No mention is made in the entry on "chevron bead" that the layers are corrugated, giving the bead its name; this is discussed in the text. Glass is not homogeneous; it is heterogeneous. It is also not a substance but a state of matter. Siliceous does not only refer to glass, faience, and similar artificial products, but also to stones containing silica.

Finally, I wish to discuss the beads that Spaer calls "mirror beads" (nos. 184-187) and the associated "rayed bead" (no. 189). She notes that I have used the term "torus folded" for these beads (Francis 1989:29), but says it is not clear which bead I was discussing. I thought the drawing in Fig. 2c would have made that clear, but that is beside the point. As far as I can tell, the first person to discuss these beads at any length was Chittick (1974:466-468). He replicated these beads with plasticine, but I have never quite been able to follow his method, which involves trailing a decoration, manipulating the bead, and using a mold.

Spaer also cites this work, but only notes Fig. 181e as a parallel to her "mirror beads." In this, she may be right. As I look at Chittick's drawing, the other eight beads do look different, while this one seems to be a "mirror bead." Spaer then cites a work by L'vov and reproduces a drawing from that work in which these beads (as well as some flat pendants) were made by piercing, folding, and manipulating a disc with concentric circular designs. I have not seen L'vov's paper, but am satisfied that this technique is workable, as it was presented by beadmaker Tom Holland at Bead Expo 2002. Holland worked with Jeff Mitchem trying to replicate beads Mitchem had recently uncovered in Jordan.

Spaer relates these beads to the one she calls a "rayed bead." The notes on the "rayed bead" (p. 116; insertion mine), however, read: "Zigzag of eight protruding ribs around small basic [*i.e.* base] bead of conical shape.... The ribs form the main body of the bead. Chipped." The chipped portion presumably helped her reach the conclusions about how the bead was constructed. This, then, is a torus-folded bead, made by manipulating a torus (a thick ring) up and down the sides of a bead used as a base. It is totally unlike the method proposed by L'vov and Holland for making "mirror beads."

My initial assumption that "mirror beads" and torus-folded beads were made in the same way appears to be in error. Looking into the perforation of a "mirror" bead in the Center's collection, lines matching those on the surface are visible. Similar lines cannot be seen in the perforation of a torus-folded bead. We are dealing with two types of beads here (and possibly a third type that forms the bulk of Chittick's beads from Kilwa). That makes life more interesting, if more complicated.

In sum, Spaer's work is invaluable. I know I shall be consulting it often as I deal with material from roughly the same part of the world. There are a few flaws, but that happens with every publication. The use of what I consider odd or inappropriate terms may be a result of linguistic dissonance or cultural discrepancy (for example, I have never seen a bibliography set up the way this one is, but this may be standard practice elsewhere). The book is a major contribution to bead research.

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Asia's Maritime Bead Trade: 300 B.C. to the Present.

Peter Francis, Jr. University of Hawai'i Press, 2840 Kolowalu Street, Honolulu, Hawai'i 96822. 2002. i-xi + 308 pp., 48 color figs., 89 b&w figs., notes, index. \$52.00 (hard cover).

This reviewer, along with the entire bead community, remains greatly saddened by the premature death of Peter Francis, Jr., the author of *Asia's Maritime Bead Trade*. At it's best, a book review becomes part of a conversation between the reviewer and the book's author, and in this case, the hoped-for conversation has been cut short. When I first wrote this review in the summer of 2002, I sent a copy of the draft to Pete, partly because I sincerely didn't want to be unfair to a project that meant so much to him, and partly because, as a newcomer to the "Bead World," I didn't want to alienate anyone, let alone Peter Francis, Jr. His only request was very reasonable: for me to give more specific examples of what I saw as a pattern of small errors, none of them important enough to detract from the main messages of the book. I hope that Pete felt some satisfaction in reading the positive parts of the review; we actually became much closer friends after the summer, so I don't think he was deeply disturbed by the few less enthusiastic comments.

I have decided not to alter the original text of the review, but to leave it as if Pete were still here to respond. Reviewing an author's last publication can be an invitation to a more general assessment of the author's career—an invitation I don't feel qualified to accept. As it is, at the time I wrote this review, I was concerned that I was not being critical enough; now, I wish I had been more lavish in my praise.

Asia's Maritime Bead Trade: 300 B.C. to the Present (AMBT) is a remarkable achievement, and the type of comprehensive single-author text rarely seen in today's ever-more specialized academic environment. As such, the book provides a unity of style and vision well suited to the student or scholar searching for a particular point of view. At the same time, AMBT illustrates quite well some of the difficulties and pitfalls inherent in such a work which covers half of the world and half of history. Although bead research may seem a narrow field to the uninitiated, the fact that beads cut across so many cultural and historical boundaries makes such research necessarily broad. The bead researcher must integrate history, geography, anthropology, archaeology, and technology, both in terms of the development of technology in society, and in terms of the use of technology in analyzing cultural materials. Such integration of so many disciplines is a difficult task, and with over 20 years of experience at the highest level, Mr. Francis is eminently well qualified for the challenge.

