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## A RECORD OF *MICROTUS OCHROGASTER* FROM THE LLANO ESTACADO AND OTHER DISTRIBUTIONAL RECORDS OF MAMMALS FROM TEXAS

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### ABSTRACT

Mammal trapping efforts were conducted during the summer and fall of 2014 at sites in five counties in Texas (Delta, Fayette, Hopkins, Lubbock, and Dickens). These efforts resulted in 18 county records involving: one soricomorph, one chiropteran, one lagomorph, one cingulate, and ten species of rodents. The species record for *Microtus* extends the range substantially southward into the central region of the Llano Estacado in Texas. These records expand our knowledge of the distribution and occurrence of mammals in Texas.

Key words: Delta County, Dickens County, Fayette County, Hopkins County, Llano Estacado, Lubbock County, *Microtus ochrogaster*, mammals

### INTRODUCTION

In June, July, and September of 2014, 18 county records of mammals were obtained from Delta, Fayette, Hopkins, Lubbock, and Dickens counties, Texas. These records were determined as such based on distributional information compiled in Schmidly (2004). Specimens collected in Delta and Hopkins counties were from the Cooper Wildlife Management Area, located near Sulphur Springs, Texas; the specimen obtained in Lubbock County was collected on private property near Idalou, Texas (4.8 km N, 3.2 km W); the specimen collected

in Dickens County was on a private ranch near Afton, Texas (1.6 km E); and the specimens from Fayette County were collected on a private ranch located near West Point, Texas (4.8 km S, 4.8 km W). Habitats at the collecting sites were: riparian hardwood forests, pine forests, and mixed grasslands (Delta and Hopkins counties); mixed grasslands and post-oak savannahs (Fayette County); Conservation Rotation Program (CRP) grasslands (Lubbock County); and mesquite grassland (Dickens County).

## MATERIALS AND METHODS

Sherman traps were used to collect 34 of the 42 specimens, firearms were used to collect the bat, squirrel, and cottontail specimens, a Havahart trap was used to collect the armadillo, and one specimen was collected by a landowner's dog. Standard field collecting procedures followed the guidelines of the American Society of Mammalogists (Sikes et al. 2011) and the Texas Tech University ACUC (Animal Care and Use Committee). Standard field measurements and morphological data were recorded in the field. Voucher specimens were prepared as standard skin and skeleton preparations, and tissues (blood, heart, kidney, liver, muscle, and spleen) were frozen in liquid nitrogen. Reproductive tissues (testes) were obtained for some specimens. All

voucher specimens and frozen tissues were deposited in the Natural Science Research Laboratory at the Museum of Texas Tech University (MoTTU) and assigned a museum catalogue number (TTU) and a Tissue and Karyotype number (TK). Specific localities for most specimens collected in these counties were recorded as Universal Transverse Mercator (UTM) coordinates. Species accounts and descriptions follow the taxonomic organization in Schmidly (2004). Taxonomy and authority order follow the format in *The Mammals of North America* (Hall 1981), *Mammal Species of the World* (Wilson and Reeder 2005), and *Revised checklist of North American mammals north of Mexico* (Bradley et al. 2014).

## RESULTS

## ORDER CINGULATA

## Family Dasypodidae

***Dasypus novemcinctus* Linnaeus 1758**

## Nine-banded Armadillo

On 14 September 2014, one male individual (TTU 118704) was collected on a private ranch 1.6 km east of Afton, Dickens County. Nine-banded armadillos are distributed throughout most of Texas except the extreme western part of the state in the Trans-Pecos region (Schmidly 2004). This specimen was collected in the rancher's yard that was surrounded by a mesquite grassland habitat. Armadillos are relatively common in this area and Dickens County is within the expected range of nine-banded armadillos in Texas.

this species is relatively common throughout much of the eastern portion of the state but is rare in the Edwards Plateau and absent in the Trans-Pecos and adjacent areas (Schmidly 2004). The specimen was collected in a tall-grass prairie interspersed with fallen logs. Other specimens collected at this site include *Sigmodon hispidus*, *Peromyscus gossypinus*, and *Peromyscus leucopus*. This specimen represents the first record of *C. parva* in Hopkins County.

