Cryptotis goodwini. By Jerry R. Choate and Eugene D. Fleharty
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Cryptotis Pomel, 1848
Cryptotis Pomel, 1848:299. Type species "Maurorum", cinerea (sorex [sic] cinereus Bachm.) [= Sorex parvus Say], by original designation.
Soricinae Coues, 1877:649. Type species "Sorex parvus Say or S. cinereus Bachm," by original designation.
Xenoxorex Schmidt, 1936:289. Type species Xenoxorex (Xeno-
sores) philippinus Schmidl [= Marina mexicana pergrina
Merriam], by original designation.

CONTEXT AND CONTENT. Order Insectivora, Family
Soricidae, Subfamily Soricinae, Tribe Blarini (see Repenning,
1967). The genus Cryptotis includes 12 nominal Recent species, as follows (key adapted from Choate, 1970:221-224):

1 Occurring in North and Middle America 2
2(1) Tail elongate, more than 45 per cent of length of
head and body; rostrum markedly elongate relative
of remainder of skull 3
2(2) Tail not elongate, less than 45 per cent of length of
head and body; rostrum not markedly elongate relative
to remainder of skull 5
3(2) Dentition bulbous; posterior surfaces of P4 through
M2 (teeth labelled in figure 1) usually not re-
cessed; rostrum broad 4
3(1) Dentition not bulbous; posterior surfaces usually
slightly recessed; rostrum slender 6
4(3) Size large (total length 123 to 135 mm; condyle-
basal length, a in figure 1, 22.5 to 23.7); occurring
only in southern Mexico 7
4(1) Size medium (total length 109; condylobasal length
20.4); occurring only in southern Central Amer-
ica 8
5(2) Dentition bulbous 9
5(1) Dentition not bulbous 6
6(5) Forefeet conspicuously large; claws distinctly long
and broad 7
6(1) Forefeet small; claws short and slender 8
7(6) Size large (total length 103 to 128 mm; condylobasal
length 20.4 to 21.9; cranial breadth, b in figure
1, 10.6 to 11.8); talonid of m3 (arrow near bottom
of figure 1) reduced, consisting only of hypoconid,
and shortened antero-posteriorly; winter pelage
almost black; upper surfaces of feet usually black
10
7(1) Size medium (total length 85 to 112; condylobasal
length 17.5 to 20.2); talonid of m3 almost always
consisting of both hypoconid and well developed
toconid; posterior surfaces of P4 through M2
only slightly if at all recessed; color of dent
dark, only slightly paler than dorsum  C. mexicana
Size small (total length in region of sympatry with
mexicana 69 to 99; condylobasal length 15.3 to
16.4); talonid of m3 consisting only of hypo-
conid; posterior surfaces of P4 through M2 moder-
ately to considerably recessed; color of dent
whitish, considerably paler than dorsum  C. pata
9(1) Venter (pale buff to buff) markedly paler than dor-
sum (grayish brown)  C. thamasi
9(2) Venter only slightly, if at all, paler than dorsum 8
10
10(9) Pelage pale gray both above and below  C. montivaga
Pelage dark brown or black both above and below 11

Figure 1. Dorsal, ventral, and lateral views of skull, and
lateral view of lower jaw of Cryptotis goodwini (USNM 77072,
male, from Calel, Guatemala). Labelled dimensions and teeth
are noted in the key and text.
FIGURE 2. First left upper molar of a Cryptopsis to show dental terminology (Cheoate, 1970:210).

Figure 1: Dentition is not bulbous; anterior element of ectoph of M1 is reduced relative to posterior element; posterior surfaces of P4 through M2 are decidedly receded; protoconal basin of M1 is reduced relative to hypaconal basin; M3 consists primarily of paracon and premetacrista and is usually vestigial and frequently absent; talonid of M3 is reduced, short, and consisting only of hypocone, which frequently is vestigial (Cheoate, 1970:240-250; dental terminology illustrated in figure 21). Cheoate (1969:471-474 and 1970:211) illustrated additional details of the skull and dentition.

GENERAL CHARACTERS. Total length is 103 to 128 mm; length of hind foot is 14 to 17; conidial bone length (a in figure 1) is 20.4 to 21.9; palatal length (c) is 8.5 to 9.4; maxillary breadth (d) is 6.5 to 7.3; interorbital breadth (e) is 5.4 to 6.0; length of maxillary tooththrow (f) is 7.0 to 8.4; and nasal breadth (h) is 10.0 to 11.0. Adult summer and winter pelages are distinctive (winter pelage is luxuriant and numerous vermiculations are present, whereas summer pelage is not especially luxuriant and vermiculations are present only when the pelage is fresh). In winter pelage, the dorsum is near Bister (capitalized color terms after Ridgway, 1912) in old specimens (collected in 1896) but nearer Clove Brown in recently taken specimens (1924 and 1955); the venter is paler than the dorsum because of admixture of pale buff or white-tipped hairs. In summer pelage the dorsum is near Bister in specimens obtained in 1926, nearer Clove Brown in specimens collected in 1947; the venter is only slightly paler.

