

DONALD and JOAN GEAR, *Earth to Heaven: The Royal Animal-Shaped Weights of the Burmese Empires*. Harrow, England: Twinstar, 1992. pp. xvii + 298.

This is an intriguing, but frustrating book. The appeal derives from the authors' highly original investigation—one is tempted to say, discovery—of the only extant material evidence of precolonial Burmese market exchange, namely a series of weights used to measure monetary units and commercial goods. During at least two extended trips to

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Burma, the authors located and examined over a thousand animal-shaped weights of varying descriptions and provenances. So far as I know, they have provided the first systematic description of these materials, the first chronological classification, as well as the first effort at iconographic interpretation. But a variety of problems, deriving both from the intractable nature of the weights themselves and from the authors' historiographic approach, bedevil their efforts.

As an exercise in technical description, the book is meticulous and impressive. Supplemented by four appendices, four maps, and 62 black-and-white plates, the text provides a comprehensive description of the weights' mass units and mass scales, component materials and manufacture, dimensions, shapes, design, and decoration. Made of cupriferous alloy, these objects range from 2 to 4000 grams and have three principal designs, those of a feline-like beast, a duck or duck-like bird, and an elephant (the latter used only in northern Thailand). The Gears argue, logically enough, that they were used for weighing only high-value goods, principally the privately-controlled lump-silver money which constituted the chief currency in precolonial Burma. The first six chapters are concerned mainly with these technical descriptions and a discussion of the weights' economic function. Particularly valuable is Chapter 3, which discusses all too briefly the system of lump currencies and which provides rare photographs of silver and lead varieties. Chapters 7-16 then attempt to interpret the material by devising a chronological typology (Chapter 15) and by discussing in great detail the mythic and political symbolism of the animal motifs, the origins of these symbols, and their putative diffusion to Burma from other parts of Asia.

It is in the non-technical historical discussions that problems arise. The authors claim at the outset that Burmese-language materials "proved of uncertain value" (p. xvi); and among over a thousand footnotes, I have found only one reference to a Burmese source. Yet in fact a significant number of Burmese royal edicts, commercial records (*thet-kayits*), and court records are directly relevant to the book's main theses. Nor, despite its length, does the bibliography include standard secondary sources on economy, society, and religious organization in the period with which the Gears are concerned, such as those by William Koeng or E. Michael Mendelson. Most of the problems the authors set themselves are difficult enough, but without Burmese source materials, or at least a nuanced understanding of rural society and politics, the undertaking becomes quite insuperable.

Consider the basic questions of who manufactured the weights, who disseminated them, and who used them. The Gears posit a model of a powerful, centralized, standardizing monarchy, well able to impose its norms on local merchants and traders. Thus they assume that all weights were manufactured in a single center "under the supervision of the Chief Minister" [in fact there was no such official] and disseminated thence throughout the empire (pp. 9, 12-13). Because it "was in the financial interest of the Burmese monarch to ensure that his masses were identical... it seems unlikely that the *kyat* mass would have varied from one locality to another (p. 3)." Yet all we know about the organization of the monkhood—an institution far more central to the monarchy's *raison d'être* than its system of commercial weights—and the organization of political and economic life suggests a decentralized, confused, particularist system in which central control was desultory, often nominal, and largely restricted to the capital and chief provincial towns. To be sure, the royal writ grew stronger in the late Toungoo and early Konbaung eras. The authors are correct that some kings were interested in standardizing local weights and measures. (Here they would have done well to cite further materials from Thi-ru-u-zana's 1750s text *Law-ka-byu-ha kyan*.) But there is no evidence that all weights were manufactured in the capital, that local varieties were formally prohibited much less effectively eliminated, that some local traders did not operate outside central control. The fact that all lump coins were produced by independent brokers, rather than at a central mint, points to a localization of commercial standards which must have affected weights no less than currency.

The problem of chronology follows directly. Virtually none of the weights are dated or inscribed. How then to determine when they were manufactured, and by implication, how

commercial life evolved? The Gears make a truly heroic effort using the following criteria: evidence of metal erosion; changes in artistic style; alleged correlations between changes in mass, as revealed by European records, and changes in style; events in Burmese history that would have affected the imperial styles. But the notion of uniform style again rests on the assumption of centrally-controlled manufacture. If, as seems likely, some weights were produced locally and contemporary regional styles were therefore distinct, the effort to base a unified chronology on stylistic criteria falls apart. Nor is the argument that the introduction of new styles reflected disjunctures in imperial history particularly convincing, since new and insecure dynasties, most notably the Konbaung, sought to emphasize their links to the previous line of kings. My own view is that the weights will remain undatable unless some breakthrough in metallurgical testing occurs.

But it is in the area of stylistic symbolism that the Gears' analysis is most open to question. We are told that the beast-weights symbolized "an earthly god-king (*devaraja*) characteristic of Burma (pp. xv, 248)." Burmese kings were embryo-Buddhas, *dhammarajas*, *cakkavattis*—but never god-kings. It is said that changes in the bird-weights of Lower Burma reflected changes in the status of Lower Burma's female ruler or in the relation of that region to the north—but we are given no supporting evidence from architecture, statuary, or chronicles. Most suspect is the tendency to attribute Burmese art forms to distant, usually ancient, and extraordinarily diverse Asian and Mideastern prototypes. The Burmese mass scales allegedly derived from the Babylonian/Assyrian sexagesimal scale (p. 25). The animal-style art of the Mons of Lower Burma may have originated in the Ordos region of Inner Mongolia (p. 108). Shan horse sacrifices probably date back to ancient Indo-Aryan horse sacrifices (p. 148). Other Mon motifs reminiscent of Mesopotamia and Persia may have been transmitted to the Burmese by a Persian Buddhist (sic) from Yunnan (p. 248). These and other analogies are usually little more than speculation, based on crude isomorphism and theories of undiluted cultural diffusion, without reference to social context or mediation. The stylistic development of animal weights can best be understood in the setting of Burmese (or in the widest useful context, Indo-Burmese) art and architecture, a topic on which this book is remarkably silent. In short, the authors have performed a valuable service by drawing our attention to these long-neglected artifacts, but before we can understand their implications we need local studies of art and economic organization.