

REPORT UPON A COLLECTION OF PLEISTOCENE
MAMMALS FROM TIN-BEARING DEPOSITS IN A
LIMESTONE CAVE NEAR IPOH, KINTA VALLEY,
PERAK*

by

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Early in 1957 Mr. B. A. V. Peacock, then Curator of Museums, Perak Museum, Taiping, Perak, sent me for identification a number of fossil mammalian remains found at a depth of about thirty feet in the deposits filling a limestone cave (Tambun) in the Kinta Valley, near Ipoh, Perak. These specimens (now in the collection of the University of Malaya, Kuala Lumpur) are of interest as they represent several forms that have not before been recorded from the Pleistocene of Malaya. As Mr. Peacock suggests, it seems conceivable that the fossiliferous deposits of this cave may be related to the series of terraces of the Perak river in which specimens of the Tampanian culture have been found. The Tampan industry (Collings, 1938; Sieveking, 1960) was discovered on the Kota Tampan rubber estate on the west side of the Perak river about 3½ miles south of Lenggong, Upper Perak, and according to Movius (1944, p.113; 1949, p.404; 1955, p.531/532) very probably belongs to the same Lower Palaeolithic complex as the Early Soan of the Punjab, the Early Anythian of Upper Burma, the Choukoutienian of northern China, and the Patjitanian of Java, providing additional proof of the widespread occurrence on southern and eastern Asia of the chopper/chopping-tool tradition during Early Palaeolithic times. This complex of cultures is placed by Movius in the late Middle and early Upper Pleistocene.

The only datable fossil thus far obtained from tin-bearing deposits of Perak, viz., a molar fragment of *Palaeoloxodon namadicus* (Falconer & Cautley) found at a depth of twelve feet at Salak North, at the southern end of Lake Chenderoh, Perak (Andrews, 1905), points to a Middle Pleistocene age of the deposits in question, as it belongs to a species characteristic of the Middle Pleistocene *Stegodon-Ailuropoda* faunal complex or the Sino-Malayan fauna (references in Hooijer, 1955, pp.4-5). It is, therefore, of interest to find that the mammalian fossils from the tin-bearing deposits of Tambun, Ipoh, reported upon in the present paper, include several characteristically Middle Pleistocene forms as well as others that are somewhat less reliable as diagnostic time markers. An account of the material thus far recovered is given in the following pages.

* Announcements of these discoveries have already been made in *Asian Perspectives*, vol.3, 1960, p.32 (by A. Lamb), and in the *COWA Bibliography, Area 19—Southeast Asia*, no. 1, 1959, p.2.

Rhinoceros sondaicus Desmarest subsp.

This species is rather well represented in the collection: there are four isolated teeth as well as various postcranial remains, as follows: 57/1.22*, DM⁴ dext.; 57/1.29, P³ sin.; 57/1.16, P³ dext.; G.S. 15, M³ sin.; 57/1.15, fragment of lower tooth; G.S. 22, cervical vertebra; G.S. 18, thoracic vertebra; G.S. 12 and G.S. 7 (one specimen), processus spinosus of thoracic vertebra; G. S. 20, proximal portion of scapula; 57/1.6, left scaphoid; 57/1.7, left unciform; 57/1-2, right second metacarpal; G.S. 23, left fourth metatarsal; 57/1.23, phalanx. A stout rib fragment (G.S. 2, 6, 13, all one specimen) possibly belongs here also.

The fossil specimens are indicative of rather small-sized individuals as shown in table 1. Pleistocene teeth of *Rhinoceros sondaicus* from Java average larger than the recent; an unciform from Trinil, the *Pithecanthropus* locality in Java, is as large as the recent, instead of smaller as is the Tambun specimen, but the metacarpal is longer in the Pleistocene form of Java than in the recent, just as long as the Tambun metacarpal (Hooijer, 1946).

