

MUGHAL JADES

A Technical and Sculptural Perspective

- [Stephen Markel](#)

July 14, 2008

Jachen [jade] is in great estimation in the court of the Mogol...Cups and vases are made of this Stone. I have some of most exquisite Workmanship, inlaid with strings of gold, and enriched with precious stones.[1]



Fig. 1

As the French physician François Bernier observed in a letter written in 1665 while traveling in Kashmir with the court entourage of the Mughal emperor Aurangzeb (r. 1658-1707), jade was highly valued by the Mughal emperors. Mughal jade working presumably began under the Mughal emperor Akbar (r. 1556-1605)[2], but did not achieve its full efflorescence as an art-form until the reigns of the two great aesthetes of the dynasty, the emperors Jahangir (r. 1605-1627) and Shah Jahan (r. 1628-1658). Jahangir, in particular, played a key role in the development of the Mughal jade working tradition; a number of elegant jade drinking vessels engraved with his name and imperial epithets survive.[3] In support of the epigraphic documentation, Jahangir is also portrayed in at least one extant portrait as prominently holding a white jade wine cup as one of his symbolic royal attributes. (Fig. 1, left)

The study of Mughal jades is well established in the modern scholarly record. There are, however, two important aspects of Mughal jade working that have received insufficient attention to date. First, the tools and exact methods of production used to manufacture Mughal jades. Second, the finest Mughal jades demonstrate highly developed sculptural qualities that transcend the expected characteristics of decorative art. In order to better understand the techniques used to create Mughal jades, this article will discuss historical literary accounts describing the methods of production used by South Asian lapidaries and examine pictorial portrayals of the lapidaries at work. As there are no surviving Mughal-period descriptions and illustrations of lapidaries working specifically on jade, the inference of the techniques utilized for Mughal jade working will be derived from the analogous evidence of contemporaneous and nineteenth-century South Asian lapidaries working on gemstones (excluding diamonds [4]) and examples of modern lapidaries using traditional jade working techniques. Finally, although it is ultimately impossible to experience the astonishing aesthetic sublimity of the finest Mughal jades without handling them in person at leisure, this article will also attempt to present a sense of that visceral perception through close-up photographic details that can merely hint at the subtlety of modulation wrought painstakingly into the surface of the unyielding stone.

Before beginning the literary and pictorial analysis, it will be instructive to review the salient technical aspects of Mughal jade working. Mughal jade objects are almost exclusively made of nephrite jade, principally from Kashgar in Central Asia. [5] Occasionally, softer jade 'simulants' were utilized, particularly several types of serpentine. Nephrite jade encompasses a mineral series formed of a silicate of calcium and magnesium, often with iron and other trace elements that give the stone various hues or striations. Nephrite has a hardness factor of 6.0 to 6.5 on the Mohs' scale, which indicates that it is moderately hard compared to a diamond (10 on the scale).

Structurally, nephrite is composed of long, interwoven, fibrous crystals, which provide great resistance to breakage and render carving or cleaving along fraction lines as in traditional stone-working methods impossible. During the Mughal period raw nephrite was cut or sawed into blocks with a bow or string saw and an applied abrasive slurry (wet solution) containing particles of quartz, diamond, emery, or corundum. The rough blocks were shaped and polished into the required decorative form through abrasion against grinding plates and drill points made of metal or

stone augmented by abrasive slurries.

Perhaps the earliest Mughal literary description of lapidaries occurs in the *A'in-i Akbari*, the well-known chronicle of Akbar written by his prime minister Abu'l Fazl. In describing various jeweled ornaments and the artisans involved in their production, Abu'l Fazl distinguishes a type of jeweler called the "Zarnishan or gold inlayer [as] a workman who cuts agate, crystal and other gems in various ways and sets them on gold...He embellishes agates and other stones by engraving and cutting them." [4] Abu'l Fazl also alludes to lapidaries who "produce designs which excite astonishment," but regrettably does not elaborate further.[7]

