

# Noteworthy record of *Neotamias solivagus* in Nuevo León, México

## Registro notable de *Neotamias solivagus* en Nuevo León, México

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Six species of chipmunk *Neotamias spp.* are known in México. For the Sierra Madre Oriental mountain range, the only known species is *Neotamias solivagus* with two known locations, in south east Coahuila state. No other record has been published since 1956 and no known specimen of chipmunks is recorded in the state Nuevo León. The 4<sup>th</sup> of July 2020, during a wildlife photo hike in Cerro El Escorpión mountain, in the municipality of Santa Catarina, Nuevo León a small rodent with dorsal stripes, resembling a chipmunk, was photographed within the branches of a fallen tree. A week later, to obtain a better identification of the rodent, a camera trap was placed for two weeks at the site. The rodent photographed with the camera trap presents the same coloration pattern as the one initially photographed in the hike, alternating blackish and whitish back stripes. Due to its coloration typically like a chipmunk and potential distribution, it is identified as *Neotamias solivagus*; the presence of the tree squirrel *Sciurus alleni* was also recorded. Species of trees were identified in the area. This evidence would be the first documented record of the species in Nuevo León, within Parque Nacional Cumbres de Monterrey in a mixed conifers forest, as well as the lowest altitude record for the species. The coexistence of *N. solivagus* with tree squirrel *S. alleni* is documented and the conservation category of this chipmunk is commented.

**Keys words:** Camera trap; Cumbres de Monterrey; chipmunk; distribution; forest; squirrel.

Se conocen seis especies de chichimocos *Neotamias spp.* en México y para la Sierra Madre Oriental únicamente a *Neotamias solivagus* por ejemplares de dos localidades en las montañas del sureste del estado de Coahuila. Ningún registro de este sciúrido se ha publicado desde 1956. No se tiene registro de chichimocos del estado de Nuevo León. El 4 de Julio de 2020, en una caminata fotográfica de vida silvestre en la montaña Cerro El Escorpión, municipio de Santa Catarina, Nuevo León, se fotografió un pequeño roedor con bandas en la espalda típicas de un chichimoco en las ramas de un árbol caído. Una semana después, para mejor identificación de este roedor, se colocó una cámara trampa por dos semanas en el sitio. El roedor fotografiado con la cámara trampa presenta el mismo patrón de coloración al fotografiado durante la caminata, líneas dorsales blancas y negras intercaladas. Debido a su coloración típica como un chichimoco y a su distribución potencial es identificado como *Neotamias solivagus*; se registró también la presencia de la ardilla arbórea *Sciurus alleni*. Se identificaron a las especies arbóreas de la zona. Esta evidencia es el primer registro de un chichimoco en el estado de Nuevo León, dentro del Parque Nacional Cumbres de Monterrey en un bosque mixto de coníferas, así como el registro de menor altitud para la especie. Se documenta la coexistencia de *N. solivagus* con la ardilla arbórea *S. alleni* y se comenta la categoría de conservación de este chichimoco.

**Palabras clave:** Ardilla; bosque; cámara trampa; Cumbres de Monterrey; chichimoco; distribución.

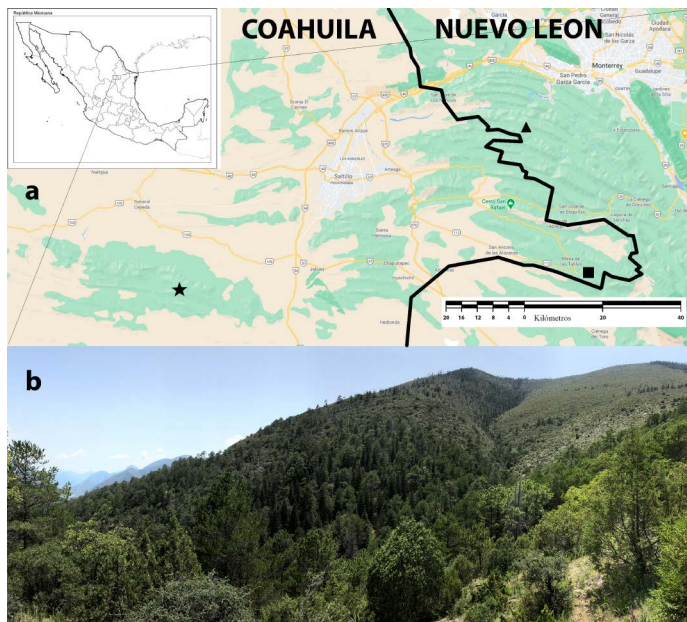
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In México [Thorington et al. \(2012\)](#) and [Ceballos \(2014\)](#) report five species of chipmunks *Neotamias spp.*, *N. bulleri* south of Sierra Madre Occidental (SMOc), *N. dorsalis* with 4 subspecies in the SMOc, west of Sonora and in the mountains north of Coahuila, *N. merriami* in the north border of Baja California, *N. obscurus* with two subspecies in the mountains of Baja California and *N. durangae* with two subspecies, *N. d. durangae* in the SMOc and *N. d. solivagus* in the Sierra Madre Oriental (SMOr) in Coahuila. Nevertheless, [Ramírez-Pulido et al. \(2014\)](#) and [Álvarez-Castañeda et al. \(2017\)](#) acknowledge six species for México, considering *Neotamias solivagus* as a species, because of published papers reporting geographical isolation and differences in morphology, genetics, color pattern, and bacular morphology. [Álvarez-Castañeda and González-Ruiz \(2018\)](#), refer to *N. solivagus* (= *Tamias solivagus*) with the common name “chichimoco de Coahuila”. This note considers *N. solivagus* as a species.

