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GILDING, INLAY AND THE MOBILITY OF METALLURGY: A CASE OF FRAUD IN MEDIEVAL KASHMIR

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The rise of an inlaid metalwork industry in Khurasan, eastern Iran, during the second half of the twelfth century constitutes one of the canonical subjects of Islamic art history. The spectacular candlesticks, ewers and pen-boxes that form the most common products of the Khurasani metalwork industry are among the objects of Islamic art most familiar to any museum-goer in Europe or the United States. While the Hermitage pen-box (*qalamdan*) dated 542/1148 gives us a *terminus ad quem* for the use of the technique in Khurasan, the most spectacular example of the genre, the cast bronze vessel of 559/1163 known as the Bobrinski bucket, localises the phenomenon by naming its own place of production as the Khurasani city of Herat, now in western Afghanistan.¹ The industry seems therefore to have flourished in the western territories of the Ghurid sultans. The Ghurids were parvenus from the mountains of central Afghanistan who, for a few brief decades at the end of the twelfth century, ruled over a vast swathe of territory extending across the modern states of Iran, Afghanistan, Turkmenistan, Pakistan and India. The remarkable transregional polity that they created was ephemeral, collapsing in the face of external pressures and internal struggles over succession around 1210.² Nevertheless, its legacy left an enduring impression upon the cultural and political life of the eastern Islamic world, witnessed on the one hand by the emergence of the Delhi sultanate, and on the other by the apparent westward migration of certain elements in the repertoire of the Herati metalworkers (most obviously animated scripts), which appear in the inlaid brass vessels produced in northern Iraq and Syria in the first half of the thirteenth century.³

There has been considerable speculation concerning the impetus for the emergence of the Khurasani inlaid metalwork industry at this time. Copper (and more rarely silver) inlay is occasionally used to highlight engraved decoration and inscriptions on Iranian and Iraqi metalwork as early as the ninth or tenth centuries,⁴ but the exponential growth in the use of inlay on both cast and beaten metal vessels produced in Herat and other centres in Khurasan from the twelfth century has generally been attributed to the chronic silver shortage then afflicting the region. James Allan (among others) has concluded that by around 1100 'many silversmiths must have given up working in precious metal and begun working in sheet bronze or brass instead.'⁵ Secondary factors cited to explain the florescence of an inlaid metalwork industry at this time are the rise of an urban bourgeoisie, and the desire to render increasingly complex surface designs more legible. In this respect, the emergence of inlay as a standard decorative technique in eastern Iran might be compared to the use of blue-glazed elements in the architecture of western Iran from the eleventh century onwards to aid the legibility of the increasingly complex brick designs, a feature that appeared in eastern Khurasan and Afghanistan around the time that the Herati inlaid metal industries were flourishing.⁶

These phenomena are clearly relevant to, perhaps even necessary for, the emergence of an inlaid metal industry in Herat around 1150, but they do not in themselves explain why it emerged there and then. It remains to explain the unprecedented facility with which the metalworkers of Herat gave themselves to the production of spectacular metal forms using copper and silver inlay on a previously unknown scale. Here several scholars, including James Allan, have suggested that enhanced contacts with India as a result of the eastward expansion of the Ghaznavid and Ghurid sultanates of Afghanistan during the course of the eleventh and twelfth centuries may have provided the impetus for these innovations in twelfth-century Khurasani metalwork. It has been suggested, for example, that a penchant for cast bronze animal and bird figures in eastern Iranian metalwork of the tenth and eleventh centuries may have been inspired by Buddhist or Hindu metal sculptures from Afghanistan and Kashmir circulating westward as booty, gifts or trade objects.⁷

Other scholars have looked to technique rather than form, pointing to the frequency with which inlay was used on western Indian metalwork in the centuries preceding the emergence of the Herati inlaid metalworking industries. The relatively recent identification of Kashmir as a major centre for the production of elaborate inlaid brass sculptures has, for example, led to speculation about possible technical relationships with the metalworking traditions of neighbouring Afghanistan and Iran. In various publications on Kashmiri art, Pratapaditya Pal has suggested that Kashmiri artists may have popularised the technique of metal inlay in the Islamic world as a result of increased contacts with the Ghaznavid sultanate during the course of the eleventh century:

Indeed, the art of inlay seems to have played a more dominant role in the bronzes of Kashmir than in those of any other school in India. And it is not improbable that the technique was later transported into eastern Persia through Ghazni following the time of Mahmud (986–1030 AD). It is somewhat curious that inlaid brass became the favored medium of Persian metal-smiths mostly after the eleventh century.⁸

More recently, Rachel Ward has outlined the factors that may have led to the development of the inlaid metalwork industry in Khurasan, concluding that

... increased contact between Khurasan and northern India must have heightened awareness of the technique. Copper and silver inlays were used in Kashmir and north-east India in the eleventh and twelfth centuries to emphasise various features of idols, such as the eyes or the 'sacred thread' (symbolising the spiritual birth of the high-caste Hindu). Booty brought back from Ghaznavid and Ghurid sorties into India would have introduced Islamic metalworkers to this work, and Indian craftsmen may even have been employed in local workshops.⁹

As a major cultural centre with a flourishing tradition of inlaid metalwork, Kashmir would indeed be the logical (but not the only possible) source of any Indic inspiration. The temples of the Kashmir Valley were distinguished by their predilection for sacred images of metal rather than stone.¹⁰ Most of the surviving examples range in height between 4 and 17 inches (10 to 43cm), but texts suggest that Kashmiri craftsmen produced metal icons of great size, and in precious metals as well as base.¹¹ Elaborate inlay was a defining characteristic of Kashmiri metal sculpture, being more popular in Kashmir than in any other region of India, and more popular on Buddhist than Hindu images, for reasons that are not entirely clear.¹² Silver was used to inlay eyes, sacred markings, garments, ornaments (necklaces, ear-rings, belt buckles) and thrones, while copper was generally reserved for minor body parts – lips, nails, nipples – and ornaments. More rarely, silver foil was applied to select facial features and hair. A black bituminous substance was used in many cases to highlight eyes, flowers, crowns, clothing and the chased lines of hair.¹³

There are a number of basic aesthetic and technical differences between Khurasani and Kashmiri metalwork, among them the ratio of beaten to cast metal, the lead content of the brass medium, and the frequency of inscriptions,¹⁴ but there are also broad similarities between the techniques of inlay used in both regions. In both traditions, linear inlay was usually hammered into place along incised and chiselled lines that were undercut. The method used for spatial inlay was also comparable, with the edges of inlaid areas undercut, the inlay sheet laid in position, and the lip of the cut hammered into place over it. In both Kashmiri and Khurasani inlaid metalwork, therefore, the brass matrix overlies the edges of the silver or copper inlay and holds it in place.¹⁵ To these specific similarities, one might also add the common use of a bituminous black

substance and the basic aesthetic principle of using inlay to provide striking visual effects while aiding the legibility of surface designs.¹⁶

In addition to these general technical parallels, the broad historical circumstances were conducive to the circulation of Kashmiri metalwork throughout the eastern Islamic lands. Between the ninth and eleventh centuries, Kashmiri bronzes were highly prized in the temples of the Himalayas and plains India,¹⁷ but through looting and trading also travelled well beyond the confines of the subcontinent: examples have been discovered in Kyrgyzstan and even as far away as a Viking site at Lake Malär in Sweden.¹⁸ The rise of small quasi-independent kingdoms on the eastern edge of the Dar al-Islam during the same period created the right conditions for the circulation of Indian metal sculptures within Iran and Iraq. The Tahirids of Khurasan (205–78/821–91) and the Saffarids of Sistan (247–393/861–1003) frequently used gifts of Hindu and Buddhist metal statues looted during campaigns of expansion in the east to articulate or negotiate their rather complex relationships with the Baghdad caliphate. In 250/864, for example, a number of idols were among the Afghan exotica sent to Baghdad from Kabul by Muhammad ibn Tahir. In 256/870 fifty gold and silver idols were dispatched from Afghanistan (probably Bamiyan) as gifts to the new caliph al-Mu'tamid from the de facto ruler of Sistan, Ya'qub ibn Layth al-Saffar.¹⁹ A rare insight into the interest generated by the display of these exotic metal sculptures in the central Islamic lands is conveyed by an account of a group of Indian metal figures sent to Baghdad by Ibn Layth al-Saffar, in 283/896. The group, which consisted of an enormous brass idol (*sanam*) of a four-armed woman on a cart flanked by two smaller idols, attracted considerable interest among the Baghdad populace.²⁰

