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AN ANNOTATED LIST OF MAMMALS COLLECTED IN NUEVO LEON, MEXICO, IN 1938 (1)

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The writer spent the summer of 1938 making an ecological study on the 3800 meter (12,500 ft.) mountain, Cerro Potosí, located about 65 kilometers (40 miles) west of Linares in the Municipio de Galeana, Nuevo Leon, Mexico. The study was primarily one of the animal communities of the upper regions of this mountain which is the highest point of the Sierra Madre Occidental range. The communities studied in detail were in the following cover types: (1) alpine grassland, (2) scrub piñon pine (an undescribed species), and (3) pine forest (*Pinus Montezumae* Lindl. var. *Hartwegii* Engelm.). Muller (1937, 1939) has given accounts of the vegetation of the area.

The results of the main portion of this investigation will appear elsewhere. The mammals were also collected in places other than the areas named, and in view of the limited data available on distribution of Mexican mammals in general, it is deemed pertinent that there be given an annotated list of all mammals taken. All localities were taken from maps issued by the Departamento Geografico, Departamento Forestal y de Caza y Pesca, Mexico, D. F. A number of skins was secured from natives from which data were lacking or unreliable so that identifications were not feasible. Among these were bear, raccoon, coyote, mountain lion, and bobcat. Tracks and other signs of all these were also seen but no specimens secured. The list follows that of Miller (1924) with both scientific and common names given. The majority of the specimens are deposited in the Field Museum of Natural History.

The writer wishes to express his appreciation to Dr. C. C. Sanborn of the Field Museum of Natural History and Dr. E. A. Goldman of the Biological Survey for identification of the mammals. He is also indebted to Señor Juan Zinzer, Departamento Forestal y de Caza Pesca, Mexico, D. F., for permission to collect in Mexico.

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SOREX EMARGINATUS Jackson. Zacatecas Shrew

LOCALITY: Cerro Potosí, Municipio de Galeana, N. L.
HABITAT: Scrub piñon pine.

This supposedly rare shrew was taken only in the scrub pine at about 12,000 feet altitude. The fact that five specimens were taken in an area .07 hectare (.18 acre) in eight days indicates that the animal is abundant in the habitat in which it occurs. Jackson (1928) states that it is known only from Sierra Madre near Bolanos, Jalisco, and Plateado, Zacatecas, Mexico, thus a considerable extension of its range is established. A female taken on July 6 showed evidence of having suckled young. Because of the small size of this shrew two specimens were caught by the tail, the guillotine trap having cleared the rest of the animal. They were dead in both cases, probably due to shock and lack of food. Measurements for the five specimens are given in millimeters in the following respective order: total length, tail length, and hind foot. ♂ 94 - 38 - 12; ♂ 103 - 44 - 12; ♀ 100.5 - 42 - 11; ♀ 95 - 42 - 11; ♀ 91 - 42 - 11.

LEPTONYCTERIS NIVALIS (Saussure). Leaf-nosed bat. "Murcielago".

LOCALITY: Cerro Potosí, Municipio de Galeana, N. L.
HABITAT: Cave.

More than a hundred specimens of this species were taken from an abandoned mine near La Joha, (altitude 11,500 ft.) by means of paddles with which they were swatted down as they flew. The mine harbored at least 10,000 bats, all of this species. There was no evidence of the supposed ability of bats to dodge objects as the number collected was secured in a very short time. It is interesting to note that, although the bats spent the day in this cave, none were observed flying at night at these altitudes. The absence of night-flying insects probably compels them to feed at lower altitudes where bats of undetermined species were seen frequently at night.

EPTESICUS FUSCUS (Beauvois). Big brown bat. "Murcielago".

LOCALITY: La Placeta, Municipio de Galeana, N. L.
HABITAT: Deciduous forest.

One specimen was taken under bark of a rotten stump in oak forest at 9,000 ft. altitude on August 16. Bats were observed flying at this and lower altitudes.

CONEPATUS PEDICULUS Merriam. Hog-nosed skunk. "Zorilla".

LOCALITY: San Juan, Municipio de Galeana, N. L.

