

FIRST OBSERVATIONS OF CAVE SWALLOW IN OKLAHOMA

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Abstract.— Cave Swallows (*Petrochelidon fulva*) have recently made a transition from cave nesting-sites to those in man-made structures, primarily culverts. With this move, they are expanding their breeding range, numbers, and extralimital wanderings. Here, we provide the first reports of Cave Swallows for Oklahoma, including the details of supporting documentation. Although there remain some cautions for identification, it is expected that this species will be found nesting in Oklahoma in the near future.



Fig. 1. Sketches of (a) a subadult Cave Swallow observed 20 July 2000 at Hackberry Flats, Tillman County, Oklahoma, and (b & c) specimens from Coahuila, Mexico, taken 1 July 1958 and housed at the Sam Noble Oklahoma Museum of Natural History, University of Oklahoma (OUMZ 15417 & 15418).

Introduction.—The Cave Swallow (*Petrochelidon fulva*) is a species with 2 disjunctly-distributed subspecies groups. The *pelodoma* group is found locally from southeastern New Mexico to southern Texas and in northeastern Mexico. The *fulva* group breeds in central Chiapas and the Yucatan Peninsula of Mexico, the Greater Antilles, and (recently) southern Florida (American Ornithologists' Union 1998).

The taxonomic classification for various populations of Cave Swallow is somewhat unsettled and changing. Populations of the *fulva* group in southern Mexico are considered distinctively as *P. f. citata* by some authors (West 1995). *P. f. pelodoma* is equivalent to *P. f. pallida* (American Ornithologists' Union 1998), latter as in West (1995). The *fulva* and *pelodoma* subspecies groups may represent separate species (Smith et al. 1988). The Chestnut-collared Swallow (*P. rufocollaris*) of Ecuador and Peru (Sibley and Monroe 1990, American Ornithologists' Union 1998) was formerly considered conspecific with *P. fulva* (as in West 1995).

The behavioral and ecological leap of the Cave Swallow into the use of man-made structures for breeding (Whitaker 1959, Martin and Martin 1978) has greatly expanded its breeding distribution. For *P. f. pelodoma*, formerly restricted in south-central Texas to a collection of caves and sinkholes on the Edwards Plateau, use of culverts and bridges (Martin 1974) has allowed its expansion across much of southern Texas and along the Texas coast (Palmer 1988). Its movement northward through Texas (West 1995) has led to documented nesting as close to Oklahoma as Bowie, Montague County, Texas, in recent years (B. Freeman, pers. comm.)—within 40 km of the Red River. A juvenile Cave Swallow was captured in a Cliff Swallow (*P. pyrrhonota*) colony in the Lake McConaughy area of south-central Nebraska on 31 May 1991 (Brown and Brown 1992), with others later taken in 1995 and 1998 (C. Brown, pers. comm.). Caribbean populations (of the *fulva* group) also have expanded recently into southern Florida (Smith et al. 1988).

With these increases and expansions, Cave Swallows are being observed at extralimital locations in the Great Lakes region and along the East Coast. Numerous records occurred during fall 1999 north to Michigan and Quebec (Contreras 2000). Conjecture on these and other extralimital records suggested origins from both subspecies groups (McNair and Post 2001). However, occurrences in fall 2002 were in conjunction with a powerful Midwestern weather system, first in the Great Lakes and Northeast, then subsequently south along the coast. This pattern of records would indicate that these birds came from the *pelodoma* group (Brinkley and Lehman 2003). Thus, the occurrence of Cave Swallows in Oklahoma and points northward has been anticipated for several years.

Oklahoma Records.—The first reports of possible Cave Swallows for Oklahoma came from Red Slough Wildlife Management Area, McCurtain County, in the southeastern corner of the State. On 29 June 2000, Dave Arbour identified a buffy-throated swallow with a grayish spot on the forehead as a juvenile Cave Swallow. On 2 July, he saw 2 similarly-plumaged individuals from a group of Cliff Swallows. No photographs were taken nor specimens obtained. The written documentations for these records were rejected by the Oklahoma Bird Records

Committee (OBRC) because documentations were brief and lacked sufficient detail to support a first state record or definitive identification (OBRC files). Because this does not exclude the possibility they were Cave Swallows, these individuals may represent the first identified in Oklahoma (but see below).

On the morning of 20 July 2000, Grzybowski spent several hours scanning through a group of about 3,000 Cliff Swallows roosting in a broad strip of Johnson grass (*Sorghum nutans*) and various weed stalks at Hackberry Flats Wildlife Management Area, Tillman County, Oklahoma. Among these swallows, he found 3 birds he felt might be juvenile Cave Swallows. He developed descriptions and sketches that were later submitted to the OBRC. These were rejected by the OBRC because of uncertainties in the overlap of variation between juvenile Cave and Cliff swallow plumages, and some variations in the plumages observed that suggested a peculiar combination of adult and juvenile traits. Existing descriptions of juvenile Cave and Cliff swallows were somewhat obtuse (Oberholser 1974) and limited (West 1995, Pyle 1997), or were inaccurately depicted (National Geographic Society 1999).

