

A Six-Legged *Rattus* (Rodentia: Muridae) in Oklahoma

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The occurrence of polydactylism in mammals is a rare but not unknown phenomenon, having been reported in Cervidae (1), Leporidae (2), Cynocephalidae (3), Molossidae (4), Vespertilionidae (5), Sciuridae (6), Cricetidae (7), and Felidae (11). A six-legged black rat (*Rattus rattus*) was collected on 18 January 1993 by Roger D. Cowan at his residence, 303 Angus Street, in Lawton, Comanche County, Oklahoma. The specimen was caught in a snap trap in the attic of the Cowan residence, and brought to the Cameron University Department of Biology, where it was photographed, examined via x-ray, dissected, and deposited in the Cameron University Museum of Zoology (CUMZ 1209).

The specimen, an immature male, measured 232 mm total length, weighed 40 g, and appeared normal except for two extra hind limbs (Fig. 1). One additional leg was located between the penis and the right hind leg, and dissection revealed atrophied leg muscles and that the head of the femur was joined to the posterior edge of the right pubis by connective tissue. This femur was 5 mm shorter than the femur of the normally developed left hind leg and was 14 mm long, but the tibia and fibula were equal in length to those of the left leg and measured 21 mm and 19 mm respectively. An anomaly of this nature has been reported in Leporidae (2). The rat's leg showed no sign of use and was probably nonfunctional.

The other extra limb originated as a single right femur but divided antero-posteriorly 9 mm from the head. The femur terminated into two lower legs, each having a patella, tibia, fibula, and a fully formed foot that appeared normal (Figs. 2, 3). The two lower legs were joined by a single covering of skin and connective tissue, giving the appearance of a single appendage, but the X-ray exam and dissection showed them to be separate from the knee down. In contrast to the first accessory leg, the muscles were well developed with regard to size and fiber development. The biceps femoris and sartorius muscles in the upper leg appeared normal, while deeper muscles including the vastus medialis, adductor magnus, adductor longus, and the pectineus were discernible. Each lower leg also appeared normal in muscular development and exhibited gracilis and gastrocnemius muscles in addition to deeper muscles such as the semimembranous and semitendinosus. The tibias and fibulas were highly formed, the former averaging 21 mm long and the latter 18 mm. The condition of the legs is similar to that observed in *Eptesicus fuscus* (5), and



Figure 1. Six-legged rat.

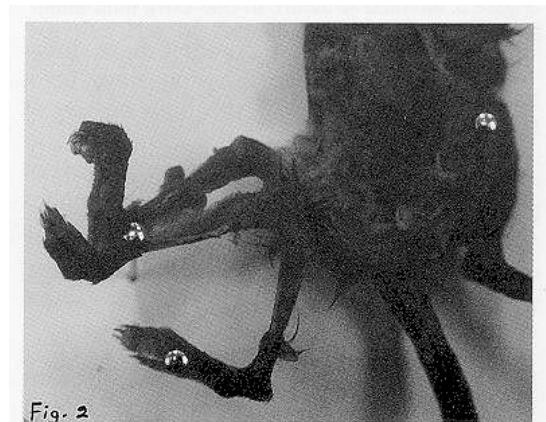


Figure 2. Hind limbs of six-legged rat.

although the two legs couldn't have functioned normally, some use may have been possible as indicated by the high degree of musculature. While the mechanisms of polydactylism are still under investigation, such anomalies may be influenced through either genetic (9-12) or environmental factors (13-15).

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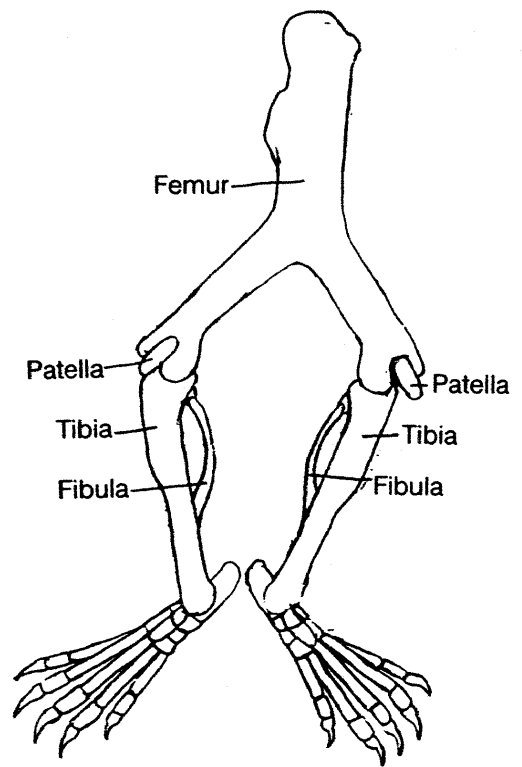


Figure 3. Skeletal structure of one extra hind limb.