HABITAT: Chaparral.

One specimen was found after having been killed by natives, but was in too poor a condition for preservation. It was common in this region.

CITELLUS VARIEGATUS COUCHII (Baird). Couch's rock squirrel. "Tusa".

LOCALITY: Ojo de Agua, San Francisco, and Galeana, Municipio de Galeana, N. L.

HABITAT: Rocky cliffs and chaparral.

These ground squirrels were found to be very abundant in the cliffs and dry regions of the lower altitudes (5,500 ft.). All those observed were totally or partially melanistic. Although a ground squirrel, they frequently climb small trees and give forth their chattering call. They are much detested by the natives since their great abundance exerts havoc on their small corn fields. These animals are quite edible, being equal or superior to regular tree squirrels in quality.

CYNOMYS MEXICANUS Merriam. Mexican prairie dog.

LOCALITY: San Juan and Potosí, Municipio de Galeana, N. L.

HABITAT: Desert prairie.

One specimen was taken at S. Juan where the animals were very numerous. Holes occurred every 25 feet on the average. Although the writer did not visit the place, their presence is also established in the valley of Potosí as substantiated by the natives and a skull brought from there.

SCIURUS ALLENI Nelson. Grey squirrel. "Ardilla".

LOCALITY: Ojo de Agua and Cerro Potosí, Municipio de Galeana, N. L.

HABITAT: Pine and deciduous forest.

This squirrel was found ranging throughout the forests, both deciduous and coniferous, occurring from the lower elevations to the limit of trees on Cerro Potosí.

THOMOMYS SPP. Pocket gopher.

LOCALITY: Cerro Potosí and Ojo de Agua, Municipio de Galeana, N. L.

HABITAT: Pine forest and cultivated fields.

Of two species of pocket gophers (undetermined because of insufficient material), one taken at the upper limits of pine on Cerro Potosí (11,000 ft.) was a greyish color. The other taken at Ojo de Agua

was black. The 'pocket' of the latter contained several wheat straws and some *Amaranthus* or pig weed leaves.

LIOMYS IRRORATUS ALLENI (Coues). Allen spiny pocket mouse. "Ratón".

LOCALITY: Ojo de Agua and San Francisco, Municipio de Galeana, N. L.

HABITAT: Rocky valley.

Two specimens were taken, one caught by a boy in a native house during the day. The other, a female, was taken in a trap in a rocky valley near Ojo de Agua and had five early stage embryos.

REITHRODONTOMYS FULVESCENS TENUIS Allen. Mexican harvest mouse. "Ratón".

LOCALITY: Ojo de Agua, Municipio de Galeana, N. L.

HABITAT: Chaparral.

The only record for this species is in the higher areas of this valley. The specimen was taken by native boys while collecting lizards.

PEROMYSCUS MANICULATUS LABECULA Elliot. White-footed mouse. "Ratón".

LOCALITY: Cerro Potosí, Cieneguillas, and Ojo de Agua, Municipio de Galeana, N. L.

HABITAT: Alpine grassland, scrub piñon pine, pine forest, and chaparral.

This was the most abundant animal encountered. It occurred in all types of habitat found and ranged to the highest peak of Cerro Potosí. It was also frequently found in native houses along with other species. Shells of the snail, *Humboldtiana fortis* Pilsbry, broken open on the side were found in places which indicated this species as well as *Microtus mexicanus* fed on them. Although *P. maniculatus labecula* occurred in the same areas with *M. mexicanus*, and both in large numbers, their general activity periods alternated which enabled them to occupy the same areas with a minimum of competition between the species. *M. mexicanus* was most active during the day while *P. maniculatus labecula* was most active at night.

PEROMYSCUS BOYLII LEVIPES (Merriam). White-footed mouse. "Ratón".

LOCALITY: Near Hacienda Villa Hermosa, Municipio Villa de Santiago, N. L.

HABITAT: Pine forest, scrub oak.

Only four specimens were taken, three in a pine forest not far from Monterrey. These were taken on a passing trip so that little is known of their abundance. Another was taken in scrub oak. They are well represented in collections from this and other mountainous regions.