TABLE 1
Measurements of *Rhinoceros sondaicus* Desmarest (in mm)

	Tambun, Perak	Recent (Hooijer, 1946)
DM ⁴ , antero-transverse - - - - -	44	41-46
postero-transverse - - - - -	39	38-42
M ³ , antero-transverse - - - - -	46	43-55
length of outer surface - - - - -	49	44-58
Unciform, vertical diameter - - - - -	46	52-57
anteroposterior diameter - - - - -	80	91-93
transverse diameter - - - - -	60	73-76
Second metacarpal, length - - - - -	165	151-158
middle width - - - - -	41	41-43
distal ant. post. diameter - - - - -	38	41-43

In Java, *Rhinoceros sondaicus* ranges from Middle Pleistocene to Recent; the species is now on the verge of extinction, in Malaya as well as elsewhere. In the Middle Pleistocene of China we find *Rhinoceros sinensis* Owen, which is more or less intermediate in dental characters between *Rh. sondaicus* and the living Indian *Rh. unicornis* L. (Colbert and Hooijer, 1953).

Sus spec.

A single last lower molar, M₃ dext. (57/1.13), 35 mm long anteroposteriorly, and 18 mm wide in front, has a short talonid, by which it compares well with its homologue in *Sus brachygnathus* Dubois from the Middle Pleistocene of Java (Stemme, 1911). Among the living forms it is closest to *Sus celebensis* Müller et Schlegel, and *Sus barbatus* oi Miller. On the base of this specimen the specific identity of the Tambun suid must remain uncertain.

* These coded letters and/or figures refer to collector's or cataloguers' numbers marked on the specimens.

Hippopotamus spec.

The shaft of an immature right radius (57/1.1) can be referred to a hippopotamus. Fossil hippopotami, often referred to as *Hexaprotodon*, are known from Early to Upper Pleistocene in India and Java (Hooijer, 1950), and they have also been found in the Pleistocene of Burma and Ceylon, but are unknown from China. A specific determination of this immature bone from Tambun is not possible.

Cervus (? Rusa) spec.

Two specimens of the lower right second molar, 57/1.12, 26 by 17 mm, and 57/1.26, 23.5 by 15.5 mm, are as large as those of the living sambar, *Rusa unicolor* (Kerr). This species is known from the Middle Pleistocene of China (Colbert and Hooijer, 1953), while teeth very similar to those of the sambar are found in the Pleistocene of Java as well. In the absence of more diagnostic specimens the large Tambun cervid cannot be identified with certainty.

Duboisia santeng (Dubois) subsp.

Two last molars, one of the upper jaw, M³ sin. (57/1.10), and the other of the lower jaw, M₃ sin. (57/1.11), are indistinguishable from their homologues in the extinct antelope *Duboisia santeng* (Dubois) from the Middle Pleistocene of Java (Hooijer, 1958). They are well within the limits of individual variation of the specimens in the Dubois Collection as shown in table 2.

TABLE 2.
Measurements of *Duboisia santeng* (Dubois) (in mm)

	Tambun, Perak	Pleistocene, Java (Hooijer, 1958)
M ³ , length - - - -	19.5	17-20.5
anterior width - - -	15	14.5-17.5
M ₃ , length - - - -	21.5	19-25
anterior width - - -	9.5	9.5-12

The reference of the following postcranial remains to the present form is provisional; they agree with the Pleistocene bones from Java most probably belonging to *Duboisia*: 57/1.19, lumbar vertebra; 57/1.8, segment of mesosternum; 57/1.3, radius dext.; G.S. 17, proximal part of radius dext.; G.S. 9, 11, 14, and 21, shaft portions of femur; 57/1.24, proximal end of tibia sin.; 57/1.9, distal end of tibia sin.; 57/1.21, distal end of tibia dext.; 57/1.18, calcaneum sin.; G.S. 1, proximal part of metatarsal dext.

Duboisia has never before been recorded from Pleistocene deposits outside Java; it is most closely related to the two living Indian antelopes, *Tetracerus quadricornis* (Blainville) and *Boselaphus tragocamelus* (Pallas) (Stemme, 1911; Hooijer, 1958).

Bibos c.q. Bubalus spec.

The presence of a large bovine in the Tambun collection is attested by the following remains: 57/1.14, M_3 sin.; 57/1.4, processus spinosus of thoracic vertebra; 57/1.17, proximal end of calcaneum dext.; 57/1.25, distal fragment of metatarsal. Most of the rib fragments 57/1.5, 20, 27, and G.S. 3 and 16 (one specimen). G.S. 4, 5, 8, and 10 belong to a large bovine, too.

