

ABBERANT COLORATION IN A LITTLE BROWN BAT (*MYOTIS LUCIFUGUS*) FROM THE YUKON

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Key words: aberrant coloration, albinism, leucism, Little Brown Bat, *Myotis lucifugus*

Variation in the pigmentation of mammals is widespread. Color aberrations in bats, however, are rarely reported in the literature, despite many thousands of bats being observed annually (Trapido and Crowe 1942; Quay 1970; Walley 1971; Smith 1982). On rare occasions, bats from the genus *Myotis* have been observed that are melanistic (excessive pigmentation: Buchanan 1985), silvered (white-tipped hair: Munzer and Kurta 2008), leucistic (reduced or absent integumentary pigmentation with pigmented eyes: Trapido and Crowe 1942; Metzger 1956; Rogers 1965; Walley 1971), or albinistic (reduced or absent integumentary pigmentation with unpigmented eyes: Walley 1974; Smith 1982; Harada and others 1991; Brigham and James 1993; Brack and others 2005). Here we report an observation of leucism in a Little Brown Bat (*Myotis lucifugus*) from northwestern Canada.

During a study of Little Brown Bat maternity colonies in and near Watson Lake, Yukon, Canada (60.1°N, 128.7°W), we used mist-nets to capture Little Brown Bats as they emerged from their diurnal roosts in buildings. On 7 June 2006, we captured an adult female that exhibited aberrant coloration. Both wing tips were unpigmented, whereas the rest of the coloration (such as pelage, uropatagium, face, feet, ears, and eyes) was typical for the species (Fig. 1). Extent of the unpigmented portion of the flight membranes was asymmetrical, with the tip of the left wing having about twice the amount of unpigmented area as the right. Other than its unusual coloration, the individual appeared and behaved like others captured at the study area. The bat was pregnant, as determined by gentle palpation of the abdomen. It weighed 8.4 g, had a forearm length of 38.0

mm, and had an ear length of 11.3 mm. The bat was not collected as a voucher specimen and was released at the capture site after voucher photographs were taken (Fig. 1).

The maternity colony roosted in the attic of a log building, approximately 50 y old, near the center of the town of Watson Lake. The building was located about 250 m from a series of small shallow lakes and wetlands as well as about 300 m from vast tracts of contiguous mature boreal forest. Dominant trees within 1 km of the colony included Lodgepole Pine (*Pinus contorta*), White Spruce (*Picea glauca*), Trembling Aspen (*Populus tremuloides*), and White Birch (*Betula papyrifera*).

We captured 23 adult females at this colony on 7 June 2006, and no others showed unusual coloration. We estimated the colony contained about 40 adult Little Brown Bats, based on captures and counts as they emerged from their roost. We sampled the colony on 3 subsequent evenings, and despite capturing a total of 94 bats (including recaptures), we failed to recapture this bat or any others with aberrant coloration. Further, several hundred Little Brown Bats were captured at a roost 8.5 km away over a period of 3 y (Jung and Slough unpubl. data; Talerico and others unpubl. data), and we observed no bats with atypical pigmentation.

Published accounts of variation in coloration of Little Brown Bats are few (Fenton and Barclay 1980). To our knowledge, only 4 accounts of albinism exist in Little Brown Bats (Brigham and James 1993), 3 of leucism (Walley 1971; RM Brigham pers. comm.), 1 of silvering (Munzer and Kurta 2008), and 1 of melanism (Buchanan 1985), despite this being one of the most studied species of bat in North America. Our observation is the 1st to report the unusual coloration pattern of white wing tips in a Little Brown Bat. The only other published account of a bat with white wing tips was an Eastern Pip-



FIGURE 1. Little Brown Bat, *Myotis lucifugus*, with white wing tips captured in Watson Lake, Yukon, Canada, 7 June 2006. Left wing tip shown. Photo by JM Talerico.

istrelle (*Pipistrellus subflavus*) from Ohio (Goslin 1947).

