

# Audubon's Oriole (*Icterus graduacauda*) in Indiana: First United States record away from Texas

DON GORNEY • 6207 CARRINGTON DRIVE • INDIANAPOLIS, INDIANA 46236-8209 • (EMAIL: DONGORNEY@YAHOO.COM)

JASON LEWIS • U.S. FISH AND WILDLIFE SERVICE • 24279 STATE HIGHWAY 51 • PUXICO, MISSOURI 63960

## Abstract

This paper documents the presence of an after-second-year female Audubon's Oriole (*Icterus graduacauda*) of the subspecies *audubonii* from Jefferson County, Indiana, during late January and early February 2007. The criteria used in identifying it to subspecies, age, and sex, as well as the larger context for this record and the issue of provenance, are also discussed.

## Field Encounter

On approximately 24 January 2007, Bill Smock noticed an unfamiliar yellow and

black bird at his feeders east of Canaan, Jefferson County, Indiana (38.88° N, 85.25° W, elev. 257 m). It visited irregularly, so it was several days before his wife, Carol, and a family friend, Dale Sides, were able to observe the bird. In early February, Bill Smock identified the bird as an Audubon's Oriole (*Icterus graduacauda*) by use of a field guide. On 6 February, Jason Lewis of the U.S. Fish and Wildlife Service was contacted to confirm the observation, and the next day, Lewis contacted Gorney, discussed the report, and visited the Smock home. Upon arriving at the Smock residence, Lewis spotted the oriole in a bare Sil-

ver Maple (*Acer saccharinum*) next to the house and obtained several photographs. During the next hour, the oriole was observed near the house as well as in an adjacent small apple orchard. Photographs obtained by Lewis and shared later that day with Gorney and others conclusively identified the bird as an Audubon's Oriole.

Gorney visited the site on 8 February with Lewis, obtained additional photographs, and took detailed field notes. The bird was in view for approximately 40 minutes during this two-hour visit. The bird was seen feeding at two oil sunflower seed feeders, foraging and resting in

Audubon's Oriole visiting a feeder near Canaan, Jefferson County, Indiana on 11 February 2007. Relevant field marks include the large black hood extending onto the breast, olive-yellow back and rump, bright yellow collar, and yellow underparts. The prominent white edging to all remiges and the greater coverts indicate this bird is of the subspecies *audubonii*. Photograph by Ron Austing.



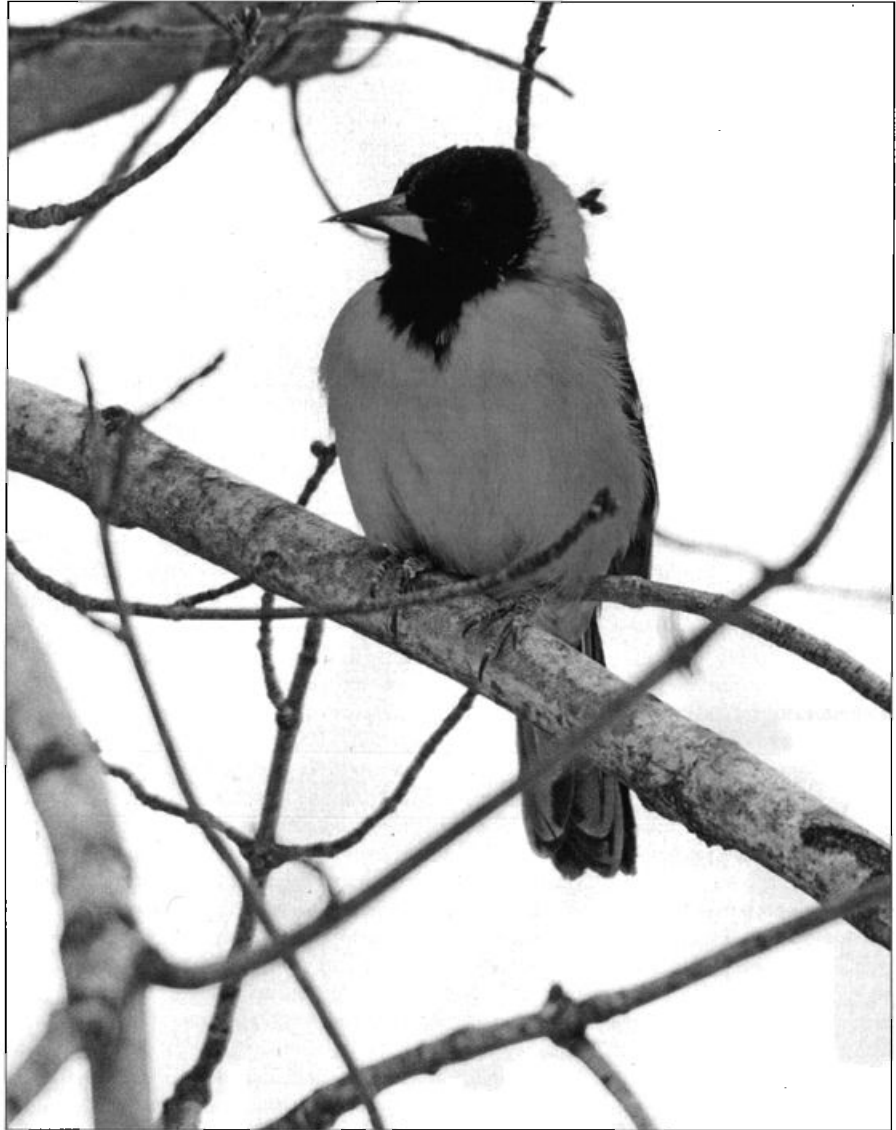
a bare Silver Maple, and foraging in matted grasses and cattails bordering a small snow-covered, frozen pond. While at the feeders it primarily perched on the wooden platforms to feed, but it was also observed feeding on the ground. The oriole and the other species present were wary. A vehicle pulling into the driveway or movement outside of the house would cause the oriole to fly away.