The westward circulation of looted Indian stone and metal objects continued as the frontier of the Dar al-Islam shifted eastward in succeeding centuries, providing further opportunities for craftsmen to observe the products of Indian artistry. The discovery of a marble Brahma sculpture (along with other Hindu statuary, including a large Nandi, or bull of Shiva) in the palace of the Ghaznavid sultan Mas'ud at Ghazni (505/1112) offers tangible support for textual accounts of Indian three-dimensional images being carried back to Afghanistan.²¹ Among the Indian loot seized during the conquest of Ajmir, capital of the Chauhan rajas of north India, by the sultans of Ghur in the last decade of the twelfth century were two golden birds (perhaps Garuda eagles) each the size of a camel, which were mounted on the roof of the Ghurid palace in Firuzkuh in Afghanistan.²²

While the broad cultural conditions may therefore have provided opportunities for aesthetic or technical innovation, ultimately the evidence for the impact of Indian artefacts on Iranian inlaid metalwork is circumstantial. Moreover, in positing a role for Kashmiri metalwork we encounter a chronological problem that has gone largely

unremarked. Although the use of silver inlay is found on Kashmiri bronzes as late as the early eleventh century (witnessed for example on an image of the Buddhist deity Avalokiteshvara dedicated during the reign of Queen Didda [r. 980–1003]), the use of lavish inlay on Kashmiri sculptures declines into the eleventh century, with copper inlay rarely found at this date. In fact, rich inlay seems to have been a particular feature of artistic production during the Karkota period (c. 600–855/6), with little evidence for extensive usage after the ninth century, with the exception of the eyes of bronze sculptures, which were routinely inlaid with silver.²³ In other words, the most complex instances of Kashmiri inlaid bronzes pre-date the earliest dated example of Khurasani inlaid metal, the Hermitage pen-box of 542/1148, by more than three centuries.²⁴

To highlight the circumstantial (and even problematic) nature of the evidence for a Kashmiri role in the rise of a Khurasani inlaid metalwork industry is by no means to deny the likelihood of artistic exchange between eastern Iran and western India. It is, for example, possible that any impetus for innovation in Khurasani metalwork came not from Kashmir but from other areas of north India. The obvious candidates would be the Swat Valley or the small Himalayan kingdom of Chamba, both of which were adjacent to Kashmir and the Ghaznavid and Ghurid territories in the Punjab and produced bronzes inspired by those of Kashmir, although with a more sparing use of inlay, during the eighth through to tenth centuries.²⁵ The Swat Valley (Udayana) was a major centre of both Tantric Buddhism and Hinduism possibly as late as the twelfth or thirteenth centuries, and a mosque with a foundation inscription of 440/1048–9 was recently discovered in the region, suggesting that Islam may have co-existed with other religions while the area was at least nominally under Ghaznavid control.²⁶ To this may be added the suggestion that Swat produced high-tin bronze vessels similar to those known from Ghaznavid Afghanistan during the same period.²⁷

One further under-researched but potentially significant factor is the metalwork produced in Sind, in the southern reaches of the Indus Valley, which was nominally under Ghaznavid and Ghurid control during the eleventh and twelfth centuries. To judge from random finds such as a 38-inch-high bronze image of Brahma now in the Karachi Museum, the area was a major metalworking centre on the eve of the Arab conquest in the early eighth century. The Brahma reflects a fondness for inlay seen in other western Indian sculptures as late as the twelfth century.²⁸ It seems likely that production of Hindu and/or Buddhist sacred statues in base and precious metals continued after the Arab conquest, for in 271/884 three silver idols (*asnam*) were sent to the Abbasid caliph by the Arab governor of Sind along with other gifts.²⁹ That the region continued to produce spectacular cast metalwork after the Arab conquest is also attested by the four monumental cast bronze door-knockers from Mansura, each over half a metre in diameter, and ringed by an inscription incised in foliated Kufic

script, which bear the name of 'Abdullah, the Habbarid amir of Sind, who reigned around 270/883.³⁰

