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Rhogeëssa genowaysi.

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Rhogeëssa Allen, 1866

Rhogeëssa Allen, 1866:286. Type species *Rhogeëssa tumida*, by designation.

Baeodon Miller, 1906:85. Type species *Baeodon alleni* (Thomas), by monotypy.

Rhogeessa genowaysi (Baker, 1984)

Genoways' Yellow Bat

Rhogeessa genowaysi Baker, 1984:178. Type locality "Chiapas; 23.6 miles by road (Mexican Highway 200) northwest of Huixtla; obtained on 20 May 1981."

CONTEXT AND CONTENT. Order Chiroptera, Suborder Microchiroptera, Family Vespertilionidae, Subfamily Vespertilioninae, Tribe Nycticeini, Genus *Rhogeessa*, Subgenus *Rhogeessa* H. Allen. Genoways and Baker (1996) recognized seven species in the *R. tumida* complex. These are *aeneus* (Goodwin, 1958), *genowaysi* (Baker, 1984), *hussoni* (Genoways and Baker, 1996), *parvula* (Allen, 1866), *io* (Thomas, 1913), *minutilla* (Miller, 1897), and *tumida* (Allen, 1866). No subspecies currently are recognized.

DIAGNOSIS. *Rhogeessa genowaysi* originally was confused with *R. tumida* (Baker and Patton, 1967). However, when individuals with the *R. genowaysi* karyotype (2n = 42) were collected sympatrically with individuals with a karyotype characteristic of *R. tumida* (2n = 34), it became apparent that this population represented a species distinct from *R. tumida* (Baker, 1984). In a sample of thirty individuals (19 with the cytotype 2n = 34 of *R. tumida* and 11 with the cytotype 2n = 42) from the type locality, no hybrids were found. Although no morphological features have been found that clearly distinguish *R. genowaysi* from *R. tumida*, *R. genowaysi* has fixed allozymic and karyotypic differences distinguishing it from the sympatric *R. tumida*, as well as from other Mexican and middle American species of this complex (Baker, 1984; Baker et al., 1985).

The best morphological character to distinguish between *R. genowaysi* and *R. tumida* is ear length. *R. genowaysi* has shorter ears (mean ± *SE*) than *R. tumida* (*R. genowaysi*, 11.13 mm ± 0.18, range = 10–12, n = 13; *R. tumida*, 12.83 ± 0.12, range = 11–14; n = 54, F = 11.07, $P < 0.01$; Baker, 1984). However, there is some overlap in the 11–12 mm range. Moreover, *R. genowaysi* exhibits more sexual dimorphism than is present in *R. tumida* (Baker, 1984). Notwithstanding these minor morphological differences, the only way absolutely to identify *R. genowaysi* (Fig. 1) is to examine genic or chromosomal characters (Baker, 1984).

GENERAL CHARACTERS. Examination of three characters has shown sexual variation in *R. genowaysi* that does not appear in *R. tumida*. *R. genowaysi* females are larger in greatest length of skull (F = 6.57; $P < 0.05$; mean = 13.45), condylobasal length (7.59; $P < 0.05$; mean = 12.61), and zygomatic breadth (8.22; $P < 0.05$; mean = 8.80; Baker, 1984; Fig. 2). Skull dimensions (in mm) are, for the female, greatest length, mean = 13.45 mm; condylobasal length, mean = 12.61; zygomatic breadth, mean = 8.80; for the male, greatest length, mean = 12.86; condylobasal length, mean = 12.06; zygomatic breadth, mean = 8.05; Baker, 1984).

Adults of *R. genowaysi* weigh ca. 5 g (Baker et al., 1985). The dentition is i1/3, c1/1, p1/2, m3/3, total 30 (Goodwin and Greenhall, 1961). *R. genowaysi* shares with other members of the *R. tumida* complex the following characteristics: very small, yellow, with no external specializations; ears small and rounded; flight membranes relatively thick and strong; and tail extending the full length of a broad, naked interfemoral membrane (Goodwin and Greenhall, 1961).

DISTRIBUTION. *Rhogeessa genowaysi* is known only from two localities a few kilometers apart (Baker, 1984) in the Pacific lowlands of southern Chiapas, Mexico (Fig. 3). Species of the *R. tumida* complex typically are distributed allopatrically (Genoways and Baker, 1996); however, *R. genowaysi* occurs sympatrically with *R. tumida*. No fossils are known for this species.

FORM AND FUNCTION. For the skin of the holotype, the most intensely colored fur is on the posterior two-thirds of the specimen. The darkest regions of this area are nearly mummy brown, whereas the lighter regions are sepia (Ridgway, 1912). There is a V-shaped saddle across the scapular region that consists of a lighter basal region of cream color, with the tips being sepia (Ridgway, 1912). The banded head fur is more intensely colored, with the hairs cream near the skin and sepia halfway up the hair shaft to the outer region (Ridgway, 1912). The anterior half of the ventral pelage is nearly Naples yellow; the posterior half is Saccardo's umber (Ridgway, 1912).

ECOLOGY. No data are available for ontogeny and reproduction in *R. genowaysi*. However, closely related species such as *Rhogeessa tumida* have a synchronized monestrus breeding cycle, with individuals reaching sexual maturity at the age of one year and females bearing two young per year (Baker et al., 1985).