During the next week, the oriole sporadically visited the Smocks' feeding area. Bill Smock reported that it was absent from the feeders for one 48-hour period and sometimes for hours at a time on days when it did visit. The bird was occasionally seen flying towards or at several locations on the property, thus it appeared to make wide use of the Smocks' 110-acre homestead. There are few other residences besides the Smock home in the vicinity, so the bird was likely obtaining food on its own when not present at the feeders. Several other birders besides those mentioned above were able to observe the oriole during the remainder of its stay. Wildlife photographer Ron Austing obtained photos on 11 February (Figures 1 and 2). The Audubon's Oriole was last seen on 15 February 2007 by Bill Smock. No vocalizations were heard from the bird.

Physiographically, the local region is a plateau of up to 330 m above sea level and dissected by streams that may be 150 m below the hilltops. Natural communities include glades, barrens, and mesophytic forests associated with ravines. The area surrounding the Smock home is decidedly rural and undeveloped, with agriculture and natural vegetation being the primary land cover (Campbell 1997, pers. obs.).

## Identification

Audubon's Oriole is a distinctively marked species. The individual observed in Indiana was a large oriole with a black hood; yellow underparts; olive-yellow back, scapulars, and rump; bright yellow collar separating the hood and the back; black wings with white edging on each remex and the greater coverts; and a long, black, graduated tail with pale edging on the underside of the retrices. The hood extended past the crown but did not reach the nape. It extended onto the chin, throat, and breast. Eye color was black. The medium-length, pointed, and mostly black bill was thicker at the base and narrowed to a fine point. The mandible was powder blue from the base to a point slightly more than halfway to the tip. Only a minimal portion of the maxilla was so colored. The tips and the outer edges of the undersides of the outermost tail feathers (R6) were extensively marked with a combination of off-white and dull yellow. The



Audubon's Oriole near Canaan, Jefferson County, Indiana on 11 February 2007. The clean edge to the back of the hood and the neatness and reduced size of the breast spot strongly suggests a female. Diagnostic for a female are the extensive undertail spots. Photograph by Ron Austing.

markings were most extensive on R6 and appeared less so on each feather moving towards the central tail feathers (R1). Compared to other species present at the feeders, the oriole was closest in size to Northern Cardinal but was slightly bigger and bulkier.

While several species of orioles in definitive plumage show variations of yellow and black—e.g., Scott's (*I. parisorum*), Black-cowled (*I. prothemelas*), and Yellow-backed (*I. chrysater*)—Audubon's Oriole is unique in having a black hood and yellowish back. Immatures of several oriole species are yellow and black but can be eliminated by a variety of factors such as body shape and size, bill shape, wing markings, lack of hood, and overall coloration (Jaramillo 1999). Female

Crimson-collared Grosbeak (*Rhodothraupis celaeno*) can be eliminated by differences in wing and tail color, overall duller coloration, and bill shape and size. The long, graduated tail and the unique undertail pattern also points to the Indiana bird as being an Audubon's Oriole.

