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## **Noteworthy Mammals from Sinaloa, Mexico**

**J. KNOX JONES, JR., TICUL ALVAREZ, AND M. RAYMOND  
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UNIVERSITY OF KANSAS  
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### **Noteworthy Mammals from Sinaloa, Mexico**

BY

**J. KNOX JONES, JR., TICUL ALVAREZ, and M. RAYMOND LEE**

In several of the past twelve years field parties from the Museum of Natural History have collected mammals in the Mexican state of Sinaloa. Most of the collections contained only a modest number of specimens because they were made by groups that stopped for short periods on their way to or from other areas, but several collections are extensive. Field work by representatives of this institution now is underway in Sinaloa with the aim of acquiring materials suitable for treating the entire mammalian fauna of that state.

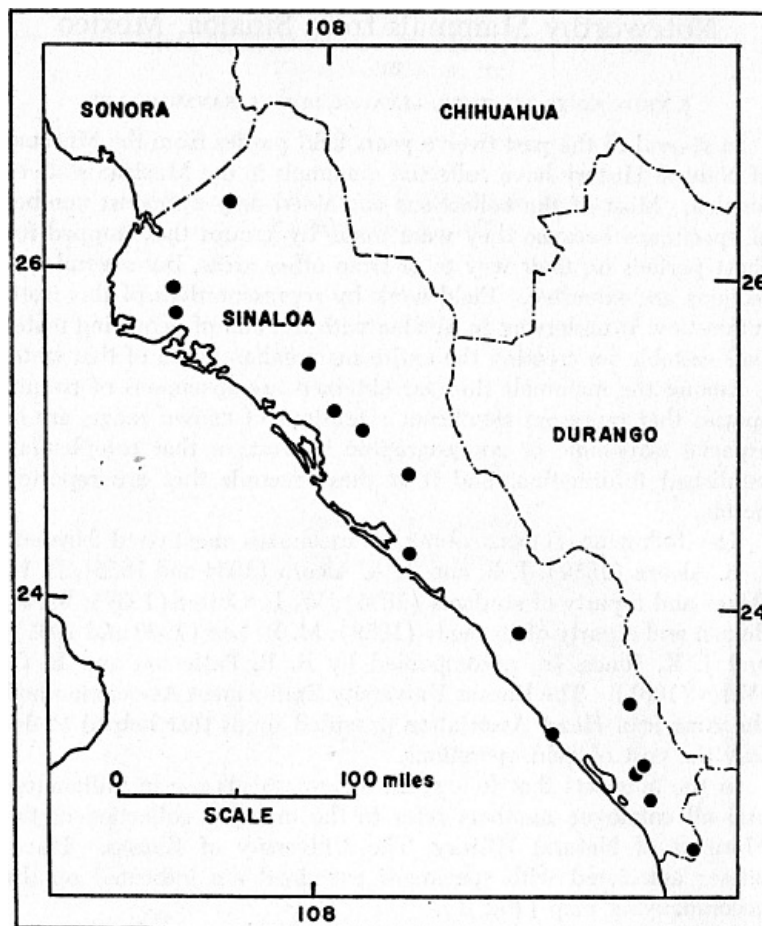
Among the mammals thus far obtained are specimens of twenty species that represent significant

extensions of known range, are of especial taxonomic or zoogeographic interest, or that complement published information, and it is these records that are reported herein.

The following persons obtained specimens mentioned beyond: J. R. Alcorn (1950); J. R. and A. A. Alcorn (1954 and 1955); R. H. Baker and a party of students (1955); W. L. Cutter (1957); S. Anderson and a party of students (1959); M. R. Lee (1960 and 1961); and J. K. Jones, Jr., accompanied by R. R. Patterson and R. G. Webb (1961). The Kansas University Endowment Association and the American Heart Association provided funds that helped to defray the cost of field operations.

