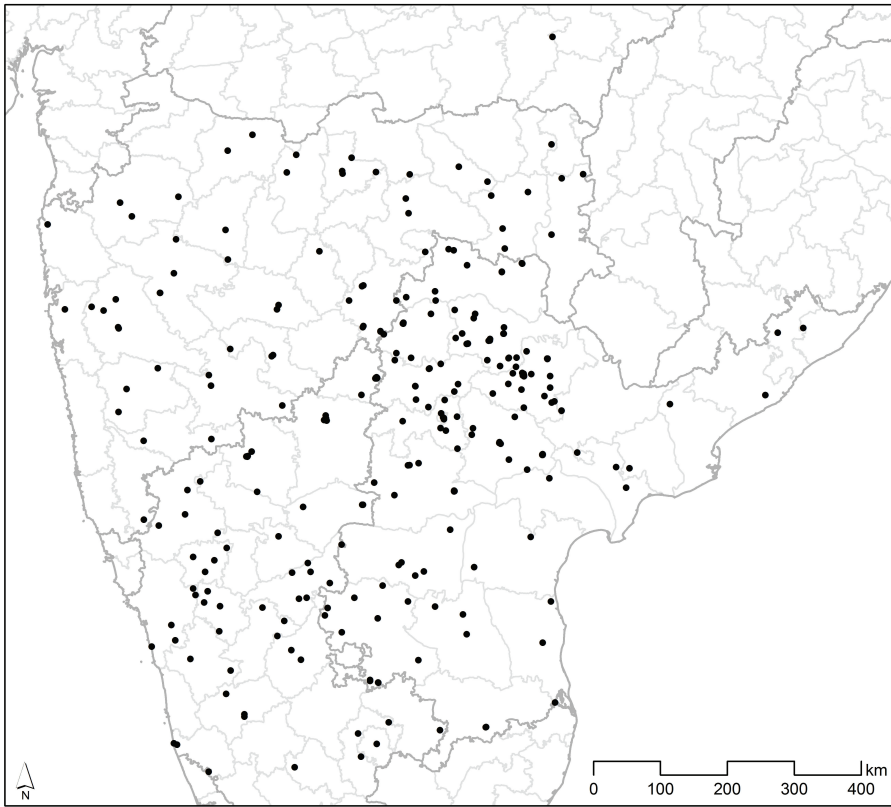


Fig. 11.4: Findspots of coin hoards containing Bahmani or Vijayanagara material

chronological demarcator is provided by the Mughal annexation of the last two Bahmani successor states, Bijapur and Golconda, in 1686 and 1687, respectively. Thus, the presence in hoards of any Mughal coin minted in the reigns of Aurangzeb (1658-1707) or later rulers, or of any coin issued by other polities of the eighteenth, nineteenth, and twentieth centuries, offers a convenient criterion by which those hoards may be excluded as later deposits. Accordingly, 24 of the 275 hoards have been separated out from the main spatial data set, leaving a pared data set consisting of a total of 251 hoards with Bahmani and Vijayanagara material, but no Mughal or later coins (see map in Fig. 11.5).¹⁷

¹⁷ In addition to coins issued by the later Mughals (between 1658 and 1837), the excluded hoards included coins issued by the rulers of Mysore (during the period 1761-1868), by the Nawabs of Elichpur (in 1825-1826), and by the British (during the years 1830-1936).

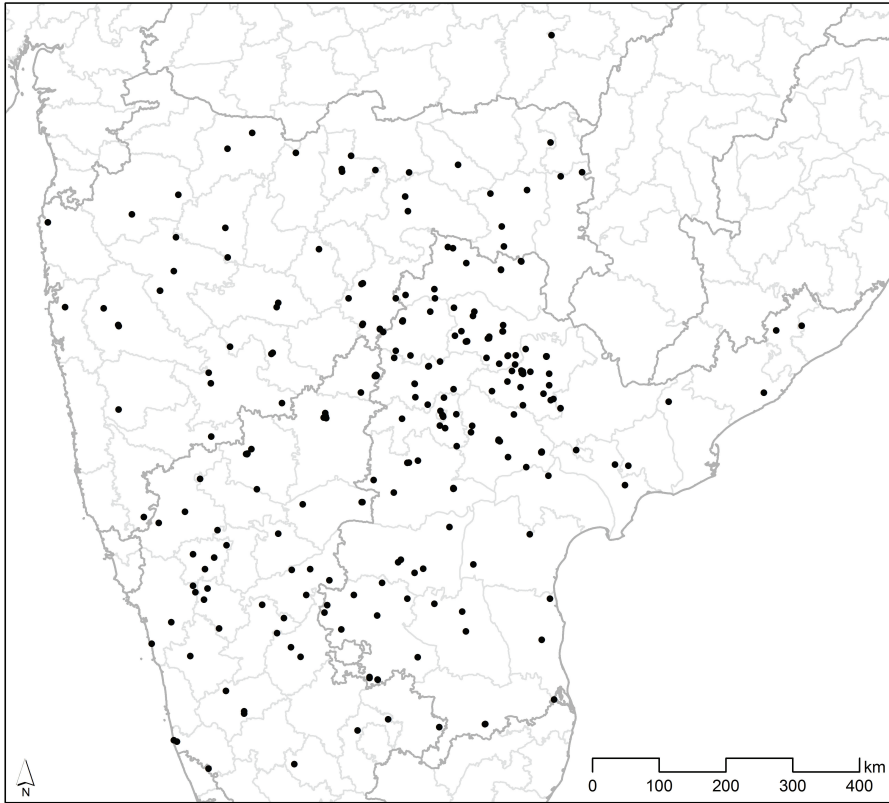


Fig. 11.5: Find-spots of hoards with Bahmani or Vijayanagara coins but no Mughal or later issues