Four subspecies of Audubon's Oriole are currently recognized: *audubonii*, *dickeyae*, *graduacauda*, and *nayaritensis*. *Audubonii* is the only subspecies known to occur in the United States (Flood et al. 2002; Brush, pers. comm.). It also occurs in the Mexican states of Coahuila, Nuevo León, and Tamaulipas (Brush 2005). The remaining three subspecies are found only in Mexico (Jaramillo 1999). Flood et al. (2002) state that the four sub-

Table 1. Reports of orioles from winter 2006–2007 in the greater Ohio River Valley.

Species	Location	Date and source
Baltimore Oriole	McHenry Co., Illinois	8 February 2007; P. Zeller, IBET listserv
Bullock's Oriole	Scott Co., Indiana	1 January–15 April 2007; pers. obs.; IN-BIRD listserv
Audubon's Oriole	Jefferson Co., Indiana	approx. 24 January–15 February 2007; present paper
Baltimore Oriole	Franklin Co., Kentucky	approx. 14 January–mid-February 2007; B. Palmer-Ball
Scott's Oriole	Franklin Co., Kentucky	early February–23 April 2007; B. Palmer-Ball
Baltimore Oriole	Monroe Co., Ohio	Late December 2006–late January 2007; V. Fazio, W. Murphy
Baltimore Oriole	Summit Co., Ohio	17 December 2006; V. Fazio
Baltimore Oriole	Franklin Co., Ohio	December 2006–late January 2007; B. Whan
Baltimore Orioles	Various sites, Pennsylvania	13 birds; December 2006–February 2007; V. Fazio
Scott's Oriole	Cumberland Co., Pennsylvania	19 February–April 2007; V. Fazio
Baltimore Oriole	Williamson Co., Tennessee	5–13 December 2006; TN-Bird Net listserv, Jan Shaw
Baltimore Oriole	Shelby Co., Tennessee	17 December 2006; TN-Bird Net listserv, Chris Sloan
Baltimore Oriole	Greene Co., Tennessee	18 December 2006; TN-Bird Net listserv, Chris Sloan
Baltimore Oriole	Monroe Co., Tennessee	7 January 2007; TN-Bird Net listserv, Chris Sloan

species are moderately well marked but they intergrade where ranges meet. The Indiana bird was identified as an *audubonii* primarily because the remiges and greater coverts were boldly edged with white (Figure 1), which eliminates all subspecies but *audubonii*. The nominate subspecies *graduacauda* resembles *audubonii* but is smaller and lacks white edges on the inner secondaries and white tips on the coverts. Determining the subspecies of the Indiana bird based on size is impractical. However, *graduacauda* specimens at the Field Museum, Chicago, were noticeably smaller than *audubonii* specimens and appeared closer in size to Bullock's (*I. bullockii*) and Baltimore (*I. galbula*) Orioles. The Indiana bird was stocky and appeared bulkier and larger than the Bullock's Oriole that Gorney had observed elsewhere in southern Indiana on 7 February, the day before he observed the Audubon's Oriole. *Nayaritensis* is similar to *graduacauda* and therefore can be eliminated for the same reasons given above for that subspecies. *Dickeyae* is the most distinct of the four subspecies, being similar to *graduacauda* but larger and lacking white edges on any wing feathers (Jaramillo 1999, Flood et al. 2002). Jaramillo (1999) speculates that further study might show *dickeyae* to constitute a separate species.

The bird was identified as an after-second-year female by review of pertinent references, examination of specimens, and evaluation of photographic evidence. Juvenile plumage in Audubon's Oriole is quite distinct from adult plumage, the most striking differences being the olive-colored tail and upperparts and the lack of a black hood, throat, and breast mark. The partial Prebasic I molt includes the hood, throat, and breast; the central and possibly other retrices; and from some to all of the wing coverts and tertials. The primaries and secondaries are not replaced and remain

brownish (Flood et al. 2002, Pyle 1997). An individual after Prebasic I molt appears similar to one in definitive plumage except that the brownish primaries and secondaries contrast with the black coverts and tertials, most of the retrices remain olive-colored, and the upperparts are extensively olive-colored (Jaramillo 1999; pers. obs.). The Definitive Prebasic molt is complete and occurs from July through September of a bird's second year (Flood et al. 2002). Because the Indiana bird had no olive-colored retrices, showed no contrast between primaries/secondaries and coverts/tertials, and had an olive-yellow back and rump, we determined the bird's age to be after second year.

