

DESCRIPTION OF A NEW ROCK POCKET MOUSE, *CHAETODIPUS INTERMEDIUS*, FROM NEW MEXICO

The rock pocket mouse (*Chaetodipus intermedius*) occurs on three large lava fields in New Mexico: Alton lava flows in Dona Ana Co.; Carrizozo malpais in Lincoln and Otero counties; Pedro Armendariz lava field in Sierra and Socorro counties. On these lava fields, *C. intermedius* are strikingly darker in color than nearby populations (Dice, 1929; Benson, 1932; Weckerly, 1983). Weckerly and Best (1985) have shown morphologic differences in size among these populations. The purpose of this paper is to describe a new subspecies of *C. intermedius* from the Pedro Armendariz lava field.

Chaetodipus intermedius beardi, new subspecies

Holotype—Adult female, skin and cranium, Eastern New Mexico University Natural History Museum (ENMU) 8918, collected 23 August 1982, original number F. W. Weckerly 236.

Type locality—26 mi. N, 15.5 mi. E Engle, Socorro Co., New Mexico.

Distribution—Found only on the Pedro Armendariz lava field in Sierra and Socorro counties, New Mexico.

Diagnosis—A medium-sized rock pocket mouse. Dorsal pelage is dark-fuscous gradually turning pale mouse-gray laterally (color nomenclature is from Dice, 1929). Individual dorsal hairs are dark-fuscous terminally, gradually turning pale mouse-gray proximally. Venter is white with a tinge of buff. The location of the junction between the dorsal and ventral pelage is variable throughout the paratypes. Relative numerical color values recorded on a Baush and Lomb 505 Spectrophotometer identified two color groups. Colorimetric values for 19 dark-hued and 2 tan-hued specimens, respectively, are: $X = 0.050$ and 0.145 ; range of 0.04 to 0.07 and 0.13 to 0.16 .

Measurements (mm) for the holotype followed by the four adult topotypes (ENMU 8717, 8919, 8920, 8937) are: total length, 157, 155, 160, 156, 151; tail length, 91, 94, 90, 91, 92; hind foot length, 19, 20, 19, 19, 19; ear length, 7, 7, 7, 7, 7; greatest depth of cranium, 8.7, 8.8, 8.6, 8.8, 8.5;

mastoid width, 12.8, 12.9, 13.0, 13.3, 12.9; greatest length of cranium, 23.5, 23.5, 23.2, 23.8, 23.3; rostral width, 3.6, 3.8, 3.5, 3.7, 3.7; nasal length, 8.2, 8.3, 7.9, 8.4, 8.1; nasal width, 2.1, 2.3, 2.1, 2.1, 2.2; interorbital width, 6.2, 6.2, 6.2, 6.2, 6.0; maxillary toothrow length, 3.6, 3.7, 3.6, 3.6, 3.6; maxillary toothrow width, 4.2, 4.2, 4.1, 4.2, 4.2; interparietal length, 3.7, 3.7, 3.5, 3.3, 3.5; interparietal width, 7.1, 7.9, 7.6, 7.8, 7.9; mandible length, 10.6, 10.5, 10.7, 10.5, 10.6.

Measurements (mm) for 68 adult males followed by 82 adult females are: total length $X = 168.3$, range 143 to 184; $X = 163.3$, range of 147 to 195; tail length (93.0, 65 to 105; 91.0, 61 to 109), hind foot length (19.5, 14 to 22; 18.9, 12 to 21), ear length (7.1, 5 to 9; 6.9, 5 to 9), greatest depth of cranium (8.6, 7.9 to 9.0; 8.5, 7.7 to 9.2), mastoid width (13.1, 12.5 to 14.0; 12.9, 10.3 to 13.5), greatest length of cranium (23.9, 22.7 to 24.7; 23.6, 22.5 to 24.4), rostral width (3.8, 3.5 to 4.0; 3.8, 3.5 to 3.7), nasal length (8.5, 7.4 to 9.3; 8.3, 7.6 to 9.3), nasal width (2.1, 1.6 to 2.4; 2.1, 1.8 to 2.4), interorbital width (6.2, 5.8 to 6.5; 6.2, 5.9 to 6.7), maxillary toothrow length (3.7, 3.2 to 4.1; 3.7, 3.4 to 4.2), maxillary toothrow width (4.2, 3.8 to 4.5; 4.2, 3.9 to 4.5), interparietal length (3.5, 3.1 to 4.3; 3.5, 3.0 to 4.0), interparietal width (7.4, 6.8 to 8.1; 7.5, 6.8 to 8.0), mandible length (10.9, 10.0 to 11.9; 10.8, 9.7 to 11.4).