The next map (Fig. 11.6) plots a subset of the find-spots in the previous map—only those of the 116 hoards that contain Bahmani or Bahmani successor states' material. Unsurprisingly, the distribution of the find-spots suggests that the area of circulation of Bahmani coins was more or less congruent with the territory of the Bahmani state, indicated with blue shading.¹⁸ The small circle with the 'X' mark indicates the mean center¹⁹ of all the Bahmani find-spots, located some 75 km north-east of Bidar, the Bahmani capital and primary mint; while the circle inscribed around

¹⁸ The shading represents only an approximation of Bahmani territory, which was in fact subject to constant expansion and contraction over the course of the fourteenth through seventeenth centuries. This shading only represents the stable core of Bahmani territory, and does not include the districts running west from the Raichur doab to the Konkan coast on the west, which was contested between the Bahmanis and Vijayanagara. The same caveat also holds for the extent of Vijayanagara's territory as indicated in Fig. 11.7.

¹⁹ The average x -coordinate and average y -coordinate for all the features.

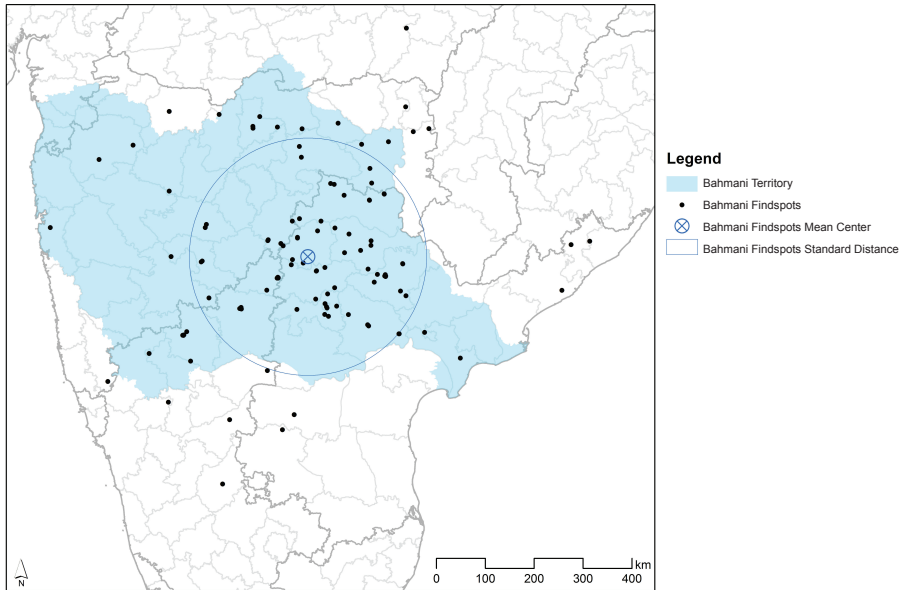


Fig. 11.6: Find-spots of hoards with Bahmani coins

it represents in graphic form the standard distance deviation (242.5 km), a statistical measure of the degree of dispersion of features around their mean center.²⁰

The third map (Fig. 11.7) plots the locations of only the 146 hoards that contain Vijayanagara material. Instead of showing a distribution of find-spots congruent with Vijayanagara's territory, this map vividly shows that there are in fact more hoards containing Vijayanagara material located *outside* the boundaries of Vijayanagara territory than inside, with the bulk of these concentrated in the Bahmani territory. As a result, the mean center of Vijayanagara find-spots is displaced over 177 km. to the north of the Vijayanagara capital and primary mint, so that it falls outside Vijayanagara territory, and the standard distance deviation (293.6 km) is significantly greater than was the case with the Bahmani hoard distribution. This map shows not only that the Vijayanagara currency was more dispersed, enjoying a much broader area of circulation than that of the Bahmani currency, but also that its circulation was not demonstrably constrained by political boundaries, as was the case with the Bahmani currency. Thus, to the north, Vijayanagara coinage circulated widely within

²⁰ More precisely, the standard distance deviation 'measures the extent to which the distances between the mean center and the features vary from the average distance [between these points and the mean center].... The greater the standard distance value, the more the distances vary from the average, and the more widely dispersed the features around the center' [Mitchell 2005: 42-43].

