

# 'Turtle-Ware' from Borneo Caves

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THE 1964 excavations at Tapadong Cave, Segama River, Sabah, in the northeast corner of Borneo, have been treated previously in a preliminary report (Tom Harrisson 1964). Further aspects of the excavations will be amplified in other publications, such as the Tapadong earthenware in the *Sarawak Museum Journal* for 1965. The present article deals with a notable by-product of the recovery of pottery fragments at Tapadong. From among 10,114 earthenware sherds, 151 (1.5 per cent of the total) were identified as a previously unrecognized type, clearly not the product of any known beater or other pattern-application technique.

Once recognized, these sherds are seen to be distinctive (Pl. I), unlike anything else in the area (Wall 1962). Their surface is covered with an irregular and uneven pattern, giving a wavy and even at times dimpled effect. Other parallels suggested are dried tidal mud and a very strong tree bark. The initial idea of bark as the pattern source was not supported by tests of a wide range of local trees. As I am a zoologist especially interested in turtles, the use of the subdermal plates of larger turtles at once occurred to me. A number of common species exhibit a wide range of pattern variation in irregular ridges on one side of the flattened underplates. Using these, mock-ups in plasticine and in actual pot clay (at Niah, see below) showed results quite acceptable within the range of the 151 Tapadong pieces. Thus, pending a more conclusive classification, the term 'turtle-ware' is given to this class of sherds.

W. G. Solheim II, who has worked closely with the Sarawak Museum, agrees that among the great number of excavated sherds held in our reference collections (Solheim 1966), none resemble those he has now seen from Tapadong. He adds (personal correspondence 1/22/65) that while working previously on Gifford's Fiji material, he often wondered if turtle bone could account for some of the wavy-line patterns that appeared, 'though I was thinking in terms of the outside of the shell.' Dr. Solheim also drew attention to a ring-foot from Somrong Sen, Cambodia, illustrated in Mansuy's 1902 report. (I should add that the *outer* 'shell' could not achieve the effect under discussion.)

## *Evidence from Tapadong Cave*

Tapadong is essentially a neolithic and very early metal burial cave, without frequentation materials such as food bone, food shell or hearths. The implication, then, is a funerary association. In Borneo, as in much of Southeast Asia, neolithic (and later) pottery is placed

