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Title: Mammals of the Grand Mesa, Colorado

Author: Sydney Anderson

Release Date: February 15, 2010 [EBook #31280]

Language: English

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University of Kansas Publications Museum of Natural History

Volume 9, No. 16, pp. 405-414, 1 fig. May 20, 1959

Mammals of the Grand Mesa, Colorado

 \mathbf{BY}

SYDNEY ANDERSON

University of Kansas Lawrence 1959

University of Kansas Publications, Museum of Natural History

Editors: E. Raymond Hall, Chairman, Henry S. Fitch, Robert W. Wilson

> Volume 9, No. 16, pp. 405-414, 1 fig. Published May 20, 1959

> > University of Kansas Lawrence, Kansas

PRINTED IN
THE STATE PRINTING PLANT
TOPEKA, KANSAS

Mammals of the Grand Mesa, Colorado

[Pg 407]

BY

SYDNEY ANDERSON

The Grand Mesa of Colorado is a westward extension of the mountains of central Colorado, standing more than five thousand feet above the valleys of the Colorado and the Gunnison rivers. To certain montane mammals the mesa is a peninsula of cool, moist, forest surrounded by inhospitable, hot, dry, barren lowland.

Few mammals previously have been preserved or reported from the Grand Mesa. Of the species here reported, Warren (1942, The Mammals of Colorado, Univ. Oklahoma Press) mentioned only four from the counties in which the Grand Mesa is located. Twenty-two species are here recorded from the Grand Mesa, and two localities below the rim of the Mesa on the north slope, on the basis of specimens preserved, and five additional species on the basis of observations. Many of these species are limited to a montane habitat or find their optimum conditions there. The known geographic ranges of some subspecies are extended westward.

Specimens and notes were obtained by members of a field party from the Museum of Natural History led by Dr. Harrison B. Tordoff. The party, including also R. Gordon Cliffgard, John M. Legler, Olin L. Webb, and Glen E. Woolfenden, was in the area from June 17 to July 5, 1954, and obtained all of the specimens listed excepting those from 28 miles east of Grand Junction (Sect. 29, T. 11S, R. 95W), Mesa County, that were obtained from June 13 to July 2, 1956, by Phillip M. Youngman, and those from Land's End Road that were obtained on May 13 and 14, and on October 1, 1948, by D. A. Sutton.

Localities designated by numbers in the accounts to follow are listed in the legend for Figure 1. Localities 1 and 3 lie below the rim of the Mesa on the north side. Catalogue numbers are of the Museum of Natural History of the University of Kansas, unless noted otherwise.

Sorex cinereus cinereus Kerr.—Two male (59642-59643) Masked Shrews weighing 4.8 and 4.9 grams were trapped on June 17 at locality 10, and a nonpregnant female (59644) was trapped on June 26 at locality 6. *Sorex cinereus* seemed to be less abundant on the Mesa than *Sorex vagrans*; more individuals of *S. vagrans* than of *S. cinereus* were trapped on June 17 at locality 10 and on June 26 at locality 6, and *S. vagrans* was trapped at three localities where no *S. cinereus* was obtained.

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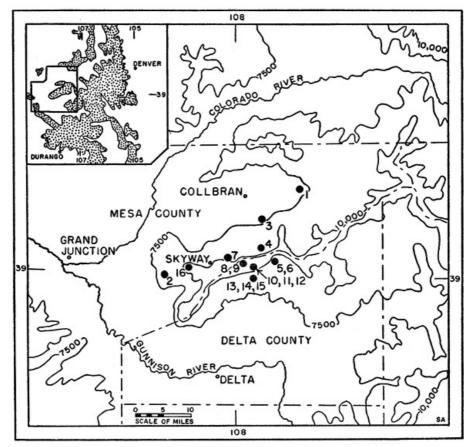


Fig. 1. Map of the Grand Mesa (for purposes of this paper the area above 7500 feet on each side of the northern boundary of Delta County). The inset of the western three-fourths of Colorado shows the Grand Mesa in relation to the larger areas of mountains in the state (areas above 9000 feet are stippled). The following collecting localities are indicated by numbered, black dots:

- (1) 2 mi. N, 9 mi. E Collbran, 7000 ft., Mesa County.
- (2) Land's End Road to Grand Mesa, 6800 to 8050 ft., Mesa County.
 - (3) 3 mi. E, 4 mi. S Collbran, 6800 ft., Mesa County.
 - (4) 3 mi. E, 9 mi. S Collbran, 10,200 ft., Mesa County.
 - (5) 5-1/2 mi. E, 11-1/2 mi. S Collbran, in Delta County.
- (6) 5-1/2 mi. E, 12 mi. S Collbran, 9600 to 10,400 ft., in Delta County.
- (7) 28 mi. E Grand Junction (Sec. 29, T. 11S, R. 95W), Mesa County.
 - (8) 6 mi. E Skyway, 10,000 to 10,500 ft., in Delta County.
- (9) 7 mi. E Skyway, in Delta County.
- (10) 8 mi. E, 1/2 mi. S Skyway, 9500 to 10,200 ft., in Delta County.
- (11) 8 mi. E, 3/4 mi. S Skyway, 10,200 ft., in Delta County.
- (12) 8 mi. E, 1 mi. S Skyway, 10,000 to 10,200 ft., in Delta County.
- (13) 8 mi. E, 1-1/2 mi. S Skyway, 8500 to 9600 ft., in Delta County.
- (14) 8 mi. E, 2 mi. S Skyway, 9000 ft., in Delta County.
- (15) 8 mi. E, 2-1/2 mi. S Skyway, 9600 ft., in Delta County.
- (16) 1 mi. S, 4 mi. W Skyway, 10,200 ft., Mesa County.

Sorex vagrans obscurus Merriam.—Fifteen specimens of the Vagrant Shrew (59645-59655, 59665-59668) were trapped in Delta County from localities 6, 10, 12, 13, and 14. The fourteen specimens having skulls fell into two distinct age-classes based on wear of the teeth as described by Findley (1955, Univ. Kansas Publ., Mus. Nat. Hist., 9:8); 5 were in the younger group and 9 in the older group. Weights in grams of the younger shrews were 4.6, 5.5, 5.7, 5.8, and 6.4; weights of the older shrews were 6.4, 6.8, 7.3, 7.4, 7.5, 8.0, 8.3, and 8.8. One of the seven females was lactating; none contained embryos.

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17; all others were taken on June 21. None was pregnant or lactating. Two are young, weighing 11.0 and 12.9 grams; the other four are older, weighing 16.6, 17.0, 19.2, and 21.5 grams.

Myotis evotis evotis (H. Allen).—One female Long-eared Myotis (59671), containing no embryos, was shot at dusk on July 2, at locality 3, which is below the rim of the Mesa.

Myotis volans interior Miller.—One female Long-legged Myotis (70016), containing no embryos, was shot at locality 7 on July 1, 1956.

Ochotona princeps figginsi J. A. Allen.—Six specimens of the Pika (59672-59675, 70018-70019) from localities 5, 6, 7, 8, and 9 extend the known range of the subspecies approximately 55 miles to the westward from Irwin in Gunnison County. Each of two females taken on June 18 and 26 contained three embryos, which measured 20 millimeters in the latter; a third female on June 29 contained two embryos 35 millimeters in length.

Lepus americanus bairdii Hayden.—No Snowshoe Rabbit was taken, but one individual was observed by H. B. Tordoff on June 18, 1954, at locality 8. Droppings of a large lagomorph were seen in the woods, and tracks were seen in the snow.

Marmota flaviventris luteola A. H. Howell.—The seven specimens of the Yellow-bellied Marmot (59731-6, 70022, four adult and two young, each a skin and skull, and one skull only of an adult) are referable on the basis of size, color, and locality as discussed by Warren (1936, Jour. Mamm., 17:394) to M. f. luteola. The total lengths in millimeters are as follows: young male 582; adult males 640, 655; young females 460, 520; adult female 630. The color and condition of the pelage is the same in all the specimens except that the two largest males are much more worn and show irregular patches of new hair on the back, and the two young females are paler especially on the back and tail. These marmots were taken at localities 4, 7, 8, 10, and 16.

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Spermophilus lateralis lateralis (Say).—Eleven specimens of the Golden-mantled Ground Squirrel (59748-59756, 59763-59764) were taken at localities 1, 3, and 4. Young were born before late June; three young of the year were taken at locality 3 on June 29 and 30, and none of the adult females taken at locality 1 (1 female) and at locality 4 (3 females) was pregnant. Most adults of both sexes at all elevations represented (6800 to 10,200 ft.) showed molt in progress and proceeding from anterior to posterior. All specimens were obtained from June 25 to July 4.

Spermophilus variegatus grammurus (Say).—Three Rock Squirrels (59738-59739, 59742) were obtained at locality 3. One of these specimens was a skull found near a wood rat nest. The other two were nonpregnant females; the adult measured 485 millimeters in total length, and the younger individual measured 413 millimeters. The two skins are characteristic of $S.\ v.\ grammurus$ in their paleness.

