

MATING BEHAVIOR OF THE MEXICAN MOUSE OPOSSUM (*Marmosa canescens*) IN CUIXMALA, JALISCO, MEXICO.

MARCIANO VALTIERRA-AZOTLA AND ANDRES GARCÍA.

*Fundación Ecológica de Cuixmala, A.C. Ave. Cometa 2910, C.P. 44520, Guadalajara,
Jalisco, México,*

The Mexican mouse opossum (*Marmosa canescens sinaloae*) is the smallest species among the Mexican marsupials. This is an endemic species to México with a geographic range from Sinaloa to Chiapas, along the Pacific coast, to the Yucatan Peninsula (Ceballos and Miranda, 1986) where it inhabits mainly in tropical dry deciduous and tropical semideciduous forests. Although some general aspects on its biology are known (Barnes and Barthold, 1969; Alvarez del Toro, 1977; Ceballos and Miranda, 1986), there is not any previous information on the mating behavior of this species.

On July 27th, 1993, the mating behavior of the Mexican mouse opossum (*Marmosa canescens sinaloae*) was recorded in a tropical dry forest in western México (19°24'59" N, 104°58'33" W). Observations were made in the Chamela-Cuixmala Biosphere Reserve, located 45 Km NW of Barra de Navidad, Jalisco. Physical and biotic characteristics are described elsewhere (Bullock, 1986; Ceballos and Miranda, 1986; Arizmendi et al., 1991, Lott, 1993; García and Ceballos, 1994). Observations were made around 18:28 hrs in a sunny afternoon with minimum and maximum air temperature of 22 and 24°C, respectively. Rains had been considerable with about 606 mm of precipitation since the beginning of June (raining season) and were close to the annual average precipitation rate of 748 mm (Bullock, 1986).

At 18:28 hrs a Mexican mouse opossum male was detected walking on the ground litter, 3 m away from a female with her offspring. The offspring was in a dead empty tree of 1.5 m high and 0.2 m in diameter, with an entrance opening at the top. The male climbed the tree and entered the nest. After 4 minutes both male and female emerged. The female stayed at the nest entrance while the male was moving around the nearest branches for almost 5 minutes. Suddenly, the male approached to the female so that they were face to face. The male either passed food to the female or simply touched her snout; this could not be determined because of the vegetation between animals and observers. Both opossums started to make loud noises (resembling suction with saliva) for approximately 3 minutes. Then they went to a nearby branch, 4 cm in diameter, which was 1.8 m above the ground. They suspended themselves up side down by wrapping their tails around the branch. The tail was their only support, and there was nothing between them and the ground. The male grabbed

the female from the back and wrapped his forelimbs around her shoulders, secured her neck with a prolonged neck-bite that extended throughout copulation and used his legs to force the female to open her posterior limbs. The male introduced his penis three times, with an approximate duration of two minutes each time. During each penetration the male moved his hips rhythmically all the time, except when he apparently ejaculated. After the apparent ejaculation, he withdrew and licked his penis. Total time for the three penetrations was 7 minutes. During the last penetration the male kept his penis inside the female for about 1.5 minutes after the apparent ejaculation. While the male was still inside the female during this last copulatory bout, she turned aggressively and bite the male. Both animals began to make the same vocalizations as before the copulation, but the noises were louder and with a more aggressive tone. The opossums fell from the branch to the ground and twisted in the litter until they separated. The female returned to her offspring and the male climbed a tree and stayed in a branch 1.8 m high, there he licked his penis and groin area for several minutes. We left the male around 18:55 hrs.

Special gratitude to Fundación Ecológica de Cuixmala for his support in our field activities and to Gerardo Ceballos for the comments to the manuscript that improved it considerably. B. Miller gently helped with the translation.

REFERENCES

- Alvarez del Toro, M. 1977. Los mamíferos de Chiapas. Universidad Autónoma de Chiapas, Chiapas, México.
- Arizmendi, C. H. Berlanga, L. Márquez, L. Navarizo and F. Ornelas. 1991. Avifauna de la región de Chamela, Jalisco (Serie Cuadernos No. 4) Instituto de Biología, Universidad Nacional Autónoma de México, México, D.F.
- Barness, R. D. And S. W. Barthold. 1969 Reproduction behavior an experimental colony of *Marmosa mitis* Bangs (Didelphidae). J. Reprod. Fert. Suppl. 6:477-482.
- Bullock, S. H. 1986. Climate of Chamela, Jalisco, and trends in the south coastal region of México. Arch. Met. Geaph. Biocl., Ser. B. 36:297-316.
- Ceballos, G. And A. Miranda. 1986. Los mamíferos de Chamela, Jalisco. Instituto de Biología, Universidad Nacional Autónoma de México, México, D. F.
- García, A. and G. Ceballos. 1994. Field guide to the reptiles and amphibians of the Jalisco coast, Mexico. Fundación Ecológica de Cuixmala and Instituto de Biología, Universidad Nacional Autónoma de México, México, D. F.
- Lott, E. 1993. Annotated checklist of the vascular flora of the Chamela bay region, Jalisco, México. Occasional Papers of the California Academy of Sciences, 148:1-60.