All the information published about this little sciurid, smaller than 90 gr ([Baker 1956](#)), refers only to specimens of

two mountains locations of the Sierra Madre Oriental to south east Coahuila, the first in Sierra de la Concordia (= Sierra de Guadalupe) as the type locality (Figure 1a) with 15 specimens ([Howell 1922](#); [Howell 1929](#); [Goldman 1951](#)), in the municipality of Saltillo and the second locality 100 km west, 19 and 21 km east of San Antonio de las Alazanas ([Baker 1956](#)) municipality of Arteaga (Figure 1a), with 13 specimens. No other record has been published since 1956.

The 4<sup>th</sup> of July, 2020, during a wildlife photo hike in Nuevo León between 13:00 and 14:00 hrs., with a temperature of 23 °C, in Cerro El Escorpión mountain, Santa Catarina, Nuevo León (25° 32' 20" N, 100° 31' 39" W) at 2,380 m (Figure 1b), two similar rodents were observed, one was photographed (Figure 2a, 2b) within the branches of a fallen tree (*Pinus sp.*) next to an oak (*Quercus greggii*); this site is 1.4 km north east of the state border between Coahuila and Nuevo León that is the top of Cerro El Escorpión mountain (Figure 1b). Due to its coloration, with dorsal bands is identified as a chipmunk. The closest human populated area to the site is Llanitos 800 m north (2,200 m),



**Figure 1.** a) Map showing the border of the Mexican states Coahuila and Nuevo León, indicating the published records of *Neotamias solivagus*: this note in Nuevo León (dark triangle), type locality (dark star), and Baker (1956) (dark square). b) Panoramic view of the observation site of *Neotamias solivagus* in Cerro El Escorpión mountain, Santa Catarina, Nuevo León, México.

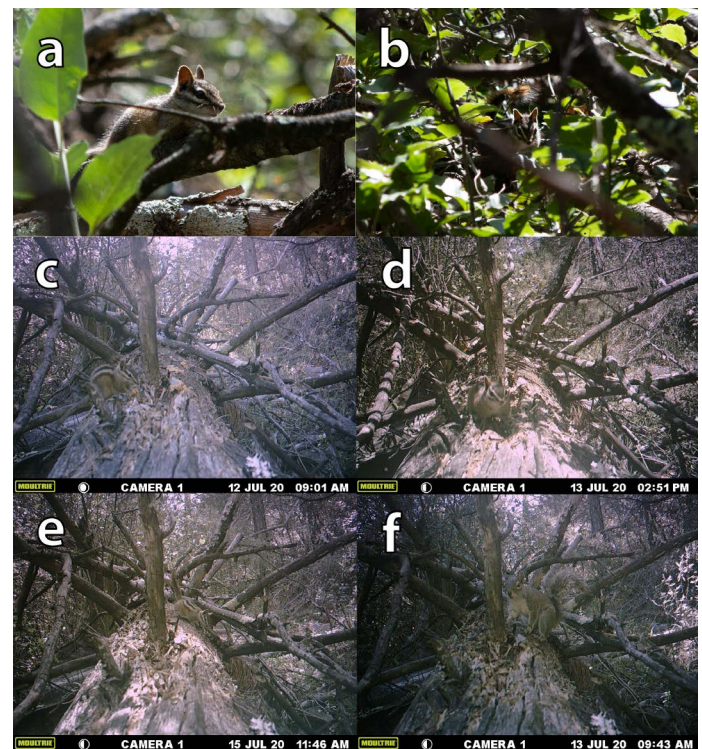
three families live in this area; the word “chichimoco” is unknown to them and the species is called by them as “huroncito” (“little ferret”). The residents of the area mention that “the huroncitos were seen every day, but after hurricane Gilberto in September 1988 none has been seen in the surroundings of the area, because creek was flooded, and water carried them away from the area”.