DISTRIBUTION. The species is known only from the highlands of southern Guatemala and western El Salvador, but also occurs on the Sierra Madre of Chiapas and the highlands of western Honduras. Localities from which specimens have been obtained are plotted in figure 3 and listed below from north to south. GUATEMALA: 3½ mi. SW San Juan Ixcoy, 3085 m (Genoways and Choate, 1967:204); Finca Xicaco, ca 915 m; Hacienda Chanchol, 15 mi. W Nebaj, 2900 to 3350 m (Choate, 1970:251); 5 mi. N, I mi. W Santa Cruz El Chol, 1830 m (Genoways and Choate, 1967:204); S Slope Volcan Tajamulco, 3050 m (Choate, 1970:251); Caled, 3110 m (Jackson, 1933:81); Finca La Paz, ca 1220 m (Choate, 1970:251); Cumbre Maria Tucum, ca 3020 m (Masser, 1964:7); Santa Elena, 3020 to 3050 m (Choate, 1970:251); Volcan Santa Maria, 2740 to 3350 m (Choate, 1970:251); Tecpan, 2960 m (Goodwin, 1934:6); Mataquesquinta, 2560 m (Choate, 1970:251). EL SALVADOR: Hacienda Montecristo, Santa Ana (Pfaffen, 1938:215).

No fossils of this species as yet have been found.

FORM AND FUNCTION. Cryptopsis goodwini is the most highly specialized member of the mexicana species group (including C. mexicana, C. goldmani, and C. goodwini). Together with C. goldmani, C. goodwini has large forefeet and claws, probably indicative of semiaquatic habits. In addition, goodwini exhibits more extreme reduction of dentition than any other Middle American representative of the genus Cryptopsis. The talonid of the lower third molar in goodwini never consists of more than one cusp, and that cusp (the hypocone) is vestigial in many specimens. The upper molar generally has become reduced to a single blade-like crest (the paracon). Emargination of the upper molariform teeth is more pronounced than in either C. mexicana or C. goldmani, and approaches the most extreme condition found in Mexican populations of C. perennis.

Most specimens collected in December and January are in adult winter pelage, but one (USNM 77075) was molting over its entire body and another (KU 64611) was molting spottily. One specimen (UMMZ 99541) obtained in May has obviously worn adult winter pelage. Of a series of eight specimens collected in August, six are in bady worn adult summer pelage, one (UMMZ 112007) was molting over the head, and one (UMMZ 112010) was molting over the head, on the venter, and on the back in the form of a saddle.

ECOLOGY. Cryptopsis goodwini is thought to occur primarily in humid montane forests. Elevations on major topographic features from which representatives of the species have been obtained include the following: 2900 to 3350 m on the Alto Quezaltenango, approximately 915 m on the Sierra de Xucan; 1830 to 3050 m on the Sierra de Chucú; and approximately 1220 to 3550 m on the Sierra Madre de Guatemala. Most specimens have been obtained in forests of pine or oak, frequently containing cypress, fir, or alder, and often interspersed with cacatán or mosses. These elevations and habitats correspond to the Canadian and Humid Upper Tropical life zones of Goldman (1931), and are included within the subtropical life belt of Stuart (1950) and the subtropical and temperate life belts of Griscom (1932). Cryptopsis goodwini is too poorly known ecologically to warrant more than a general account of its distribution, but it is noteworthy from the standpoint of ecological distribution that the species exhibits no apparent variation among populations inhabiting the different highland masses of southern Guatemala (Choate, 1970:250-251).

With regard to predation, Goodwin (1934:6) reported that a shrew of this species "was found in the trail in the forest above Tecpan [sic], where some animal had killed and dropped it,—a not unusual custom among the small carnivores. I recall one, and perhaps two others, found under similar conditions, near the heavy forest of cypress, at a point a few miles north-west of Tecpan [sic] and at about 10,000 feet altitude. It was impossible to save these."

REMARKS. No representatives of this species have been caught alive, and all specimens presently available in collections consist only of skins with skulls. Therefore, little is known of form excepting that of pelage, cranium, and dentition. Likewise, no published information as yet is available regarding physiology or other dynamic aspects of function, population structure, genetics, or behavior.
ETYMOLOGY. The specific name goodwini was proposed in honor of “George G. Goodwin of the American Museum of Natural History, in recognition of his interest in Guatemalan mammals and who suspected the present form as new on the basis of a single imperfect specimen from Tecpam [sic], Guatemala, in the collection of the American Museum” (Jackson, 1933:81).

LITERATURE CITED


Principal editor for this account was S. Anderson.