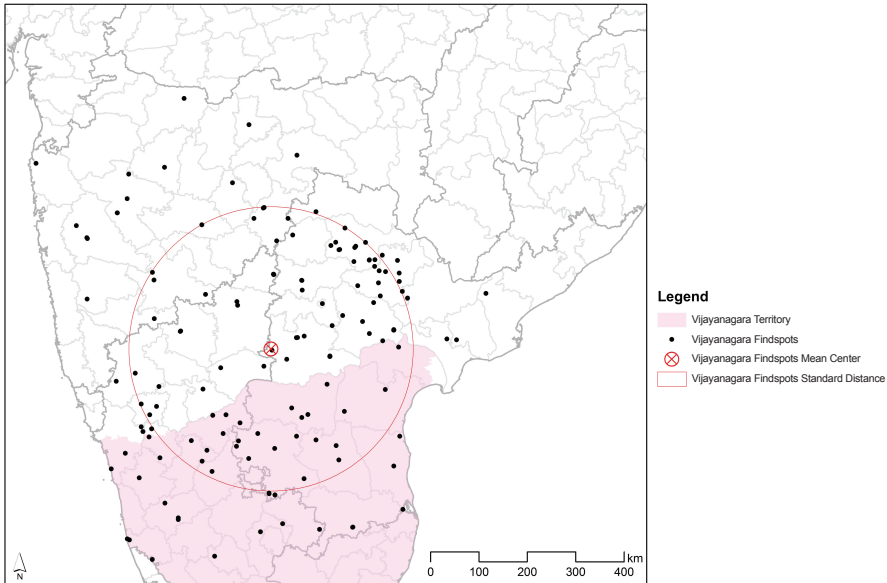


Fig. 11.7: Find-spots of hoards with Vijayanagara coins

the Bahmani territory, but to the south, coins from the central Vijayanagara mints do not appear to have circulated below the Kannada and Telugu speaking zones, despite the fact that the Tamil country further south was part of the Vijayanagara domain during most of the period under consideration. Instead, the Tamil districts constituted a distinct currency zone that was serviced primarily by copper coins issued locally by Vijayanagara subordinates and feudatories following the earlier coinage traditions of that region [Mitchiner 1998: Part Two, 165].

What this map does not communicate is a sense of the sheer volume of Vijayanagara gold *hons* that were circulating within the Bahmani realm. Of the 146 hoards that contained Vijayanagara material, 83 were found within the Bahmani territory, and in all but four of them, the Vijayanagara material consists of nothing but gold *hons* and their fractions.²¹ There is great variation in the size of these hoards, from those containing just a single gold coin to the Yeoti hoard with its 1,118 *hons*, but the average number of gold coins in these hoards works out to 50.4. To put these figures into perspective, only 12 of the 116 Bahmani hoards contained any gold *dinārs* or *tankas*, ranging from 1 to (possibly) 705²² coins per hoard, yielding an

²¹ In three hoards, the *hons* are admixed with silver and copper issues; in one hoard, there are no gold coins but only copper.

²² The largest number of Bahmani gold coins per hoard is either 705 or 10.5. The uncertainty stems from the vague wording of the report of the contents of one of the Gulbarga hoards

average of only 3.1 coins per hoard. Granted, each Bahmani gold *tanka* contains three times as much gold by weight as a *hon*. But even if we convert the number of coins to the amount of gold they contain, the results are still quite striking, and suggest that the amount of Vijayanagara gold circulating in the Bahmani realm outweighed the amount of Bahmani gold by a factor of at least 2 to 1.²³

3. Interpretation of the Hoard Data: Firishta on the ‘Infidel Money-changers’

How are we to understand this pattern, and what, if anything, does it tell us about the Deccan’s economy in this period? An important clue is provided by the Bijapuri historian Firishta in his *History* (*Gulshan-i Ibrahimi*, but better known as *Tarikh-i Firishta*) written in the early seventeenth century. Firishta notes that as early as the reign of the Bahmani Sultan Muhammad Shah I (1358-1375), the ‘infidel money-changers’ (*sarraḥ*) of the Bahmani kingdom were deliberately melting Bahmani gold coins to allow free and unrestricted circulation to the Vijayanagara *hons*. According to the historian, it was ‘the intolerant kings of Vijayanagara and Telangana’ who had instigated them:

The infidels of Vijayanagara and Telangana wanted their own coinage to remain current in the Deccan, in the manner of former times. When Sultan Muhammad Shah became aware of this, he several times forbade the money-changers of the kingdom’s forts to continue breaking or melting down the Islamic coinage. Accordingly, he made relevant admonitions, but to no avail. So he issued orders to execute members of the [money-changer] community. Written orders to this effect were sent to members of the court and to provincial officers that from such-and-such a date they should take action to execute money-changers.

[*JAR* 1981-1982]. This states that the contents of the hoard included ‘seven hundred and eight gold coins—issues of Ghiyasuddin Balban, Ghiyasuddin Tughluq, Muhammad bin Tughluq, and Bahmani kings’ [p. 89]. This unfortunate aggregation of the numbers of Bahmani and Delhi Sultanate coins means that the number of Bahmani gold coins could be as high as seven hundred five (if we assume that only one coin of each of the three Delhi sultans was included in the hoard), or as low as two (if we assume one coin each for two Bahmani rulers, since ‘Bahmani kings’ is mentioned in the plural), with any number in between being possible. If the hoard only included two Bahmani coins, then the greatest number of Bahmani gold coins known with any certainty would be the 10.5 coins from the Yeoti hoard [*JAR* 1964-1965; Joshi 1964], in which one coin was clipped in half.