## ORDER SORICOMORPHA

## Family Soricidae

***Cryptotis parva* (Say 1823)**

## Least Shrew

On 21 July 2014, one pregnant (two embryos taken) female least shrew (TTU 116587) was collected at the Cooper Wildlife Management Area in Hopkins County, Texas (UTM 15S-257730-3690178). In Texas,

The evening bat is distributed throughout eastern, central, and south-central regions of Texas. Habitat preferences include forested areas with available water sources and hollow trees for roosting sites (Schmidly 2004). At the West Point locality (Fayette County), a single female specimen (TTU 116592) was collected on 16 July 2014. This specimen was collected over a pond adjacent to a hardwood oak forest (UTM 14R-683386-3313248) and serves as the first record of *N. humeralis* for Fayette County.

## ORDER CHIROPTERA

## Family Vespertilionidae

***Nycticeius humeralis* (Rafinesque 1818)**

## Evening Bat

## ORDER RODENTIA

## Family Sciuridae

***Sciurus carolinensis* Gmelin 1788**

## Eastern Gray Squirrel

On 12 September 2014, a male eastern gray squirrel (TTU 116623) was collected in a hardwood bottomland habitat near the Sulphur River channel at the Cooper Wildlife Management Area in Delta County (UTM 15S-255955-3691553). The native distribution of *S. carolinensis* in Texas includes the eastern one-third of the state (Schmidly 2004). Habitat preferences of eastern gray squirrels include dense understories of a variety of vegetation including hammocks of live and water oaks. This specimen represents the first county record for *S. carolinensis* from Delta County and occurs within the expected range of eastern gray squirrels in east Texas. Although this is the first record for *S. carolinensis* in Delta County, gray squirrels are common in this region. The absence of prior documentation of gray squirrels in Delta County is probably due to a lack of collecting efforts by biologists.

***Sciurus niger* Linnaeus 1758**

## Eastern Fox Squirrel

The eastern fox squirrel is distributed in the eastern three-quarters of Texas but has expanded westward as a result of human introductions (Schmidly 2004). This species is a common inhabitant of open woodlands and bottomland areas of streams and rivers (Schmidly 2004). Two female specimens (TTU 116625 from Delta County, collected on 12 September 2014, UTM 15S-254981-3692170; TTU 116624 from Hopkins County, collected on 23 September 2014, UTM 15S-257754-3689313) were collected in a hardwood bottom forest habitat. The eastern fox squirrel is common in this county and other portions of East Texas; however many counties in this region have not been surveyed extensively by field biologists. These specimens represent the first records of *S. niger* for Delta and Hopkins counties.

## Family Heteromyidae

***Chaetodipus hispidus* (Baird 1858)**

## Hispid Pocket Mouse

From 15 July to 18 July 2014, four specimens (1 female, 3 males) of the hispid pocket mouse were

collected in Fayette County, Texas. Specimens were obtained in old-field or disturbed grasslands (TTU 116583, UTM 14R-681965-3311761; TTU 116584, UTM 14R-682930-3310653; TTU 116585, UTM 14R-684235-3310515; and TTU 116586, UTM 14R-682791-3311424). This species is a common inhabitant of dry, sandy grasslands throughout most of Texas, except for the extreme southeastern portion of the state (Schmidly 2004). In addition, other specimens collected from these sites include *P. leucopus*, *S. hispidus*, and *Neotoma floridana*.

