



Fig. 1 (left): Shah Jahan on a Globe with His Four Sons, Balchand, paper, pigment and gold, 392 x 284mm, c. 1628-1630, folio from the Minto Album, Chester Beatty Memorial Library, Dublin, In 07A.10. Image courtesy of the Chester Beatty Memorial Library (<https://creativecommons.org/licenses/by/4.0/deed.en>).

Fig. 2 (above): Artisanal diamond miners in Cempaka, an historic diamond mining region in South Kalimantan, Indonesia. (Photo by the author, 2023)

Fig. 3 (right): Sambas Kris, steel (blade), suasa (gold and copper) inlaid with diamonds (hilt), 6.5 x 2.5cm, c. 18th-19th century, British Museum, London, As.Bk.88.a. Image Courtesy of The Trustees of the British Museum (https://www.britishmuseum.org/collection/object/A_As-Bk-88-a). Shared under a CC licence (<https://creativecommons.org/licenses/by-nc-sa/4.0>).



Trading Gems and Knowing the Earth in Early Modern Eurasia

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Gems before geology

Before the discovery of diamonds in Brazil in the mid-18th century, the only known diamond deposits in the world were found in parts of what are now India and Indonesia. South Asia's most significant diamond mines were controlled by sultanates in the Deccan, principally Golconda and Bijapur, throughout most of the 16th and 17th centuries. Islamic sultanates also controlled several smaller diamond localities in western and southern parts of Borneo, which in contrast to those of the Deccan, are still mined today. (Fig 2) Maritime traders dealing in gems traversed the Bay of Bengal to buy both diamonds and colored stones, which were mined in Sri Lanka, Thailand, and Myanmar. The latter regions were home to many of the rubies, sapphires, topaz, tourmalines, and zircons in regional circulation at the time, which also traveled overland to China.¹ Pearls, too, came from sources spanning the Indian Ocean, from the Persian Gulf, the Gulf of Mannar, and the Mergui Archipelago. The complex geography of the premodern gem trade sustained a rich gemological literature in Arabic and Persian, often commissioned by rulers whose courts purchased most of the stones. Jewelers and traders triangulated the diverse origins of gems in books recording stones' physical qualities, where they were found, how they were mined, and how lapidaries cut, polished, enhanced, and tested them.

The "spice trade" is an essential trope of maritime Asia's role in world history, but it is less well-known that precious stones often traveled similar routes to pepper, cloves, and nutmeg. Like spices, gems were important and expensive status symbols across the pre-modern world, as objects of spiritual and political power and as medicines that could be worn or ingested. They were also associated with distinctive geographical locations in Asia (Fig. 1). Indeed, some of the most important gem localities of the pre-modern world were found in the same regions as spices in South and Southeast Asia. The unique geography of gemstones not only attracted merchants' attention from across the Indian Ocean – it was also of considerable interest to scholars of the early modern world concerned with the composition of the globe.

While the Indian Ocean gem trade had supplied Europe with gems since antiquity, European scholars and consumers had little information about the places where gems were found. Europe was comparatively poor in gem deposits, except for garnet, opal, and amethyst localities in Central Europe. And throughout the Middle Ages, most gemstones reached Europe by land routes via the Middle East, arriving overland through Turkey and the Balkans or on ships across the Mediterranean. As soon as European participants entered Indian Ocean trade around 1500 via direct maritime routes, they sought knowledge of elusive and precious stones directly from their sources. From the periphery of gemological expertise, European merchants as well as natural philosophers sought to learn more about how to buy, sell, and use these precious

minerals, and to answer the question: how was it that such minerals could only be found in very specific places on the earth?