²³ The factor would be 2:1 if we assume 705 pieces of Bahmani gold in the Gulbarga hoard (see previous note). On the other hand, if that hoard contained only 2 Bahmani gold coins, the ratio could be as high as 35 to 1. These calculations are based on the (unwarranted) assumption that all of the Bahmani gold coins reported were *tankas* (11.016 g) and all the Vijayanagara gold coins were *hons* (3.42 g).

After a few highly public killings, the infidel *sarrafs* appear to have desisted, and north Indian Khatri—*who had immigrated to the Deccan during the time of Delhi's conquests—took up the business of money-changing in their place. But the infidel money-changers appear to have returned to the scene during the reign of Sultan Mahmud Bahmani, 'when signs of disorder had become visible throughout the kingdom, and within six or seven years Muslim coinage had completely disappeared'. According to Firishta 'The coinage of the rajas of Vijayanagara and Telangana, famously known as hūn and partāb, had become current throughout all the Muslim kingdoms. And up to the present day, which is 1607/1608 (AH 1016), that same infidel coinage is current among the Muslims'.²⁴*

Firishta's account helps make sense both of the great dearth of Bahmani gold coins that has survived in hoards—the majority having been melted down and taken to Vijayanagara mints for re-striking as *hons*—and the vast quantities of Vijayanagara *hons* in circulation in the Bahmani territories, the latter having become effectively the coin of the realm. It is also intriguing for what it reveals about the tensions between the state and the banking community, and again, about the implicit opposition between the local Deccani *sarrafs* and the north Indian Khatri brought in from Delhi to attempt to stave off their activities. Why would the *sarrafs* have been so resistant to the currency system introduced by the Bahmanis? We may hypothesize that as a banking community with deep roots in the Deccan, the *sarrafs* were responding to the needs and preferences of their many customers in the towns and in the countryside. Merchants and agriculturalists alike would have been accustomed to a gold-based currency system, hinging on the convenience and versatility of the 4-*maṣa hon*, and guaranteed for purity and weight by the emblems of Hindu deities and the Sanskrit names and titles of an issuing authority. Not only would non-elites have found the new Bahmani coinage too alien for ready acceptance, thanks to its illegible Persian legends, but perhaps even more importantly, they would also have found the metrological structure too inconvenient for their purposes. While the gold and silver *dinārs* and *tankas* may have been perfectly sized for paying the generous salaries of the military and religious-literary elite, there were no denominations that readily met the needs of non-elites in the towns and countryside. To melt the oversized Bahmani gold coins and remint them as Vijayanagara *hons* was a natural response, sure to maintain the economic equilibrium.

²⁴ Firishta 1832: vol. 1, 537-538; translation courtesy of Richard M. Eaton. Note that John Briggs's translation [Briggs 1966: vol. 2, 185] contains both errors and omissions.

4. Additional Material Evidence: Mixed Hoards and Epigraphic References to Hons

I have suggested this scenario as a possible hypothesis, based on Firishta's narrative, but in addition there is material evidence that lends support to such an interpretation. First, there is another aspect of the coin hoard data that appears relevant here, having to do with the co-occurrence of Bahmani and Vijayanagara coins in the same hoards (Fig. 11.8). It is noteworthy that out of the total of 307 hoards I have studied, only eleven of them contain coins issued *both* by the Bahmanis and by Vijayanagara. All other hoards are homogeneous, containing either Bahmani coins or Vijayanagara coins, but not both. What this suggests is that even though Bahmani and Vijayanagara coins circulated side by side in the same districts, they were generally not used by the same individuals, and therefore could not be deposited in the same hoard. In other words, there would have been distinct communities or social groups that would have been likely to use each currency.

Given this situation, it appears highly significant that the majority of the 'mixed hoards' share two characteristics. First, they are not randomly distributed across the study area, but are concentrated in what we might think of as a metropolitan corridor, running from Vijayanagara in the south, up through Bijapur, Gulbarga, and Bidar, and on up to Gavilgarh at the northern edge of the Bahmani territory. Additionally,