Most scholars have predicated the possibility of a relationship between Indian and Iranian inlaid metalwork on the circulation of worked metal objects that might have served as sources of inspiration. There is, however, no reason to limit such circulations to objects; the artisans responsible for their manufacture may also have circulated.³¹ The co-optation of Indian rajas as Ghaznavid tributaries, the dependence of the Ghaznavid armies on Indian soldiery, and the biographies of several Indians who rose to prominence in the service of the sultans of Afghanistan all suggest a degree of cultural fluidity and personal mobility between eastern Iran and western India during the eleventh and twelfth centuries. The presence of an Indian quarter in Ghazni, populated by the families of the Indian soldiery highlights the gap between the normative rhetoric of the Arabic and Persian chroniclers and the pragmatism that prevailed in practice. The presence of temples and icons (including, perhaps, metal icons) serving this community can perhaps be assumed even if not mentioned by sources keen to emphasise the orthodoxy of their patrons.³²

That the various Indian contacts of the Ghaznavid and Ghurid sultanates had an impact on artistic production in Afghanistan is not in doubt. Their material effects are, for example, witnessed in the tentative reception of architectonic elements of Indic origin in the terracotta ornaments of the palace of Mas'ud III at Ghazni (505/1112) and their ubiquity in marble carvings from Bust and Ghazni datable to the last decades of the twelfth century and the beginning of the thirteenth: that is, precisely during the period when large swaths of north India were being incorporated into the Ghurid sultanate.³³ The appearance of these elements is likely to reflect the presence of Indian masons, who may also be responsible for certain technical features such as the use of cut brick in the minaret of Mas'ud (d. 508/1115) at Ghazni.³⁴ Similarly it has been suggested that Indian die-cutters may have participated in the production of Ghaznavid and Ghurid coins in Afghanistan.³⁵

Given this Indian artisanal diaspora, the looted Indian metalwork that continued to flow westwards during this period may well have been accompanied by skilled metalworkers, whether carried off as slaves or migrating in order to maximise the opportunities available to them. This was a two-way traffic, however. A chance reference to a royal commission in a Sanskrit chronicle from Kashmir attests to the presence of a migrant Turkic metalworker in the region during the eleventh century, a reminder that the value placed on unusual technical skills could cut across ethnic, geographic and sectarian boundaries. Although so far neglected by historians of Islamic art, this Kashmiri text helps construct a broader context within which to consider the mobility of metalworking techniques between India and eastern Iran on the eve

of the rise of the Khurasani inlaid metalwork industry. The reference in question appears in the *Rajatarangini* (*Sea of Kings*), a Sanskrit dynastic epic composed by the Kashmiri court poet Kalhana around 1150 AD. This offers abundant evidence for the military and cultural contacts between Kashmir and the adjacent Turko-Persian sultanates. These contacts include the presence of *Mlecchas* or non-caste foreigners, some of whom were Turkic mercenaries, in the armies of the Kashmiri rajas as early as the eighth century, echoing the later inclusion of Indian soldiery and generals in Ghaznavid and Ghurid armies.³⁶

The transregional circulations well attested in the martial sphere also extended to the realm of artistic production, for among the Turks that the *Rajatarangini* mentions is one who features in a fascinating tale regarding a craftsman who came to work on a Shiva temple built by King Kalasha, who reigned over the Kashmir Valley between 1063 and 1089. The shrine was constructed from stone, as is typical in Kashmir, but had roof ornaments of gold, including a parasol (*chatr*) that appears to have been gilded more by default than design. Discussing the ornaments of the temple, Kalhana relates the following story:

When the king wished to put a gold parasol over the [temple of Shiva] *kalaśeśa*, there came to him a craftsman (*shilpi*) from the *Turuṣka* country. This [man] said that he could make the parasol with many thousands of gold [pieces], secreting the art he knew of putting gold on copper. He remained for several days enjoying the king's hospitality, till the minister, Nonaka, who had a very sharp intellect, discovered his art by means of inference. Put [thus] to shame, he went as he had come, and that parasol was constructed [at the expense of] a very small number of gold pieces.³⁷