## Family Cricetidae

***Oryzomys texensis* Harlan 1894**

## Texas Marsh Rice Rat

Two male specimens were collected on 19 July 2014, at the Cooper Wildlife Management Area in Hopkins County, Texas (TTU 116593; TTU 116594). The habitat was dense grassland adjacent to a creek and wooded area (UTM 15S-257543-3689275). This species, formerly recognized as *O. palustris*, was shown to be genetically distinct from rice rats in the eastern United States (Hanson et al. 2010); consequently, we have used *O. texensis* as the appropriate species name (Bradley et al. 2014). This species occurs throughout most of the eastern fourth of the state to the lower Rio Grande valley in Cameron and Hidalgo counties in Texas (Schmidly 2004). Typically, Texas marsh rice rats occur in wet, grassy areas (Eubanks et al. 2011). Other mammals collected from this area include *Peromyscus maniculatus*, *S. hispidus*, *Sylvilagus floridanus*, and *Procyon lotor*. These specimens denote the first record of *O. texensis* for Hopkins County.

***Reithrodontomys fulvescens* J. A. Allen 1894**

## Fulvous Harvest Mouse

On 20 July 2014, one female individual (TTU 116609) was collected in a hardwood bottomland interspersed with an old-field habitat (UTM 15S-254914-3692227). This species occupies most of the eastern and central part of Texas, as well as parts of the Trans-Pecos region, but is absent from the northwestern portion of the state, specifically the Panhandle and Llano Estacado region (Schmidly 2004). In addition, several *S. hispidus* were located at this site. This specimen represents the first county record of *R. fulvescens* for Delta County.

***Peromyscus gossypinus* (Le Conte 1853)**

Cotton Mouse

The range of this species includes much of the eastern portions of Texas. The cotton mouse is found primarily in woodland habitat bordering open areas (Schmidly 2004). From 18 July to 20 July 2014, two females and two male individuals (TTU 116604, TTU 116605, TTU 116606, TTU 116607) were collected from Hopkins County at the Cooper Wildlife Management Area (UTM 15S-257245-3688918). In addition, on 21 July 2014, one male (TTU 116620) was collected at a second locality (UTM 15S-257730-3690178). On 20 July 2014, three females and five male individuals (TTU 116595, TTU 116596, TTU 116597, TTU 116598, TTU 116599, TTU 116600, TTU 116601, TTU 116602, TTU 116603) were collected at a third locality on the Cooper WMA in Delta County (UTM 15S-254914-3692227). The three trapping localities included hardwood bottomland habitats surrounded by old-field grasslands. In addition to *P. gossypinus*, *P. leucopus*, *N. floridana*, *R. fulvescens*, *S. hispidus*, *C. parva*, and *O. texensis* were collected at these sites.

***Peromyscus maniculatus* (Wagner 1845)**

North American Deer Mouse

The North American deer mouse occurs throughout Texas but is uncommon in the eastern, coastal, and southern regions of the state. They are found in a variety of habitats, ranging from dense grasslands to open, sparsely vegetated deserts (Schmidly 2004). On 19 July 2014, one female individual (TTU 116608) was collected in a grassy field (UTM 15S-257543-3689275). Other species found at this locality include *S. hispidus*, *S. floridanus*, *P. litor*, and *O. texensis*. This specimen represents the first record of *P. maniculatus* for Hopkins County.

***Sigmodon hispidus* Say and Ord 1825**

Hispid Cotton Rat

The hispid cotton rat occurs statewide in Texas, inhabiting grassy areas (Schmidly 2004). On 28 June 2014, one male individual (TTU 116613) was collected in Fayette County (UTM 14R-684683-3309286). This specimen was captured in the landowner's yard. Additionally, three males and three females were obtained at three localities in Fayette County: UTM 14R-681965-

3311761 (TTU 116614), UTM 14R-683742-3311432 (TTU 116615), and UTM 14R-682791-3311424 (TTU 116610, TTU 116611, TTU 116612, TTU 116616). These individuals were collected in tall, grassy areas bordering a pine forest. Other species found at these localities include *C. hispidus*, *P. leucopus*, *N. floridana*, *Mus musculus*, and *Geomys attwateri*.

