12-2013

Dual Capture of a Piñon Deer Mouse and a Silky Pocket Mouse Resulting in Consumption of the Smaller Animal

Jon C. Pigage
University of Colorado Colorado Springs, jpigage@uccs.edu

Roger D. Peyton
Fort Carson Wildlife Program, DPW Environmental Division

DUAL CAPTURE OF A PIÑON DEER MOUSE AND A SILKY POCKET MOUSE RESULTING IN CONSUMPTION OF THE SMALLER ANIMAL—Intraspecific dual captures of rodents are uncommon, but not rare. There are several reports of brown rats (*Rattus norvegicus*), white-footed deer mice (*Peromyscus leucopus*), North American deer mice (*P. maniculatus*), western harvest mice (*Reithrodontomys megalotis*) and meadow voles (*Microtus pennsylvanicus*) caught simultaneously in the same trap (i.e., a door-closing live-trap; Davis 1955, Getz 1961, Blaustein and Rothstein 1978, Jenkins and Llewellyn 1981, Novak 1983). Some reports are incidental whereas others are interpreted as social associations or bonding between conspecifics. Interspecific dual captures are rarely reported in the literature. The earliest report of interspecific dual captures involved *Peromyscus* sp. and *Perognathus* sp. (Evans and Holdenried 1943). Petersen (1975) reported three instances of interspecific dual captures where northern pygmy mice (*Baiomys taylori*) were captured with a western harvest mouse and a fulvous harvest mouse (*R. fulvescens*). Three instances of dual capture involving a North American deer mouse and a Great Basin pocket mouse (*Perognathus parvus*) were reported by Feldhamer (1977) in which the pocket mouse was always killed. Recently, Calisher et al. (2000) reported a dual capture of *P. maniculatus* and a piñon mouse (*P. truei*) and Christopher and Barrett (2007) reported a dual capture of *P. leucopus* and a golden mouse (*Ochrotomys nuttalli*). Herein, we report an incident where a piñon mouse and a silky pocket mouse (*P. flavus*) were captured together, and the piñon mouse consumed part of the pocket mouse.

In May and June 2007, we conducted a small mammal survey in a piñon pine (*Pinus edulis*)-juniper (*Sabina monosperma,*) habitat on the Niobrara Chalk Barrens outcrops within the Fort Carson Military Reservation in southeastern Colorado, USA. We placed 100 Sherman live-traps (7.6 × 8.9 × 30.5 cm; H. B. Sherman Traps, Tallahassee, FL, USA) in a 45 × 45 m grid with traps 5 m apart on 14 separate plots for a total of 5,600 trap nights. We baited traps with a 3-way grain with rolled oats, and polyester batting was used as bedding material. For animals captured, we identified each to species and recorded sex, age, reproductive status, and weight to the nearest 0.5 g with a Pesola spring scale (Forestry Suppliers, Inc., Jackson, MS, USA). We individually marked mice with either a size 1 Monel ear tag (National Band and Tag Company, Newport, KY, USA) or by using a permanent marker at the base of the tail if the ear was too small for a tag. We handled animals in accordance with established guidelines from the American Society of Mammalogists (Sikes et al. 2011) and our research was approved by the University of Colorado at Colorado Springs Institutional Animal Care and Use Committee.

On 23 May 2007, we captured an adult female piñon mouse and an adult female silky pocket mouse in the same trap. Both animals were previously captured separately, with the piñon mouse marked with an ear tag and the silky pocket mouse marked on the base of the tail with a black marker. The piñon mouse weighed 28.5 g and mammae were conspicuous, indicating that she had recently given birth. The piñon mouse consumed the front half of the silky pocket mouse leaving only the hind quarters and the tail of the animal. It is unclear why the two mice were captured in the trap at the same time and which one entered first.