The published Kashmiri gilded sculptures are all quite small – usually less than 4 inches (10cm) high – much smaller than a monumental parasol for a royal temple. The scale and likely appearance of this type of feature may be imagined, however, from the paintings on the Avalokiteshvara icon in the Sumtsek monastery at Alchi in Ladakh, western Himalayas. This Buddhist kingdom was sandwiched between the Turko-Persian sultanates of Afghanistan to the west, the Hindu polity of Kashmir to the south, and Tibet to the east. With their mix of Hindu and Buddhist devotional scenes and their topographic references to the Kashmir Valley, the paintings at Alchi have been attributed to the hand of Kashmiri artists working just before 1200.³⁸ Among them is an image of a *linga* housed within a Shiva temple, the central spire (*shikara*) of which is surmounted by a high golden parasol (*chatr*).³⁹

The term *Turuṣka*, or 'Turk', used to denote the fraudulent craftsman, frequently served in medieval Sanskrit texts and inscriptions not only as a narrow ethnic appellation but also to refer to Muslims in general.⁴⁰ In other passages of the *Rajatarangini*, the term designates people who are very clearly Muslims. For example, speaking of King Harsha

(1089–1101), the successor of Kalasha, the chronicle cites his fondness for pork, in contrast to his *Turushka* army captains, who though *Mlecchas*, evidently refrained from the forbidden meat.⁴¹ Famed for his iconoclastic destruction of Hindu and Buddhist icons, a quality associated with invading Muslim armies, Harsha earned the epithet *rajaturushka* or ‘Turk King’.⁴²

That the duplicitous craftsman came from the *Turushka* country (*Turushkadesha*) may indicate that he was a Muslim who journeyed to Kashmir from the neighbouring Ghaznavid sultanate or its territories in the Punjab. This passage is therefore of great interest for a number of reasons. First, it suggests that neither religion nor ethnicity were impediments to the employ of a skilled artist on a royal project, even a religious commission. Second, it attests the presence of a Turkic metalsmith in the ‘Hindu’ kingdom of Kashmir, highlighting the role of itinerant craftsmen in facilitating the transfer of metal technology between Kashmir and the Dar al-Islam. Third, it raises the possibility that despite their proximity, certain techniques of decorative surface treatment that were common in the luxury metalwork of one region were not as familiar in the other.

Surviving medieval Kashmiri brasses tend to confirm this impression. Pal has suggested that the vogue for rich surface treatments in the earliest Kashmiri brasses reflects the desire to emulate gilded Sasanian metalwork.⁴³ Whether or not this is so, with few exceptions,⁴⁴ gilding is conspicuous by its rarity on Kashmiri brasses, which generally eschew it in favour of inlay; gilding occurred on fewer than 15 per cent of 60 Kashmiri metal sculptures studied in the 1980s.⁴⁵ This stands in marked contrast to the frequent gilding of Nepalese and Tibetan metal sculptures inspired by Kashmiri brasses.⁴⁶ The use of gilding was also relatively common on metal icons produced in Gujarat in western India, as a gilded and inlaid copper Jain altarpiece dated 988 from Broach indicates.⁴⁷

Despite the periodic silver shortage that afflicted the eastern Islamic world, the existence of a metalworking industry in Ghazni that produced both gold and silver vessels has been demonstrated.⁴⁸ Moreover, both texts and surviving artefacts attest the use of mercury gilding in the Ghaznavid sultanate.⁴⁹ One can easily imagine, therefore, how a Kashmiri ruler, desiring to imbue his temple with large and lavish golden ornaments, might have come to employ the services of a craftsman from the Ghaznavid territories. Since gilding was not commonly used in Kashmiri metalwork, this may have facilitated the deception of the wily Turk. One further point to bear in mind is the possibility that the baldachin was made of beaten metal, a rarity in Kashmir, where casting was the norm.

The import of a Turkic artisan was not an isolated incidence, but coincides with a vogue for elements of *Turushka* culture in the late eleventh and early twelfth centuries.⁵⁰ As R.L. Hangloo has noted, the evidence from the *Rajatarangini* and other texts