The book is organized into seven sections, with the center five focusing on the major beadmaking industries important in the Asian maritime trade. In Part One: Introduction, Mr. Francis reviews the scope of the book, with a succinct history of sea trade from the West to Asia, followed by an excellent summary of "Beads, Bead Materials, and Beadmaking." This summary alone would make an excellent inclusion for any beginning course in historical or archaeological sciences, and presents in just a few pages the synthesis of years of study and experience.

Part Two tells the story of the small, drawn-glass beads which became "the most widespread trade bead of all times, quite possibly the most widespread trade item of any sort" (p.19). Mr. Francis is perhaps best known for his study of these ubiquitous beads, which he named "Indo-Pacific" beads in 1986, a term now generally adopted. Basing his ideas on contemporary beadmaking at Papanaidupet in South India, as well as on the characteristic wasters found at early beadmaking sites, Mr. Francis has proposed a manufacturing process unique to the Indo-Pacific beads, and goes on to discuss the evidence for the spread of manufacturing from the early site of Arikamedu, near today's Papanaidupet, to Sri Lanka, Thailand, Vietnam, Malaysia, and Sumatra. The black and white photographs which accompany this section are quite helpful in identifying the various tools involved; perhaps more detailed diagrams of the complicated "lada" process could be included in any future editions. The book's description of the expansion of Indo-Pacific beadmaking, and possibly workers and raw materials, provides one of the most convincing recreations of early technology transfer, with important implications for trade and state development in Southeast Asia, Japan, and Korea. Although many details are necessarily sketched-in, Mr. Francis' exposition here of this great story becomes the touchstone for any further studies.

The third chapter in Part Two describes some of the "by-products" of Indo-Pacific bead manufacturing sites, and goes on to review the significance and distribution of Indo-Pacific beads, literally "from Bali to Mali." These nine pages could easily have been 90, and this reader was left wanting more, both about the "by-products," drawn beads finished by alternate techniques, and about the bead distributions. This particular chapter illustrates some of the pitfalls of a single-author text, and although well-written, emphasizes isolated observation over an integrated summary. The section on Korea, at least, contains several errors of both omission and commission, where there is little discussion of the progression of Indo-Pacific beads through time, an aspect which is particularly interesting in Korean archaeological finds. The mislabeled map on p. 47, in which the names of two Korean capitals are juxtaposed, raises questions about other small oversights in areas with which the reader may not be so familiar.

Part Three: Chinese Glass Beads provides an excellent review of glass beadmaking in China, followed by a cogent discussion of Chinese trade, as carried out by both Chinese and non-Chinese groups. Chapter 8, Chinese Beads in the Asian Maritime Trade, is particularly helpful for its discussion of the most characteristic Chinese beads. There is apparently relatively little published work on Chinese glass beads, and Mr. Francis' contributions here make a good start toward a more comprehensive treatment.

The subsequent section on beads from the Middle East concentrates first on those Middle Eastern beads sold to Asia, and second on beadmaking methods transferred to Southeast Asia during the Early Islamic period. Both of these sections benefit from Mr. Francis' considerable experience with and study of Middle Eastern and Asian beads, and reflect his opinions on the history and current status of these areas of investigation. While providing an excellent starting point for the beginning student, the section on Middle Eastern beads might be used with caution by the serious investigator. The field of Middle Eastern bead research is severely hampered by too few well-documented sites and examples, and Mr. Francis' admirable desire to integrate Middle Eastern and Asian bead history requires that he extrapolate from uncertainty; this reader would have preferred to see a clearer distinction between the known and the suggested.

Part Five: Stone Beads in the Asian Maritime Trade concentrates on the western and southern Indian stone bead industries, both areas of Mr. Francis' special expertise. In particular, the description of the role of the Pandukal people in South Indian stone beadmaking provides a real contribution. Mr. Francis' reminder on p. 110 that "this section cannot be too dogmatic about identifying western Indian stone beads" would seem good general advice for any author writing about early beads, whether stone or glass. Although Mr. Francis does not attempt to list the occurrences of Indian stone beads at archaeological sites throughout the Asian maritime region, such an effort would be most welcome, particularly if integrated with the early trade in Indo-Pacific beads.

Part Six: Some Minor Bead Industries presents several glass- and stone-beadmaking traditions which may be minor in comparison to the small Indo-Pacific beads, but are certainly major in terms of interest and historical importance. The many references from the 1990s characterize these excellent summaries, and provide one of the more satisfying sections of *AMBT* not based on Mr. Francis' own work. In particular, the discussion of possible glass beadmaking in the Sa Huynh culture of southern Vietnam is intriguing, and one wishes for a more extensive discussion of Solheim's suggested role for Sa Huynh in the Austronesian "Nusantao" maritime trading network, perhaps a key to the early trade in Indo-Pacific glass beads.