Although many references indicate that adult males and females are similarly marked (e.g. Sibley 2000, Pyle 1997), there appears to be one key field mark and several more subtle characteristics by which one can sex the species. Jaramillo (1999) was the only readily accessible reference that addressed the undertail patterns of male and female Audubon's Orioles. The text indicates that males have an all-black tail, sometimes with a small white tip to the tail feathers. In contrast, the outer tail feathers of females typically show an olive tip or extensive amounts of olive. Other retrices also may be olive-tipped. We found considerable variability in the undertail markings of females at the Field Museum. However, every female examined showed at least some pale tips to the outermost feathers (R6), most of them being extensively marked. Usually the other tail feathers had pale tips as well. The amount of marking on each feather decreased towards the central tail feathers, which were often unmarked. The undertails of male specimens, on the other hand, were entirely black except in a few instances of birds with minimal markings, usually restrict-

ed to R6 and probably noticeable only with a bird in the hand. The Indiana bird had an extensively marked undertail, including a small pale tip to the central tail feathers, an indication that the bird was a female (Figure 2).

Another difference between the sexes that is mentioned in most references is that the females' upperparts are duller than those of the male, with the back and rump appearing olive rather than yellow. The authors found this mark to be inconclusive when they examined old, presumably faded, specimens, although they still found that males were often brighter than females. The Indiana bird had an olive-yellow back and rump, another indication that it was a female.

Field marks that appeared useful in sexing specimens but that are not well addressed in references include the raggedness of the margin of the hood at the nape, the shaggy lower hood, and the overall size of the breast marking (Gorney 2007). Male specimens tended to have a poorly demarcated edge to the hood along the nape or the back of the head. The edge was usually ragged, with stray black feathers radiating out onto the back. Females, on the other hand, had a fairly well demarcated edge to the hood with few, if any, stray feathers. Male specimens tended to have a hood that ended with a large breast spot with shaggy edges and black streaks radiating outward. Females tended to have a smaller breast spot, edges that were much less ragged, and little to no dense streaking emanating from the breast spot. We believe that although these subtle features vary, they are useful in sexing the species. This opinion is shared by Alvaro Jaramillo, who indicated that, based on his experience with specimens, most birds can be sexed by plumage (pers. comm.). The Indiana bird showed a well demarcated edge to the hood at the back of the head and had a small, clean breast spot that lacked the ragged appearance of many males (Figure 2). All field marks again suggested a female.

## Discussion

According to Flood et al. (2002), Audubon's Oriole is known from Texas, Mexico, and Belize, with a reported vagrant from Puerto Rico. Despite previous reports and references in the literature, the species has not been verified in Belize (Bruce W. Miller, pers. comm.). The single sighting in Puerto Rico was reported as an adult male seen by two observers near Ramey on 12 June 1995. Details of the sighting do not allow for subspecies determination but do point to an Audubon's Oriole. The observers assumed the bird to be a former captive because of the great distance from its normal range and the lack of vagrancy

records for the species (Bunkley-Williams and Williams 1996).

Within the United States there are no accepted records of Audubon's Oriole outside of Texas (Brush 2000). Its range in Texas appears to be expanding northward. Vagrants have been noted well away from the species' known permanent range (Mark Lockwood, pers. comm.). A review of TexBirds listserv postings point to a number of birds seen away from the core range including an unconfirmed report of a bird seen in September 2005 in Angelina County, Texas, approximately 224 km northeast of Houston and only 96 km from the Louisiana border (Booker 2005). At least some individuals in Texas move or wander seasonally (Flood et al. 2002, Brush 2000, 2005), and up to four birds wintered in the southern-central Hill Country at Utopia, Uvalde County in winter 2006-2007 (M. Lockwood, pers. comm.). However, the extent of their extralimital movements is not well understood, and indeed many details of the species' life history are poorly known because of its secretive nature, breeding habits, limited distribution, and the extensive private land ownership that limits access (Brush 2001). It is clear, however, that Audubon's Orioles are occasionally found during winter in parts of southern Texas where they no longer breed, which provides some evidence of a migratory or wandering component in the *audubonii* subspecies (Brush, pers. comm.). In Mexico, the *audubonii* subspecies occurs along the U.S. border, including in the Sierra del Carmen mountain range across from Big Bend National Park in the state of Coahuila. A specimen was taken from that mountain range in 1940, and pairs of Audubon's Oriole, including singing males, were noted at elevations between 2100 and 2550 m in the same area in June 2000 (Brush 2005). Either these birds are resident and can tolerate cold over-night temperatures or they move down-slope in winter (Brush, pers. comm.).

