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Notes on the Malaysian Fruit Bats
of the Genus *Dyacopterus*



by R. L. Peterson¹

Oldfield Thomas (1890) based the description of *Cynopterus spadiceus* on a single female specimen with damaged skull from Baram, Sarawak. In his review of the Megachiroptera, Andersen (1912) created the genus *Dyacopterus*, with *D. spadiceus* as the type species, and figured the skull (Fig. 53, p. 651) and details of the dentition (Fig. 54, p. 652). Photographs of the skin and a lateral view of the skull of the holotype appear in Walker *et al.* (1964, p. 193). To date, other specimens have not been reported from the island of Borneo.

Thomas (1920) later described a second species, *Dyacopterus brooksi*, again based on a single specimen (male), from Lebong Tandae, Upper Ketaun River, about 100 miles north of Bencoolen, Sumatra. He distinguished *D. brooksi* as being slightly larger and slightly different in colouration—more uniformly coloured, browner and the head less blackish. Thomas noted that the palatal ridges were “. . . numerous, closely set, about 17–19 in number, but irregular, not quite corresponding on the two sides; the posterior half of them divided in the centre by a median groove; their pattern widely different from that of any species of the *Cynopterus* group, or, indeed, any other figured in Anderson’s Catalogue . . .”.

No other specimen was recorded for the genus until Hill (1961) referred to *D. spadiceus* a single female specimen from the Ulu

Langat Forest Reserve, Kajang District, Selangor, Malaysia. Later, Hill (1966) reported two additional specimens (male and female) from Bukit Tembusu, Kuala Pilan, Negri Sembilan, Malaysia.

On June 25, 1968, the students of the Government Secondary School at Binatang, Sarawak, collected an adult female *D. Spadiceus*, which was crawling on the ground beneath a lamp post. The field measurements were: Total length, 125 mm; tail vertebrae, 18; hind foot, 13; ear from notch, 20; wingspan, 530; forearm, 80; and weight, 70 grams. This specimen (ROM 48163, preserved in alcohol, skull extracted) apparently represents the second known specimen (the first complete skull) from Sarawak (some 230 miles southwest of the type locality) and the sixth known specimen of the genus. Of these, five are in the British Museum (Natural History).

Additional measurements (mm) taken on the preserved specimen, followed in parentheses by those of the holotype, are: forearm, 79.3 (77.5); third digit – metacarpal, 57.9 (54.5); phalanx I, 36.6 (35); phalanx II, 44.9 (42.5); fourth digit – metacarpal, 55.6 (52.5); phalanx I, 31.8 (30.5); phalanx II, 25.5 (26); fifth digit – metacarpal, 55.0 (53.5); phalanx I, 24.5 (23.5); phalanx II, 23.9 (22.5); tibia, 27.5 (27). Similar measurements of the skull are: greatest length, 37.4 (—); condylobasal length, 35.6 (—); palatal length, 18.7 (18.9); orbitonares length, 8.2 (7.7); zygo-

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matic breadth, 26.1 (24.8); interorbital breadth, 7.7 (7.6); breadth of postorbital processes, 13.4 (13.6); postorbital constriction, 6.7 (5.8); breadth of braincase, 15.7 (—); mastoid breadth, 15.9 (—); M^1 – M^1 , 11.7 (10.9); C–C (upper) 7.6 (7.5); C– M^1 (alveolar), 13.1 (12.6); C– M^1 (crowns), 13.4 (13.8); C– M_2 (alveolar), 15.1 (15.6); C– M_2 (crowns), 15.3 (15.8).

In general, the Binatang specimen agrees with the published information concerning the holotype of *D. spadiceus* in measurements, colouration and cranial detail. Hill (1966) pointed out that the mainland Malaysian specimens “. . . are darker brown on the dorsal surface of the head and lower back than the holotype . . .”, and have a darker medial stripe dividing the mantles. Unfortunately, an adequate colour description is not available for *D. brooksi*, which Hill considers as probably only subspecifically distinct from *D. spadiceus*. The cranial measurements provided by Hill (1961 and 1966) for the three mainland Malaysian specimens are similar to the two Sarawak specimens (both females), and all differ from the male holotype of *D. brooksi* from Sumatra in the smallness of the following cranial measurements: greatest length, condylobasal length, palatal length, orbitonares length, interorbital breadth, breadth of postorbital processes, breadth of braincase, mastoid breadth, upper canine–canine breadth, and length of tooth rows, upper and lower. Among these five, the one male is smallest in greatest length of skull and breadth of braincase but is equal to or intermediate to the females in other cranial measurements.

The palate of the Binatang specimen (Fig. 1) is strikingly different from *Cynoptyerus* (see Andersen, 1912, p. 591), *Ptenochirus* (*op. cit.*, p. 643) and *Megaerops* (*op. cit.*, p. 647). There are 21 rather than 17–19 palatal ridges, as indicated by Thomas (1920) for *D. brooksi*, and the central half of the ridges, rather than the posterior half, is divided by a median groove. Unfortunately, the range of variation in this, as well as other characters, cannot yet be established.

Clarification of the taxonomic status of *D. brooksi* must await the accumulation of additional specimens. The few records for

the genus *Dyacoptyerus* have been taken from three geographically isolated areas. The examples of *D. spadiceus* from the island of Borneo are similar in size and in several cranial details to the three known specimens from the mainland of Malaysia but appear to differ slightly in colouration. The one specimen of *D. brooksi* from Sumatra is larger in most cranial measurements than the known examples of the genus from the other two areas and ultimately may prove to differ significantly in the details of the palatal ridges.

