

Myzopoda aurita. By Harald Schliemann and Birgit Maas

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Myzopoda Milne-Edwards and Grandidier, 1878

Myzopoda Milne-Edwards and Grandidier, 1878:220. Type species *Myzopoda aurita* Milne-Edwards and Grandidier, 1878, by monotypy.

Myxopoda Dobson, 1878:871. Name misspelled by Dobson who studied the type specimen of Milne-Edwards and Grandidier.

CONTEXT AND CONTENT. Order Chiroptera, Suborder Microchiroptera, Family Myzopodidae (Thomas, 1904:2). *Myzopoda* includes one species, *Myzopoda aurita*, as treated below.

Myzopoda aurita Milne-Edwards and Grandidier, 1878

Golden Bat, Vespertilion Doré

Myzopoda aurita Milne-Edwards and Grandidier, 1878:220. Type locality—beyond the information that the holotype came from Madagascar—unknown.

CONTEXT AND CONTENT. Context as noted above. The species is monotypic.

DIAGNOSIS. Because the genus includes only one species, the following diagnosis applies to both genus and species. Ears are separate and large; tragus obviously fused along the anterior edge of ear conch. Outer margin of ear conch terminates near angle of mouth. Unique mushroom-shaped process lies near the base of the ear (see figure 1). Upper lip extends remarkably beyond the lower. Conspicuously large horseshoe-shaped pads present on sole and thumb. Thumb has a relatively small claw. Second finger has the bony metacarpal nearly as long as that of third finger, and has no distinct bony phalanx. Third finger has three bony phalanges. Only two phalanges are in each toe. Toes are united along the proximal half of the first phalanges and are closely set together.

GENERAL CHARACTERS. Measurements (in millimeters) listed below were obtained from 11 specimens (none of these was suitable for taking all measurements, skull measurements could be taken only from four specimens, and measurements were taken by several individuals): forearm length 46.9 to 50.0; condylobasal length 14.4 to 15.3; zygomatic breadth 9.5 to 12.1; height of braincase 6.5 to 6.8; maxillary tooththrow (C-M3) 5.8 to 6.3; mandibular tooththrow (c-m3) 6.1 to 7.0; total length 109 to 126; length of tail 43.3 to 49.5. Dental formula is $i \ 2/3, c \ 1/1, p \ 3/3, m \ 3/3$, total 38.

DISTRIBUTION. This species is restricted to Madagascar. The few specimens from which *Myzopoda* is known come mainly from the east coast of the island. Besides a single locality on the west coast (Majunga) the following localities should be mentioned: Maroantsera, Mananara, Mahambo, Tamatave, Mananjary (see also Walker, 1964), and northern vicinity of Fort Dauphin (Mandromondromotra River, 16 km NE Fort Dauphin, Mantemina, Bermangidy, 35 mi N Fort Dauphin—personal communication Dr. R. L. Peterson, Toronto). Except for places near Fort Dauphin, the localities mentioned probably indicate where the animals were obtained rather than where they were actually captured. There is no fossil record.

FORM AND FUNCTION. The presence of large flat adhesive organs on the thumb and hind foot is striking. These organs consist of the epithelium mainly covering adipose tissue subdivided by connective tissue into cylindrical chambers arranged in transverse rows. Each chamber contains a gland. The secretion of these glands is discharged onto the entire ventral surface of the organs. The organs do not contain intrinsic musculature but are operated by muscles of the forearm and the shank. It is prob-

able that these organs mainly function by suctorial adhesion. For more morphological, functional, and comparative details of these organs see Schliemann (1970).

Myzopoda lacks any remarkable specialization of its skeleton and dentition except those mentioned above. For detailed description of the skeleton and the teeth see Miller (1907) and Thomas (1904). Figure 2 shows general features of the skull, dentition, and the adhesive organs in ventral view.