PEROMYSCUS DIFFICILIS (Allen). White-footed mouse. "Ratón".

LOCALITY: Cerro Potosí and Ojo de Agua, Municipio de Galeana, N. L.

HABITAT: Scrub piñon pine, pine forest, chaparral.

This large mouse was conspicuous because of its size although compared to others was much less abundant, there being 20 *Peromyscus maniculatis labecula* to every *P. difficilis*. It was taken in the same variety of habitats as *P. maniculatus labecula* and was a more serious pest in native houses than others, probably because of its size. The walls of the adobe houses were a maze of tunnels made by this species.

NEOTOMA ALBIGULA LEUCODON Merriam. White-toothed wood rat. "Rata".

LOCALITY: Ojo de Agua, Municipio de Galeana, N. L.

HABITAT: Rocky cliffs near cultivated areas.

The white-toothed wood rat was taken in the rocky valley and seen frequently around camp and near structures of a saw mill, since they were active during the day as well as at night.

MICROTUS MEXICANUS (De Saussure). Mexican vole. "Ratón".

LOCALITY: Cerro Potosí, Cieneguillas, and Ojo de Agua, Municipio de Galeana, N. L.

HABITAT: Alpine grassland, scrub piñon pine, chaparral.

The Mexican meadow mouse is another widespread species in the area of most intensive study and reaches its greatest abundance in the treeless areas although it is found in both pine forest and chaparral. The runways of this species as in others of the genus *Microtus*, are frequently lined with leaves of plants used as food. Examination of such remains under one log where a live *Microtus mexicanus* was taken showed the following: Seeds and green leaves of *Lupinus montanus* HBK, green leaves of *Senecio scalaris* Greene, seed coverings of seeds from scrub piñon pine (an undescribed species), and seeds and male cones from *Pinus Montezumae*. Remains of

shells of the snail, *Humboldtiana fortis,* with openings cut in them indicated that this species as well as *Peromyscus maniculatus labecula* fed on it. The vole occurred in colonies, especially in the alpine grassland. A yellow composite grew abundantly in these areas indicating a definite relationship between the plant and this small mammal. Clark's Nutcracker, *Nucifraga columbiana* (Wilson), was observed once to fly down during midday and catch a *M. mexicanus.* The bird flew to a tall pine tree where it shook the vole several times, then rested a few moments and flew away with the animal still kicking in its beak. (Koestner and Schneider, 1940).

MUS MUSCULUS L. House mouse. "Ratón".

LOCALITY: Ojo de Agua, Municipio de Galeana, N. L.
HABITAT: House.

The house mouse was a constant pest to the natives in adobe houses and many specimens were brought in by them. Strangely enough, none were taken in any of the outdoor sets.

SYLVILAGUS FLORIDANUS CHAPMANI (Allen). Texas cottontail. "Conejo".

LOCALITY: Cerro Potosí and Cieneguillas, Municipio de Galeana, N. L.
HABITAT: Alpine grassland, scrub piñon pine, chaparral.

This cottontail was taken from the peak of Cerro Potosí as well as lower down occurring in all types of cover of the mountain. Its greatest abundance, as would be expected, was reached in the chaparral.

ODOCOILEUS VIRGINIANUS MIQUIHUANENSIS Goldman & Kellogg. Miquihuana white-tailed deer. "Venado".

LOCALITY: Cerro Potosí, Municipio de Galeana, N. L.
HABITAT: Pine forest, scrub piñon pine.

A specimen of this newly described subspecies (Goldman & Kellogg 1940) was taken on July 2, and had horns in the velvet. The deer were found to range through the pine forest and scrub pine areas and in early morning and evening would venture out into the alpine meadow to graze, or browse on an occasional scrub near the edge. They occurred at altitudes from 11,000 to 12,500 feet. Although the deer are protected by game laws in Mexico, the natives take them frequently for food. One native showed skins of two unborn fawns that he had taken from a deer killed in June. The deer were abun-

dant on the mountain usually seen in small groups of two to five, although one morning I counted twelve in one herd.

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