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Neoplatymops mattogrossensis.  By Michael R. Willig and J. Knox Jones, Jr.

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**Neoplatymops Peterson, 1965**

*Neoplatymops* Peterson, 1965:3. Type species *Molossops mattogrossensis* Vieira.

**CONTEXT AND CONTENT.** Order Chiroptera, Family Molossidae. The genus *Neoplatymops* is monotypic; some regard it as a subgenus of *Molossops*.

*Neoplatymops mattogrossensis* (Vieira, 1942)  
South American Flat-headed Bat


**CONTEXT AND CONTENT.** Context same as for generic account above. No subspecies are recognized.

**DIAGNOSIS.** Inasmuch as the genus is monotypic, this diagnosis applies to both genus and species (Peterson, 1965). Size small for a member of the family *Molossidae* (Fig. 1). Forearm with small wart-like granular structures on the dorsal surface not found in any other New World molossid; gular gland on throat; dental formula i 1/2, c 1/1, p 2/2, m 3/3; total 30; upper incisors strongly hooked forward and separated from each other and from canines by evident spaces; two premolars above and below well developed, not crowded, P3 small, but P4, p3, and p4 large and conspicuous; skull distinctly flattened, lacking sagittal crest (Fig. 2); lacialrids well developed.

**GENERAL CHARACTERS.** Males average significantly larger than females in most external and cranial measurements but the differences are not great (Willig, 1983, in press). Average external and cranial measurements for a series of males and females, respectively (measured by MRW): greatest length of skull, 14.5, 13.3; breadth of braincase, 7.08 (0.28, 26); zygomatic breadth, 9.31 (0.25, 11); postorbital constriction, 3.36 (0.10, 22), 3.29 (0.08, 25); mastoid breadth, 9.60 (0.40, 16), 9.06 (0.22, 14); breadth of braincase, 7.08 (0.28, 21), 6.81 (0.18, 22); breadth across upper molars, 6.54 (0.13, 21), 6.40 (0.15, 25); length of maxillary toothrow, 5.57 (0.15, 21), 5.34 (0.13, 25); length of mandibular toothrow, 5.91 (0.10, 22), 5.69 (0.13, 24). Weight (g) of this Brazilian series averaged 34.2, 32.6; loading (g/cm²), 0.093, 0.086. Maximum flight speeds were estimated as about 33 km/h. Crevice dwelling was suggested by Willig (in press) as a selective force that reduced morphometric variation in this molossid. Because of the strength and mechanical advantage derived from the moderately thick jaws and well-elevated condyles above the toothrow, this flat-headed bat is capable of consuming both soft- and hard-shelled food items (Freeman, 1981).

The adaptive significance of the forearm granulations has not been determined. One of us (MRW) has attempted to remove specimens from crevices with forceps; upon contact, individuals of this species wedge their forearms against the upper surface of the granitic exfoliation. The granulations on the forearm may provide additional anchorage into the porous granitic surface, thereby reducing

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Fig. 1. Live specimen of *Neoplatymops mattogrossensis* from northeastern Brazil (photograph by M. R. Willig).
FIG. 2. Dorsal, ventral, and lateral views of cranium and dorsal view of lower jaw of Neoplatymops mattogrossensis (male, 2295 M. R. Willig, Carnegie Mus. Nat. Hist.). Greatest length of skull is 14.5 mm (photographs by N. Olson).

the incidence of capture by potential predators such as snakes and marsupials.

Embryonic development has not been reported for this species. However, Peterson (1965) recorded variation associated with post-partum ontogeny. The wart-like granulations of the forearm were present on even the youngest neonates from Guyana; additional data from northeastern Brazil indicates that the granules develop well before parturition.

REPRODUCTION AND ONTOGENY. Isolated records of pregnant and lactating specimens from Guyana were reported by Peterson (1965). Willig (in press) noted that Neoplatymops was monotocous and seasonally monestrous with parturition occurring during the transition from the dry to wet seasons in the Brazilian Caatingas. Reproductive synchrony was complete.

ECOLOGY AND BEHAVIOR. This molossid is a micro-habitat specialist (Willig, 1983, in press). In the Caatingas of northeastern Brazil, its local distribution is restricted to areas containing rocky outcrops where it roosts close to the ground in narrow horizontal crevices beneath granitic exfoliations. A similar roost preference has been reported in Venezuela, Guyana, and elsewhere in Brazil by Handley (1976), Peterson (1965), and Szirmai and Taddei (1976), respectively. Small holometabolous insect taxa compose the diet of this species. Coleopterans (Scarabaecidae, Hydrophilidae, and Dytiscidae) and dipterans (nematocerans and Calliphoridae) were the predominant food items in the Caatingas, although some taxa in the Hemiptera, Lepidoptera, Hymenoptera, Diptera, Orthoptera, and Blattodea were consumed also (Willig, in press). Dietary information from other localities is unavailable. The peculiar aerodynamic characteristics of Neoplatymops result in low vagility for a volant mammal and increased foraging maneuverability for a molossid (Freeman, 1981; Willig, in press). As a result, this flat-headed bat occupies an atypical molossid niche.

GENETICS. The 2n number of an adult female Neoplatymops mattogrossensis from northeast Brazil was 48 and the fundamental number was 60 (62 if the sex chromosomes are considered acrocentric; A. L. Gardner, pers. comm.). The karyotype includes one pair of large biarmed chromosomes and three pairs of medium-sized metacentrics or submetacentrics. The gross chromosomal morphology of Neoplatymops is similar to that of Otomops and Platymops. Karyotypic evidence does not support inclusion of this flat-headed bat in the genus Molossops. However, if Neoplatymops is considered to be a subgenus of Molossops, then the range of karyotypic variation within the genus (2n = 34 to 48; FN = 56 to 60 or 62) is unusually large for the otherwise chromosomally conservative taxa in the Molossidae (Gardner, pers. comm.).

REMARKS. Currently there is controversy as to whether Neoplatymops should be recognized as a distinct genus or as a subgenus of Molossops. Koopman (1982), for example, recognized Neoplatymops, but Honacki et al. (1982), following Freeman (1981), did not. Whether Cynomops and Molossops should be recognized at the generic level (subgenera fide Freeman, 1981) also is unresolved, and Ibañez (1980) recently named Cabreramops, based on Molossops aequatorianus. Until Molossops and its related taxa are
studied in detail, we choose to retain Neoplatymops as distinct at the generic level. It differs from other New World Molossops (sensu lato) in its flattened skull, two well-developed premolars above and below, wart-like granules on the forearm, and in other ways described by Peterson (1965), as well as karyotypically.

The generic name of the South American flat-headed bat is a combination of three Greek words, neo (new), platy (flat), and mops (bat). The specific name comes from Mato Grosso, the state in Brazil from which the holotype originated.

LITERATURE CITED


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