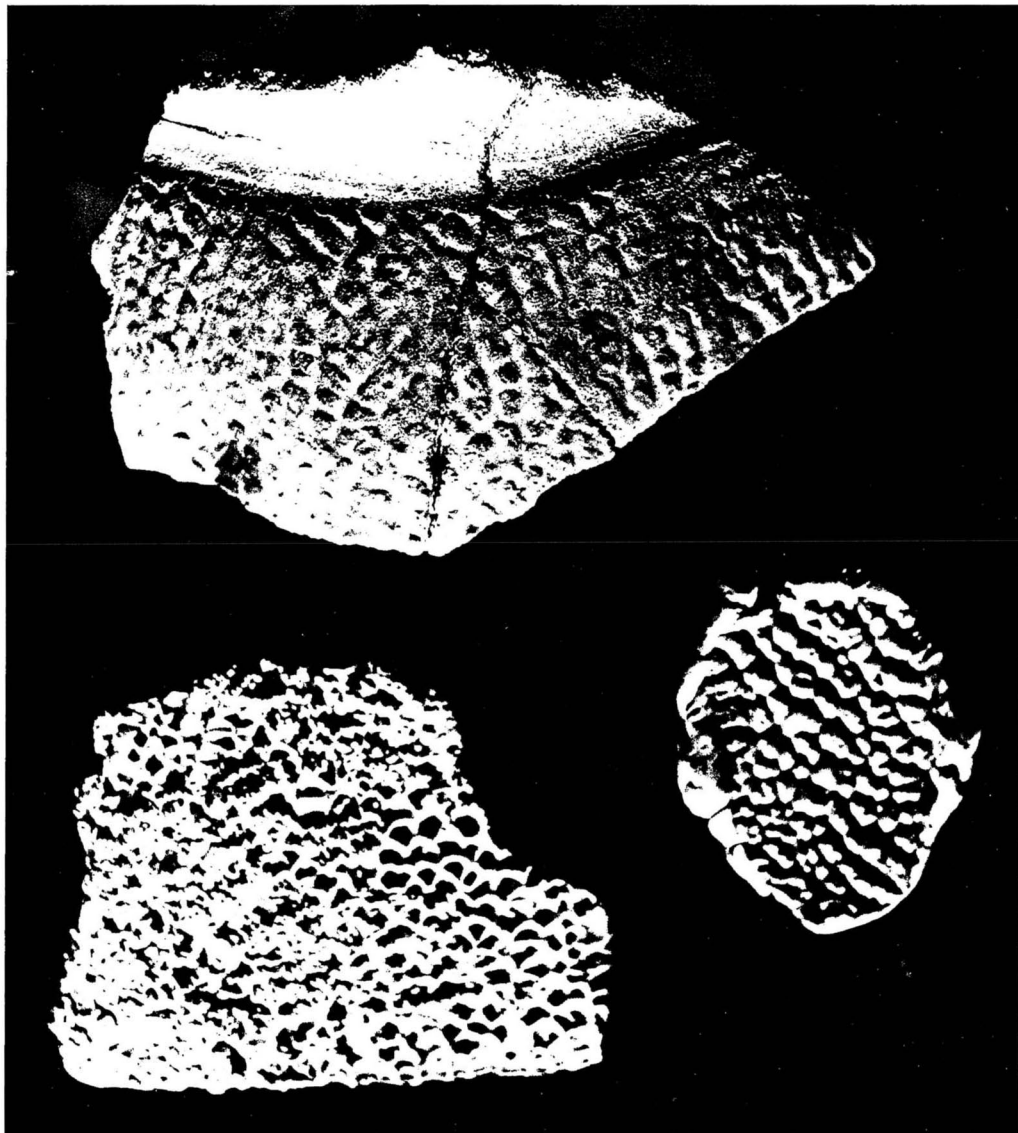


Plate I. At top: Fitted rim sherds of "turtle-ware" from Tapadong Cave, Sabah.  
Lower left: Encrusted subdermal bone plate from a large riverine turtle.  
Lower right: Impression on clay from subdermal turtle bone.

along with most primary burials, or is used as container for many secondary ones (see T. Harrison 1962 for Borneo cave details).

The sherd distribution at the site indicates a tendency to more *even* distribution than other types of earthenware, as indicated in the table below.

Distribution of Sherds for Common Earthenware Types,  
Tapadong Cave, Sabah

Depth:	0-6 in.	6-18 in.	18-30 in.	Total
All	1,007	7,914	1,193	10,114
'Mainly plain'	818	7,362	1,100	9,280
Cross-paddle	52	192	18	262
Combed	48	166	6	220
'Turtle-ware'	63	67	21	151
Basketry	15	92	4	111

Moreover, of only three sherds *below* 27 in. (bottom of deposit, 30 in.), two were turtle-ware. This suggests that the type had a very long and continuous special tradition.

#### *Subsequent Sabah Finds*

The known area of such a funerary application was increased and the duration of its tradition lengthened during an archaeological survey of the great Kinabatangan River, also in northeast Sabah, in 1965. Here Barbara Harrison found three incidences of turtle ware sherds far upriver:

1. *Miasias Darat*, one day above Lomag: at 0-6 in., associated with imported Chinese ceramics and protohistorical wooden coffins.
2. *Batu Puteh, Suluk I*, below Lomag: below 6 in., body rather *redder* than normal (cf. Niah below) with protohistorical wooden coffins.
3. *Batu Puteh, Suluk II*: much worn sherd material on surface; with late Chinese stoneware and wooden coffins (B. Harrison 1965).

These finds bring turtle ware almost into the orbit of modern pottery, extinct for over a generation in the Segama and Kinabatangan Rivers, yet surviving elsewhere in Sabah, even on the coast (Evans 1955).

A further extension in space of this tradition was indicated from the identification of a clear turtle ware sherd among a small collection from a side cave at Gomanton in the lower Kinabatangan, in July 1958. The ridge-marking here is rather finer and smaller than on the rest, but another species of turtle could readily account for this, and Gomanton is directly accessible to saline and fully marine waters having distinctive reptile fauna. Further studies by a Sabah-Sarawak team in 1965 have not yet produced further specimens of this type from Gomanton.

#### *Niah Great Cave: Turtle Beater and Sherds*

Niah, 200 mi. to the southwest in Sarawak, is accessible to the whole range of turtles, marine, estuarine and riverine. Turtle bone is well represented in the excavations (King 1962). It also provides a significant class of bone artifact, 'turtle tools,' described by Lord Medway and this writer (1962 *a, b*, class. M) before any pot usage was suspected.