Eutamias minimus consobrinus (J. A. Allen).—The 63 specimens of the Least Chipmunk (59770-59824, 60105-60108, 70024-70025, and nos. 5194 and 5196 in Univ. of Colorado Museum) were taken at localities 2, 3, 4, 6, 7, 8, 10, 13, and 15. The reproductive condition at time of death had been noted for 20 females obtained from June 17 to July 2 at elevations from 9500 to 10,400 feet. Eleven of these had no embryos, but six have mammae that are still prominent on the dried skins and may have had litters prior to their capture. Nine females contained embryos, numbering 3 in two specimens, 5 in four specimens, 6 in two specimens, and 7 in one specimen.

Eutamias quadrivittatus hopiensis Merriam.—Four specimens of the Colorado Chipmunk were obtained by D. A. Sutton at locality 2, at 6800, 6900, 7175, and 8050 feet elevation. All are males taken on May 13 and 14, 1949; the specimens bear numbers 5197, 5198, 5199, and 5201 in the collection of the University of Colorado Museum.

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Thomomys talpoides fossor J. A. Allen.—The 27 specimens of the Northern Pocket Gopher (59840-59849, 70086-70102) were trapped at localities 3, 6, 7, 10, 11, and 13. The eight skins from locality 7 differ from those from the other localities on the Mesa in being uniformly duller in color dorsally. No significant difference in size or cranial characters was observed. Specimens assigned to *T. t. fossor*, in the collection of the Museum of Natural History, from other localities in Colorado differ in color from any of the specimens from the Grand Mesa. Until larger numbers of *Thomomys talpoides* from other localities in Colorado and from the type locality of *T. t. fossor*, stated to be at Florida, in southern Colorado, have been studied, the specimens from the Grand Mesa seem best referred to *T. t. fossor*. Three females from localities 7, 10, and 11 contained embryos (2, 4, and 5 in number), and seven other females from localities 6 and 7 show distinct mammae on the dried skins or were recorded by the collectors as lactating.

Castor canadensis concisor Warren and Hall.—Dams constructed by beavers were seen at locality 4 on June 23, 1954. No specimen was taken.

Peromyscus maniculatus rufinus (Merriam).—The 36 specimens of the Deer Mouse (59921-59956) are from seven localities (3, 4, 6, 10, 12, 14, and 15). The mice vary considerably in color; most of them are like mice of the highlands of Colorado and unlike the paler mice inhabiting the lower areas immediately to the west of the Grand Mesa. Young individuals trapped on June 20, 21, and 22 and judged to range from a month through two months in age, and females containing embryos, attest to a somewhat protracted breeding season on the Grand Mesa.

Neotoma cinerea arizonae Merriam.—Two immature Bushy-tailed Wood Rats (60000-60001) were obtained at locality 3 on July 3.

Clethrionomys gapperi galei (Merriam).—The 22 specimens (60005-60025, 70133) of Gapper's Red-backed Vole were taken at localities 6, 7, and 10, and are clearly referable to C. g. galei, rather than to Clethrionomys gapperi gauti to the south, on the basis of generally dark dorsal pelage, indistinctly bordered broad dorsal stripe, and cranial features. C. g. gauti was described by Cockrum and Fitch (1952, Univ. Kansas Publ., Mus. Nat. Hist., 5:289) on the basis of 14 specimens from southern Colorado and northern New Mexico. Twenty-one additional specimens from five miles south and one mile west of Cucharas Camps, Huerfano County, were obtained from the seventh to the fourteenth of July by the field party led by Tordoff after the party left the Grand Mesa. These specimens substantiate the subspecific distinctness of C. g. gauti in that they agree in external and in cranial appearance with the description of typical C. g. gauti, and are distinct in appearance from specimens of C. g. galei from the Grand Mesa and from other localities in northern Colorado. The six specimens from two localities in Colorado available to Cockrum and Fitch exhibited evidence of intergradation at one locality, and atypical smallness at the other locality. A specimen (70134) taken on June 26, 1956, by Phillip M. Youngman on the Black Mesa, nine miles WNW of Sapinero, 9500 ft., Gunnison County, Colorado, is almost identical in color to the two specimens from Saguache County regarded by Cockrum and Fitch as intergrades between C. g. galei and C. g. gauti, but in small size of auditory bullae and narrowness of braincase resembles C. g. galei, to which it seems best referred. The specimens from the Grand Mesa extend the known range of C. g. galei approximately 50 miles westward in central Colorado from Gothic. Three females were pregnant; two trapped on June 17 and June 25 contained 6 embryos each, and one trapped on June 25 contained 5 embryos. Four of the females taken in Huerfano County were pregnant; one contained 3 embryos, two contained 5 embryos, and one contained 7 embryos. Immature individuals are present in the sample from Huerfano County also.