Accounts by European travelers in South Asia provide important information on lapidary techniques during the Mughal period. Jean de Thevenot, a Frenchman of independent wealth who visited India in 1666, reports that the lapidaries working for the Deccani court of Golconda

cut Saphirs [sapphires] with a Bow of Wire; whil'st one Workman handles the Bow, another pourses continually upon the Stone [a] very liquid solution of the Powder of white Emrod [emery] made in water; and so they easily compass their Work.[8]

John Fryer, an English physician in India between 1672 and 1681, records that the Muslim lapidaries of Cochin cut "all sorts of Stones, except Diamonds, with a certain Wheel made of Lacre and Stone ground and incorporated." [9] The "certain Wheel" was a composite grinding plate made of melted lac mixed with powdered stone and hardened. The "Stone ground" was likely emery or corundum.

Portraits of Mughal and nineteenth-century Indian lapidaries at work provide visual corroboration of the gemstone-working techniques and tools described in the literary accounts. These same techniques and tools can be presumed, by logical extension, to have been employed also for working jade. The primary tool was the bow lathe, which could be fabricated with varying degrees of complexity and could be used either horizontally or vertically. The rotating shaft of the bow lathe could be outfitted with four primary types of terminals depending upon the desired technical or artistic effect: an engraving point or cutting wheel, used for engraving inscriptions and cutting designs; a drill point, used for boring holes; and a grinding plate, used for shaping and polishing.

Perhaps the earliest surviving portrait of a Mughal lapidary is that found in the margin of a manuscript page from a Jahangir album dating from around 1610/11, now in the National Museum-Náprstek Museum, Prague (A 12 182). (Fig. 2, right) The lapidary, who was probably from Afghanistan or northwestern Pakistan (judging by his distinctive woolen patti hat), is depicted using a bow lathe to engrave a red gemstone, which is likely a ruby, red spinel, or carnelian seal. [10] A detailed description and accompanying line drawing (Fig. 3a, below) of this exact type of bow lathe used for engraving gemstones was published in 1872 by Baden Henry Baden-Powell (1841–1901). In addition to providing a clear explanation of the tools and technique involved, Baden-Powell's record also documents the longevity of this traditional method of manufacture.



Fig. 2

The 'mohr-kand' or engraver's stand, consists of a solid heavy pyramidal box, on the top of which is a long wooden ledge carrying three uprights; one at either end is fixed, but the third can be slid along and fixed with a screw, so as to hold the graving tool, which is mounted between the end and middle, in a horizontal position, with the graving end projecting.

The tool itself is set revolving by the usual process of the bow. The point being adroitly pressed against the seal stone, and touched with oil and corundum, kept in a cup below, a dot or line, or other mark, is engraved: the stone is stuck with lac on to a wooden handle for convenience of holding. The graving tool or 'barma' consists of a light turned wooden shaft carrying a steel spike, at the very point of which a small copper head, like a pin's head, is fixed. This little head touched with oil and corundum does the work. If a fine line has to be engraved, the headed barma is removed and one placed in the proper position, which carries a little disc of copper at the end; the disc is perhaps ¼ of an inch in diameter, and the edge can be filed exceedingly thin. It is this thin edge, when pressed revolving against the seal stone [with an abrasive slurry], that cuts a fine line. The whole process, however, requires the workman to be exceedingly adroit in adjusting and turning about his stone so as not to get the lines too thick or too deep, to get the curves smooth, &c. [11]



Fig. 3

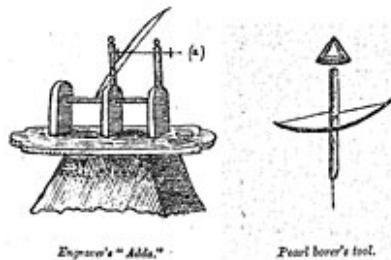


Fig. 3a



Fig. 4



Fig. 5

A bow lathe fitted with a drill was used for boring holes (necessary to string gemstones together) and for creating sockets used in securing inlaid gold and/or gemstones.[12] An occupational portrait painted in Patna around 1810, now in the Ashmolean Museum (1966.232), depicts a lapidary using a simplified bow lathe oriented vertically to drill a hole in a gemstone (Fig. 3, above). Baden-Powell describes this exact method of lapidary production and furnishes an accompanying line drawing (Fig. 3a, above) that precisely accords with the Ashmolean Museum's painting.

