

## NEW RECORDS OF RODENTS FROM COLIMA, MÉXICO

NOÉ GONZÁLEZ-RUIZ, JOSÉ RAMÍREZ-PULIDO, AND SERGIO TICUL ÁLVAREZ-CASTAÑEDA\*

*Laboratorio de Cordados Terrestres, Escuela Nacional de Ciencias Biológicas, Instituto Politécnico Nacional, Prolongación de Carpio y Plan de Ayala, Colonia Santo Tomás, A.P. CON 256, 11340, D.F. México (NGR) Universidad Autónoma Metropolitana. Unidad Iztapalapa, División de C.B.S., Departamento de Biología, A.P. 55-535, México 09340, D.F., México (NGR, JRP)*  
*Centro de Investigaciones Biológicas del Noroeste (CIBNOR), Mar Bermejo No. 195, La Paz, Baja California Sur, 23090, México (STAC)*

\*Correspondent: sticul@cibnor.mx

**ABSTRACT**—We examined specimens of 3 species of rodents, which represent new records in the State of Colima, Mexico. This includes *Reithrodontomys hirsutus*, which had not been collected in more than 50 years, and the third recorded specimen of *Reithrodontomys mexicanus riparius* from western México and formerly considered restricted to the State of Michoacán.

**RESUMEN**—Examinamos especímenes de 3 especies de roedores, que constituyen nuevos registros para el Estado de Colima, México. Se incluye *Reithrodontomys hirsutus* que no se había colectado desde hace más de 50 años y el tercer espécimen registrado de *Reithrodontomys mexicanus riparius* del oeste de México, anteriormente considerado restringido al estado de Michoacán.

The state of Colima is located in the central-western part of Mexico. One of the smallest states (5,191 km<sup>2</sup>), it is slightly larger than Tlaxcala and the Federal District. Despite its small size, it has a wide variety of climates and vegetation that vary with elevation. Diverse mammal communities result from the richly complex habitats, varying from near tropical on the Pacific coast to the 3,800-m summit of the Volcán de Colima (Colima Volcano). All of these conditions provide complex habitats for its rich mammalian fauna, but this fauna is poorly known, and most records are marginal and sporadic. As a result, there are few papers dedicated to the distribution of a particular group, such as those of Gardner (1962), Kennedy et al. (1984), Iñiguez Dávalos (1993), and Sánchez-Hernández et al. (2002), all of which refer to bats. Only Baker and Phillips (1965) studied rodents.

Of the 115 verified records of species in Colima, only 27 are for rodents. Therefore, it is important to publish records that might enable us to understand distributional patterns of rodents. A small collection of mammals on the Volcán de Colima included new records of 3 rodent species. The specimens were deposited and cataloged in the mammal collection of Escuela Nacional de Ciencias Biológicas, Instituto Politécnico Nacional (ENCB). Skull mea-

surements were made with a Fowler Sylvac electronic caliper. Dental topography was determined according to Hooper (1952).

*Reithrodontomys hirsutus* Merriam, 1901

An adult female (ENCB 29567) was collected 0.5 km north of El Carrizal at 1,520 m elevation (19°22'26"N, 130°40'48"W) and had the following body measurements (mm): total length 200, vertebral tail length 120, hind foot length 22, ear length 15, greatest length of skull 24.2, zygomatic breadth 12.2, brain case breadth 11.5, interorbital constriction 3.8, rostral breadth 4.1, rostral length 8.9, maxillary tooth row length 3.9, zygomatic plate breadth 2.0, and mesopterygoid fossa breadth 1.3.

The mesoloph of M<sup>1</sup> and M<sup>2</sup> extended to the labial margin and were fused with the mesostyles, and the mesoloph of M<sup>3</sup> was small and barely noticeable. The primary folds of M<sup>1</sup> and M<sup>2</sup> were divided into labial and lingual segments. The ectostylids were in M<sup>1</sup> and M<sup>3</sup> and did not have mesolophids. In M<sup>3</sup>, there were 2 large enamel folds in the major and first primary. The second of these folds was bigger in the labial position and S-shaped. The characteristic occlusal surface is shared with *R. fulvescens*, but the external and skull measurements,

as well as the general shape of the skull, separate the 2 species.

This specimen had a brilliant pale cinnamon dorsal color, slightly darker than the flanks, and similar to that of *R. f. nelsoni* specimens from the same locality. In contrast, the dorsal region of the hind foot is darker, and the tail is bicolor and with little hair, which allows scales to be clearly seen. The zygomatic plate is narrow, and the bullae are small. All these characteristics are diagnostic and useful for separating the 2 species.