Etymology—The new subspecies is named in memory of our friend and colleague, Melvin Beard.

Comparisons—*Chaetodipus intermedius beardi* is distinguishable from the three other populations, representing different taxa, using a combination of morphologic and pelage differences. The magnitude of differences is comparable to those reported by Dice (1929) for *C. i. ater* on Carrizozo malpais and by Benson (1932) for *C. i. rupestris* on Afton lava flows. In pelage, the dark melanic specimens from Pedro Armendariz are similar to melanic animals from Carrizozo, and both populations contrast strikingly with the tan mice from Fra Cristobal. Mice from Afton are polymorphic for coat color. A few specimens from Afton are near tan in color, and a small percentage dark melanic similar in hue to mice from Pedro Armendariz. A majority of specimens form a gradation between the two color phases (Elder, 1977). Morphologically, *C. i. beardi* has an average hind foot length that is smaller (males 19.5, females 18.9) than that of specimens from Carrizozo (21.1, 21.0) and Afton (21.6, 21.4). Males from Fra Cristobal possess a longer mean interparietal length (3.9) than *C. i. beardi* (3.5), and females from Fra Cristobal have an average hind foot length that is 1 mm longer than females from Pedro Armendariz (19.9 and 18.9, respectively).

Remarks—Based on pelage coloration, four of the 239 (1.7%) specimens captured on the Pedro Armendariz lava field were indistinguishable from the tan-colored specimens collected on the Fra Cristobal Mountain Range. Coat color polymorphism was also reported for rock pocket mice from Carrizozo lava flows (Elder, 1977).

Mice from Pedro Armendariz showed greater morphologic similarities with the specimens from geographically close Fra Cristobal, and greater differences with samples from the more distant Afton lava flows and Carrizozo malpais (Weckerly and Best, 1985). Perhaps, there is some gene exchange between populations on the Pedro Armendariz lava field and those on Fra Cristobal, or they have not been isolated very long, or both (Weckerly and Best, 1985). The likely restriction of gene flow and differing selection pressures has yielded distinguishable morphologic and pelage color differences between the populations.

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Specimens Examined—All specimens are from New Mexico and are deposited in the ENMU Natural History Museum. Sierra Co.: 20.5 mi. N, 8 mi. E Engle, 4; 20.5 mi. N, 15.5 mi. E Engle, 8; 20 mi. N Engle, 1; 20 mi. N, 6 mi. E Engle, 11; 20 mi. N, 15.5 mi. E Engle, 16; 20 mi. N, 4 mi. E Engle, 34. Socorro Co.: 28 mi. N, 10 mi. E Engle, 12; 28 mi. N, 14 mi. E Engle, 16; 27 mi. N, 15.5 mi. E Engle, 16; 26 mi. N, 14 mi. E Engle, 13; 26 mi. N, 15.5 mi. E Engle, 10; 25 mi. N, 4 mi. E Engle, 9; 24.5 mi. N, 6 mi. E Engle, 3; 24 mi. N, 3 mi. E Engle, 6; 24 mi. N, 10 mi. E Engle, 14; 24 mi. N, 10.75 mi. E Engle, 4; 24 mi. N, 11 mi. E Engle, 8; 24 mi. N, 15.5 mi. E Engle, 4; 23 mi. N, 4 mi. E Engle, 3; 23 mi. N, 6 mi. E Engle, 26; 22.5 mi. N, 1 mi. E Engle, 3; 22 mi. N, 2 mi. E Engle, 1; 22 mi. N, 3 mi. W Engle, 13; 22 mi. N, 15.5 mi. E Engle, 2; 21 mi. N, 3 mi. W Engle, 15; 21 mi. N, 2 mi. E Engle, 6; 21 mi. N, 8 mi. E Engle, 3; 21 mi. N, 14 mi. E Engle, 6.

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