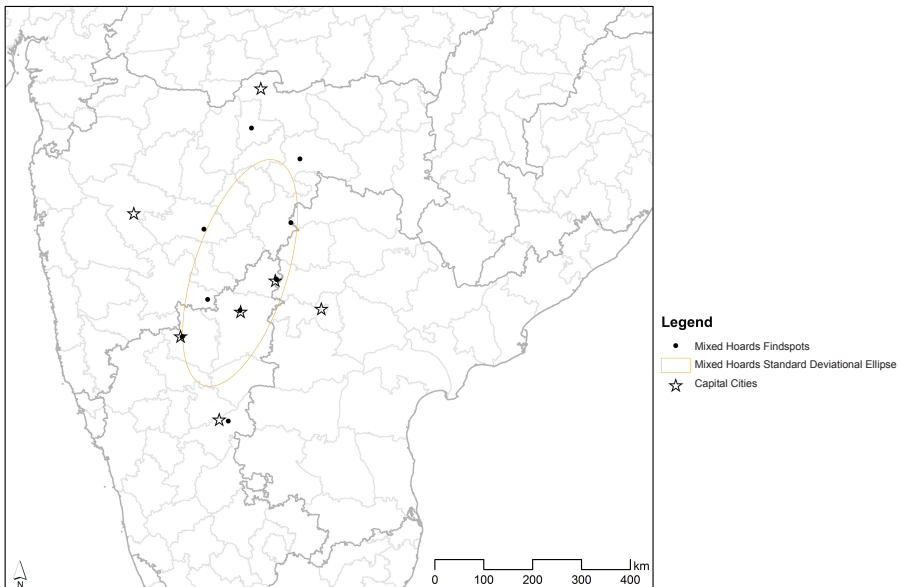


Fig. 11.8: Find-spots of hoards containing both Bahmani and Vijayanagara coins

just over half of these hoards (6) were found in capital cities—one on the outskirts of Vijayanagara, two in Bijapur, one in Gulbarga, and two in Bidar—while the rest were distributed at various find-spots in between and around these primary urban centers. Second, the majority of these hoards (8) contained gold coins of both Bahmani and Vijayanagara issue. This data, then, might plausibly be interpreted as an indication of the activities of Firishta's *sarrafs*, who would by definition have been handling both Bahmani and Vijayanagara gold coins, and transporting them back and forth between Bahmani urban centers and the Vijayanagara capital.

The second category of material evidence that supports this hypothesis comes from the domain of epigraphy, in the form of coin names mentioned in the inscriptions of the Bahmanis and their successors (Fig. 11.9). Although these epigraphs are

DATE AND SITE	COIN TYPES MENTIONED	BIBLIOGRAPHY
1513 Malliabad (Dt. Raichur)	<i>hon</i> <i>partāb</i> <i>tanka</i> <i>chital</i>	<i>ELAPS</i> 1962, pp. 63-64 (Desai, #1213)
1559 Bijapur (Dt. Bijapur)	<i>tanka</i> <i>jikāni</i>	<i>ELAPS</i> 1955-1956, pp. 74-75 (Desai, #250)
1580 Kalyana (Dt. Bidar)	<i>hon</i>	<i>EIM</i> 1935-1936, p. 8 (Desai, #942)
1586-1587 Kalyana (Dt. Bidar)	<i>hon</i>	<i>EIM</i> 1935-1936, pp. 9-10 (Desai, #943)
1625 Hyderabad (Dt. Hyderabad)	<i>hon</i>	<i>EIM</i> 1917-1918, pp. 54-55 (Desai, #677)
1630 Bijapur (Dt. Bijapur)	<i>hon</i>	<i>ARIE</i> 1974-1975, D, 303 (Desai, #282)
1633-1634 Mamdapur (Dt. Bijapur)	<i>hon</i>	<i>ARIE</i> 1976-1977, D, 202 (Desai, #1215)
1633-1634 Mamdapur #2 (Dt. Bijapur)	<i>hon</i>	<i>ARIE</i> 1976-1977, D, 203 (Desai, #1216)
1674 Hyderabad (Dt. Hyderabad)	(<i>khara</i>) <i>hon</i>	<i>EIM</i> 1917-1918, pp. 51-52 (Desai, #744)
1677 Hyderabad (Dt. Hyderabad)	<i>hon</i>	<i>EIM</i> 1917-1918, pp. 53-54 (Desai, #761)
1746 Arcot (Dt. North Arcot)	<i>rupee</i>	<i>ARIE</i> 1976-1977, D, 247 (Desai, #69)
1783-1784 Bahadurbanda (Dt. Raichur)	<i>rupee</i>	<i>ARIE</i> 1984-1985, C, 140 (Desai, #87)
1782-1799 Channapur (Dt. Dharwar)	<i>varāha</i>	<i>ARSIE</i> 1933-1934, E, 82 (Desai, #369)

Abbreviations: *ARIE*: *Annual Reports of Indian Epigraphy*; *ARSIE*: *Annual Reports of South Indian Epigraphy*; Desai: Z.D. Desai, *A Topographical List of Arabic, Persian, and Urdu Inscriptions of South India*, New Delhi, 1989; *ELAPS*: *Epigraphia Indica, Arabic and Persian Supplement*; *EIM*: *Epigraphia Indo-Moslemica*

Fig. 11.9: Table of epigraphic references to coins during the period of the Bahmanis and their successor states

neither as numerous nor as detailed as the contemporary inscriptions issued by Vijayanagara, they are none the less instructive. Out of the total of more than 800 Persian inscriptions from the Deccan indexed by Z.A. Desai, only 13 make any reference at all to monetary units [Desai 1989]. Six such units are named, including the *hūn* (Persian spelling of *hon*) and its half-unit, the *partāb* (from *pratāpa*). These are both mentioned in the earliest of the 13 inscriptions, dating from 1513, and after that, the *hūn* is mentioned nine more times, through the course of the seventeenth and eighteenth centuries. In fact, in the eight inscriptions issued between 1580 and 1677, it is the *only* coin unit named, lending further confirmation to Firishta's statement about 'the gold coins of the infidels' being the coins current in his day (c.1607).