ECOLOGY. Few direct observations are available. The possession of adhesive organs indicates that these bats are able to cling to smooth surfaces. Inasmuch as one specimen (collected by Hoogstraal in 1947) was found in an uncoiled leaf of *Ravenala madagascariensis*, it may be that *Myzopoda* (Brosset, 1966; Schliemann, 1974; Walker, 1964) inhabits roost sites similar to those of *Thyroptera* (Carvalho, 1939; Jimenez de la Espada, 1870; Findley and Wilson, 1974). Another specimen (according to R. L. Peterson, Toronto, and A. Williams, Nairobi—personal communication) was caught with a mist net over a small stream in a habitat similar to one where Hoogstraal found his bat. This information and the fact that nearly all specimens were taken from the east coast leads to the assumption that *Myzopoda* is restricted to the rain forest and the savoka, the replacement of the original forest; *Ravenala madagascariensis* can be found in the original forest and it forms large populations in the savoka (Koechlin, 1972; Starck, 1974).

REMARKS. Nothing is known of the physiology, ontogeny, behavior, and genetics of this species, which is known by only a few specimens (presumably less than 15) mostly collected before 1900. This makes it difficult to track all animals that have been mentioned in the literature. In view of the absence of osteological and dental specializations in *Myzopoda*, the unique mushroom-shaped ear process, and the adhesive organs are most remarkable. The adhesive organs of *Myzopoda* and *Thyroptera* (of tropical America), although they are quite often mentioned together, are built completely differently with regard to histological and anatomical details (Schliemann, 1970, 1971; Wimsatt and Villa-R., 1970). It can be concluded that these organs have been acquired independently in the two genera. The endemic *Myzopoda aurita*, with its mixture of primitive and specialized fea-

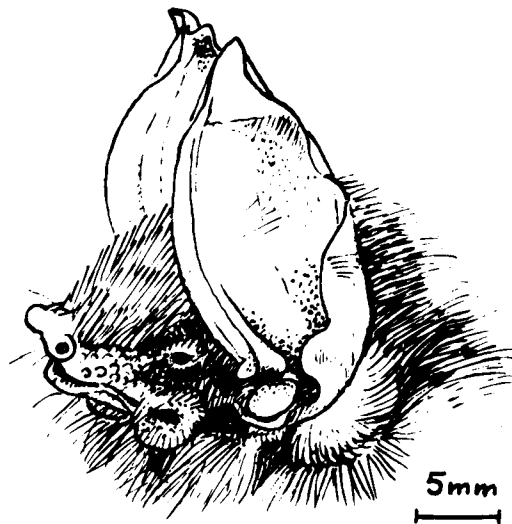


FIGURE 1. Lateral view of the head of *Myzopoda aurita*. Drawn by W. Eigener.