In the accounts that follow, all measurements are in millimeters and all catalogue numbers refer to the mammal collection of the Museum of Natural History, The University of Kansas. Placenames associated with specimens examined are indicated on the accompanying map (Fig. 1).

*Notiosorex crawfordi* (Coues).—A non-pregnant female (75184) was obtained on November 29, 1957, at El Fuerte by W. L. Cutter. Comparison of this specimen with topotypes of *N. evotis* (see below) and with undoubted examples of *N. crawfordi* proves our specimen to be referable to the latter. We presume that the shrew reported as *evotis* on geographic grounds from El Carrizo by Hooper (1961:120) also is referable to *crawfordi*. External measurements of our female are: total length, 77; length of tail, 20 (tip missing); length of hind foot, 11; length of ear from notch, 8; weight in grams, 4. Cranial measurements of this individual are given in Table 1.



**Fig. 1.** Map of Sinaloa on which are plotted symbols representing placenames mentioned in text. From north to south, these are: El Fuerte; San Miguel; Los Mochis; Guamúchil; Terrero; Pericos; Culiacán; El Dorado; Piaxtla and Camino Real (one symbol); Pánuco; Mazatlán; Matatán; Rosario; Escuinapa; Concepción.

*Notiosorex evotis* (Coues).—Four topotypes (85533-36), all males, were collected by Lee at Mazatlán. One was caught on December 17, 1960, in a museum special trap set "in low weeds near thorn bush" in a sandy field at the north edge of Mazatlán, less than a mile from the ocean. A few trees and some grasses grew in this area; *Mus musculus* and *Perognathus pernix* were taken in the same line of traps. Additional trapping at this locality failed to produce more shrews. The other three specimens were captured alive on February 1 (one) and February 2 (two), 1961, in the wake of a bulldozer that was clearing land adjacent to the place where the first specimen was trapped. The ground cover being cleared away consisted mostly of dry, dense weeds and

short, thorny scrub; the latter was sparse in some places and formed dense thickets in others. One individual that was kept alive for a short time in a can ate crickets and roaches readily and ate one spider, but refused isopods. On one occasion it ate six crickets in about three hours. Wet oatmeal and oatmeal mixed with peanut butter both were refused.

TABLE 1. CRANIAL MEASUREMENTS OF TWO SPECIES OF NOTIOSOREX.

Catalogue number, or number of specimens averaged, and sex	Condylobasal length	Interorbital constriction	Maxillary breadth	Cranial breadth	Palatal length	Length of maxillary tooth-row
<i>Notiosorex crawfordi</i> , Huachuca Mts., Arizona <sup>[A]</sup>						
Average 6 (2♂, 4♀)	16.01	3.72	5.08	8.32	6.59	5.93
Minimum	15.7	3.6	4.9	7.8	6.3	5.8
Maximum	16.5	3.85	5.2	8.8	7.15	6.2
El Fuerte, Sinaloa						
75184 KU, ♀	16.5	3.7	5.0	8.4	6.9	6.1
SW Guadalajara, Jalisco						
33318 KU, ♂	..	3.6	4.9	..	7.1	5.7
42583 KU, ?	15.0+	3.5	4.6	..	6.6	5.4±
42584 KU, ?	..	3.6	4.9	..	7.1±	6.1±
2 mi. E La Palma, Michoacán						
42586 KU, ?	..	3.8	4.9	..	6.9	..
42587 KU, ?	..	3.8	4.8	..	6.9	6.0
42588 KU, ?	..	..	4.9	..	6.9	6.2
<i>Notiosorex evotis</i> , Mazatlán, Sinaloa						
Average 4 (♂)	17.68	4.05	5.37	8.68	7.60	6.58
Minimum	17.4	4.0	5.3	8.5	7.5	6.5
Maximum	17.9	4.1	5.4	8.8	7.7	6.7

[A] After Hoffmeister and Goodpaster, 1954:51.