Unlike exotic plants or animals, minerals could not be transplanted to be studied or cultivated in situ. This required seeking out observations of gemstones by visiting markets and mines directly, which an increasing number of European goldsmiths, jewelers, and merchants attempted over the 16th and 17th centuries. Setting out on military, missionary, and commercial voyages, they followed existing networks of the Indian Ocean gem trade from the coastal port cities where Europeans settled, tracing stones further afield. During his residence in Melaka from 1512 to 1515, the Portuguese apothecary Tomé Pires (c. 1468–c. 1524/1540) learned of sources of precious stones around the Bay of Bengal,

including Ceylon, Arakan, and Pegu (parts of modern Sri Lanka, Myanmar, and Thailand, respectively).² His contemporary, Italian adventurer Ludovico Varthema (1470–1517), corroborated Portuguese reports on the dynamism of the region's gem trade. Varthema declared of Bengal: "here are the richest merchants I ever met with," whose wares included abundant cotton, sugar, ginger, and silk. "There are also here very great merchants in jewels," he noted, but their wares "come from other countries."³

After Flemish soldier Jacques de Coutre had disembarked a Portuguese ship at Goa in 1592, he ventured onward to Melaka, seeking a fortune in Asian trade. Initially buying and selling diamonds at Pahang and Johor (which would have been imported from their client states in Borneo), he later traveled to India in 1611 to buy diamonds directly at the Deccan mines, spending several years working with Gujarati, Portuguese, and Ottoman Jewish merchants. De Coutre offered to handsomely compensate Tamil and Telugu "mine diggers to get me some stones with diamonds in them" as evidence of the kinds of rocks in which diamonds originated. Such samples would have been procured at considerable risk to the supplying miners, who were severely punished for smuggling and private dealings. De Coutre reportedly collected 160 samples of diamond-bearing rocks that he sent to his brother "to show to our friends in Europe."⁴ He described the color and texture of earth at different diamond localities, as had been pointed out to him by miners, as evidence for the geological conditions conducive to gem formation. Ultimately, the new insights relayed by people like de Coutre back to Europe – specifically, about how diamonds formed in the ground – relied on the existing expertise of the merchants he did business with and on the skilled techniques of the South Asian laborers he observed.

Gems and geopolitics on the ground

Because of its strategic location for intra-Asian shipping, the port-city of Melaka continued to be the target of European forays into Southeast Asia. When the Dutch East India Company admiral Cornelis Matelieff de Jonge (c.1569–1632) arrived in Melaka, it was with the intention to wrest the city from the control of the Portuguese, who had seized it in 1511. The Dutch set their eyes on the Malay peninsula as a base from which to wrangle a share of Indian Ocean commerce for the newly founded Dutch Republic. In the early 17th century, Melaka was a small European-controlled enclave abutting the Johor sultanate on the southern Malay peninsula. At that time Johor was ruled by Alauddin Riayat Shah III (r. 1597-1615) and his step-brother, Raja Bongsu (1571-1623).⁵ Amidst the growing political threat from neighboring Aceh, in north Sumatra, and the incursion of new European political elements, Bongsu negotiated a series of treaties with Matelieff and sent a diplomatic delegation to Holland.⁶

Raja Bongsu was also responsible for the sultanate's *negeri* (client polity) of Sambas, a region in western Borneo rich in diamonds, which were sent to Johor as tribute (Fig. 3). Matelieff must have discussed the sources of these diamonds with Raja Bongsu, because he shared extensive information about them and their political sensitivity with his superiors after returning to the Netherlands. Like the earliest Portuguese voyages, the VOC's first fleets brought several diamond experts (*diamantkenners*) to help navigate the region's famed gem trade. Around 1610, two of them were dispatched to southern Borneo to aid in mineral prospecting in areas that would be less politically sensitive than Sambas.⁷

After Matelieff's departure, Raja Bongsu appears to have commissioned a revised copy of the *Sejarah Melayu*, the Malay dynastic chronicles. This updated the history of the sultanate from its mid-16th-century genealogy in order to celebrate the legitimacy and longevity of Bongsu's dynasty. The text glitters with jewels presented to these rulers and is an early source of evidence for the association of Johor with gemstones.⁸ While Bongsu celebrated Johor's illustrious past, Matelieff composed a series of memoranda