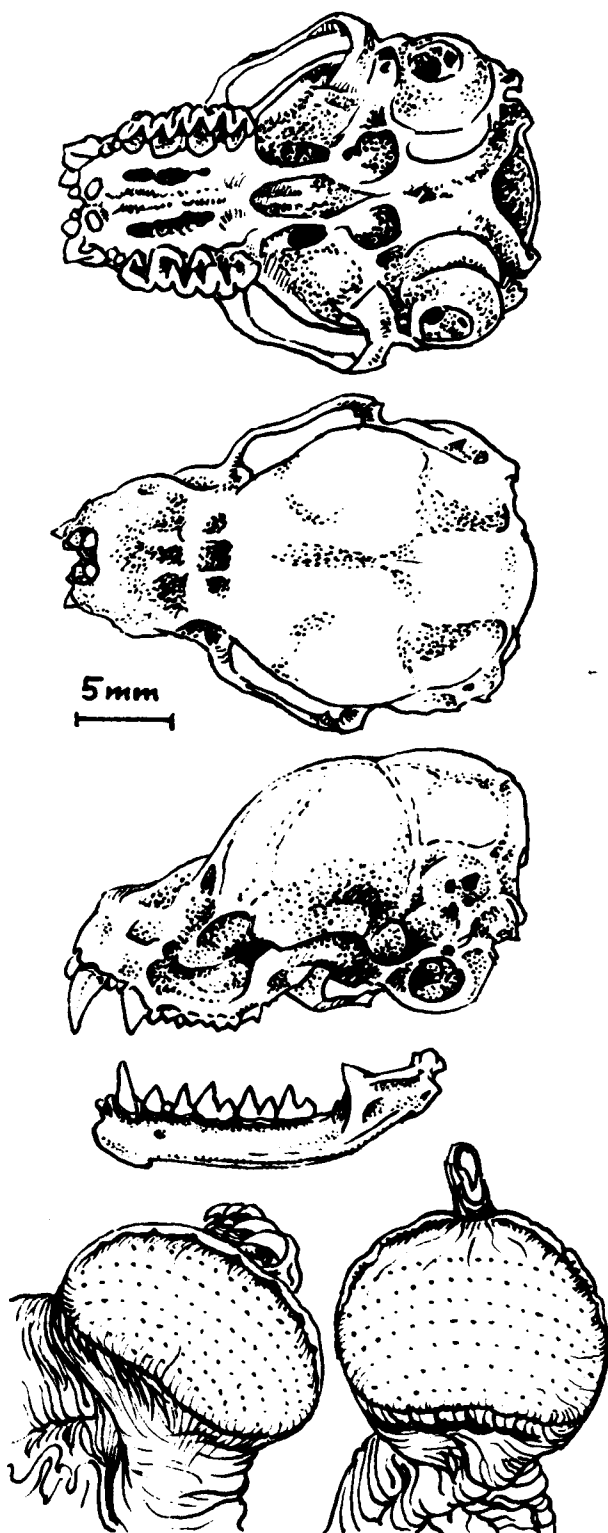


FIGURE 2. From top to bottom: skull of *Myzopoda aurita* in ventral, dorsal, and lateral view (*hamuli pterygoidei* incomplete, dehiscences in the palate artificial); adhesive organs of *Myzopoda aurita* on the sole (left, about 5 mm in breadth) and on the thumb (right, about 6.5 mm in breadth). Drawn by W. Eigener.

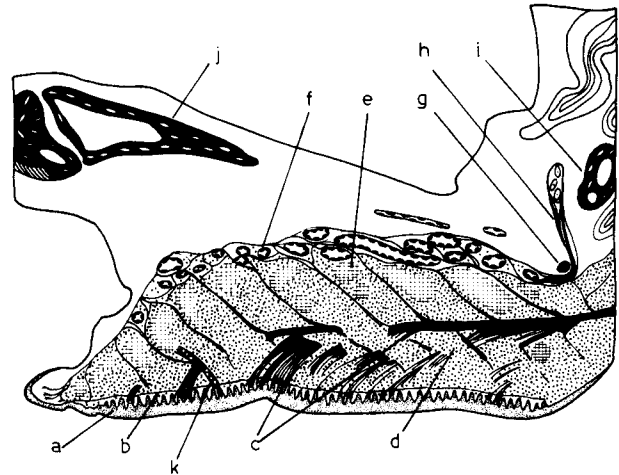


FIGURE 3. Schematic longitudinal section through the adhesive organ on the thumb of *Myzopoda aurita*; a = ventral epithelium, b = network of elastic fibers, c = tendons of *M. palmaris longus*, d = adipose tissue, e = glands, f = venous plexus, g = tendon of *M. propatagialis prop.*, h = collagenous fiber bundle, i = metacarpal bone, j = phalangeal bone. From Schliemann, 1970.

tures, requires the assumption of a long, isolated phylogenetic development.

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H. SCHLIEMANN AND B. MAAS, ZOOLOGISCHES INSTITUT UND ZOOLOGISCHES MUSEUM, UNIVERSITÄT HAMBURG, 2000 HAMBURG 13, MARTIN-LUTHER-KING-PLATZ 3, WEST GERMANY.