For better identification, during July 11th, 2020 a camera trap was placed 40 m north of the first observation site (Moultrie Product, Model # CGC-12589-A-5) in a fallen pine tree, a day later presence of the chipmunk was confirmed at 9:01hrs.; the individual is identified as a *Neotamias solivagus* because of its distribution is within Sierra Madre Oriental (Figure 2c). Because *Neotamias dorsalis carminis* is located at 240 km northeast (Baker 1956), *N. bulleri* and *N. durangae* more than 400 km west, both in Sierra Madre Occidental (Ceballos 2014), misidentification as *N. solivagus* is unlikely. The coexistence of *N. solivagus* with *Sciurus alleni* (Figure 2f) is documented. Both species were recorded with this camera trap at different times of day during the next few days up to July 25<sup>th</sup> (Figure 2d and 2e) when the camera trap ran out of batteries. Considering this is an unusual species in the area, the area described is a protected area and scientific collector’s permit is required, no individual was captured.

This photographic evidence is the first record of the species in Nuevo León (Best et al. 1993; Jiménez-Guzmán et al. 1999), as well as the northernmost location known at 39 km north of the closest published record (Baker 1956) and at 95 km northeast from the type locality (Figure 1a). This record is within the protected area Parque Nacional Cumbres de Monterrey.

The site of observation is a seasonal mountain stream, with north exposition, the creek side slopes have an inclination of 20 to 60 degrees, rocky areas and fallen trees, this allows sites for chipmunk’s dens (Best et al. 1993). There is a Montane Mesic Forest or Mixed Conifers Forest (Figure 1b), arboreal stratum is composed of Douglas fir (*Pseudotsuga menziesii*), fir (*Abies vejarii*), pines (*Pinus teocote*, *P. greggii*, *P. montezumae*, *P. cembroides* and *P. johannis*), oaks (*Quercus greggii*, *Q. saltillensis*, *Q. grisea* and *Q. striatula*), madrone (*Arbutus xalapensis*), black cherry (*Prunus serotina*), junipers (*Juniperus flaccida* and *J. deppeana*), aspen (*Populus tremuloides*), walnut (*Juglans mollis*) and hawthorn (*Crataegus mexicana*), medium and herbaceous stratum is visually dense, which complicates spotting and tracking of this ground sciurid of secretive habits, making it difficult to detect (Best et al. 1993). In the area, the tree squirrel *Sciurus alleni* was present, this has arboreal and terrestrial habits, and it is possible that both species of sciurids compete for resources (Mercado-Morales 1985; Best et al. 1993). Baker (1956) does not comment on the coexistence of both squirrels.

Howell (1929) mentions that “Nelson and Goldman found this chipmunk common in the coniferous forest on top of the Sierra de Guadalupe” of the 8,500 to 9,500 feet of height (2,590 m to 2,900 m) and Baker (1956) indicates that “specimens were obtained in stands of pine, fir and aspen at elevations no lower than 9,000 feet (2,700 m)” thus this record in Nuevo León is the lowest altitude ever recorded for the species at 2,380 m in a conifer mixed forest habitat.



**Figure 2.** a) and b) *Neotamias solivagus* over fallen pine branches in Cerro El Escorpión mountain, Santa Catarina, Nuevo León, July 4th, 2020. c), d) and e) confirmation of *Neotamias solivagus* in Nuevo León with camera trap images, over fallen pine in Cerro El Escorpión, Santa Catarina, Nuevo León, México. d) Presence of *Sciurus alleni* coexisting with *Neotamias solivagus* in Cerro El Escorpión, Santa Catarina, Nuevo León, México.

In [Naturalista-CONABIO \(2020\)](#), 18 photographic records exist of this rodent, from 2015 to August 2020, three are from the author of this note, all in southeast of Coahuila; the three northernmost recorded, in the municipality of Ramos Arizpe, two are 9 km south and one 14 km southwest of the recorded in this note. All recorded between the months of March through November.

The chipmunk *Neotamias solivagus* is considered as least concern according to the International Union of Conservation of Nature ([Álvarez-Castañeda et al. 2016](#)) and in the Mexican Conservation Norm ([SEMARNAT 2010, 2019](#)) it is not considered in any category of conservation. Due to their small fragmented distribution limited by altitude and vegetation of mixed conifer forests, it is important to continue the study of this species to determine the current state of its population and understand their genetic diversity as well as its relation to other Mexican chipmunks.

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