Most of these epigraphic references to the *hūn* use it to measure the costs of construction projects or the amounts expended on religious endowments, but the earliest of the inscriptions—the Malliabad inscription of 1513 [Kadiri 1962: 63-65, inscription no. 6]—uses the *hūn* and the *partāb* as units in which agricultural and commercial taxes are assessed. The inscription records the text of a *qaul-nāma* or revenue agreement, entered into between the governor of the district and the residents of Malliabad, which is identified as a market town (*qasba-i Malliabad*). Of particular interest is the inscription's reference to four different monetary units in recording the tax rates assessed on different occupational classes. Thus, while the revenue payment due from oil sellers and part-time weavers, and the annual tax on land were expressed in Bahmani silver *tankas* and copper *jitals*, the rates for cultivators, grocers, and full-time weavers were expressed in Vijayanagara *hūns* and *partābs*. I have suggested above that the *sarrafs* were responding to the customary preferences of agriculturalists and merchants in melting down Bahmani gold *dīnārs* and *tankas* in order to restrike them as *hons*, with which taxes and other payments could more conveniently be made. This inscription provides direct evidence suggesting that the Bahmani state—or at least some of its more pragmatically-minded administrative officers—not only accepted such monetary arrangements, but even encouraged them.

5. Vijayanagara's Collapse and the Sultanate Minting of Hons

Given the economic importance of the Vijayanagara *hon* to the economy of the Bahmanis and their successors, one suspects that the successor states would have experienced mounting problems of cash flow after the 1565 collapse of Vijayanagara. After the minting of new coins stopped, the supply of Vijayanagara gold coins would have slowly but steadily diminished. The most important of the successor states responded by beginning to mint their own *hūns*, *partābs*, and *fanams*. The first to adopt this strategy was the sultanate of the Nizam Shahis of Ahmadnagar, who under Murtaza I issued *hūns* in 1584, and under Burhan II in 1592, struck both *hūns*

and *partābs*.²⁵ The Qutb Shahis of Golconda followed closely behind, issuing only *fanams* (so far as is known), during the reign of Muhammad Quli (1580-1611).²⁶ The last to mint gold coins inspired by Vijayanagara was the ‘Adil Shahis of Bijapur, who minted *hūns* and *fanams* under Muhammad (r. 1627-1656), and *fanams* under both ‘Ali II (r. 1656-1672) and Sikandar, in 1676.²⁷ All of these coins are minted on the Vijayanagara standard, with a 4-*māṣa hūn*, a 2-*māṣa partāb*, and a 0.4-*māṣa fanam*. Although following the Vijayanagara system metrologically, they depart from it with respect to the devices used, preferring the established Bahmani device of Persian calligraphic legends naming the issuing sultan and his titles.

This qualified response seems natural enough—one imagines that the sultans and their advisors would have been interested in augmenting the supply of gold coins that followed Vijayanagara’s metrological standard, but that at the same time they would have hesitated to duplicate their Sanskritic devices and legends. Hence, they are *hūns*, *partābs*, and *fanams* by weight, but not by design—which in all of these cases maintains the earlier convention of the ruler’s name and titles written in Persian. As a result of this compromise, it appears that their response was ultimately unsuccessful, since the ‘new’ hybrid *hūns* were not wholeheartedly accepted, and were distinguished from the old *hūns* that still remained in circulation and were exchanged at a premium. There is clear evidence of this in the Qutb Shahi realm, where in Hyderabad in 1674, an inscription specified that an annual grant for the upkeep of a mosque was to be made with ‘genuine *hūns*’—the term used being *khara-hūn*.²⁸ Even more intriguing is the testimony of a *farmān* issued by the ‘Adil Shahi governor of the province of Sholapur in 1654. G.S. Khare, who brought this *farmān* to light, translates its contents as follows:

At present, it has come to our notice that the bankers, merchants, the subjects and others residing in villages, towns, and market-places included in the district of Sholapur, refuse to accept *hūns* bearing our name-stamp (‘Muhammad Shah’), do not exchange it for the coins of smaller denominations and do not use it in sale and purchase. What a boldness it is since it bears our name-stamp! Now we order that as the *hūns* consist of gold of 43 ‘*ayārs* or *kas*, as it is called in the language of the Deccan (82.69 fineness), whosoever terms it as a counterfeit, refuses to accept it after deforming the same and postpones to exchange it for coins of smaller denominations, should be chastised in an exemplary manner and his movable and immovable property should be confiscated....²⁹

²⁵ Goron and Goenka 2001: 326-327.

²⁶ Goron and Goenka 2001: 335.

²⁷ Goron and Goenka 2001: 316-319.

²⁸ Desai 1989: 71, no. 744.

²⁹ Khare 1954: 131.