The pearl borer, "moti-winh" (from winha to bore), fixes the pearl into a little hole in a block of very soft wood, generally sembal, &c. The boring is done with the usual mechanical contrivance: a pointed tool set revolving by a bow and string passed round, and moved to and fro with a sawing movement. So here the borer is a light pointed tool with a long handle. To make a loose handle for this, the workman selects the end of a coconut shell, the extreme end bit of which makes a mushroom-shaped piece, this he holds his hand upon, while the end of his boring tool revolves in the hollow. The bow used is of course very small and light.[13]

A bow lathe with a grinding plate was used for shaping and polishing gemstones and jades. Another occupational portrait painted in Patna, this one dating from around 1826 and now in the Victoria and Albert Museum, London (IS.48-1964), depicts a lapidary using this technique (Fig. 4, above). Baden-Powell identified this type of lapidary as a "Hakkak – Ring Stone Polisher or Lapidary" and recorded that

His tools are, —a grindstone, which revolves on a wooden axis between two uprights; the uprights and stands are called 'adda.' The wheel or grindstone called 'sán,' is a disc made of corundum powder and lac melted together: it is kept revolving by a bow and leather string, like a turner's wheel. The sán is made of two sorts: one to grind coarse, the other fine. "Mitta sán," is one to grind finer, this is made with sand instead of corundum. A third wheel is called 'chilása' and is smaller, and serves to polish the stone with the aid of a paste called "bari," which is made of pounded burnt crystal or flint.[14]

The use of a bow lathe with a grinding plate as a traditional method of South Asian jade working has continued into the modern period. It was documented in Benares in 1972 [15] and was still being used there in 1990 by a lapidary to polish gemstones and jade amulets (Fig. 5, above). This lapidary informed me that he had no apprentice, so by now even this modest keeper of the tradition may have succumbed to the inevitable march of time. The traditional bow lathe must compete today with the less laborious and more efficient electric lathe, and even the computerized cutting and polishing of gemstones, jades, and other hardstones.

As with any art form that evolved over the course of centuries and subsisted under waxing and waning levels of patronage, there is a significant range of artistic accomplishment exhibited in the large corpus of Mughal jades. The finest works demonstrate a mastery of form and sophistication of aesthetic expression that rank among the pinnacles of world art.

One of the most sublime Mughal jades, now in the Los Angeles County Museum of Art (M.76.2.7a-b), is a dagger hilt in the form of a horse's head superbly modeled in aqua green jade with areas of burnt-orange used to highlight the delicately incised mane (Figs. 6-7, below).[16] According to an inscription damascened in gold on the almost certainly original watered steel blade,[17] the dagger was the personal dagger (khanjar) of the Mughal Emperor Aurangzeb and dates from 1660/61 (A.H. 1071).[18] The inscription is contained in two cartouches bordered by flowering vines. Extending along the central axis of the blade is an acanthus leaf, a favored Mughal decorative motif, and a royal parasol, a further indication of its imperial ownership.



Fig. 6



Fig. 7



Fig. 8



Fig. 9

The depiction of the horse's head is an artistic tour de force (Figs. 8-9, above). It realistically portrays what is presumably a strain of Arabian stallion. During the Mughal period Arabians were generally regarded as the finest breed of horse[19] and, therefore, befitting the supreme status of the emperor. The master lapidary who crafted the hilt was a close observer of the natural world, in the same inspired manner as the renowned Mughal painters. He carefully reproduced the distinctive features of an Arabian stallion:

In profile, the face [of pure Arabian horses] is notably concave, or "dished," and the forehead is convex, forming a shield shape called the jibbah. The muzzle is so small that it fits into a half-cupped hand, while the nostrils are very large, and can flare widely. The eyes are enormous and expressive; . . . in appearance they must be dark and deep in color, . . . in the stallion showing great alertness, with enormous challenging dignity. The ears are short and mobile, and curved inward.[20]