Average and extreme external measurements of the four males are as follows: total length, 93.2 (90-98); length of tail, 25.5 (23-27); length of hind foot, 11.9 (11-13); length of ear from notch, 7.7 (7-8); weight in grams, 5.4 (4.4-6.3). Cranial measurements are given in Table 1.

*Notiosorex evotis* was described by Coues (1877:652) on the basis of a single specimen, obtained at Mazatlán by Ferdinand Bischoff in 1868, that originally had at least the partial skull inside. Subsequently the skull was removed and evidently lost (Poole and Schantz, 1942:181). Coues named *evotis* as a species distinct from *crawfordi* (described by him in the same paper) on the basis of larger size, shorter tail, and alleged slight differences in color. He did not describe the skull, but did note that the dentition was "substantially the same as that of *N. crawfordi*." Evidently, the only other correctly identified specimen of *evotis* on record is an individual from Mazatlán in the British Museum, the skull of which was figured by Dobson (1890:pl. 23, fig. 20).

Merriam (1895:34) characterized *evotis*, known to him by only the holotype, as: "Similar to *N. crawfordi*, but slightly larger and darker." He did not examine the skull, which by that time had been "lost or mislaid." Merriam reduced *evotis* to subspecific status under *crawfordi* with the following remarks: "In the absence of sufficient material of *N. evotis*, it is impossible to determine its exact relations to *crawfordi*. Dobson did not recognize it as distinct, but figured its teeth under the name *crawfordi* [*loc. cit.*, possibly a *lapsus*]. For the present it seems best to retain it as a subspecies."

Merriam's arrangement of *evotis* as a subspecies of *crawfordi* has been followed by subsequent workers, mostly, we suppose, because additional material of undoubted *evotis* has not until now been available. Comparisons of our four specimens with specimens (from Jalisco, Sinaloa and Tamaulipas) and published descriptions and measurements (see especially Hoffmeister and Goodpaster, 1954:46-47, 51) of *crawfordi* reveal that *evotis* has a longer body and hind foot than *crawfordi* but a relatively (sometimes actually) shorter tail and ear, and a distinctly larger, heavier skull (see Table 1). The upper parts of our specimens average pale brownish gray and are paler, not darker, than the upper parts of *crawfordi*. But, all of the latter were obtained in the warm months of the year except one November-taken individual from El Fuerte, Sinaloa, the dorsal pelage of which approaches in color that of the darkest of the *evotis*. The pelage of both kinds probably is paler in winter than in summer and may be indistinguishable in the same season. Ventrally, all four *evotis* are grayish white, faintly to moderately tinged with brownish buff.

*Notiosorex evotis* differs cranially from *Notiosorex crawfordi* as follows: larger (see measurements); mesopterygoid fossa squared rather than broadly U-shaped anteriorly; rounded process on maxillary at posterior border of infraorbital canal well developed (faint or lacking in *crawfordi*); occipital condyles smaller and, in lateral view, elevated above basal plane of skull; upper molars slightly more crowded in occlusal view. These differences, although admittedly slight, appear to be constant in the specimens we have seen, but ought to be used cautiously owing to the small samples studied.

Shrews of the genus *Notiosorex* have been reported twice previously from localities in west-central México, other than from Mazatlán, as follows: 21 mi. SW Guadalajara (remains from owl pellets) and 13 mi. S, 15 mi. W Guadalajara, Jalisco, by Twente and Baker (1951:120-121); and Cerrito Loco, 2 mi. E La Palma, Michoacán (remains from owl pellets), by Baker and Alcorn (1953:116). The remains were referred to *evotis* on geographic grounds in one instance and were so referred inferentially in the other. Examination of the specimens upon which these reports were based reveals that all are *crawfordi* on the basis of characters previously cited. As a result, *N. evotis* is known only from the type locality at Mazatlán, whereas *N. crawfordi* is widely distributed on the Mexican Plateau as far south as Jalisco and northern Michoacán, and occurs on the west side of the Sierra Occidental as far south as northern Sinaloa.