indicates that 'there was a constant cultural exchange, a commercial relationship and mutual dependence in artisanal skills and military techniques from the middle of the eighth century.'⁵¹ We are told that in the decades following the construction of the Shiva baldachin, King Harsha introduced changes in fashion and personal adornment, popularising a type of attire that 'was fit for a king'. We have few details of this attire, but in view of Harsha's other *Turushka* leanings, Aurel Stein noted the likelihood that this was a style of dress associated with the Muslim sultanates to the West.⁵² Around 1200, the rulers of the western Tibetan region of Ladakh had themselves depicted in Turko-Persian garb, wearing sleeved, tailored, mid-calf-length coats (*qaba'*), closed by fastening one side across the other, some of which bore pseudo-Arabic inscriptions. Since the Ladakhi rulers had close ties with Kashmir, ties that extended to the use of Kashmiri artists in the production of their self-representations, the paintings from Ladakh may indicate the adoption of similar modes of dress in the court of the rajas of Kashmir.⁵³ This mode of dress was originally associated with the Turks, but during the twelfth and thirteenth centuries its associations with the military and political authority of the Turks led to its adoption in the self-representations of regional rulers who were not ethnic Turks.⁵⁴ The use of the *qaba'* at the Ghaznavid court is attested by both wall paintings and portable luxury objects that undoubtedly circulated in the Islamic world and beyond. Images of the Turko-Persian modes of dress current at the Ghaznavid court were therefore available for the Buddhist ruler of a minor Himalayan kingdom to draw upon in his self-representations.⁵⁵

In short, the available textual and visual evidence indicates that the employment of a *Turushka* craftsman in Kashmir in the second half of the eleventh century coincides with a moment when the cultural impact of the Ghaznavid sultanate was strongly felt in the Himalayan kingdoms to its northeast. One of the problems in conceptualising the relationship between these contiguous realms has been an anachronistic tendency to envisage them as possessed of boundaries analogous to those of the modern nation state. The rhetorical posturing of the medieval Arabic and Persian histories has tended to affirm this impression by reifying cultural and religious difference, depicting the boundaries between the eastern sultanates of the Dar al-Islam and the neighbouring kingdoms of al-Hind as a kind of medieval iron curtain. By contrast, the *Rajatarangini* suggests that the cultural, ethnic and religious boundaries between these realms were quite porous, permeable enough to permit the employment of a non-Hindu Turk in the embellishment of a royal Shiva temple.⁵⁶ In this sense, the evidence from the *Rajatarangini* suggests that the phenomenon of *ouvriers sans frontières*, which Anthony Cutler has recently discussed in relation to Byzantine–Islamic exchanges in the metalwork of the contemporary Mediterranean,⁵⁷ was also operative on the eastern frontier of the Dar al-Islam in the eleventh and twelfth centuries. In fact, the phenomenon is especially

well attested in relation to metalworking technology; in addition to their numerous references to base-metal vessels circulating between Egypt, Arabia and southern India, the Cairo Geniza documents record the voyage of a trio of Jewish goldsmiths (one of whom hailed from the Maghrib) from Aden to Sri Lanka around 1130.⁵⁸ From such stray references, one gains the distinct impression that individuals with specific metallurgical skills were especially mobile around the Indian Ocean during exactly the period that an inlaid metalwork industry was emerging in Khurasan. The metallurgical innovation (or deception) associated with the peripatetic Turk of the *Rajatarangini* attests equally to the mobility of metalworking technology between western India and the neighbouring sultanates of Afghanistan by terrestrial means on the eve of the emergence of the Herati inlaid metalwork industry. That it was here rather than in any other region of the Islamic world that a technique long established in the contiguous regions of India emerged as dominant is hardly fortuitous. However, if Indian artisans or booty were in fact one of the causal factors, the evidence for the circulation of artefacts, artisans and techniques presented here suggests that this may well have been a two-way traffic.

NOTES

- 1 Ettinghausen 1943; Giuzalian 1968.
- 2 Jackson 2000; Kumar 2007; Flood 2009: 89–228.
- 3 Rice 1957a; Baer 1983: 204–7.
- 4 Allan 1976/77: 11; Allan 1979b: 65; Melikian-Chirvani 1982, nos 6–7; Allan 1996a: 369.
- 5 Allan 1976/77: 16.
- 6 Wilber 1939: 30–38.
- 7 Allan 1985b, no 255. Although it should be noted that the inlaid turquoise eyes associated with many of the Iranian figures are less common in Kashmir (where turquoise inlay is occasionally used for jewellery) than in Nepal and Tibet.
- 8 Pal 1975: 13.
- 9 Ward 1993: 73–74.
- 10 For a recent overview see Pal 2007.
- 11 Barrett 1962: 38, Pl. 24/6.
- 12 Reedy 1989: 103.
- 13 Pal 1975: 13, 30–31; Pal 1988: 24.
- 14 Unlike Bihar and Tamil Nadu, where copper alloy was the standard medium for metal sculpture, in Kashmir leaded brass (copper with at least 2 per cent zinc and 2 per cent lead) and brass (copper with added zinc) were the most favoured alloys; tin probably came from Afghanistan: Reedy 1989: 95–96. In addition, Kashmiri metalwork was almost