Feldhamer (1977) reported three instances of interspecific double captures involving *P. maniculatus* and *P. parvus*. In all three cases, the pocket mouse was apparently killed by the deer mouse which did not exhibit injuries. Evans and Holdenried (1943) also reported dual captures and fighting between *Peromyscus* and *Perognathus* with most cases resulting in the death of the pocket mouse. Pocket mice appear to be at a disadvantage in encounters with *Peromyscus*, such as in Sherman-live traps because of their smaller size and inability to escape. None of the previous reports on dual captures in traps mentioned the consumption of the smaller species. This suggests that the lactating *Peromyscus* might have consumed the *Perognathus* for additional protein. Lactation in *Peromyscus* is energetically costly and requires a higher caloric intake (Millar 1978, 1979). *Peromyscus truei* and other *Peromyscus* species primarily consume plant material, arthropods, and fungi (Jameson 1952, Hoffmeister 1982, Lackey et al. 1985). However, Bradford (1974) reported in a study of stomach contents from 16 piñon deer mice that most included plant material, insects, and spiders, but one stomach contained 60% of unidentified mammal remains. *—Jon C. Pigage[1] and Roger D. Peyton[2]. [1]Biology Department, University of Colorado Colorado Springs, 1420 Austin Bluffs Parkway, Colorado Springs, CO 80918, USA; [2]Fort Carson Wildlife Program, DPW Environmental Division, 1626 Evans Street, Building 1219, Fort Carson, CO 80913, USA. [1]Corresponding author email address: jpigage@uccs.edu.*

LITERATURE CITED

Blaustein, A. R., and S. I. Rothstein. 1978. Multiple captures of *Reithrodontomys megalotis*: social bonding in a mouse? American Midland Naturalist 100:376–383.

Bradford, D. R. 1974. Water stress of free-living *Peromyscus truei*. Ecology 55:1407–1414.

Calisher, C. H., J. E. Childs, W. P. Sweeney, K. M. Canestorp, and B. J. Beaty. 2000. Dual captures of Colorado rodents: implications for transmission of hantaviruses. Emerging Infectious Diseases 6:363–369.

Christopher, C. C., and G. W. Barrett. 2007. Double captures of *Peromyscus leucopus* (white-footed mouse) and *Ochrotomys nuttalli* (golden mouse). Southeastern Naturalist 6:407–412.

Davis, D. E. 1955. Social interactions of rats as indicated by trapping procedures. Behaviour 8:335–343.

Evans, F. C., and R. Holdenried. 1943. Double captures of small rodents in California. Journal of Mammalogy 24:401.

Feldhamer, G. A. 1977. Double captures of four rodent species in Oregon. Northwest Science 51:91–93.

Getz, L. L. 1961. Home ranges, territoriality, and movement of the meadow vole. Journal of Mammalogy 42:24–36.

Hoffmeister, D. F. 1981. *Peromyscus truei*. Mammalian Species 161:1–5.

Jameson, E. W., Jr. 1952. Food of deer mice, *Peromyscus maniculatus* and *P. boylei*, in the northern Sierra Nevada, California. Journal of Mammalogy 33:50–60.

Jenkins, S. H., and J. B. Llewellyn. 1981. Multiple captures of *Peromyscus*: age, sex, and species differences. Journal of Mammalogy 62:639–641.

Lackey, J. A., D. G. Huckaby, and B.G. Ormiston. 1985. *Peromyscus leucopus*. Mammalian Species 247:1–10.

Millar, J. S. 1978. Energetics of reproduction in *Peromyscus leucopus*: the cost of lactation. Ecology 59:1055–1061.

Millar, J. S. 1979. Energetics of lactation in *Peromyscus maniculatus*. Canadian Journal of Zoology 57:1015–1019.

Novak, J. M. 1983. Multiple captures of *Peromyscus leucopus*: social behavior in a small rodent. Journal of Mammalogy 64:710–713.

Petersen, M. K. 1975. An analysis of multiple captures in several rodents from Durango, Mexico. Journal of Mammalogy 56:703–705.

Sikes, R. S., W. L. Gannon, and the Animal Care and Use Committee of the American Society of Mammalogists. 2011. Guidelines of the American Society of Mammalogists for the use of wild mammals in research. Journal of Mammalogy 92:235–253.

Submitted 22 July 2013. Accepted 19 September 2013. Associate Editor was Keith Geluso.