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Summary—A specimen of *Dyacoptyerus spadiceus* from Sarawak apparently represents the second known specimen (first complete skull) from the island of Borneo and the sixth known example for the genus. External and cranial measurements are provided and compared with those of the other known specimens of *Dyacoptyerus*. The palatal ridges are illustrated for the first time for the genus.

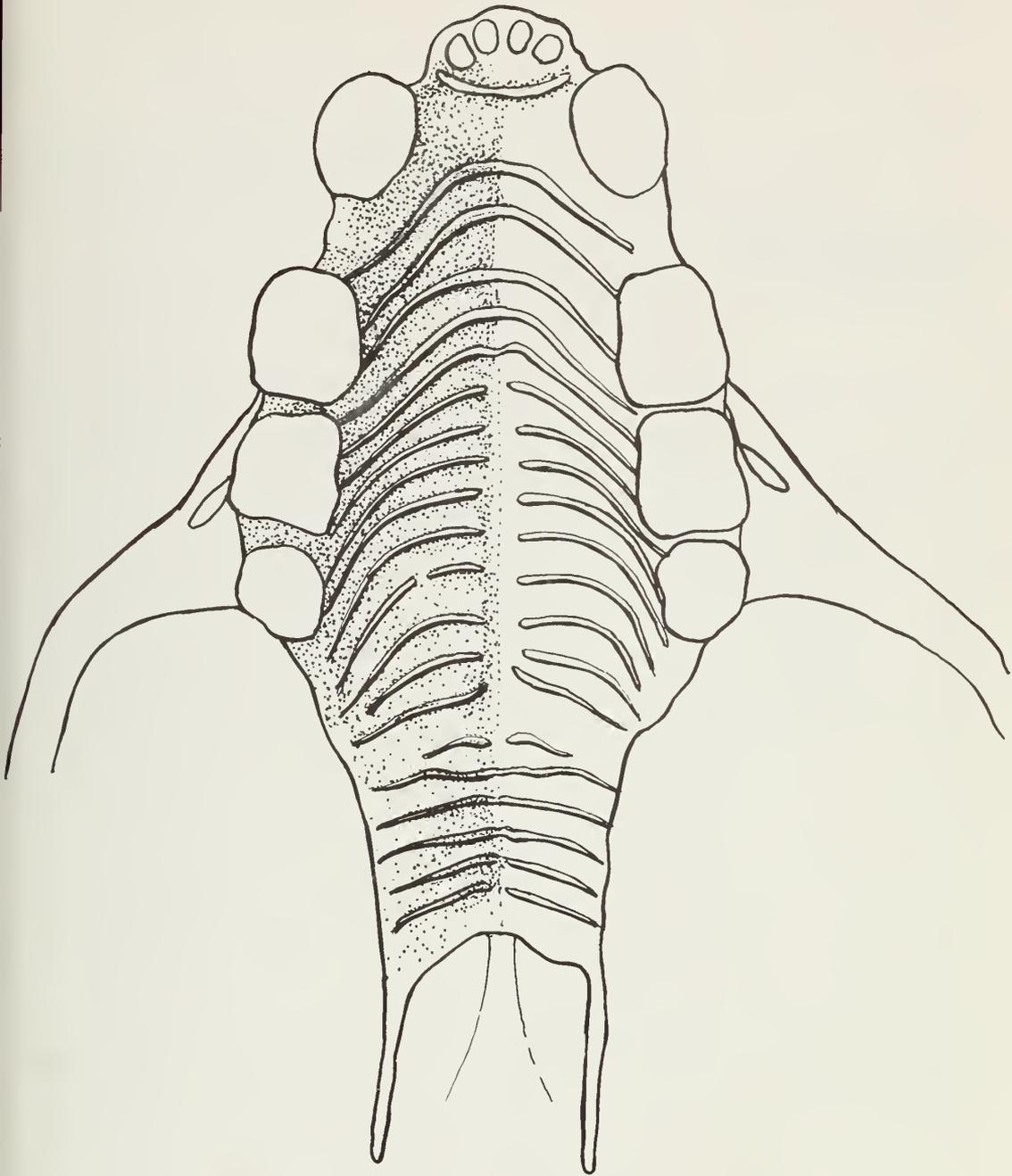


Figure 1
Palatal ridges of *Dyacopterus spadiceus* (ROM 48163 ♀).

Literature Cited

Andersen, Knud

1912 Catalogue of the chiroptera in the collection of the British Museum. Vol. 1. Megachiroptera. *Brit. Mus. (Nat. Hist.)*, 854 pp.

Hill, J. E.

1961 Fruit-bats from the Federation of Malaya. *Proc. Zool. Soc. London*, Vol. 136, pp. 629-642.

1966 Two unusual bats from Malaya. *Fed. Mus. Jour.*, Vol. 11, pp. 58-60.

Thomas, O.

1890 Diagnosis of a new *Cynopterus* from Borneo. *Ann. Mag. Nat. Hist.*, (6), 5, pp. 235-236.

1920 Two new Asiatic bats of the genera *Tadarida* and *Dyacopterus*. *Ann. Mag. Nat. Hist.* (9), 5, pp. 283-285.

Walker, Ernest P. *et al.*

1964 Mammals of the world. The Johns Hopkins Press, Vol. I, 664 pp.

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