### The issue of provenance

There is no obvious outward evidence that would suggest captive provenance for the Indiana Audubon's Oriole. The International Species Information System (ISIS), a database of captive animals maintained by zoological institutions around the world, contains no record of any Audubon's Orioles in captivity. Indeed, very few native orioles, either species or individuals, were held by zoos in the United States and Canada (ISIS). The United States Fish and Wildlife Service reported that no federal migratory bird permits had been issued to legally possess a live oriole of any species in the United States (Andrea Kirk, Division of Mi-

gratory Birds, pers. comm.). However, Eduardo E. Iñigo-Elias, an expert on the North American caged-bird trade, currently employed by the Cornell Lab of Ornithology, indicated that orioles, including Audubon's, are indeed part of the caged-bird trade in Mexico. While passerines are smuggled into the United States, psittacids command much higher prices and thus tend to be the species of choice for smugglers (Iñigo-Elias, pers. comm.).

Birds brought illegally into the United States may be confiscated by either U.S. Customs and Border Protection or the United States Fish and Wildlife Service. While both agencies have reporting systems to track seizures, data was only obtained from the latter. The extent of bird seizures by Customs and Border Protection is unknown, although information from their website (<<http://www.cbp.gov>>) indicates that they likely confiscate as many birds as does the Fish and Wildlife Service, if not more. Data obtained from the LEMIS reporting system (U. S. Fish and Wildlife Service) concerning confiscated passerines for the period 2000 through early 2007 was meager. Only 46 cases, representing 1036 birds, were listed. Of the total, one seizure in Miami of 910 birds, mostly finches of various species, represented the overwhelming majority of individuals. No orioles of any species were listed on the LEMIS report, and no reports of oriole seizures were listed on the Customs and Border Protection website.

Although North American birds are protected by federal laws (e.g., Migratory Bird Treaty Act and Lacey Act), native species are trapped within the United States for the caged-bird market (Sykes et al. 2006, Paul Beiriger, Special Agent, United States Fish and Wildlife Service, pers. comm.). It is unclear how widespread in the United States local trapping might be and what effect it has on local bird populations. The market appears to have an affinity for brightly colored species with unique and melodious vocalizations, such as Painted (*Passerina ciris*) and Indigo (*P. cyanea*) Buntings, Northern Cardinals (*Cardinalis cardinalis*), and Northern Mockingbirds (*Mimus polyglottos*). Special Agent Gary Young of the United States Fish and Wildlife Service reported that Easter is a time during which Northern Cardinals are particularly targeted. Special Agent Paul Beiriger speculated that local trapping of songbirds within the United States might result in a higher number of caged-birds than birds being smuggled across the border. Beiriger has personally confiscated birds such as Northern Cardinals that had been trapped locally at feeders and kept as pets.

Although the Audubon's Oriole that appeared in Indiana may have been trapped in Texas or Mexico and transported to the Midwest, Iñigo-Elias did not think that was the case. After reviewing photographs of the Indiana Audubon's Oriole, he stated that the bird did not appear to have been held captive recently because the plumage and overall condition of the bird was inconsistent with that of a captive bird (Iñigo-Elias, pers. comm.). Captive birds in the Mexican bird markets tend to be in poor condition, often missing feathers or injured as a result of having been held under substandard conditions (Iñigo-Elias, pers. comm., Hamilton 2001). Captive birds brought illegally into the United States are often in similarly poor condition and frequently do not survive the smuggling process due to the deplorable conditions in which they are held (Iñigo-Elias, pers. comm.). Dr. Iñigo-Elias believes that very few rare bird reports in the United States involve formerly captive birds.

