

# Commentary

## Interpretation of Sai Yok and Ban Kao Sites, Central Thailand

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AS PREHISTORIANS concerned primarily with research in Thailand, we have read with great interest G. de G. Sieveking's relatively lengthy review in *Antiquity* (1974: 149-151) of two volumes reporting the results of excavations at Sai Yok and Ban Kao (van Heekeren and Knuth 1967; Sørensen and Hatting 1967). Unfortunately, this review contains a large number of errors of fact, misunderstandings of the text of the volumes, and misinterpretations of the data from these and other sites in Mainland Southeast Asia. Although limitations on space precluded the publication of these comments in a general journal such as *Antiquity*, we feel they will be of interest to those more specifically concerned with the rapidly changing field of Southeast Asian prehistory; it is for this reason that we have submitted them to *Asian Perspectives*.

In several instances Sieveking has made statements clearly contradicted by the text of the volumes. The two sites are in central rather than south (peninsular) Thailand; Sørensen points this out in the first line of his introduction to the Ban Kao report (p. 7), as does van Heekeren in the Sai Yok volume (map, p. 16). Throughout the review Sieveking refers to Ban Kao as a "stratified site" with a "stratigraphic sequence." Sørensen says on p. 14 that the site contained a "relatively homogeneous deposit," and in point of fact the site was entirely excavated by arbitrary horizontal levels of 15 cm. No record was kept of any natural stratigraphy which may have been present.

The reviewer has badly misunderstood several of Sørensen's statements regarding the burials. Thus he quotes Sørensen as saying that "the level of the burials showed surprisingly little variation" (p. 69). The actual quotation is: "The levels of the individual skeletons show surprisingly little variation. Much care was apparently

spent on their horizontal position." That is, each skeleton is lying more or less horizontally. As a group, the burials in fact range from 195 to 305 cm below Sørensen's arbitrary datum point (Text Fig. 6). Sieveking interprets the excavator's statement that "the average skeleton level is 230–235 cm" below datum (p. 70) as applying to all 45 burials at the site; it is very clear from the text that Sørensen is referring to a *single* burial (no. 9), which lies well above the average depth, with 14 burials above it and 30 below. Although the reviewer states categorically that the deposit at Ban Kao had "a maximum depth of 1 metre," Sørensen's Map 3 shows an average depth of excavated deposit much nearer 2 m. Nowhere in the review does Sieveking mention that the depths discussed are in terms of a single arbitrary datum point rather than the actual ground surface, which varies from 1 m to over 5 m below this datum. The burials are thus left floating, with no ties to the natural surface or to whatever natural stratigraphy may have been present at the site. Despite the efforts of the excavator to detect the levels from which the burials were cut, in no case were any grave outlines detected (p. 65).

Two minor points remain: in addition to the two radiocarbon dates given by Sieveking, six more dates from the site were published early in 1973 (Tauber 1973), all in the range 1800–1300 B.C. Finally, while the river near which the site is located is known as the Kwai to Westerners, it is called Khwae Noi rather than Kwai Noi by Thais; inconsistent transliteration of Thai site and place names only serves to contribute more confusion to the country's rapidly developing archaeology.

In discussing the Hoabinhian lithic material from the Sai Yok site, Sieveking expresses doubt that its associations with "cord-ornamented" pottery there or at other sites is a genuine one. This may well be the case at Sai Yok; the site was excavated by gross layer units of up to 65 cm; in some cases 25 cm or more was apparently removed at one time (van Heekeren and Knuth 1967: 63, 57). The statistical analysis of the material made by Matthews (1965) was based on depth below surface alone, and is valueless for determining actual association of potsherds and Hoabinhian tools. In contrast, the other cave sites to which Sieveking alludes were excavated with considerably greater care. Gua Kechil, in Malaya, was excavated by 5-cm levels; although artificial, much more vertical control was obtained. In the major portion of the excavations, "all available evidence" indicated that the deposits were "undisturbed by man, animal, or other forces" (Dunn 1964: 96). Hoabinhian tools and cord-marked pottery ("cord-ornamented" is apparently Sieveking's invention, and a very misleading one) are in clear association throughout some 20 cm of deposit. The evidence from Spirit Cave (northern Thailand) is even more conclusive; Hoabinhian tools, cord-marked pottery, and quadrangular adzes occur in a single layer (Gorman 1971: 314). As the site was completely excavated by very detailed natural stratigraphy (Gorman 1969), there can be no doubt of this association. Contrary to Sieveking's assertion, a consistent series of radiocarbon dates (Gorman 1971: 303) supports this association at the site throughout most of the 7th millennium B.C. Additional evidence supporting the association of pottery with Hoabinhian tools comes from the site of Laang Spean in Cambodia, also excavated by natural layers (Mourer and Mourer 1970). Finally, three plain potsherds were recovered in clear stratigraphic context from a Hoabinhian workshop site on the banks of the Mekong at Chiang Khan, northeastern Thailand (Bayard, Marsh, and Bayard 1974: 48). The case for pottery in the late Hoabinhian period in Thailand

and elsewhere in Southeast Asia and South China (Meacham 1977) is far more conclusively proved than Sieveking believes.

The same may be said for Sieveking's comments on the vegetable remains from Spirit Cave. The excavator has not claimed that these were *definitely* domesticated; he suggests rather that these remains imply "a stage of plant exploitation beyond simple gathering. Whether they are definitely early cultigens . . . remains to be established" (Gorman 1971: 311). Sieveking is certainly correct in saying that the botanical evidence from the site has been criticized (Harlan 1971; Harlan and de Wet 1973); however, he neglects to mention that it has also found quite favorable acceptance by a number of workers in the field (Chang 1970; Solheim 1970; Yen 1971; Harris 1972*a*, 1972*b*; Howells 1973). Here again, the question is far more open than Sieveking would have us believe.

