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Mapping the Indo-Pacific Beads vis-à-vis Papanaidupet. Alok Kumar Kanungo. New Delhi and Madrid: Aryan Books International and International Commission on Glass, 2016. xii + 92 pp., €24. ISBN 978-81-7305-547-8.

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Alok Kumar Kanungo's Mapping the Indo-Pacific Beads vis-à-vis Papanaidupet discusses the production of a particular kind of glass bead purported to have originated in South India over two and a half millennia ago. This Indo-Pacific glass bead is claimed to have spread across vast areas of southern and southeastern Asia as well as the eastern sub-region of the African continent. Borne from nearly two decades of Kanungo's archaeological and ethnographic research on glass and glass beads in India and surrounding regions, this book maps the spread of the Indo-Pacific (IP) beads in Southeast Asia, documents the process of production of the beads at the extant glass bead making factories at Papanaidupet, and describes the social, economic, and ritual use of the beads across Southeast Asia. Contributing to our knowledge of the importance of India in the history of glass, the author details complexities associated with the archaeological study of glass. These difficulties include (1) reconstructing techniques of glass bead production, (2) identifying debris representing different stages in the production chain, and (3) understanding the social collaboration embedded in each step of the production to ensure a successful final product.

The book opens with a short preface introducing some major concerns in the study of the archaeology of glass and glass bead production, including the few occurrences of glass industries in antiquity, the techniques of glass bead manufacture, and the complex social meanings of glass and glass beads among past

societies. Kanungo states that the book's focus is to "discuss the origin and dispersal of IP beads, their technological innovation, the reasons for the continuation of the 2500 years old bead making tradition, the history of Papanaidupet and a detailed and exhaustive recording of the IP bead production cycle" (p. ix).

The book can be divided into two thematic sections with a total of six chapters, and a brief concluding section. Chapter 1 provides a background on the archaeology of glass in India with an emphasis on the development and evidence of glassmaking in ancient India. Chapter 2 centers on the attributes of IP beads, their origins and distribution across the globe. Countering Francis' (1983) earlier claim that the technique of IP beads was invented at Arikamedu (on the southeastern coast of India near Pondicherry), Kanungo states that IP beads were produced at other workshops across Asia using the same technology at about the same period that IP beads were being manufactured at Arikamedu. He argues for "the emergence of distinct glass technologies and the existence of several independent glass beads making centers at different points across South and Southeast Asia" (p. 24).

Section 2 (chapters 3–6) focuses on ethnographic and ethnoarchaeological narratives about IP beads. Despite the record of production of glass beads using the IP bead making technique at Papanaidupet, there is a challenge of retrieving ethnographic accounts that document the antiquity of the industry at the area beyond the last 200 years (chapter 3).

This conundrum "raises the question of why [and when] bead producers chose Papanaidupet" (p. 27). However, the continuous production of IP beads at Papanaidupet until 2014 and the abundance of wastes that litter the surface of the village allow a detailed documentation of the processes and the labor involved in the production. To this end, chapter 4 is a thorough presentation of the process of production of IP beads at Papanaidupet. Chapter 5 maps the location of the Papanaidupet glassworks and the spatial management within the factory, the proximity of a drawing furnace to a rounding furnace, and the occurrence of nearby religious centers (traditional temples). Chapter 6 discusses the use of IP beads by two distinct traditional groups, the Bondos and the Nagas, in India. Because of the extensive use of glass beads among these two groups, Kanungo refers to them as the "most ornamented communities of the world" (p. 78). A survey of the use of glass beads among the Bondos and the Nagas reflects complex and dynamic symbolic differences between these cultures. Archaeologists working on ancient beads should bear this in mind when inferring meaning from beads in an archaeological context.

The ethnographic aspect of the book is its strongest part, providing an unprecedented account that narrates the stages in the production of IP glass beads at Papanaidupet. In addition, the text demonstrates how each of these steps can be identified from the archaeological context through the study of production waste. In a similar vein, aspects of bead production that are often obscure to archaeologists working on past craft production are well-developed in the book. These include the division of labor and distribution and shared responsibilities along the lines of expertise and experience in glassmaking as well as gender. The movement of objects within production loci is a great concern in archaeology. Objects usually move in multiscalar dimensions by different actors or agents. Kanungo's description of the movement of IP glass beads at Papanaidupet from the drawing workshop to the cutting room area to the rounding furnace and on to stringers' houses and consumers' bodies

demonstrates the complete production cycle of an IP glass bead. This level of information empowers archaeologists to understand the mobility of glass beads even during production. This movement reminds us of the Ogundiran's (2016:534) concept of "movementality," which considers the mobility of an object as a kinetic experience manifested through three components: axial, gestural, and locomotor. These three elements are embedded in the production sequences provided by Kanungo. The ethnographic detail also provides a compelling narrative that supports Wenger's (1998) notion of "communities of practices," a concept that has been employed in archaeology to engage understanding of material-human interaction in collective learning of skill or craft production. Although the author does not draw insight from these theories, the lucid nature of the discussion in the book allows archaeologists to distil the information as an interpretive tool.

The archaeology section appears to have been hastily summarized, neglecting some important details. Although a vast body of scholarship focuses on the antiquity of glass in India, an overarching but non-repetitious discussion of the archaeology of glass in India and South Asia in general would have been an excellent way to open the book. For example, the significance of the compositional uniqueness of India glass (i.e., soda-alumina glass) is reduced to a single sentence (Brill 1999; Dussubieux et al. 2010). The numerous maps showing places where IP beads have occurred across Asia could have been compressed into one or two figures to provide space for more narrative. Also, the author appears to have either mislabeled Table 1 or overlooked the sites stated therein. The caption reads "Indo-Pacific bead yielding sites in Asia," yet sites in Africa, particularly Kenya and Zimbabwe, are also listed in the table. Similarly, Kanungo often mentions the occurrence of the IP bead in Africa, but fails to discuss the agency, routes, and socio-economic networks that existed between the Indian traders and bead makers and their Eastern and Southern African counterparts dating back several centuries.

The *lada* technology of drawing glass tubes has been recognized as perhaps an Indian

invention. The author raises the issue of whether or not the lada technique was used in antiquity. I consider this a legitimate concern, echoed in his mention of the absence of the tools utilized for this method at archaeological sites where IP glass beads and associated wastes have been found. However, he failed to discuss or at least mention other drawing methods such as those Peter Francis (1983) identified in northern India. How does the lada technique compare to the "hook" method? Are the wastes generated from these two techniques similar? And how can they be differentiated in an archaeological context?

The author leaves the reader with a short concluding section entitled "The Future." This portion is more or less a retrospective enumeration of the challenges facing the local IP bead industry in Papanaidupet, as only a few bead-makers continue to produce glass beads and strictly by order. While discussing the problems facing the local glass industry is ideal, providing hypothetical scenarios and reiterations of the chances of future survival of the craft and what that would mean for archaeologists would have embellished the section. Considering the rapid deterioration of glass furnaces after abandonment, is there any possibility for revamping the industry in the future? Is any effort being made to transmit the knowledge of glass-making to the younger generation? Or is the knowledge being transferred? And to what extent does Roddick and Stahl's (2016) notion of "knowledge in motion" come into play in understanding craft production in future ethnographic and archaeological studies in the region? A discussion centered on these questions would have strategically situated the

book within current debates and opened up future concerns about the local glass industry in India and beyond. Nevertheless, the book is an important addition to the scholarship of ethnographic accounts of glass production in South Asia. By focusing not only on glass as a material, but also on the sociotechnological relationship between the material and its craftsmen, it provides a thorough guideline for archaeological reconstruction of past glass production.

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