The subsequent discussion of beads from Thailand (Ban Don Ta Phet and Ban Chiang) and eastern Java are well-referenced, and provide reasonable interpretations of the current information. The Javanese (Jatim) beads, in particular, require caution because so little is known from well-conducted excavations, and here the author is careful to distinguish observation from conjecture.

Chapter 14, on Minor Stone Bead Industries, will likewise be of great value to those interested in these important early beads. Mr. Francis presents what he knows in an organized fashion, although the relatively fewer recent citations suggest the possibility that more information may have become available in recent years. Chapter 15 concentrates on organically derived gem materials, in particular amber, coral, ivory, and pearls. No doubt the constraints of space and time precluded complete treatments of these materials in the Asian maritime trade, but the summaries presented form a good orientation for the serious student.

The final section, Part Seven: Drawing to a Close, first considers the transition from Asian- to European-dominated trade. In contrast to the Americas and West Africa, the Asian-controlled bead trade continued into the 20th century, and European beads, even when introduced as early as the 16th century, were of secondary importance. The subsequent Chapter 17 presents an excellent 84

discussion of heirloom beads among 15 groups in Southeast Asia, based largely on Mr. Francis' own research. Here, the author presents a framework filled in by observed detail, and discussed in terms of suggested hypotheses of how heirloomed beads can help us learn about cultural history.

In Chapter 18, Conclusions, Mr. Francis reviews his ideas on both the beads and the people involved in beadmaking and bead trading. This excellent summary combines the author's earlier work with some of the current theoretical background to the study of South and Southeast Asia. As such, it suggests many areas for further study, along with an overview of the author's current concept of the contribution of bead study to the larger issue of Asian maritime trade.

The seven major parts of *AMBT* are followed by two appendices, 33 pages of notes, an excellent references section, and a quite helpful index. Appendix A reviews the collection of beads in the National Museum of the Philippines, while Appendix B includes a very useful summary of chemical and spectrographic analyses done on Indo-Pacific beads. Mr. Francis' interpretations of the often confusing analyses appear to be sound, although it is unfortunate that he was unable to include the many analyses of Indo-Pacific beads published by Brill in 1999. This section ends with the always apt suggestion that "unquestionably, there is more work to be done." The notes section is a welcome enlargement of the text, and not to be missed.

In addition, there are two groups of plates, with 16 pages in black and white, and an equal number in color, as well as numerous well-done line drawings and maps throughout the text. The series of black and white photographs of beadmaking in India is excellent, and supplements the textual description of these processes. The photographs of individual beads are generally adequate, although poor focus and lighting limit the visual appeal of several of the shots, which appear to have been taken under difficult circumstances.

Asia's Maritime Bead Trade is a very important contribution to both bead study and the story of trade within Asia and from Asia to the West. Mr. Francis' work in these areas has set a standard for serious bead research. In much the same way, AMBT sets a standard for future investigation of beads and the people who made, traded, and used them. Subsequent scholars may not always agree with Mr. Francis' identifications and interpretations, but will owe a great debt to his ability to summarize and synthesize sometimes fragmented information. One test of a book's success may be its ability to stimulate further work, and I would guess that AMBT will be very successful in this regard. While setting a stage and telling a story, Mr. Francis makes clear the need for additional work, both careful and rigorous, to revise and refine his vision of beads, people, and history. I strongly recommend AMBT to any student of the development of trade between the West and Asia, as well as to those whose work involves beads and their relation to history. In addition, bead enthusiasts and collectors will find much of interest in AMBT, which well deserves a place on the bookshelf.

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Ethnographic Beadwork: Aspects of Manufacture, Use and Conservation.

Margot M. Wright (ed.). Archetype Publications Ltd., 6 Fitzroy Square, London W1T 5HJ, U.K. 2001. ix + 140 pp., 76 b&w figs. \$30.00 (paper cover).

On July 22, 1999, the Conservators of Ethnographic Artefacts (CEA) organized a seminar on "Ethnographic Beadwork: Aspects of Manufacture, Use and Conservation" which was held at the National Museums and Galleries on Merseyside, The Conservation Centre, in Liverpool, England. This seminar was followed by a three-day workshop on ethnographic beadwork, led by Sherry Doyal and Julia Fenn. *Ethnographic Beadwork* brings together various papers and poster sessions from the conference and incorporates additional papers by Annie Lord and Moyra Keatings.

As many bead and beadwork researchers and conservators know, it can be difficult and sometimes downright impossible to find published information regarding the care and conservation of beads and beadwork. Luckily, the CEA has brought this material together for those of us who were unable to attend the seminar and workshops. Most of the papers include notes and references as well as pertinent