Perhaps if Muhammad Shah had ordered his *hūns* struck with his name in Devanagari instead of in Persian, and had put an image of a Hindu deity on the obverse, the ‘residents of the villages, towns, and market-places’ would have been more willing to accept them.³⁰ That he did not do, however, suggests where the limits of convergence lay. It was evidently one thing to accept coins of the infidels, bearing images of Hindu deities, for the payment of taxes, and quite another for a Muslim sovereign to engage in the act of striking his own coins with images of Hindu deities on them. What was readily taken over from the Vijayanagara *hons* and smaller gold coins was their metrology—a purely secular economic feature of the coinage that had nothing to do with religion.

Conclusion

This case of complementarity between the two coinages shows vividly how everyday economic activity, manifest in the actions taken by non-elites belonging to a wide range of occupational groups, contributed in its own way toward furthering the convergence between Sanskrit and Persianate approaches to statecraft in the Deccan. Agriculturalists and other rural classes—who, after all, constituted the vast majority of the Bahmani state’s population—preferred the coins of a weight, purity, and appearance that had been locally in use for centuries, instead of the unfamiliar and inconveniently sized coins that were being issued by their rulers. Bankers and money-lenders (*sarrafs*) satisfied this demand by withdrawing Bahmani gold coins and taking them to Vijayanagara mints, where they were melted down and restruck to the Vijayanagara standard before being returned to circulation. After initially resisting this development, the ruling elite eventually yielded to these market forces emanating from non-elite sectors of society. As a result, both actual Vijayanagara gold *hons*, and the Persianate adaptations minted by the Bahmani successor states, continued to circulate throughout the Deccan until well into the Mughal period, when they were finally displaced by the imperial Mughal coinage of north India.

³⁰ This was, in effect, what the Ghurid rulers of north India did some four and a half centuries earlier. In their coin issues east of the Indus river, they not only followed the metrology of the established north Indian coinages but also perpetuated their imagery, striking coins with Hindu deities on one side (the goddess Lakshmi; Siva’s sacred bull) and the ruler’s name in Devanagari script on the other. See Flood 2009: 114-116.

Bibliography

- Abdy, R.A. 2002. *Romano-British Coin Hoards*. Buckinghamshire: Shire Publications.
- Ahamad, R. 2001. 'A Hoard of Silver and Billon Coins of Bahamani and Delhi Sultanate from Pen, Maharashtra'. In *Medieval Indian Coinages: A Historical and Economic Perspective*, ed. Amiteshwar Jha, Nasik: Indian Institute of Research in Numismatic Studies, pp. 153-158.
- Archaeological Survey of India. 1953-1954-2000-2001. *Indian Archaeology: A Review*. Annual Treasure Trove Reports.
- Briggs, J., tr. 1966. *History of the Rise of the Mahomedan Power in India*. 4 vols. Calcutta: Editions Indian.
- Burnett, A. 1991. *Coins: Interpreting the Past*. Berkeley: University of California Press.
- Chattopadhyaya, B. 1977. *Coins and Currency Systems in South India, c. AD 225-1300*. New Delhi: Munshiram Manoharlal.
- Codrington, H.W. 1924. *Ceylon Coins and Currency*. Colombo: A.C. Richards.
- Cohen, Benjamin J. 1998. *The Geography of Money*. Ithaca and London: Cornell University Press.
- Dames, M.L. 1967. *The Book of Duarte Barbosa*. 2 vols. Millwood, NY: Kraus Reprint.
- Desai, Z.A. 1989. *A Topographical List of Arabic, Persian, and Urdu Inscriptions of South India*. New Delhi: Indian Council of Historical Research.
- Deyell, J.S. 1990. *Living Without Silver: The Monetary History of Early Medieval North India*. New Delhi: Oxford University Press.
- Eaton, Richard M., and Phillip B. Wagoner. 2014. *Power, Memory, Architecture: Contested Sites on India's Deccan Plateau, 1300-1600*. New Delhi: Oxford University Press.
- Firishta, Muhammad Qasim. 1832. *Tarikh-i Firishta*. Bombay: Government College Press.
- Flatt, Emma. 2009. 'Courtly Culture in the Indo-Persian States of the Medieval Deccan: 1450-1600'. Ph.D. dissertation, London, School of Oriental and African Studies.
- . 2011. 'The Authorship and Significance of the *Nujum al-'Ulum*: A Sixteenth-Century Astrological Encyclopedia from Bijapur'. *Journal of the American Oriental Society* 131(2): 223-244.
- Flood, F.B. 2009. *Objects of Translation: Material Culture and Medieval 'Hindu-Muslim' Encounter*. Princeton: Princeton University Press.
- Goron, S., and J.P. Goenka. 2001. *The Coins of the Indian Sultanates: Covering the Area of Present-day India, Pakistan, and Bangladesh*. New Delhi: Munshiram Manoharlal.

