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Cryptotis magna.

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Cryptotis magna (Merriam, 1895)
Big Small-eared Shrew

Blarina magna Merriam, 1895:28. Type locality Totontepec, 6800 ft., Oaxaca.

Cryptotis magna Miller, 1912:28.

CONTEXT AND CONTENT. Order Insectivora, Superfamily Soricoidea, Family Soricidae, Subfamily Soricinae. As presently understood the genus contains 12 living species. *C. magna* is monotypic.

DIAGNOSIS. This genus includes shrews possessing four unicuspids in the upper toothrow, and a total of 30 teeth. *Cryptotis magna* may be distinguished from other members of the genus by its large size and moderately bulbous dentition (see key, Choate and Fleharty, 1974). The skull is massive and the braincase angular. The rostrum is elongate and broad. Posterior surfaces of P4-M3 are not recessed, and M3 is relatively unreduced (see figure 1). See Choate, 1970, for other characters.

GENERAL CHARACTERISTICS. Means and ranges of standard external and cranial measurements (in mm) are as follows, with the number of specimens examined in parentheses: total length, 132, 123 to 141 (20); tail, 47, 37 to 53 (18); hind foot, 16.5, 16 to 17.5 (21); condylobasal length, 23, 22.3 to 23.7 (19); palatal length, 9.9, 9.5 to 10.6 (20); maxillary breadth, 7.4, 7.1 to 7.8 (21); interorbital breadth, 5.5, 5.3 to 5.7 (21); maxillary toothrow, 8.6, 8.2 to 9.0 (19); cranial breadth, 11.6, 11.3 to 12.4 (21). Pelage in specimens available is a uniform black, varying from near Fuscous Black to Chaetura Black (capitalized terms from Ridgway, 1912). Dorsal pelage is interspersed with paler hairs and the venter is slightly paler than the dorsum. In contrast to *C. goodwini*, another large shrew of the montane forest in which adult summer and winter pelages are distinctive (Choate and Fleharty, 1974), there appears to be little seasonal variation in the pelage of *C. magna*. Choate (1970:287) found brownish pelages in specimens taken in the winter months of 1894 and 1959; however, specimens recently collected in September, October, and January were not noticeably browner than those collected in summer (Robertson, 1975). Young individuals show no significant differences in pelage coloration.

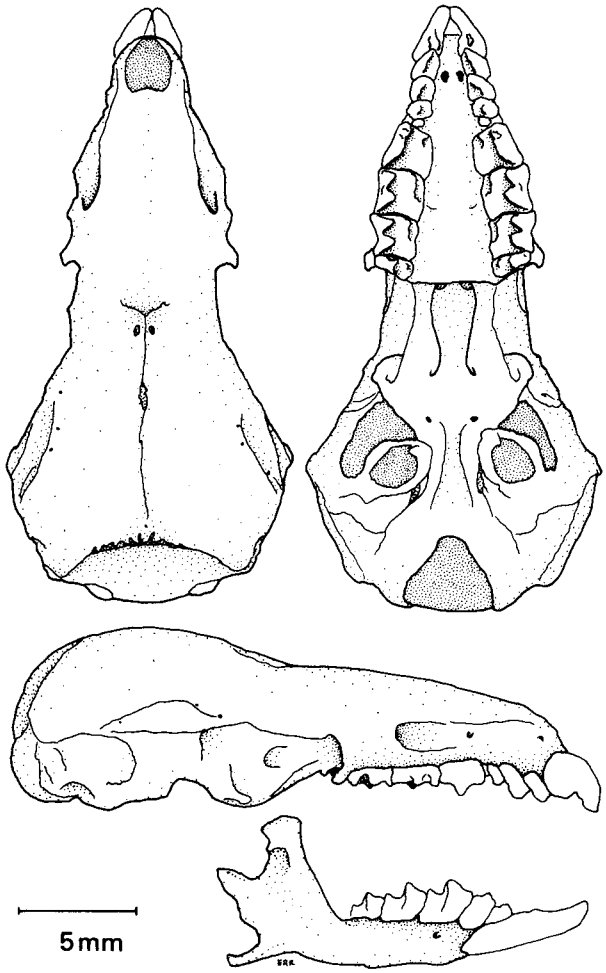

FIGURE 1. Dorsal, ventral, and lateral views of skull, and lateral view of lower jaw of *Cryptotis magna* (KU 124285, male, from Vista Hermosa, Oaxaca).

