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Polydactyly in a Vaux's Swift

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ABSTRACT.—I report on polydactyly in a Vaux's Swift (*Chaetura vauxi*). An extra, asymmetrically located toe was found on each foot of one swift. A check of 329 swifts from several museums produced no other examples of polydactyly in this species. A review of the literature and a query over the Internet, however, produced 10 other examples of polydactyly in wild birds. *Received 5 August 2005, accepted 27 February 2006.*

Polydactyly is a relatively common malformation phenomenon in vertebrates. It has been well documented in humans and domestic animals such as cats, dogs, mice, and chickens (Clark et al. 2000); however, it is an uncommon phenomenon and rarely reported in wild birds. A group of eight Vaux's Swifts (*Chaetura vauxi*, family Apodidae) was brought to me from the California Wildlife Center, an animal rehabilitation center in the Santa Monica Mountains in Malibu, California. On 29 April 2002, the swifts were found dead along Cross Creek Road (34° 02′ 35″ N, 118° 41′ 02″ W) near Malibu Creek, Malibu, Los Angeles County, California.

As I was preparing the birds as study skins and examining the swifts' pamprodactyl-type feet (Proctor and Lynch 1993), I found that seven of the birds were normal and one had an extra, asymmetrically located toe on each foot. On both feet, digit one (the hallux) was located 11 mm below the joint of the tibiotarsus and tarsometatarsus. The tarsometatarsi were 13.5 mm long. On the left foot, the extra digit was located on the tarsometatarsus 6 mm from the joint of the tibiotarsus and tarsometatarsus (Fig. 1A) and was 6 mm long. In addition, digit one and the extra toe of the left foot were joined by a webbing of tissue; thus, the nails touched. The extra digit on the right foot was located at the joint of the tibiotarsus and the tarsometatarsus (Fig. 1B) and was 10 mm long.

A survey of the literature and a query to museum bird curators and collection managers via the ''AVECOL'' listserve produced reports of 10 birds with polydactyly. Extra toes were reported for Mallard (*Anas platyrhynchos*; Napier 1963), Common (currently Wilson's)

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FIG. 1. Left (A) and right (B) feet with extra toe of a Vaux's Swift (*Chaetura vauxi*) collected 29 April 2002 along Cross Creek Road near Malibu Creek, Malibu, Los Angeles County, California.

Snipe (*Capella gallinago* [currently *Gallinago delicata*]; Fogarty 1969), Sooty Tern (*Sterna fuscata*; Austin 1969), Long-billed Curlew (*Numenius americanus*; Forsythe 1972), Ring-billed Gull (*Larus delawarensis*; Ryder and Chamberlain 1972), Common Nighthawk (*Chordeiles minor*; Chandler 1992), Common Loon (*Gavia immer*; R. Y. McGowan pers. comm.), Common Swift (*Apus apus*; Gory 1992), Common (currently Eurasian) Kestrel (*Falco tinnunculus*; Trinkaus et al. 1999), and Eastern Screech-Owl (*Otus* [currently *Megascops*] *asio*; Albers et al. 2001). An unconfirmed case of polydactyly in Anna's Hummingbird (*Calypte anna*) was reported from the San Francisco Bay Area, California (W. H. Baltosser pers. comm.)

I also checked Vaux's Swifts in the collections of two nearby museums: 75 specimens at the Los Angeles County Museum of Natural History (LACMNH), Los Angeles, California, and 157 specimens at the Western Foundation of Vertebrate Zoology (WFVZ), Camarillo, California, all of which were normal. The 73 Vaux's and Chimney Swifts (*Chaetura pelagica*) in the collection at Delaware Museum of Natural History, Wilmington, Delaware, also were reported as normal (J. L. Woods pers. comm.). C. M. Dardia (pers. comm.) reported that all 24 Vaux's Swifts in the collection at Cornell Museum of Vertebrates, Ithaca, New York, were normal.

The causes of polydactyly among vertebrate groups have included UV-B radiation (Blaustein et al. 1997), parasites (Johnson et al. 2001), parasites and pesticides in amphibians (Kiesecker 2002), nuclear radiation in humans (Lazjuk et al. 1998), and congenital defects in humans (Castilla et al. 1996). Extensive teratological studies have been conducted on Domestic Chicken (*Gallus domesticus*), and several breeds normally have five toes (Warren 1941, 1944). Unfortunately, the life history of the Vaux's Swift with polydactyly is unknown. The individual in question appeared healthy and its weight (12.8 g) did not differ from that of the other seven individuals (mean = 12.67 ± 0.62; *Z*-test, $P = 0.71$) found with it, although it was lower than the mean (17.1 ± 1.3 SD, $n = 72$) weight of birds reported by Dunning (1984).

The Vaux's Swift specimen with polydactyly (Santa Monica College [SMC] SMC 1100) was prepared as a wet specimen, and the other seven specimens (SMC 1049, 1051, 1052, 1053, 1056, 1057, and 1058) were prepared as study skins. All eight specimens were then transferred to the LACMNH's Ornithology Collection (wet specimen: LACM 113615; skins: 112233, 112234, 112230, 11232, 11231, 11229, and 11228).

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