The two kinds obviously are closely related and intergradation eventually may be demonstrated between them. But, for the present, we adopt a conservative course and treat *evotis* as a full species owing to its distinctive features, restricted geographic distribution, and the lack of evidence of intergradation between it and *crawfordi*.

***Balantiopteryx plicata pallida*** Burt.—Thirty-five specimens from two adjacent localities along the Río del Fuerte in northern Sinaloa, 3 mi. NE San Miguel, 300 ft. (84944-48) and 10 mi. NNE Los Mochis (60572-75, 60667-78, 60681-94), provide the first records of the subspecies from the state. Individuals from both localities were shot at dusk as they foraged among trees in the valley of the river. Fifteen of 18 females from 10 mi. NNE Los Mochis, collected on June 5, 6 and 7, 1955, were pregnant; each contained a single embryo, the embryos ranging from 7 to 15 mm. in crown-rump length. *B. p. pallida* previously has been reported from the southern parts of Baja California and Sonora.

***Balantiopteryx plicata plicata*** Peters.—Specimens in the Museum of Natural History from the following localities, several of which are marginal, document better than previously has been done the distribution of this subspecies in Sinaloa: 32 mi. SSE Culiacán (60699); 10 mi. SE Escuinapa (68629); 17 mi. SSE Guamúchil (60576); 5 mi. NW Mazatlán (85537-61, 85901-04); 1 mi. SE Mazatlán, 10 ft. (39461-76); 1 mi. S Pericos (60697-98, 60700); ½ mi. E Piaxtla (60701); ½ mi. W Rosario, 100 ft. (39477-79); 5 mi. SSE Rosario (60702-03); 4 mi. N Terrero (60695-96).

Pregnant females, each with a single embryo, were recorded in 1954 from 4 mi. N Terrero, 2 (June 9), 1 mi. S Pericos, 2 (June 13), and 5 mi. SSE Rosario, 2 (June 20). None of 16 December-taken females from 5 mi. NW Mazatlán was pregnant.

The specimen from 17 mi. SSE Guamúchil, preserved in alcohol, is provisionally referred to *B. p. plicata* on geographic grounds inasmuch as specimens from the nearby localities of 1 mi. S Pericos and 4 mi. N Terrero, although more grayish on the average than specimens from southern Sinaloa, are somewhat darker and distinctly larger than specimens of *B. p. pallida* from along the Río del Fuerte in northern Sinaloa. Specimens from southern Sinaloa average only slightly paler than typical *plicata* examined from southern México and Nicaragua.

***Pteronotus psilotis*** (Dobson).—A total of six specimens from two localities in southern Sinaloa provide the first records from the state and are the northernmost records in western México. The two localities are: ½ mi. S Concepción, 250 ft. (84987-90); 1 mi. W Matatán (84985-86). The two individuals from the last-mentioned place extend the known range of the species approximately 275 miles north-northwest from a locality 7 mi. W, ½ mi. S Santiago, Colima (Anderson, 1956:349), and place the limit of the known distribution of *P. psilotis* farther to the north in western México than in the eastern part of the country. We follow Burt and Stirton (1961:24-25) in use of the generic name *Pteronotus* for this species.

The two specimens from 1 mi. W Matatán were shot at late dusk as they foraged with other bats, presumably of the same species, low over water at the place where the Río San Antonio joins the larger Río Baluarte. The four individuals from ½ mi. S Concepción were captured in mist nets stretched across the Río de las Cañas at the Sinaloa-Nayarit border, and were taken shortly after dark at heights of three feet or less above the water. Our six specimens all are males. Five are in the reddish color phase and one is in the brownish phase.

