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Notes on Parturition and Behavior  
in *Pipistrellus hesperus*  
in the Laboratory

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Wimsatt (J. Mamm. 41: 183-200, 1960) has reviewed parturition and subsequent behavior in bats. Asdell (Patterns of Mammalian Reproduction, Cornell Univ. Press, 670 p., 1964) more recently, has reviewed the aspects of reproduction in *Pipistrellus hesperus*. Although the western pipistrelle is one of the most common species of bat in the arid regions of the Western United States, little is known concerning reproduction and parturition in this species. *P. hesperus* generally gives birth to two young in June. Since this species roosts individually in cracks and crevices usually associated with cliffs, it is virtually impossible to observe parturition under natural conditions.

The bats were collected on 24 June 1968 at White Spot Spring, Desert Game Range, Clark Co., Nevada. They were transported to the Bird and Mammal Museum, University of Nevada, Las Vegas, and were housed communally in 1/4 inch hardware cloth holding cages. Mealworms and water were provided *ad libitum*. Between 25 and 29 June 1968 I made several noteworthy observations on parturition and behavior in these bats.

The two normal births observed differed in length of time but were similar in all other aspects. One birth took 45 minutes; the other took 126 minutes. Prior to parturition the female became restless and moved about the holding cage. As the fetus began to emerge the female positioned herself in an upright posture with the interfemoral membrane cupped ventrally to form a pouch. After assuming this position, visible abdominal contractions and audible vocalizations began. These continued for several minutes and then she resumed a normal head down resting position. After several minutes she again moved to the upright position. This process was re-

peated periodically until the fetus was completely expelled. At the time parturition was complete, the female was in the upright position and the fetus was deposited in the cup formed by the interfemoral membrane. All births observed were breech, rump first, presentations.

After parturition of the first young, the female began licking her vulva and groomed herself along the throat and chest. Alternately she began cleaning the neonate. Within 20 minutes she resumed the head down resting posture and began scratching her pectoral region around the nipples. She then spread her wings and allowed the young to crawl down and find a nipple. After the neonate had become firmly attached she resumed the head up position and began the routine of labor again. The birth of the second young took considerably less time than the first. After both young had been cleaned and firmly attached to a nipple, the female proceeded to ingest the placentae.

Bats in a captive situation might be expected to exhibit aberrant behavior. The following behavior common to all pipistrelles observed is probably such an example. Following attachment of the neonates, the female became quite restless and began to crawl around the cage. Most of the young managed to remain attached for at least 15 minutes but finally were dislodged and abandoned. While crawling about the cage, the female would shiver almost constantly. Although the abandoned neonates constantly gave forth with distress calls, the adults never responded to them.

One other noteworthy birth was also observed. This particular female was observed starting labor, but instead of assuming the head up posture, she began crawling about the cage. This continued for 18 minutes before she stopped, at which time I was able to note that a wing had emerged from the vagina. The female began pulling and gnawing at the fetus' wing, and began shivering violently. She continued pulling at the wing and intermittently crawled about the cage for 15 minutes. She then crawled to the bottom of the cage and lay there shaking convulsively.

She remained quiescent for the next 17 hours before she started to move around again. Almost immediately the fetus began to emerge. During the next two hours, by pulling at the emerging fetus and by violent abdominal contractions, the female managed to manipulate the fetus from a sideways position to almost a breech position with approximately half of the fetus' body emerged. It took two more hours for the female to fully expel the fetus, all the while chewing at the tail, wing, and lower back of the fetus. After an additional 30 minutes of

panting and resting, the female bit through the umbilical cord and the dead fetus fell to the bottom of the cage. She was in apparently good condition when released three days later.

In summary, normal parturition takes place in a head up position with the interfemoral membrane cupped ventrally in which the neonate is first deposited. Breech presentation appears to be common, as in many other species of bats (Wimsatt, op. cit.). The placentae were consumed in all cases. The neonates orient in a head down position and begin to search for a nipple. If the adult does not orient also in a head down position, the young is unable to find a nipple and will attach to a membrane. Regarding an unusual occurrence as in the sideways presentation of the fetus, the adult was able to survive this traumatic event. To my knowledge this is the first report of this type of parturition in bats.

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