Besides depicting the horse in naturalistic detail, the master lapidary endowed his representation with a martial spirit appropriate to the Emperor Aurangzeb, who spent much of his reign on military campaign. Portrayed in symbolic accord with his warrior equestrian, the imperial charger is ready for combat. His ears are laid back, his nostrils are flaring, and his teeth are bared and about to bite (Figs. 10-11, below). [21]



Fig. 10



Fig. 11



Fig. 12

Additional noteworthy features of the jade include the naturalistic treatment of the ridge of the neck forming the junction of the mane, called the crest, and the gently rippled profile of the throat designed to facilitate an improved finger grip (Fig. 12, above). The mouth of the hilt adjoining the blade is decorated in quintessential Mughal fashion with bas-relief split acanthus leaves flanking a tulip enlivened with a curled petal.

A distinctive but intangible quality of the finest Mughal jades is their sensuous tactile appeal that invites caress. One of the most accomplished examples manifesting this elusive characteristic is an elegant jade bowl made from mottled dark green nephrite (Fig. 13, below). It dates from around 1640-50, and is now in the Los Angeles County Museum of Art (M.76.2.2). The bowl has a gracefully flared lip and two handles formed from the scrolled terminals of raised acanthus leaves that adorn the otherwise plain exterior walls of the vessel(Fig. 14, below). The low foot is formed from four overlapping lotus leaves oriented at right angles around a small rosette(Fig. 15, below). When viewed from the bottom with transmitted light,[22] the bowl has an ethereal appearance that perfectly conveys its impalpable nature(Fig. 16, below).





Fig. 13



Fig. 14



Fig. 15



Fig. 16

Another quality of the finest Mughal jades is that they can exhibit a sophisticated complexity of design with multiple component parts. This complex design is exemplified by a white nephrite dagger hilt dating from around the mid-seventeenth century, which was recently acquired by the San Diego Museum of Art (2004:196)(Fig. 17, below) . The hilt was originally crafted for a type of Mughal dagger with a double-edged curved blade with a strong mid-rib, which in Akbari and Jahangiri historical records was called a *khapwah*, meaning “the finisher, the giver of *coup de grace*.”[23] The San Diego *khapwah* hilt is fashioned in a classic Mughal complex hilt form that was first used for daggers made with metal hilts.[24] This jade example is one of the few known to survive, and replicates the hilt parts derived from metal hilts. The end of the hilt, termed the pommel, is in the form of two leaves that function as the end guards and flank a bud-shaped finial called the tang-button. Around the middle of the hilt grip is a decorative band called the necklace, which is in the form of a flowering vine graced by irises and stylized open poppy blossoms (Fig. 18, below). The base of the grip flares out with bud-shaped terminals that serve as the arms of the cross guard, called quillons, used to protect the hand. A knuckle guard connects the pommel with the quillon on one side. It ends at the pommel in the form of a pendant bud and as a volute at the quillon. Joining the quillon and the grip in the center is an openwork shaft in leaf form that is hollowed to accommodate the blade tang. Protruding from the base of the quillon is a short collar that anchors the blade in place and acts as a coupling when the hilt is inserted into the locket of the sheath. The subtle floral and vegetal designs of the San Diego hilt not only proclaim its Mughal origin, but also create a decorative program that elegantly contrasts and complements its sheer surface.



Fig. 17



Fig. 18

The finest Mughal jades often display an imaginative creativity in adapting forms from the natural world to design the external shape of palatial vessels, weapon hilts, or other luxury objects.[25] Artists drew their inspiration from a wide variety of flowers, foliage, and animals, which were often combined to create fantastic hybrid forms. A particularly delicate example of this Mughal artistic inventiveness is a small white nephrite spoon dating probably from the late seventeenth or early eighteenth century, which was recently acquired by the Los Angeles County Museum of Art (M.2006.167.1)(Fig. 19, below). The bowl of the spoon is wide and shallow like a miniature ladle, and is crafted in the form of a lobed leaf with the tapered sections on the bottom converging into an acanthus leaf flanked by split acanthus leaves used as a border motif (Fig. 20, below). The bowl connects in a faux joint to a curvilinear handle in the form of a leaf stem adorned with a collar of acanthus leaves. A smaller acanthus leaf collar and a tiny flower bud terminal complete the decoration at the end of the handle.