However, with additional observations and information coming to light on subadult plumages of Cave Swallows, we believe that 1 of these birds can be reliably identified as a Cave Swallow. We compared a sketch of this bird to specimens of juvenile Cave Swallows from Coahuila, Mexico (OUMZ 15417 & 15418; Fig. 1). Several features pointed to the first also being a Cave Swallow, including the almost uniform buffy coloration from throat to nape, lightening slightly (but not to white) on the throat, graying somewhat on the nape, and cleanly separated from the cap. Also, the posterior portion of the cap angled up more abruptly than in Cliff Swallows, and the forehead patch with a slight russet cast was only slightly darker than the sides of head, and cornered to near the eye.

Two traits raised doubts sufficient enough to cause the OBRC, in the original evaluation, to reject this individual as a Cave Swallow. The slight dark flecks on the throat were not anticipated as a Cave Swallow character. However, such slight flecks do appear on 1 of the juvenile Cave Swallow specimens from Coahuila (OUMZ 15417) and on a bird captured and photographed by the Browns in Nebraska (Grzybowski 1995), and are mentioned by Pyle (1997). Experts to whom this documentation was sent were themselves uncertain how to assess these marks (OBRC files). Secondly, some blue tones were noted on the back, along with some pale back-stripping. The blue was thought to represent a component of adult plumage. Uncertainties in information on timing of molts left the validity of this trait for a potential juvenile Cave Swallow uninterpretable at the time. However, recent photos by Ted Cable of an immature Cave Swallow in worn plumage discovered at Cheyenne Bottoms, Kansas, show such blue tones (see *North American Birds* [2001] 55:505).

In addition, the somewhat overcast and misty conditions of the day, and the long distance of the observation left impressions of tones darker than might be expected from the Coahuila specimens. This raised questions as to whether this occurred because of lighting conditions induced by the cloud cover or because of the bird's alternative identification as a variant Cliff Swallow. The extensively white throats and sides of heads of a few juvenile Cliff Swallows also raised the possibility that the bird in question could have been a variant Cliff Swallow. However, we believe the above discourse would support the identification of this

individual as a Cave Swallow, now being perhaps the first adequately documented individual for Oklahoma.

A third set of observations occurred in 2001. On 19 July, we traveled to Hackberry Flats. Upon arriving at about 1515 h, we encountered a small group of swallows on powerlines and branches of a dead tree near a pond, with hundreds more on the ground and cotton plants in adjacent fields. While glassing the birds in the dead tree near the road, Grzybowski noticed a very tanly-plumaged juvenile Cave Swallow. We backed off to view the bird through a Leica Televied telescope at 60X; the bird was close enough to entirely fill the view. We then attempted closer approach and photographs of the bird but were unsuccessful. However, at 1 point, Fazio was able to count 3 juvenile Cave Swallows, and later located an adult that we both studied.

The juveniles were essentially tan versions of adults, with abbreviated caps that ended more anteriorly on the back of the crown relative to those of the Cliff Swallows, and with buff tones of throat extending continuously and cleanly onto sides of head, then back to the nape below and behind the cap. The forehead patch was a slightly darker tone than the throat and sides of neck, and with a slight russet cast. Unlike Cave Swallows, the very pale-throated Cliff Swallows were white-throated (not buff), with some portion of the cap color breaking onto the collar (cleanly separated in the Cave Swallows). The adult Cave was a quite rich tawny buff across the throat and sides of head compared to the juveniles, and of the same plumage pattern, but generally with dark tones to what were medium brown areas on the juveniles. This observation was considered the first acceptably documented record of Cave Swallows for Oklahoma by the OBRC (Arterburn 2003).

We were able to notify several birders and posted the observation on the Oklahoma birder listserv. On 22 July, Lou and Mary Truex of Lawton may have observed the juvenile birds, although they were uncertain (L. Truex, pers. comm.), thus possibly just noting variant pale-throated juvenile Cliff Swallows. Jim Arterburn (pers. comm.), Jo Loyd and Jerry Sisler found 2 juveniles and 1 adult on 23 July. The juveniles appeared obvious to them, very tan with discrete and abbreviated caps, thus likely the same birds we observed. On 29 July, George Kamp (pers. comm.) was able to locate an individual he identified as an adult Cave Swallow. As a caveat, however, another birder the previous day photographed a suspected adult Cave Swallow that was an adult Cliff.