Phenacomys intermedius intermedius Merriam.—Three Heather Voles (60048, 60049, 70135) were trapped at localities 6, 7, and 10. All were adult females; one, taken on June 25 at locality 6, contained seven embryos five millimeters in length, and one, taken on July 2 at locality 7, contained seven embryos nine millimeters in length. These specimens extend the known range of the species approximately 55 miles west from Gothic (Pruitt, Jour. Mamm., 35:450, 1954).

Microtus longicaudus mordax (Merriam).—Ten Long-tailed Voles (60070-60079) represent localities 3, 6, 12, 13, 14, and 15.

Microtus montanus fusus Hall.—Ten Montane Voles (60060-60068, 70145) represent localities 3, 6, 7, and 15.

Ondatra zibethicus osoyoosensis (Lord).—Muskrats were seen daily from June 17 to June 23 in a lake at locality 13. No specimen was obtained.

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Zapus princeps princeps J. A. Allen.—Nineteen Western Jumping Mice (60109-60126, 60137) were trapped at localities 6, 10, 12, 14, and 15.

Erethizon dorsatum epixanthum Brandt.—A Porcupine skull was seen in the nest of a wood rat by John M. Legler at locality 3 on July 2. On June 20 a porcupine was seen at locality 12. No specimen was obtained.

Mustela frenata nevadensis Hall.—Seven Long-tailed Weasels (60138-60143, 70152) were taken at localities 1, 4, 7, 8, 13, and 14. Four are males and three are females. Some of these were attracted by "squeaking" noises and then shot.

Taxidea taxus taxus (Schreber).—One adult male Badger (60144) was found dead; the skull and baculum were saved. The subspecific identification is on geographic grounds, and is tentative. In this area *T. t. taxus* and *T. t. fippsi* may intergrade.

Mephitis mephitis estor Merriam.—One Striped Skunk (60145) of unknown sex was found dead in the cellar of a cabin at locality 10.

Odocoileus hemionus (Rafinesque).—Mule Deer were observed at locality 15; no specimen was obtained.

DISCUSSION

The species here reported from the Grand Mesa may be placed according to their geographic ranges and their restriction to certain habitats in two groups:

BOREAL.—Each of the 12 species listed below is of northern distribution, is dependent, at the latitude of Colorado, upon the habitat provided by areas of high altitudes, and is near its southern zonal limit on the Grand Mesa. The 12 species are: Sorex cinereus, Sorex palustris, Sorex vagrans, Ochotona princeps, Lepus americanus, Marmota flaviventris, Spermophilus lateralis, Clethrionomys gapperi, Phenacomys intermedius, Microtus longicaudus, Microtus montanus, and Zapus princeps. Thomomys talpoides may be considered in this category also, although it is less restricted in range and habitat than most of the other species listed as boreal. These thirteen species make up almost half of the twenty-seven species known from the Grand Mesa.

WIDE-SPREAD.—Species in this category are those that are widely distributed in the western United States and that occur in Colorado in both the mountains and the lower more arid intermontane areas. Some of these species are differentiated into subspecies, one of which inhabits the [Pg 414]

mountains and another the lowlands. Wide-spread species that do not have subspecies in the lowlands different than the subspecies in the mountains or that are represented by too little material from the Grand Mesa to be evaluated critically are *Myotis evotis, Myotis volans, Spermophilus variegatus, Eutamias quadrivittatus, Castor canadensis, Ondatra zibethicus, Erethizon dorsatum, Mustela frenata, Taxidea taxus, Mephitis mephitis, and Odocoileus hemionus.* Three other wide-spread species are differentiated into lowland and highland subspecies; two of these species, *Eutamias minimus* and *Peromyscus maniculatus,* are represented on the Grand Mesa by the darker subspecies of the mountains. The third species, *Neotoma cinerea,* is represented by two individuals from below the actual rim of the mesa; they are intergrades between the lowland and highland subspecies.

Species of southern distribution, that are dependent at the latitude of Colorado upon the habitat provided by areas of lower altitudes, and that are here in Colorado near their northern limit comprise a third category that is not represented in the list of mammals from the Grand Mesa although such characteristic species as *Ammospermophilus leucurus, Perognathus apache*, and *Dipodomys ordii* occur as near as Grand Junction.

Approximately 55 per cent of the species of the mammalian fauna are boreal; no species of Sonoran affinities finds haven on the Grand Mesa.

Transmitted January 22, 1959.

27-7472

Transcriber's Notes

Page <u>407</u>: Rejoined the remainder of the last paragraph, originally found on page 409.

*** END OF THE PROJECT GUTENBERG EBOOK MAMMALS OF THE GRAND MESA, COLORADO ***

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