Fig. 19

Fig. 20

Fig. 21

The intended social function of the Los Angeles spoon is uncertain, and there are no known examples of spoons of this type depicted in Mughal paintings that could provide clues to its original cultural context. Although the repertoire of extant Mughal palatial tableware and utensils includes ovoid serving spoons made of jade and precious metals^[26] and jade ladles made in a lobed form,^[27] these are all considerably larger than the Los Angeles spoon. Judging from its small size (L: 10.8 cm) and tiny bowl in the form of a shallow circular scoop (Fig. 21, above), both of which render it impractical for serving or eating a typical portion of food or liquid, a likely suggestion is that the spoon may have been used originally to consume opium that was prepared as a paste in which opium resin was mixed with syrup or thickened juices to make it more palatable.^[28] If this interpretation is correct, this intriguing work of art is perhaps the only surviving Mughal jade opium spoon.

Mughal jades, and stylistically comparable jades made contemporaneously in the Deccan under probable Mughal patronage,^[29] constitute one of the primary modes of sculptural expression in northern India during the seventeenth and eighteenth centuries. Whether judged by their degree of technical difficulty or level of aesthetic accomplishment, or merely by the number of surviving high quality examples, Mughal jades clearly represent a zenith of artistic achievement in the rich visual heritage of South Asia.

Footnotes

1. François Bernier, *Travels in the Mogul Empire A.D. 1656-1668*, trans. Archibald Constable (London: Oxford University Press, 1891; reprint ed., New Delhi: Oriental Books Reprint, 1983), p. 423.
2. The English merchant William Hawkins reported in 1609 that the Mughal royal treasury at Agra contained some 25 kg. of uncut jade and 500 drinking cups, including fifty elaborate ones made of a single piece of jade or other precious minerals. As Akbar's reign had ended only four years earlier, it is likely that many of these cups had been made during his rule. See William Foster, ed. *Early Travels in India 1583-1619* (London: Oxford University Press, 1921; reprint ed., New Delhi: Oriental Books Reprint, 1985), p. 103. For a discussion and probable examples of Akbar-period jades, see Stephen Markel, "Inception and Maturation in Mughal Jades," in *The World of Jade*, ed. Stephen Markel (Bombay: Marg Publications, 1992), pp. 49-54.
3. For example, see Stephen Markel, "Fit for an Emperor: Inscribed Works of Decorative Art Acquired by the Great Mughals," *Oriental Art* 21:8 (1990): 22-36.
4. There is a significant corpus of historical literature on various aspects involved in the mining, cutting, polishing, trade, etc. of diamonds in South Asia during the Mughal period. For several primary references to diamond working techniques, see Stephen Markel, "Pictorial, Literary, and Technical Evidence for Mughal Lapidary Arts," paper presented at the 48th Annual Meeting of the Association for Asian Studies, Honolulu, 13 April 1996.
5. Historical accounts document Mughal contact with the sources of nephrite jade production in Kashgar from an early period. For the well-known visit to Akbar's court in 1563 of Khwaja Mu'in, the overseer of the main jade-bearing river in Kashgar, see Abu'l-Fazl, *The Akbar Nama of Abu'l-Fazl*, 3 vols., trans. H. Beveridge (Calcutta: Asiatic Society, Bibliotheca Indica, 1897-1921; reprint ed., Delhi: Low Price Publications, 1989), pp. 2:300-303. For trade caravans arriving regularly from Kashgar and China with jade and other foreign treasures, see Bernier, *Travels in the Mogul Empire*, p. 426.
6. Abu'l-Fazl, *The A'in-i Akbari*, vol. 1: trans. H. Blochmann, ed. D. C. Phillott (Calcutta: Bibliotheca Indica, 1873); vols. 2 & 3, trans. H. S. Jarrett, ed. J. Sarkar, 2nd ed. (Calcutta: Asiatic Society of Bengal, 1927; reprint ed., Delhi: New Taj Office, 1989), p. 3:346.
7. Abu'l-Fazl, *The A'in-i Akbari*, 3:347.
8. Surendranath Sen, ed., *Indian Travels of Thevenot and Careri* (New Delhi: National Archives of India, 1949), p. 138.
9. John Fryer, *A New Account of East India and Persia. Being Nine Years' Travels, 1672-1681*, ed. William Crooke (London: Hakluyt Society, 1909-1915; reprint ed., Nendeln/Liechtenstein: Kraus Reprint Ltd, 1967), pp. 284-285.
10. When this portrait of a Mughal lapidary engraving a red gemstone was illustrated in two separate publications in 1982, he was inaccurately described as "grinding or polishing" and "cutting/polishing". See respectively *The Indian Heritage: Court Life and Arts under Mughal Rule*, exhibition catalogue (London: Victoria and Albert Museum, 1982), p. 38, no. 44b; and Ahsan Jan Qaisar, *The Indian Response to European Technology and Culture (A.D. 1498-1707)* (Delhi: Oxford University Press, 1982; reprint ed., Delhi: Oxford University Press, 1998), pl. 3Cb. I would like to thank Dagmar Pospailová, Keeper of South & Southeast Asian Art, National Museum-Náprstek Museum, Prague, for his generous assistance in obtaining this image and its reproduction permission.
11. B. H. Baden-Powell, *Hand-Book of the Manufactures and Arts of the Punjab* (Lahore: Punjab Printing Co., 1872), pp. 193-194.