Given the potential variation in Cave Swallows, the very similar plumages between the 3 juvenile Cave Swallows observed, along with the presence of an adult, suggest that they could have been part of a family group. Individuals from different broods are more likely to differ from each other than those from the same brood (Stoddard and Beecher 1983; C. Brown, pers. comm.). Thus, it is possible that they were reared in the area at large. The proximity of Hackberry Flats to the Texas border < 8 km to the south, however, does not exclude the possibility that they were reared in Texas.

Discussion.—Variation in juvenile Cliff Swallows complicates identifications of juvenile Cave Swallows. Some juvenile Cliff Swallows can have extensive white throats back to the auriculars and can appear pale back to and across the nape, thus superficially resembling Cave Swallows (although their caps are not as

discretely delineated, particularly in the auriculars). Descriptions indicate that a small percentage of juvenile Cave Swallows can have pale gray, even white, areas in the forehead patch (West 1995). None of the birds we support herein as Cave Swallows had such pale gray or white areas on the forehead; our birds maintained tawny foreheads with russet casts. It thus challenges probabilities that several other suspected or reported Cave Swallows in Oklahoma to date (including those of Arbour above) had the less commonly expected markings, although the bird photographed by Ted Cable (North American Birds [2001] 55:505) shows gray at the base of the tawny forehead patch. Several photographs informally circulated as Cave Swallows following our 2001 observations clearly misinterpreted the pale collar markings. Thus, identification of Cave Swallows still warrants critical caution.

Earlier than our observations, single juvenile and subadult Cave Swallows were discovered at Cheyenne Bottoms, Barton County, Kansas, on 13 July 2001 by Sebastian Patti and Chris Hobbs, and seen by many birders the following day (Patti and Shane 2001). Ted Cable photographed the subadult on 14 July (KSBirds 2001, North American Birds 55:505). Additionally, 2 adult Cave Swallows were reported from Ackley Lake, Finney County, Kansas, on 27 September 2001 (Patti and Shane 2001). Birders have yet to discover breeding in the region north of the Red River, but it will likely occur in the near future.

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Prothonotary Warbler nest in Eastern Bluebird Box in Johnston County, Oklahoma.— Eastern Bluebird (*Sialia sialis*) nest boxes provide cavities for bluebirds and many other species. Carolina Chickadee (*Poecile carolinensis*), Carolina Wren (*Thryothorus ludovicianus*), Tufted Titmouse (*Baeolophus bicolor*), and White-breasted Nuthatch (*Sitta carolinensis*) have been documented nesting in bluebird boxes in Oklahoma (Carter 1981, Wood and Patton 2003). Tree Swallow (*Tachycineta bicolor*), European Starling (*Sturnus vulgaris*), House Sparrow (*Passer domesticus*), House Wren (*Troglodytes aedon*), and other secondary cavity nesting species also use bluebird boxes (Pinkowski 1975).

In May 2003, Joe Barnett, a volunteer at Tishomingo National Wildlife Refuge, reported an unusual clutch of eggs in a bluebird box northeast of the Refuge office. I checked the box on 29 May, and it contained 3 Prothonotary Warbler (*Protonotaria citrea*) eggs. A female warbler was incubating the nest, although she left the nest as I approached the box. The bluebird box was located at the interface of 2 habitat types. The box faced west over a grassy area and rowcrop field. However, immediately behind the box to the east was a bottomland hardwood stand of willows (*Salix spp.*) and oaks (*Quercus spp.*). The bluebird box had a metal snake guard and was in good condition.

All 3 warbler eggs hatched on 3 June, and I banded and weighed the nestlings on 13 June. The nestlings weighed 11.0, 10.5, and 10.0 g. The nestlings fledged on 18 June, and the box was not used by any other birds the remainder of the breeding season. Prothonotary Warblers nested nearby in the bottomland hardwood stand, and the nearest active bluebird box was 50 m W of the box the warblers used for nesting. The presence of a nesting pair of bluebirds nearby may have allowed the Prothonotary Warblers access to a bluebird box that would otherwise be unavailable to the warblers.

Two unsuccessful nesting attempts by Prothonotary Warblers in bluebird boxes were documented at Tishomingo National Wildlife Refuge in 1999 and 2001 (Wood and Patton 2003). Both nests were lost to predators during the incubation stage. Petit et al. (1987) reported that only 5% of bluebird boxes were used by Prothonotary Warblers in flooded riparian habitat in Tennessee. However, my observation is of warblers using a bluebird box in different landscape context (i.e., agricultural and forest stands juxtaposed) compared with the riparian-habitat box placement of Petit et al. (1987). Although there is a paucity of published accounts of Prothonotary Warblers successfully nesting in bluebird boxes, I received several anecdotal accounts of Prothonotary Warblers using bluebird boxes in Texas, Mississippi, and Maryland from the internet listserv CAVNET (<http://bio.fsu.edu/~jameslab/>), but few accounts confirmed successful nesting attempts.

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