The Ban Kao site is an extremely important one, not only because of its richness and the large area excavated, but because of the complete detail and excellent presentation of Sørensen's report. Two questions of interpretation are of paramount importance: the geographic origins of the Ban Kao "culture," and the dating of the occupation layers and burials at the site. The excavator believes, largely on the evidence of pottery types, that the inhabitants of the site arrived there by a direct migration from North China (pp. 131, 134, 136). He sees few or no connections of the Ban Kao ceramic material with other sites in central, north, and northeastern Thailand. In fact, many of the ceramic forms have quite close parallels at other sites; eight of the twenty-six vessel types Sørensen distinguishes (including some of the most common types) have parallels with such Thai sites as Phimai (Solheim and Ayres n.d.), Khok Charoen and Tha Muang (Watson 1968), and Lop Buri (Chin 1965). The famous "sinicised" tripods of Ban Kao mentioned by Sieveking as evidence of Chinese derivation are quite clearly non-Chinese; the conical legs are hollow rather than solid (as in Chinese *ting*), and are applied to the body of the vessel rather than forming an integral part of it (as with Chinese *li*). The vessels are in fact the simple carinated bowls of Sørensen's type 15 and 16 with legs added. Similar vessels without legs are found at the other Thai sites mentioned above; it should be noted that all but Khok Charoen are iron-using, and appear to date from the 1st millennium B.C. and later. There is no need to look further afield than adjacent regions of Central Thailand for relatives of the Ban Kao "culture," and certainly not to northern China.

Sieveking chooses to accept Sørensen's interpretation of the site as wholly "Neolithic" with the exception of two burials containing iron tools; these latter are supposedly intrusions into the "Neolithic" cemetery made at a later date and feature a distinctive vessel type not found in the earlier burials. However, it is clear from Sørensen's own data (Pls. 24 and 28) that one of the burials (no. 12) contains several vessels of his "Late Neolithic" type as well. While he attempts to divorce these "Neolithic" vessels from their association with this burial (p. 71) and relate them to an adjoining one, this seems quite unlikely in view of the 25 cm vertical distance separating the two deposits.

Sørensen views the radiocarbon dates from the site as applying to both the occupation of the site and the burials dug into the occupational layers (excepting, of course, the two burials with iron tools). This has been questioned by two previous reviewers of the report (Parker 1968; Solheim 1969), who point out the fallacy of

attempting to use the same carbon sample to date both the grave it is found in and the layer into which this is cut. They would interpret the site as a 2nd millennium B.C. occupation later used as a cemetery during the middle and late 1st millennium B.C. In the absence of a report on the occupational pottery, this debate has remained unresolved. However, a recent publication by Sørensen (1973) describes the iron and bronze artifacts (mostly fragmentary) and pieces of iron slag which were not associated with burials at the site: the distribution of these casts considerable light on the problem. His data make it apparent that the skeletons of at least six and perhaps nine of his "Late Neolithic" burials lie at the same depth as that producing the bulk of the metal objects and slag (170–220 cm). Combining this recent data (1973: 154) with Text Figure 6 in the original report, which gives the depth of all burials, one can see that even the shallowest of graves (say, 30 cm) would include not only the two burials with iron tools, but almost all of his "Late Neolithic" series. A more realistic grave depth of 60 cm (as at Non Nok Tha in Northeastern Thailand) would account for all of the 45 burials. It would thus appear that most if not all of the Ban Kao burials are iron-period in date, even though only two contained iron objects. It goes without saying that an iron-period burial does not have to contain an iron artifact; only ten of the 204 burials at Non Nok Tha contained objects of bronze, although metal was in use through nine of the eleven burial periods at the site (Bayard 1970, 1971).

We turn finally to Sieveking's explanation of the sequence of deposition of the Ban Kao burials. He reasons as follows:

- a. The occupational deposit was very rich in small sherds; hence the burials were dug into an occupation.
- b. The burials were only slightly stratified, as the skeletons were at "approximately a single level" and grave depths were relatively constant throughout the sequence.
- c. He explains the slight stratification present as the result of alluvial deposits made between each burial.
- d. These deposits brought in the occupational potsherds from "an occupation surface elsewhere."
- e. The majority of the burials at the site "are likely to be those of its inhabitants."

We find this line of reasoning difficult to follow. First, either the occupational sherds are in primary deposition or they have been alluvially deposited; either the users of the cemetery were living on it or they were living elsewhere. Items (a), (d), and (e) are mutually contradictory. Second, it is difficult to understand the mechanisms whereby the earliest skeletons are placed in graves dug into a sherd-bearing alluvium not yet deposited. Also, would not later burials cut into such a series of discrete alluvial deposits have left stratigraphic traces? Finally, if all graves were excavated to approximately the same depth, why are the two presumably much later burials with iron tools in the *middle* of the vertical range for all burials rather than at the very top of the range? If alluvial deposition was in fact responsible for the variation in level of the earlier burials, surely these two skeletons should be well above the rest. We can only conclude that these two burials were interred in the

middle of the burial sequence rather than at its very end. The Ban Kao and Sai Yok reports are among the most complete and detailed monographs yet to appear on Southeast Asian sites; their excellent documentation allows the sort of critical analysis presented here. We feel they deserve more careful treatment than that accorded them by Sieveking, and hope such will be forthcoming.

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