12. See John Twilley, "Scientific Description and Technical Analysis of Jades," in *The World of Jade*, ed. Stephen Markel (Bombay: Marg Publications, 1992), pp. 109-124, especially pp. 113-117.
13. Baden-Powell, *Manufactures and Arts of the Punjab*, p. 192.
14. Baden-Powell, *Manufactures and Arts of the Punjab*, p. 193.
15. Robert Skelton, "The Relations Between the Chinese and Indian Jade Carving Traditions," in *The Westward Influence of the Chinese Arts from the 14th to the 18th Century*, ed. W. Watson. Colloquies on Art and Archaeology in Asia, No. 3 (London: University of London, Percival David Foundation of Chinese Art, School of Oriental and African Studies, 1972), pl. 26a.
16. The areas of burnt orange are the result of a naturally occurring iron staining. See Abraham Rosenzweig, "On the "Rind" of Nephrite Jades," *The Bulletin of the Friends of Jade* 3 (Fall 1983): 70-73.
17. For a discussion of the synchronism of the hilt and dated blade, see Stephen Markel, "Jades, Jewels, and Objets d'Art," in *Romance of the Taj Mahal* (Los Angeles and London: LACMA and Thames and Hudson, 1989), p. 155.
18. I would like to thank Wheeler Thackston for the following translation of the inscription. It is contained in "two cartouches [that are] are halves of a whole. They each contain a hemistich of poetry, and the two hemistiches make up one line. The first is: *shud kilîd-i mamâlik az taqdîr* (the key of realms became, by destiny,) and the second completes it: *khanjar-i pâdishâh-i 'âlamgîr* (the dagger of the world-seizing emperor). Of course, the "world-seizing" part is a play on Aurangzeb's title Alamgir. And the date, 1071 (= 1660-61), is in the first cartouche." Personal email to the author, 9 June 2008.
19. Mughal records from Aurangzeb's reign occasionally substitute Iraqi horses in place of Arabian horses as the finest breed. Other prized breeds included Persian and Turkish horses and horses imported from Balkh and Kabul in Afghanistan and Bukhara in present-day Uzbekistan. See respectively William Irvine, *The Army of the Indian Moghals: Its Organization and Administration* (London, 1903; reprint ed., Delhi: Low Price Publications, 1994), pp. 51-52; and Niccolao Manucci, *Storia do Mogor*, trans. William Irvine, 4 vols. (London: John Murray, 1907-08; reprint ed., New Delhi: Atlantic Publishers, 1989), pp. 337, 352, 366.
20. Elwyn Hartley Edwards, *The Encyclopedia of the Horse* (New York: Dorling Kindersley, 1994), p. 65.
21. I would like to thank John Hirx, an avid equestrian and Senior Conservator, Los Angeles County Museum of Art, for generously sharing his knowledge of horses and their breeds.
22. I would like to thank Steven Oliver, Senior Photographer, Los Angeles County Museum of Art, for his extraordinary photographs illustrated in this article.
23. Gayatri Nath Pant, *Indian Arms and Armour, Volume II (Swords and Daggers)* (New Delhi: Army Educational Stores, 1980), pp. 180-181, Figs. 549-551. Pant cites references to khapwah mentioned in the *A'in-i Akbari*, *Akbarnama*, and *Tuzuk-i Jahangiri*. Fig. 550 is comparable in design to the San Diego jade hilt.