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PREDATION ON THE COASTAL TAILED FROG (*ASCAPHUS TRUEI*) BY A SHREW (*SOSEX SPP.*) IN WASHINGTON STATE

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Few observations exist of predation on post-metamorphic Coastal Tailed Frogs (*Ascaphus truei*). Karraker (2001) found a Common Garter Snake (*Thamnophis sirtalis*) with an adult male *A. truei* (36 mm snout-vent length [SVL]) in its mouth, and predation of metamorphosing *A. truei* by a hellgrammite (Megaloptera) and a larval Cope's Giant Salamander (*Dicamptodon copei*) also have been reported (Jones and Raphael 1998). To our knowledge, no reports exist of predation on *A. truei* by mammals. Here we report an observation of *A. truei* being captured and eaten by a shrew (*Sorex spp.*).

At 12:15 on 17 May 2007, JSM captured an adult female *A. truei* (approximately 40 mm SVL) 2 m from a stream edge along an unnamed tributary of the West Fork Rue Creek, Pacific County, Washington (5160283N, 445091E, UTM Zone 10, Datum WGS 1984; elevation 282 m). The capture site is along a 2nd-order stream segment (based on Strahler 1952) with a mean wetted channel width of 1.3 m at

the time of this observation; and located 220 m upstream of the electroshock-determined end of fish-bearing waters (Jason Walters, Weyerhaeuser Company, Federal Way, WA, pers. comm.) and 150 m below the stream origin. The site was located in a 60-y-old stand of Western Hemlock (*Tsuga heterophylla*) with a closed canopy. Understory vegetation included a scattered shrub layer of Oval-leaved Huckleberry (*Vaccinium ovalifolium*), Fool's Huckleberry (*Menziesia ferruginea*), and ground cover of mostly Wood Sorrel (*Oxalis oregana*), Deer Fern (*Blechnum spicant*), and Sword Fern (*Polystichum munitum*). The female *A. truei* was handled for measurement for about 2 min prior to being returned to a small stream pool (0.5 × 0.7 m, maximum depth 15 cm).

About 5 min later, EML, JSM, TRC, and KRY observed a large, black shrew with a whitish underside moving in and out of woody debris along the stream bank. The shrew came into full view, swam across the stream, passing within 0.5 m of the frog that had remained suspended at pool surface near its original release site, and then paused on the opposite stream

bank approximately 1 m away from the frog. It then pivoted, re-entered the stream and lunged at the *A. truei*, capturing it headfirst with its forelimbs and mouth. It swam to the edge of the stream with the frog, which remained peculiarly motionless in its mouth. It then grasped the *A. truei* between its front limbs and began chewing on it without taking cover. After about 10 s of chewing the shrew moved out of sight into a small hole in the stream bank with the frog in its mouth.

Without having the shrew in hand, we were not able to confirm the species identity. The Northern Water Shrew (*Sorex palustris*) and Marsh Shrew (*S. bendirii*), the 2 largest species of *Sorex* in North America, are both described as having black dorsal pelage and are often found close to small, forested streams in Washington State (Pattie 1973; Beneski and Stinson 1987; Eder 2002). Though the location of this observation might suggest *S. bendirii* (Ingles 1965; Pattie 1973), the whitish underside is more typical of *S. palustris* (Beneski and Stinson 1987; Eder 2002).

Shrew predation on other stream-associated amphibian species has been documented. Predation on *Dicamptodon* spp. by *S. palustris* has been reported several times (for example, Sorenson 1962; Nussbaum and Maser 1969; Beneski and Stinson 1987), and salamander remains have been found in the stomachs of various shrew species (Hamilton 1930); but shrew predation on anurans in the wild has only rarely been observed. Maier (2005) made 2 field observations of presumed predatory behavior by the Northern Short-Tailed Shrew (*Blarina brevicauda*) towards the Eastern Spadefoot (*Scaphiopus holbrookii*), but in both cases the observer disturbed the shrew, and no injuries were found on the toads. To our knowledge, the only report of shrew predation on an anuran in the wild is that of Dharmakumarsinhji (1946) who reported an attack on an Indian Bullfrog (*Rana tigrina*) by a Musk-shrew (*Suncus caeruleus*). Although reports of shrews preying on tailed frogs (*Ascaphus* spp.) are lacking, the habitats along forested streams typically used by *S. palustris* and *S. bendirii* (Pattie 1973, Beneski and Stinson 1987; Anthony and others 1987) overlap substantially with habitats used by *A. truei* (Diller and Wallace 2001; Nielsen and others 2001). Shrews may prey on tailed frogs in the

Pacific Northwest more frequently than our isolated observation suggests.

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