- Gupta, P.L. 1970. *Coin Hoards from Maharashtra*. Numismatic Notes and Monographs, no. 16. Varanasi: The Numismatic Society of India.
- Haidar, Navina Najat. 2011. 'The *Kitab-i Nauras*: Key to Bijapur's Golden Age'. In *Sultans of the South: Arts of India's Deccan Courts, 1323-1687*, ed. Navina Najat Haidar and Marika Sardar, New York: Metropolitan Museum of Art, pp. 26-43.
- Joshi, P.M. 1964. 'The Yeoti Hoard of Bahmani Coins and Vijayanagara Pagodas'. In *Satabda-Kaumudi*, Nagpur: Centenary Celebrations Committee, Central Museum, pp. 139-144.
- . 2002. 'Coins Current in the Kingdom of Golconda'. In *Studies in History of the Deccan, Medieval and Modern: Professor A.R. Kulkarni Felicitation Volume*, ed. M.A. Nayeem, Aniruddha Ray, and K.S. Mathew, Delhi: Pragati Publications, pp. 146-155.
- Kadiri, A.A. 1962. 'Bahmani Inscriptions from Raichur District'. *Epigraphia Indica: Arabic and Persian Supplement*, 1962: 53-66.
- Khare, G.H. 1954. 'Some More Information on the Hons of Muhammad 'Adilshah''. *Journal of the Numismatic Society of India* 16(1): 130-131.
- Kulkarni, G.T. 1991. 'A Note on Bahmani Currency'. In *Proceedings of the Indian History Congress, 51st Session, Calcutta University, Calcutta, 1990*, ed. Indian History Congress, Delhi: Indian History Congress, Department of History, University of Delhi, pp. 270-271.
- Martin, M.H. 1980. 'Bahmani Coinage and Deccan and North Indian Metrological and Monetary Considerations, 1200-1600'. Ph.D. dissertation, University of Michigan, Ann Arbor.
- . 1981-1982. 'Bahmani Metrology and the Currency Reform of the 1420s'. *Journal of the Academy of Indian Numismatics and Sigillography* 4: 35-47.
- Michell, George. 1992. *The Vijayanagara Courtly Style: Incorporation and Synthesis in the Royal Architecture of Southern India, 15th-17th Centuries*. Delhi: Manohar and American Institute of Indian Studies.
- Mitchell, A. 2005. *The ESRI Guide to GIS Analysis*. Vol. 2, *Spatial Measurements and Statistics*. Redlands: ESRI Press.
- Mitchiner, M. 1998. *The Coinage and History of South India*. Part One, *Karnataka—Andhra*. Part Two, *Tamil Nadu—Kerala*. London: Hawkins Publications.
- Murthy, A.V. Narasimha. 1977. *Coins and Currency System in Karnataka*. Mysore: Directorate of Archaeology and Museums in Karnataka.
- Petievich, Carla. 2007. *When Men Speak as Women: Vocal Masquerade in Indo-Muslim Poetry*. New Delhi: Oxford University Press.
- Quddusi, M. Yaseeb. 2001. 'A Hoard of 18 Gold Coins from Kishorepur, Uttar Pradesh'. In *Medieval Indian Coinages: A Historical and Economic Perspective*, ed. Amiteshwar Jha, Nasik: Indian Institute for Research in Numismatic Studies, pp. 159-163.

- Reddy, D. Raja. 2009. 'Hyderabad Museum Collection of Treasure Trove Coins of Bahmani, Vijayanagara, and Yadava Dynasties'. *Journal of the Numismatic Society of India* 71: 105-114.
- Reddy, D. Raja, and P. Suryanarayana Reddy. 1983. *Copper Coins of the Bahmanis*. Hyderabad: Numismatic Society of Hyderabad.
- Sardar, Marika. 2007. 'Golconda through Time: A Mirror of the Evolving Deccan'. Ph.D. dissertation, New York University, Institute of Fine Arts.
- Sewell, R. 1962. *A Forgotten Empire: Vijayanagara*. Delhi: Ministry of Information and Broadcasting, Publications Division.
- Sohoni, P. n.d. 'The Issue of Coinage as a Non-Issue: The Monetary Non-Assertion of the Post-Bahmani Sultanates'. Unpublished typescript.
- Syedain, K. Ghulam. 1997. 'Ladkhed Hoard of Bahmani Copper Coins from Maharashtra'. *Studies in South Indian Coins* 7: 95-104.
- Thackston, W.M. 1989. *A Century of Princes: Sources on Timurid History and Art*. Cambridge, MA: The Aga Khan Program for Islamic Architecture.
- Tye, R. 2009. *Early World Coins and Early Weight Standards*. York: Early World Coins.
- Wagoner, Phillip B. 1996. 'Sultan Among Hindu Kings: Dress, Titles, and the Islamicization of Hindu Culture at Vijayanagara'. *Journal of Asian Studies* 55(4): 851-880.
- . 2006. 'The Charminar as *Chaubara*: Cosmological Symbolism in the Architecture of the Deccan'. In *The Architecture of the Indian Sultanates*, ed. Abha Narain Lambah and Alka Patel, Mumbai: Marg Publications, pp. 104-113.
- Weinstein, Laura. 2011. 'Variations on a Persian Theme: Adaptation and Innovation in Early Manuscripts from Golconda'. Ph.D. dissertation, Columbia University.