DISTRIBUTION. Restricted to the Sistema Montañoso in the north-central part of the state of Oaxaca, Mexico (figure 2, modified from Hall and Kelson, 1959). Specimens have been taken at Vista Hermosa and at the following distances from there: 3.5 km N, 1360 m; 10.5 km S, 1850 m; 12 km S, 1920 m; 28.6 km S, 2350 m; and 31.6 km S, 2650 m. Specimens are also known from Llano de las Flores, 2800 m, and Totontepec.

FOSSIL RECORD. There is no fossil record for *Cryptotis magna*. However, Repenning (1967:40) and Choate (1970:298) described dental and mandibular similarities between this species and *C. kansasensis* from the early Pleistocene of Kansas. Both species are similar with regard to the bulbous dentition, large size, and general structure; however certain specializations exhibited by *kansasensis*, such as the reduced M3, make direct ancestry doubtful. Both authors concluded that *C. magna* is a relict that has had a long, distinct evolutionary history, and is only distantly related to its living congeners.

FORM AND FUNCTION. The body size of this *Cryptotis* is large relative to other members of the genus and its teeth are large relative to its body size. In combination, these two features may indicate that large prey items are

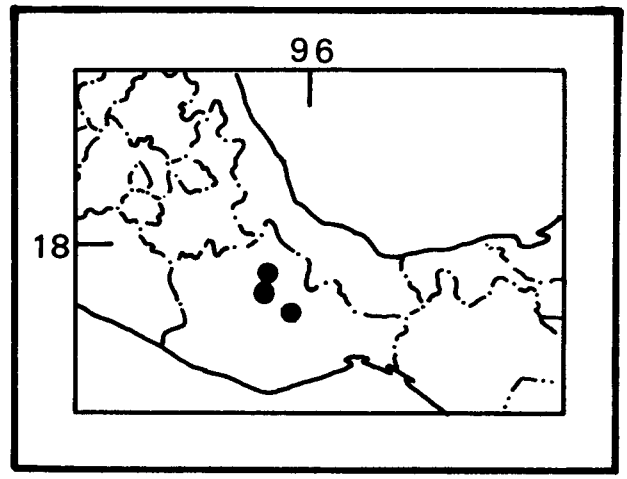

FIGURE 2. Map of southern Mexico showing the distribution of *Cryptotis magna* in the state of Oaxaca (modified from Hall and Kelson, 1959). Scale: 1 cm = 160 km.

taken. Its feet are not specialized in the manner of fossorial species (Choate, 1970). Among the 17 specimens we examined, those taken in winter (October to April) have a pelage that is longer than the pelage of shrews taken in summer (May to September). Recently molted summer and winter pelages are the same color; however, old pelages of both seasons are relatively drab, probably as a result of wear.

ECOLOGY. *Cryptotis magna* occurs in cloud forest and wet conifer-oak forest over an altitudinal range of 1300 to 3000 meters. At Llano de las Flores it was relatively common in dense, waist-high herbaceous cover at the edge of a wet pine-oak forest. Here it was trapped in close association with *Cryptotis mexicana, Sorex veraepacis, Peromyscus boylii, P. lepturus,* and *Microtus mexicanus.* In the cloud forest south of Vista Hermosa to Cerro Pelon, it was trapped in runways, which are common in the mossroot mat covering the forest floor. Here it was taken from the same runways as *Cryptotis mexicana, Sorex saussurei, S. veraepacis, Peromyscus boylii, P. lepturus, P. melanocarpus, P. mexicanus, P. thomasi,* an unidentified species of *Peromyscus, Oryzomys alfaroi, O. caudatus, Reithrodontomys mexicanus, R. microdon, Microtus mexicanus,* and *M. oaxacensis* (Jones and Genoways, 1967; Musser, 1964; Robertson, 1975). *Nyctomys sumichrasti* and *Tylomys nudicaudus* are arboreal community components at some places where *C. magna* occurs. The particular community of associates varies with altitude (Robertson, 1975). According to trapping records, *Cryptotis magna* is not common at any site on the north, gulf-facing, slope.

A young female with three embryos was taken at Llano de las Flores in October; another individual (moderate tooth wear) with three embryos was taken 12 km S Vista Hermosa, 1920 m, on 18 May. Four nonreproductive adult females were taken in June and two in October. Males with enlarged testes were taken in October, May, and June. Hence, at least some reproduction occurs in both the wet and dry seasons, as is also true in *C. mexicana* (Choate, 1973). Not enough data are available to determine whether there are breeding peaks.

REMARKS. The relict distribution of *C. magna* is also seen in a number of other small mammals from the same region (*Microtus oaxacensis, Peromyscus thomasi, P. melanocarpus, P. lepturus,* and *Oryzomys caudatus*). The topography of the region (mountain ranges bisected by deep stream gorges) contributes to this distributional pattern.

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