The morphological and morphometric characteristics of this specimen correspond to those of *R. hirsutus* (Hooper, 1952), of which only 24 specimens from 5 localities are known, all from a small region of southern Nayarit and western Jalisco (Hooper, 1952). This record is therefore evidence of 2 allopatric populations that extend the range of the species by 130 km SSE from Ameca, Jalisco, the type locality of the species. The importance of this record is that the geographic relationship between the 2 populations is not obvious. There has been no new information on this taxon during the last 50 years, because the records of Hall (1981) and Álvarez-Castañeda and Cortés-Calva (1999) were based on the specimens examined by Hooper (1952).

According to Hooper (1952), this species was found at medium elevation, in mountains with moderate slope, deciduous vegetation, and volcanic rocks. Our specimen was captured in a deciduous thorn forest, with small, mostly leguminous shrubs, on plain ground with plentiful withered leaves and volcanic rocks on the south slope of the Nevado de Colima volcano at 1,520 m, higher than the location of the sample examined by Hooper (1952).

This female, captured in April, showed no breeding sings and was collected in sympatry with *Peromyscus maniculatus*, *P. spicilegus*, *Reithrodontomys fulvescens*, *R. mexicanus*, *Baiomys taylori*, and *Liomys pictus*.

*Reithrodontomys mexicanus riparius* Hooper, 1955

An adult female (ENCB 29573) was taken 0.5 km north of El Carrizal at 1,520 m elevation (19°22'26"N, 130°40'48"W). This species was known previously from the type locality 2.5 km SW of Coalcomán, Michoacán (Hooper,

1955). After 1955, Hooper (1957) added a new record from Uruapan, Michoacán, so this finding represents the third location for the subspecies in western Mexico, increasing the distribution by 90 km to the northwest. The specimen was collected at the same locality, in the same conditions, and with the same associated fauna as described for *R. hirsutus*.

External and cranial measurements were as follows (mm): total length 173, vertebral tail length 94, hind foot length 20, ear length 16, skull greatest length 22.5, zygomatic breadth 11.8, cranium breadth 10.9, interorbital constriction 3.5, rostrum breadth 6.3, rostrum length 7.9, maxillary toothrow length 3.3, zygomatic plate breadth 1.6, mesopterygoid fossa breadth 2.7. The measurements were close to those of the holotype (Hooper, 1955).

In our specimen, the length of the vertebral tail was greater than the body (119%), but smaller than the range for the species (130 to 160%). The dorsum was yellowish cinnamon, and the ventral area was grayish white. The inner part of the ear was covered with black hair, and the dark coloration of the tarsus on the hind foot extended all the way to the base of the toes. The tail was nearly black. The brain case was globiform. The zygomatic arches were delicate, so the zygomatic plate was narrow, and lacked beads or a canal. The rostrum was wide, and the palate length was close to that of the maxillary tooth row, but less than that of the incisive foramina.

*Liomys irroratus jaliscensis* (J. A. Allen, 1906)

Two males, 1 adult and 1 subadult (ENCB 29470 and 29497) were collected on the southern slope of the Volcán Nevado de Colima, 7.5 km north and 4 km west of Quisería, at 1,820 m elevation (19°27'20"N, 103°36'36"W). The species is abundant in the highlands of western Mexico, but until now there was no record from Colima, although we do have records from the northern slope of Volcán Nevado de Colima, in the state of Jalisco. In this case, the nearest locality to the Colima specimens is about 20 km NE of Atenquique, Jalisco (Genoways, 1973).

The specimens were collected in April. The subadult had abdominal testes 5 mm long, and the adult had scrotal testes 12 mm long. The 2 specimens were captured in a pine-oak forest

zone, with many shrubs and large fields of corn. Specimens of *R. sumichrasti*, *R. fulvescens*, *Peromyscus spicilegus*, and *Liomys pictus* also were obtained at this location.

The specimens of *L. irroratus* differed externally from *L. pictus* in breadth and color of the lateral line. In the former, it is 2 mm wide and of pinkish ochre color, while in the latter it is 5 mm wide and deep orange.

External and cranial measurements (mm) of the adult and subadult are, respectively: total length 270, 236; vertebral tail length 138, 121; hind foot length 33, 32; ear length 17, 15; skull greatest length –, 33.1; zygomatic arch breadth 16.9, 16.0; cranium breadth –, 14.8; interorbital constriction 9.4, 8.7; nasal length 14.5, 13.2; and maxillary tooththrow length 6.0, 5.7.

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