Average and extreme measurements of the six males, which average slightly smaller than specimens examined from Colima and Guerrero, are as follows: total length, 66.8 (65-69); length of tail, 16.3 (15-18); length of hind foot, 11.8 (11-12); length of ear from notch, 16.9 (16.5-17.0); length of forearm (dry), 41.5 (40.6-42.4); weight in grams, 8.3 (6.9-9.8); greatest length of skull, 15.4 (15.2-15.5); zygomatic breadth, 8.3 (8.2-8.4); interorbital constriction, 3.4 (3.3-3.6); mastoid breadth, 8.7 (8.6-8.8); length of maxillary tooth-row, 5.8 (5.8-5.9); breadth across M3, 5.4 (5.3-5.6).

***Sturnira lilium parvidens*** Goldman.—The first specimens to be reported from Sinaloa are as follows: 32 mi. SSE Culiacán (61087); 1 mi. S El Dorado (75207); Pánuco, 22 km. NE Concordia (85648-50). The three bats from the last-mentioned locality were caught after midnight in a mist

net stretched across a road adjacent to a nearly dry stream bed. The vegetation in the vicinity of the net consisted mostly of dry weeds and grass along with some low shrubs, but a tree-filled canyon was about one-fourth mile above the net. We lack details about the capture of the other two bats.

*S. l. parvidens* has been reported only once from farther north in western México than Sinaloa. Anderson (1960:7) recorded five specimens from along the Río Septentrión, 1½ mi. SW Tocuina, Chihuahua.

***Artibeus lituratus palmarum*** Allen and Chapman.—This species has been reported once previously from Sinaloa (from 1 mi. S El Dorado by Anderson, 1960:3). Six specimens (85668-72, 85674), all males, collected on December 23 and 24, 1960, at Pánuco, 22 km. NE Concordia, provide the second known occurrence in the state.

***Artibeus toltecus*** (Saussure).—A male (85666) from Pánuco, 22 km. NE Concordia, provides the first record of this species from Sinaloa and extends the known range northwestward approximately 182 miles from Ambas Aguas [= 6½ km. SW Amatlán de Jora], Nayarit (Andersen, 1908:300). Our specimen was taken on December 22, 1960, in a mist net placed across a road in an area where vegetation consisted mostly of weeds, grasses and shrubs. Two *Glossophaga soricina leachii* and two *Choeronycteris mexicana* were taken in the same net.

Davis' (1958:165-166) key is useful in separating the small Mexican members of the genus *Artibeus*, but we have found some adults of *toltecus* to be smaller than the key indicates. For example, in the 12 Mexican specimens (Oaxaca, 6, Tamaulipas, 3, Jalisco, 2, Sinaloa, 1) examined by us the total length of skull varies from 19.7 to 21.0 and the forearm from 36.3 to 42.6.

Dalquest (1953) and more recently Koopman (1961) regarded *A. toltecus* and the larger *A. aztecus*, which occurs in the same areas but at higher elevations than *toltecus*, as subspecies of the more southerly *A. cinereus*. Davis (*op. cit.*), on the other hand, recognized *toltecus*, *aztecus*, and *cinereus* as distinct species. More specimens of small and medium-sized *Artibeus* are needed from México before this baffling complex can be studied adequately, but on the basis of specimens examined we are inclined to agree with Davis as concerns the specific distinctness of *toltecus* and *aztecus*. In Tamaulipas (the mammalian fauna of which is currently under study by Alvarez) for example, *toltecus* is known from Rancho Pano Ayuctle at an elevation of 300 feet in tropical deciduous forest, whereas *aztecus* has been taken only four miles away at Rancho del Cielo, but at an elevation of 3000 feet in cloud forest. The altitudinal difference between ranges of the two kinds in Tamaulipas corresponds to that found in Sinaloa (see Koopman, *loc. cit.*) and is of approximately the same magnitude found by Davis at higher elevations in Guerrero. This relationship suggests that the two kinds are neither subspecies of a single species, nor individual variants of a widespread, monotypic species, but probably are two different species. We agree that one, most likely the smaller *toltecus*, may eventually prove to be a northern subspecies of *cinereus*.