The above listed specimens may be either *Bibos* (seladang or temadau) or *Bubalus* (water buffalo), both of which are known from the Middle Pleistocene on upward in Java (Hooijer, 1958) as well as from the Middle Pleistocene of China (Colbert and Hooijer, 1953).

The only remaining specimen from the Tambun cave, 57/1.28, is less well mineralized than most of the others, and is a cervical vertebra of a small carnivore, cf. *Cynogale*.

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If the specimens recorded above are unified as to age they represent a fauna that is at most Middle Pleistocene in age. The most diagnostic element appears to be *Duboisia*, previously known only from the Middle Pleistocene of Java. The hippopotamus likewise is incompatible with a post-Pleistocene age of the deposit. The rhinoceros, the suid, the large deer, and the large bovine may all belong to living species but are very similar to Middle Pleistocene fossils, either from Java (*Rhinoceros*, *Sus*), or from China (*Rusa*), or both (*Bibos* c.q. *Bubalus*). The two extinct elements in the fauna, *Duboisia* and *Hippopotamus* (*Hexaprotodon*) indicate the affinities of the Pleistocene fauna of the Tambun cave to be with that of Java rather than with that of China, from which both *Duboisia* and *Hippopotamus* are absent. On the other hand, *Palaeoloxodon namadicus*, recorded by Andrews (1905) from similar Pleistocene tin-bearing deposits in Perak, is an extinct species which is not found in Java, where it is replaced by *Elephas hysudrindicus* Dubois (Hooijer, 1955), but which is found in the Middle Pleistocene of India, Burma, and China. It is to be hoped that further and larger Pleistocene collections from the tin-bearing deposits of Malaya will come to light to enable us to make more extensive comparisons with the known faunas of southern and eastern Asia than is at present possible.

REFERENCES

- ANDREWS, C. W., 1905. Fossil tooth of *Elephas namadicus* from Perak. *Journ. Fed. Malay States Mus.* 1: 81-82.
- COLBERT, E. H., AND D. A. HOOIJER, 1953. Pleistocene mammals from the limestone fissures of Szechwan, China. *Bull. Amer. Mus. Nat. Hist.* 102: 1-134, pls. 1-40, 42 figs.
- COLLINGS, H. D., 1938. Pleistocene site in the Malay Peninsula. *Nature* 142: 575-576, 1 fig.
- HOOIJER, D. A., 1946. Prehistoric and fossil rhinoceroses from the Malay Archipelago and India. *Zool. Med. Museum Leiden* 26: 1-138, pls. I-X, 1 fig.
- HOOIJER, D. A., 1950. The fossil Hippopotamidae of Asia, with notes on the recent species. *Zool. Verh. Museum Leiden.* 8: 1-124, 22 pls., 5 figs.

HOOIJER on PLEISTOCENE MAMMALS

- HOOIJER, D. A., 1955. Fossil Proboscidea from the Malay Archipelago and the Punjab. *Ibid.* 28: 1-146, 17 pls.
- HOOIJER, D. A., 1958. Fossil Bovidae from the Malay Archipelago and the Punjab. *Ibid.*, 38: 1-112, 9 pls.
- MOVIUS, H. L., 1944. Early Man and Pleistocene stratigraphy in southern and eastern Asia. *Papers Peabody Mus., Harvard Univ.* 19: 1-125, 47 figs., 6 tables.
- MOVIUS, H. L., 1949. The Lower Palaeolithic cultures of southern and eastern Asia. *Trans. Amer. Phil. Soc. Philad.* (new series) 38: 329-420, 43 figs., map.
- MOVIUS, H. L., 1955. Palaeolithic archaeology in southern and eastern Asia, exclusive of India. *Cahiers d'Histoire Mondiale*, 2: 257-282; 520-553.
- SIEVEKING, ANNE, 1960. The Palaeolithic Industry of Kota Tampan, Perak. *Asian Perspectives* 2: 91-102.
- STREMMER, H., 1911. Die Säugetiere mit Ausnahme der Proboscider, in L. SELENKA and M. BLANCKENHORN, "Die Pithecanthropus Schichten auf Java." Leipzig (Engelmann), pp. 82-150, pls. 16-20, 10 figs.