In August and September 1965, excavations at the Lobang Angus cave mouth, half a mile from our main site (West Mouth), produced a tremendous accumulation of food bone, including an exceptionally large amount of turtle. Finds from this mouth range from full palaeolithic (chopper tools) to faint traces of metal age (a piece of bronze, a few small glass beads). It is distinguished from all other known caves in West Borneo by the absence of any evidence of human burials.

There are indications that a pocket of some good yellow clay at one side of Angus had been used for pot-making, as was that at Gan Kira, half a mile away. The earthenware found there is predominantly simple, utility stuff, with a marked absence of the more elaborate Niah techniques, which of course are associated with funerary and ritual usage (see the colored plate of the 'three-colour ware' burial urn in Solheim, Harrison and Wall 1961).

On 28 August 1965, in trench US/23, we found a piece of flat subdermal turtle bone, 42 × 38 mm, of the ridged type theorized for Sabah pot-making, *encrusted with clay*. No other bone, there or elsewhere, has been found in this condition, which could not have been casual. Thus alerted, we recovered, eight days later, in adjacent trench US/17a, at 0-6 in., a single turtle ware sherd, 34 × 20 mm. This differed from the Tapadong type of material in having a pale reddish (hematite?) wash, inside and out. This could imply local manufacture, as the (hematite) red colouring of pottery is a strong tradition at Niah. But the body material is of a fine, blue-grey clay, unlike any neolithic pottery known to us.

Normally at Niah we are almost inundated with repetition in pottery types: we can recall only one other case of an unduplicated find. This was a single sherd having a fine stamped design on a curious gritty, almost sandy body, found in 1957 at the West Mouth cemetery. The encrusted piece of turtle bone could have been used for some other purpose, e.g. making the big neolithic clay 'beads' (perhaps fish-line weights) found here fairly frequently. Further investigation is necessary. Meanwhile, we have from US/17a alone, 191 pieces of turtle bone, of which 18 have the patterned ridges similar to that on the pottery; this trench yielded 286 earthenware sherds (none turtle-ware).

#### *Technique of Pattern Application*

Judging also from the Niah evidence, my suggestion that the Tapadong and other wavy designs are derived, at least in part, from turtle bone, stands as a working hypothesis. It remains to learn how the pattern was effectively transferred.

Experiment shows that direct application by hand is delicate, laborious and inadequate. It is more likely that the selected bone plate was set flat in clay (or any other matrix), held in a sling with a handle of bamboo or rattan. This sort of socketing was the main technique used for stone bark-beaters in Celebes, and for metal ones in Java. It was long ago described among the Toradja by the Sarasin brothers (1905: 1,260) and recently by Dr. Kooijman (1963: 65-66 and Pl. XVI) and the Lings (1963: 206, 235 and Pl. VI). Stone bark-beaters in Borneo are closely related in some respects to pottery beaters, but were remarkably rare or absent in our wideranging excavations (T. Harrison 1964). I have already emphasized, in the earlier paper on Tapadong Cave (*AP VIII, 1: 171-81*), that there are important prehistoric links between northern Borneo and Celebes, particularly as regards earthenware pottery.

*Postscript.* Since this paper went to press, more sherds of 'turtle ware' have been found in newly excavated sectors of the Angus mouth at Niah. Also recovered were pieces of damar resin, commonly used to 'glaze' earthenware in Borneo.

*Additional Note*

The rather distinctive form of purely prehistoric earthenware termed 'turtle-ware' is not matched in historic or ethnological collections. It has a wavy, 'dimpled' surface decoration possibly applied from the underside of the sub-dermal bone of a turtle. No examples have been found in the many thousands of sherds carefully examined from the later open sites of the Sarawak River delta, dating from A.D. 700 to 1400 (limits), which have been reported in detail for Tanjong Kubor by W.G. Solheim II (Solheim 1965) and subsequently for four other sites in the vicinity (T. Harrison and O'Connor n.d.). Being thus widely but unusually distributed and rare, this ware is potentially a valuable marker for culture contact.