***Myotis occultus*** Hollister.—A single specimen of this species (67491) from 1 mi. N, ½ mi. E San Miguel provides the first certain record from Sinaloa, and is indistinguishable from specimens from Alamos, Sonora, that were referred to *occultus* by Hall and Dalquest (1950:587). Miller and Allen (1928:100) identified a skin alone from Escuinapa as *occultus*, but Hall and Dalquest (*loc. cit.*) later assigned this specimen provisionally to *M. fortidens* on geographic grounds and because it agreed in color with undoubted specimens of the latter from Guerrero. Specimens from south of San Miguel and north of the undoubted range of *fortidens* are needed in order to ascertain whether the two kinds are distinct species or instead only subspecies of a single species.

The Sinaloan bat was taken in a mist net stretched over a drainage ditch adjacent to the Río del Fuerte on the night of June 19-20, 1955, by R. H. Baker. Several other kinds of bats were obtained (shot or netted) at the same place, among which was one specimen of *Myotis velifer*. The specimens studied of *occultus* from Sinaloa and Sonora are clearly separable from specimens of *velifer* from the same region (Sonora and northern Sinaloa) in having paler (more reddish) pelage, shorter forearm, smaller skull, relatively broader rostrum, and four fewer teeth.

***Myotis velifer velifer*** (J. A. Allen).—Three specimens from the following localities in northern Sinaloa provide the first records of the species from the state: El Fuerte (75234); Río del Fuerte, 1 mi. N, ½ mi. E San Miguel (67490); Río del Fuerte, 10 mi. NNW Los Mochis (61149). The subspecies *M. v. velifer* has been reported previously from the adjacent states of Chihuahua, Durango, and Sonora.

A female (61149) obtained on June 8, 1954, carried a single embryo that measured 3 mm. in crown-rump length.

***Lasiurus borealis teliotis*** (H. Allen).—A female from 10 mi. NNW Los Mochis (61172), obtained on June 8, 1954, represents the first record of the species from Sinaloa, and is tentatively referred to this subspecies. It resembles cranially, but is paler than, Californian specimens seen of *teliotis*.

***Molossus ater nigricans*** Miller.—This large free-tailed bat previously has been reported no farther north in western México than the type locality, Acajoneta, Nayarit. Nineteen specimens from four different localities in Sinaloa are as follows: 1 mi. SE Camino Real, 400 ft. (85093-99); 32 mi. SSE Culiacán (61279-87); 1 mi. S Pericos (61277-78); ½ mi. E Piaxtla (61288). The

specimens labeled with reference to Camino Real and Piaxtla were obtained along the Río Piaxtla at approximately the same place. Those from 1 mi. S Pericos extend the known range of the species approximately 225 miles northwestward.

*M. a. nigricans* is characteristically an early flier. Along the Río Piaxtla, 1 mi. SE Camino Real, where bats probably found daytime retreats in the rocky walls of the steep-sided valley of the river, individuals first appeared early in the evening when the sun was still on the western horizon, but were gone before other species of bats were seen. A female from 32 mi. SSE Culiacán, taken on June 18, 1954, contained one embryo that was 18 mm. in crown-rump length. Each of the color phases of the species, reddish (8) and black (11), are represented among our specimens. We follow Goodwin (1960) in the use of the specific name *ater* for this bat.

***Dasyus novemcinctus mexicanus*** Peters.—Two armadillos (85402-03) from the valley of the Río del Fuerte, 3 mi. NE San Miguel, 300 ft., are the first of the species to be reported from northern Sinaloa. They extend the known range northwestward in the state approximately 285 miles from Escuinapa (Russell, 1953:25) and signal the possible occurrence of *D. n. mexicanus* in southern Sonora. Sign of the armadillo was abundant at the place where our two specimens were collected. Because it was felt that the species possibly had been introduced along the Río del Fuerte, a number of local residents were questioned on the point, but all insisted that armadillos were native to the area.