***Neotoma floridana* (Ord 1818)**

Eastern Woodrat

The eastern woodrat is distributed throughout much of eastern and central Texas. Habitat preference in Texas includes post-oak savannahs, characterized by fallen logs and brush piles (Schmidly 2004). On 14–17 July 2014, one female and three male individuals were collected at four localities: UTM 14R-682251-3310603 (TTU 116588), UTM 14R-684683-3309286 (TTU 116589), UTM 14R-681965-3311761 (TTU 116590), and UTM 14R-682930-3310653 (TTU 116591). All specimens were collected in a hardwood forest habitat. Other species collected from these localities include *C. hispidus*, *M. musculus*, *P. leucopus*, *S. hispidus*, and *G. attwateri*. This specimen represents the first county record of *N. floridana* for Fayette County.

***Microtus ochrogaster* (Wagner 1842)**

Prairie Vole

On 6 September 2014, one female prairie vole (TTU 116621) was trapped in an old grassy field area adjacent to a CRP grassland (UTM 14S-0248341-3731579) in Lubbock County. Prairie voles typically inhabit tall grass prairies in the northern regions of the Texas Panhandle. Historically, the distribution of *M. ochrogaster* in Texas was restricted to Hansford and Lipscomb counties (Schmidly 2004). More recently, *M. ochrogaster* was documented from Armstrong and Ochiltree counties within the Texas Panhandle (Poole and Matlack 2007). This specimen serves as a county record of *M. ochrogaster* in Lubbock County and extends the distribution southward on the Llano Estacado. Based on the current distribution records, *M. ochrogaster* appears to have a discontinuous range in the Texas Panhandle and Llano Estacado. However, it is unclear whether this scattered distribution is the result of a lack of trapping efforts in intervening areas or an ongoing, natural range extension. Alternatively, for some rodent species, human agricultural activities (i.e.,

movement of hay, grain, and feeds) may be responsible for transporting and ultimately introducing individuals into recently unoccupied areas.

This distributional record is, most likely, evidence that *M. ochrogaster* is reclaiming portions of the original range it occupied during the late Pleistocene and not the result of a recent range extension into a previously unoccupied habitat. During the late Pleistocene, *M. ochrogaster* was distributed throughout the northern half of Texas but retreated northward during the more arid Holocene (Stangl 2004). Perhaps the combination of increased CRP acreage and irrigation of croplands and grasslands has allowed this species to repopulate portions of their previously occupied habitat.

Other specimens collected at this locality include *S. hispidus*, *M. musculus*, *C. hispidus*, *P. maniculatus*, *Reithrodontomys montanus*, and *Reithrodontomys megalotis*.

Family Leporidae  
*Sylvilagus floridanus* (J. A. Allen 1890)  
Eastern Cottontail

The eastern cottontail has a ubiquitous distribution in Texas. Habitat preferences include dense, brushy areas, habitats surrounding cultivated fields, as well as riparian areas (Schmidly 2004). On 15 July 2014, one male individual (TTU 116617) was collected in a mowed field adjacent to a post-oak savannah habitat in Fayette County (4.8 km S, 4.8 km W West Point, Van Wart Ranch). On 20 July 2014, one female individual (TTU 116618) was collected in a mixed pine/hardwood bottomland at the Cooper Wildlife Management Area in Hopkins County (UTM 15S-257543-3689275). Additionally, on 12 September 2014, one female individual (TTU 116622) was obtained in a hardwood bottomland habitat at the Cooper WMA in Delta County (UTM 15S-240124-3689001). These specimens serve as the first records of *S. floridanus* for Delta, Fayette, and Hopkins counties.

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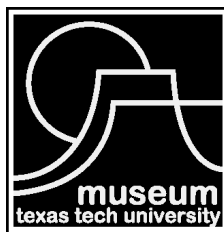
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