exclusively cast rather than beaten. The favoured medium in the medieval Islamic world was relatively pure brass (11–23 per cent zinc) with little or no tin and lead: Craddock et al. 1990: 77. In contrast to Khurasani metalwork, inscriptions are rare on Kashmiri metalwork.

- 15 Allan 1979b: 64–65, Fig. 3; Reedy 1989: 100, 103.
 16 Reedy 1989: 104.
 17 Davis 1997: 29, 64–65.
 18 Barrett 1962: 38, 40, Pl. 25, Figs 10, 21–22. This had an inlaid golden *urna* unusual in Kashmir, where the *urna* was usually silver.
 19 Bosworth 1994: 101, 105–6.
 20 Ibn al-Zubayr, 1959: 45; al-Qaddumi 1996: 88; Flood 2009: 32–34.
 21 Flood 2009: 32, Figs 8–9. The Nandi will appear in a forthcoming study of the Ghazni marbles by Dr Martina Rugiadi.
 22 Flood 2009: 126–35.
 23 Pal 1989: 79, 86.
 24 Giuzalian 1968.
 25 Goetz 1969: 133–34; Pal 1973: 743–44; Pal 1975: 37; Pal 1989: 80; Ohri 1989.
 26 Khan 1985; Scerrato 1985.
 27 Melikian-Chirvani 1982–83: 41.
 28 Van Lohuizen 1981: 51, Pl. 13; Joshi 2007: 53, Fig. 16.
 29 Ibn al-Zubayr 1959: 37; al-Qaddumi 1996: 83–84.
 30 Flood 2009: 48–52.
 31 Ward 1993: 74.
 32 Flood 2009: 28–29.
 33 Artusi 2009; Flood 2009: 189–203.
 34 Pinder-Wilson 2001: 157.
 35 Tye 1988.
 36 Hangloo 1997.
 37 Stein 1989–90, vol. I: 311.
 38 Goepper 1991–92: 50.
 39 The Pashupata Shaivites of Kashmir placed a particular emphasis on the *linga*: Pal 1973: 730.
 40 Stuszkiewicz 1951–52; Ahmad 1977: 99; Wink 1992: 766–68; Prasad 1994; Chattopadhyaya 1998: 40–43.
 41 *Rajatarangini* 7: 1149 in Stein 1989–90, vol. I: 357. See Talbot 1995: 701 for references to abstention from pork being a characteristic of *Turushkas*.
 42 *Rajatarangini* 7: 1090–95 in Stein 1989–90, vol. I: 352–53.
 43 Pal 1973: 743; Pal 1975: 42.
 44 Barrett 1962: 41, Pls 21, 26.
 45 Reedy 1989: 104.
 46 Lo Bue 1981: 82–83; Pal 1988: 24; Oddy et al. 1981.

- 47 Pal 1994: no 30.
- 48 Melikian Chirvani 1985a: 92.
- 49 Allan 1979b: 11–13. Where it did appear, both mercury (fire) and cold gilding were used, despite the difficulties that leaded brass presents for fire-gilding/mercury gilding.
- 50 Khan 1986; Bamzai 2007: 308–9.
- 51 Hangloo 1997: 105; Wink 1992: 767.
- 52 *Rajatarangini* 7: 922–924 in Stein 1989–90, vol. I: 339.
- 53 Flood 2009: 65–72.
- 54 Soucek 1992.
- 55 Flood 2009: 65–67.
- 56 Sadly, the boundaries of contemporary scholarship are less fluid. Scholars who have mined the *Rajatarangini* as a source for the history of medieval Kashmiri metalwork and who have championed the role of Kashmiri sculpture in popularising inlaid metalwork in Khurasan have singularly failed to draw attention to the passage from the *Rajatarangini* that I have discussed, which goes unmentioned in the standard works on Kashmiri metalwork.
- 57 Cutler 1999.
- 58 Udovitch 2000: 689–91.

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