External measurements of 85402 (female) and 85403 (male) are, respectively, as follows: total length, 725, 748; length of tail, 351, 357; length of hind foot, 87, 89; length of ear from notch, 39, 39.

***Sylvilagus audubonii goldmani*** (Nelson).—This cottontail has been reported from Sinaloa only from Bacubirito, Culiacán (type locality), and Sinaloa (Nelson, 1909:226). Additional records are: 12 mi. N Culiacán (67561-62); 6 mi. N El Dorado (75263); 6 mi. N, 1½ mi. E El Dorado (75264-66); 7 mi. NE El Fuerte (81076-77); and 1 mi. S Pericos (61292-93). Specimens from the vicinity of El Dorado extend the known range some 30 miles southward from the type locality. A female from 1 mi. S Pericos that was taken on June 13, 1954, carried three embryos that measured 29 mm. in crown-rump length.

***Sciurus truei*** Nelson.—Three specimens (61300-02) of this species collected by A. A. Alcorn on June 19, 1954, 32 mi. SSE Culiacán extend the known range approximately 210 miles south-southeast from Guirocoba, Sonora (Burt, 1938:38), and provide the first record from Sinaloa. Two of the specimens are females and each was pregnant, one with two embryos and the other with three.

Our specimens generally agree in color with *S. truei*, but are larger than typical individuals and in this respect approach *S. sinaloensis* of southern Sinaloa. Probably *truei* and *sinaloensis* both are only subspecies of the more southerly *S. colliaei*. The three nominal species currently constitute the *S. colliaei* group in which the presence or absence of P3 seems to vary geographically. The tooth frequently is absent in the northern *truei* and usually present (invariably in the specimens we have examined) in *colliaei*. Only one of our Sinaloan specimens is accompanied by a skull; in it P3 is present on the right side and absent on the left.

External measurements of the male and two females are, respectively: total length, 512, 508, 504; length of tail, 263, 263, 252; length of hind foot, 64, 63, 64; length of ear from notch, 28, 29, 28. Cranial measurements of 61300 (a female) are: greatest length of skull, 56.2; zygomatic breadth, 32.6; interorbital constriction, 17.9; postorbital constriction, 17.9; length of nasals, 17.3; alveolar length of maxillary tooth-row (on side lacking P3), 10.9.

***Thomomys umbrinus atrovarius*** J. A. Allen.—Two specimens (85104-05) from the valley of the Río Piaxtla, 1 mi. SE Camino Real, 400 ft., resemble the description of *atrovarius* and agree in size, color and most cranial details with a specimen (85744) from 5 mi. NW Mazatlán. The first-mentioned specimens extend the known range of the subspecies some 50 miles northward from Mazatlán (Bailey, 1915:96), and indicate the probable occurrence of the species at lower elevations in other parts of central Sinaloa.

***Peromyscus merriami goldmani*** Osgood.—This subspecies has been reported previously only from the type locality, Alamos, Sonora. Eight specimens were collected in Sinaloa by W. L. Cutter in the autumn of 1957 as follows: 6 mi. N, 1½ mi. E El Dorado (75368-72); 2½ mi. N El Fuerte (75365-66); El Fuerte (75367). The first-mentioned locality is approximately 200 miles south-south-east of the type locality. All specimens collected by Cutter were taken in lowland areas, supporting remarks by Commissaris (1960) concerning habitat preferences of *P. merriami* as compared with those of the closely related *P. eremicus*.

Two of three females from northeast of El Dorado were pregnant on November 18 and 19; one carried four embryos (8 mm. in crown-rump length) and the other three (11 mm.).