Specimens of *R. genowaysi* have been taken under the canopy of mature second growth lowland tropical forest a few meters above sea level (Baker, 1984). Genoways' yellow bats are aerial insectivores and are among the first bats to appear in the evening for feeding (R. J. Baker, in litt.).

GENETICS. The karyotype of *R. genowaysi* is 2n = 42, and FN = 50 (Fig. 4). The X chromosomes are submetacentric, and the Y chromosome is a small biarmed element (Bickham and Baker, 1977).

Because *R. genowaysi* is an example of the extremely rare condition of a species of mammal being distinguishable only by karyotypic or genic data, this species has been the subject of intense genetic analysis. Chromosomal data (G- and C-bands) reveal that within the *R. tumida* complex there is considerable monobrachial chromosomal homology among species (Baker et al., 1985). This species, along with *Mus musculus* (Capanna, 1982; Capanna et al., 1977; White, 1978), forms the basis for models of speciation (Baker and Bickham, 1986; Capanna, 1982) based on monobrachial homology causing meiotic problems in hybrids that form the basis for a post-mating isolating mechanism.

In addition to karyotypic data, genic data from starch gel elec-

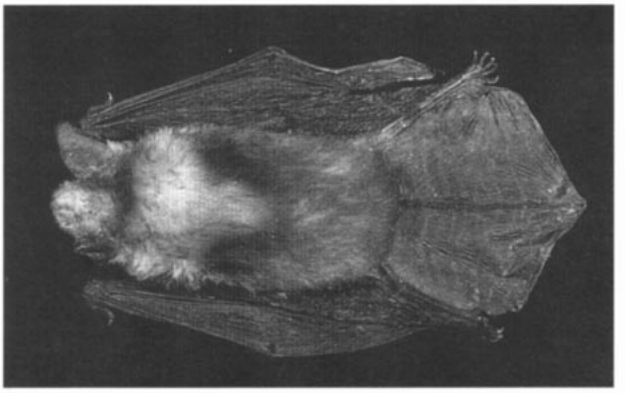

FIG. 1. Dorsal view of holotype of female *R. genowaysi* (The Museum, Texas Tech University, 79409).

FIG. 2. Dorsal, ventral, and lateral views of cranium and lateral view of mandible of a female *Rhogeessa genowaysi* from 23.6 miles by road NW Huixtla (The Museum, Texas Tech University, 79409). Greatest length of skull is 13.2 mm.

trophoretic studies suggest that *R. genowaysi* has fixed differences at the α-glycerophosphate dehydrogenase (α-Gpd) and leucine aminopeptidase (Lap) loci. *R. genowaysi* (n = 2) and *R. parvula* (n =2) are fixed for alternative alleles at 6 (peptidase-2, leucine-aminopeptidase, glutamate oxalate transaminase-1, α-glycerophosphate dehydrogenase, isocitrate dehydrogenase-2, and malate dehydrogenase) of 21 presumed loci examined (Baker et al., 1985). Additionally, *R. genowaysi* has fixed allozymic differences distinguishing it from other individuals of the *R. tumida-R. parvula* complex.

Data from two independent data sets (cladistically-analyzed G-banded chromosomes and genic data) indicate that *R. genowaysi* is more closely related to *R. tumida*, the species with which it is sympatric, than to any other member of the *R. tumida* complex (Baker et al., 1985).

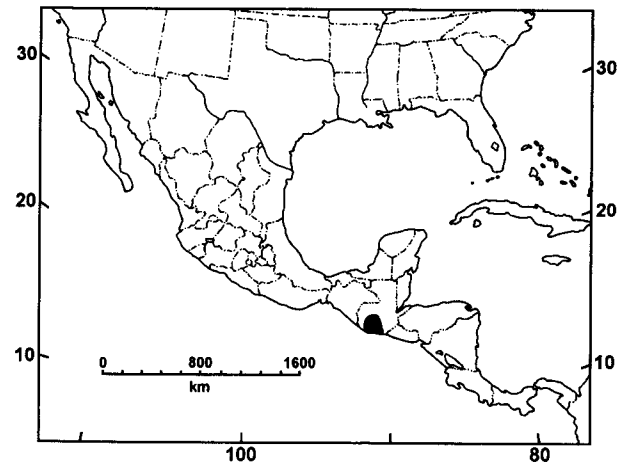

FIG. 3. Geographic distribution (shaded area) of *R. genowaysi*. It is known only from two locations on the Pacific lowlands of southern Chiapas, Mexico (Genoways and Baker, 1996).

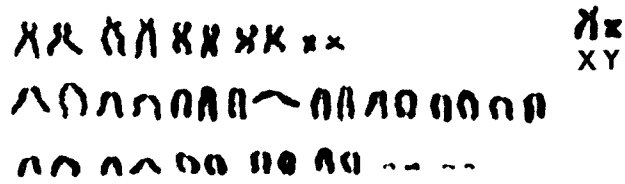

FIG. 4. Idiogram of standard karyotype of a male *R. genowaysi*.

REMARKS. The species name *genowaysi* is a patronymic honoring Hugh H. Genoways.

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