I now wish to draw attention to more sherds of the same turtle-ware, whose discovery extends the known range farther around the east coast of Sabah. As with all the other pieces known, they come from a cave easily accessible to the sea and rivers rich in turtle food; in the case of Niah this is also well represented in the neolithic (and earlier) food remains. (Turtle bone from Lobang Angus is now in the hands of Dr. Wayne King in the U.S.A. for his expert zoological analysis.)

The new material consists of five sherds, from at least two smallish, rather thick-walled pots, excavated at 6-12 in. and 12-18 in. layers in Pusu Samang Tas, a difficult, waterless cave high in the Madai cliff formation, 50 mi. south of the Tapadong cave explored in 1965, towards the Kalimantan border near Lahad Datu. The Madai sector was fully explored by a joint Sabah-Sarawak Museum party led by Barbara Harrison during November and December 1966, as part of a continuing regional program (1964-68) under my general direction.

Four of these five sherds show—for the first time in turtle-ware—soot as evidence of some sort of 'use.' This is, however, strictly a 'burial cave' of early iron, and neither stone tools nor any of the stonewares imported with the further development of iron after A.D. 700 were located. This differs from the presence of such stonewares at the Sarawak River delta sites above cited (except Tapadong and Angus). Here at Pusu Samang Tas in the Madai Caves, glass beads represent the earliest identifiable 'import' element. These are small monochromes, and two are of the *manik tulang* type which, I have elsewhere suggested, derives directly from the bone beads of the neolithic. *Manik tulang* means 'bone bead' in Malay, and has become a loan word used far into the interior, where the upland Kelabits value such glass beads by this name (meaningless to them) as the oldest and best to this day (T. Harrison 1950; 1957).

This would seem to place turtle-ware prior to iron, continuing but fading out fairly soon after its appearance. The wide but sparse distribution of turtle-ware, never in quantity, implies that it was an article of early seaborne trade, and valuable commensurate with its status as a minor rarity or curiosity. The Madai cave area was definitely abandoned for funerary use by c. A.D. 1407, with the advent of Islam, which can be so dated from Idahan ('Dunsun') *sila sila* text material (T. Harrison and B. Harrison).

At Pusu Samang Tas, largish sherds of other earthenware bowls, mostly small, are well

<i>Depth</i>	<i>All</i>	<i>Turtle-Ware Only</i>
0-6 in.	311	0
6-12 in.	670	2
12-18 in.	212	3
18-24 in.	29	0
	<hr/> 1,222	<hr/> 5

represented, having a density of about 25 per cubic foot, which is high in this sort of Bornean context. Sherd distribution by depth in a trial trench, 5 × 5 ft., is indicated below.

Turtle-ware represents less than 0.5 per cent of the Pusu Samang Tas collection—a frequency similar to that of the previously reported occurrences. What makes its presence in this Madai cave especially noteworthy is the character of the *other* associated earthenware. This will be fully reported elsewhere (T. Harrison 1966). The associations pertinent here can be summarized briefly:

1. This earthenware includes some pieces of Niah-type 'three colour ware' not previously reported in the area (Solheim, Harrison and Wall 1961).
2. An exceptional amount of it is, however, unlike anything from Niah, including angular, waisted, small (6–11 cm.) pots with heavily incised designs on the upper half, with or without paddle-beating over the main body.
3. Those with paddle-beater marks show a very high proportion of 'crossed' or 'basket' (over a quarter); less numerous is cordmarking, but in general *bound* paddle designs are exceptionally numerous, whereas only the simplest carved paddles are represented, and these by less than 2 per cent of the whole.

Indeed, the Madai pottery is a *mélange* linking 300 mi. of coast to Niah with special pieces, three colour and turtle-ware, but not closely associated with Tapadong only 50 mi. away, in the majority of the vessels. Yet both assemblages of pottery cover approximately the same early metal age time span.

As we learn more about Borneo, it becomes evident that there are several levels of earthenware activity not only in time but in place-mobility. Some kinds of pots were traded or reproduced over long distances. Other forms were greatly developed locally but did not spread widely. Some local groups sought outside wares; others did not. These things occurred within one broad time phase, bridging stone and iron, which may for convenience be termed the 'calcolithic' period.

Because turtle-ware is so conspicuous, it may continue to provide clues in further study—especially if it can be found elsewhere, outside Borneo (Celebes?). Anyone in doubt of identification may send sherds to me in care of either the Sarawak Museum, Kuching, East Malaysia, or the Department of Anthropology, Cornell University, Ithaca, New York 14850, U.S.A.

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