External and cranial measurements of *P. m. goldmani* previously were known only for the holotype (Osgood, 1909:252, 267). Measurements of five adults, a male (75370) and four females (75365, 75369, 75371-72) are, respectively, as follows: total length, 204, 225, 215, 214, 210; length of tail, 105, 120, 110, 108, 109; length of hind foot, 21, 23, 23, 22, 22; length of ear from notch, 21, 21, 21, 20, 21; weight in grams, 29, 19, 35

(pregnant), 33, 34 (pregnant); greatest length of skull, 26.6, 26.5, 26.9, 26.5,—; zygomatic breadth, 13.8, 13.9, 14.1, 13.4,—; interorbital constriction, 3.9, 3.8, 4.0, 4.0,—; mastoid breadth, 11.8, 11.9, 11.8, 11.9, 11.5; length of nasals, 10.1, 9.4, 10.0, 10.0,—; length of maxillary tooth-row, 4.5, 4.3, 4.1, 4.1, 4.1.

***Onychomys torridus yakiensis*** Merriam.—Only one specimen of this grasshopper mouse has been reported previously from Sinaloa (from the town of Sinaloa by Hollister, 1914:471). Thirteen specimens in the Museum of Natural History better define the range of the species in the state as follows: 12 mi. N Culiacán (67981-82); 6 mi. N, 1½ mi. E El Dorado (75374-80); 2½ mi. N El Fuerte (75373); 1 mi. S Pericos (62118-20). The individuals from northeast of El Dorado extend the known range of the species some 115 miles south-southeast from Sinaloa.

A female taken on November 17, 1957, from 6 mi. N, 1½ mi. E El Dorado carried two embryos that measured 23 mm. in crown-rump length. A female obtained on November 18 at the same place carried four embryos that measured 10 mm.

***Neotoma albigula melanura*** Merriam.—Four specimens from northern Sinaloa, two (85379-80) from 3 mi. N, 1 mi. E San Miguel, 350 ft., and two (75386-87) from 2½ mi. N El Fuerte, provide the first records of the species from the state. *N. a. melanura* has been known previously from adjacent parts of Sonora and Chihuahua (see Hall and Kelson, 1959:687-688). The specimens from northeast of San Miguel were trapped in runways under cholla cactus, in which nests also were found, on a slope above a rocky arroyo.

***Spilogale pygmaea*** Thomas.—Two pygmy spotted skunks from 5 mi. NW Mazatlán (85898-99) are the fifth and sixth of the species to be reported (see Van Gelder, 1959:381) and the second and third taken in Sinaloa (the holotype of *pygmaea* was obtained at Rosario). One of our specimens, an adult male, was shot on the night of January 10, 1961, as it foraged near an old hollow tree in weedy-thorn bush habitat adjacent to the Pacific Ocean. The hollow tree contained the nest of a woodrat. The second, an adult female, was trapped nearby in a commercial rat trap baited with peanut butter and set near a burrow in a forested area having little undergrowth.

The two individuals here reported fit fairly well the description of color pattern given for the species by Van Gelder (*op. cit.*: 379), but are larger (considering sex), externally and cranially, than any of the four specimens reported previously. Measurements of the male and female are, respectively: total length, 291, 270; length of tail, 65, 58; length of hind foot, 38, 35; length of ear from notch, 25, 23; weight in grams, 247.0, 190.5; condylobasal length, 46.0, 42.9; occipitonasal length, 45.0, 41.4; zygomatic breadth, 29.0, 27.3; mastoid breadth, 23.9, 22.5; interorbital constriction, 14.3, 13.6; postorbital constriction, 14.8, 14.1; palatilar length, 15.6, 14.6; postpalatal length, 23.2, 22.4; cranial depth, 16.6, 15.2; length of maxillary tooth-row, 14.2, 13.4. Cranial measurements were taken in the manner described by Van Gelder (*op. cit.*: 236-237).

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### Transcriber's Notes

Corrected typo: semi-colon for comma in "postpalatal length, 23.2, 22.4;".

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