24. For a *khapwah* with an enameled silver hilt, see Manuel Keene with Salam Kaouki, *Treasury of the World: Jewelled Arts of India in the Age of the Mughals* (London: Thames & Hudson in association with The al-Sabah Collection, Dar al-Athar al-Islamiyyah, Kuwait National Museum, 2001), p. 77, no. 6.36. For *khapwah* with a metal hilt and a jade hilt, see Claus-Peter Haase, Jens Kröger, and Ursula Lienert, eds., *Oriental Splendour: Islamic Art from German Private Collections* (Hamburg: Museum für Kunst und Gewerbe, 1993), pp. 212, nos. 150-151 (misidentified therein as a chilamun [sic] and khanjar respectively; for corrected identifications, see Pant, *Indian Arms and Armour, Volume II*, pp. 180-181, figs. 549, 551 captions).
25. See Stephen Markel, "The Use of Flora and Fauna Imagery in Mughal Decorative Arts," in *Flora and Fauna in Mughal Art*, ed. Som Prakash Verma (Mumbai: Marg Publications, 1999), pp. 25-35.
26. For a jade serving spoon with a later replacement enameled silver-gilt handle, see Mildred Archer et al., *Treasures from India: The Clive Collection at Powis Castle* (New York: The Meredith Press, 1987), pp. 111, 122, no. 177. For a well-known bejeweled gold spoon from the late Akbar period, see *The Indian Heritage: Court Life and Arts under Mughal Rule*, pp. 112, 151, no. 322.
27. For an exceptional light green jade ladle with a sophisticated curvilinear handle dating from the late eighteenth century, see Kalpana Desai with contributions by B. V. Shetti and Manisha Nene, *Jewels on the Crescent: Masterpieces of the Chhatrapati Shivaji Maharaj Vastu Sangrahalaya; formerly Prince of Wales Museum of Western India* (Mumbai: Chhatrapati Shivaji Maharaj Vastu Sangrahalaya in association with Mapin Publishing, 2002), pp. 190, 325, no. 188; and Sadashiv Gorakshkar, Kalpana Desai, and Madhav Gandhi, *Mirror of Beauty: Art Treasures from India* (Stockholm: Museum of Far Eastern Antiquities, 1987), p. 179, no. 158. For two white jade ladles with straight handles decorated with concentric spiral patterns, see Teng Shu-p'ing, *Catalogue of a Special Exhibition of Hindustan Jade in the National Palace Museum*, trans. D. M. Kamen (Taipei: National Palace Museum, 1983), pp. 208-211, pls. 42-43. A third ladle is in the Taipei collection (pl. 41), but it is inscribed with a Chinese poem dated 1770 and is, in my opinion, of Chinese origin.
28. Opium spoons used in this manner were described in the late nineteenth century as a Turkish method of consumption, but on

the basis of the Los Angeles spoon it is likely that the practice was also followed in South Asia during the Mughal period. See Edward Balfour, *The Cyclopaedia of India and of Eastern and Southern Asia, Commercial, Industrial, and Scientific; Products of the Mineral, Vegetable, and Animal Kingdoms, Useful Arts and Manufactures*, 3 vols., 3rd ed. (London: Bernard Quaritch, 1885), p. 35.

29. See Stephen Markel, "Non-Imperial Mughal Sources for Jades and Jade Simulants in South Asia," *Jewellery Studies* 10 (2004): 68-75.