### Weather as a factor

Although there are no previous confirmed records of Audubon's Oriole north of Texas, factors that together suggest that the Indiana bird was almost certainly of wild provenance include: 1) seasonal movements by some individuals during autumn and winter, 2) severe drought in Audubon's Oriole's range, 3) weather systems that moved warm air from Texas into the Ohio River Valley prior to the bird's discovery, 4) appearance of a number of orioles in the eastern United States during the same period, and 5) previous sight records of Audubon's Orioles outside of Texas. One might also add, in larger context, that many Texas/Mexican species have been detected farther and farther north in recent years, some in large numbers (e.g., Cave Swallow [*Petrochelidon fulva*]).

Ecological conditions ranging from prolonged periods of drought to temporary weather fronts can factor into movements of individual birds. Numerous authors have shown that periods of drought can lead to the dispersal of birds, at any time of year, within a geographical area (e.g., Vega and Rappole 1994, Dunning and Brown 1982, George et al. 1992). Vega and Rappole (1994) found that many Texas species, including Audubon's Oriole, usually considered to be permanent residents, were absent from their study areas during winter during a drought. Data from the U. S. Drought Monitor (<<http://drought.unl.edu/dm>>) indicated that much of the northwestern range of Audubon's Oriole (based on Lockwood 2004 and TexBirds listserv posts) in Texas was experiencing extreme

drought conditions for much of the latter half of 2006. Drought conditions in this area, which includes Bandera, Uvalde, Medina, Bexar, and Zavala Counties deteriorated to "exceptional drought" status for the 12 December 2006 report and remained at that maximum drought category through the end of January 2007. Much of the remaining portion of southern Texas, away from the Gulf Coast, also was in drought, ranging from moderate to extreme, during the latter half of 2006 and the beginning of 2007. In the drought areas, soil moisture was low, vegetative health was fair to poor, and streamflow was low (National Climatic Data Center).

A series of weather events from late November 2006 through mid-January 2007 supplied the greater Ohio River Valley and large sections of the eastern United States with warm, southerly winds largely from or including Texas. Examination of weather data for Kentucky, located at the heart of the Ohio River Valley and in close proximity to the Audubon's Oriole sighting, revealed mild weather in late November and the first few days of December, with temperatures 8° F above normal due to southerly winds. After a week of below-normal temperatures during the week of 4 December, a series of systems brought a relatively consistent flow of southerly winds from Texas and the Gulf coast area from mid-December 2006 through mid-January 2007. During this period, the warm southerly winds helped push temperatures in the greater Ohio River Valley to well above normal. Still using Kentucky as a proxy for the region, average weekly temperatures for the five-week period beginning 11 December and ending 14 January were 15°, 13°, 9°, 15°, and 13° F above normal, respectively (Priddy 2007, 2006).

The Audubon's Oriole in Indiana was not the only oriole reported in the greater Ohio River Valley from December 2006 through February 2007. Other orioles reported included Bullock's Oriole from Indiana, Scott's and Baltimore Orioles from Kentucky, Scott's and Baltimore Orioles from Pennsylvania, and Baltimore Orioles from Illinois, Ohio, and Tennessee (see Table 1). The 22 Baltimore Orioles reported for these states compare to the eight reported during the winter of 2005-2006, along with no other oriole species, and two Baltimores reported for the winter of 2004-2005, in addition to two Bullock's Orioles in *North American Birds*. During the 2006-2007 winter season, Baltimore Orioles were reported in more than a dozen additional eastern states and provinces, and Bullock's Orioles were also reported from Georgia and New York (C.B.C. data, state

listservs). Many of the orioles were observed at feeding stations. Interestingly, a number of these birds were first noticed at feeders during periods of mild weather with above normal temperatures, suggesting that inclement weather was not the proximate reason for their unexpected appearances at the feeders. When speaking specifically about oriole records from the Great Backyard Bird Count in mid-February 2007, Paul Green of the National Audubon Society noted, "We've got Baltimore Orioles in 14 states, Orchard Orioles in five different [states], and Scott's Oriole in Pennsylvania. They shouldn't be here. They should be way south" (O'Driscoll 2007). Another unusual species well represented in the eastern United States during this period was Western Tanager, with 21 reports including individuals in Ohio, Pennsylvania, and Michigan (Whan 2007). In his seasonal report, Whan, like many other birders and authors, described winter sightings of White-eyed Vireo (*Vireo griseus*) and Orange-crowned (*Vermivora celata*) and Nashville (*V. ruficapilla*) Warblers as lingerers. However, given the weather patterns and the unusual number of seasonal vagrants that appeared in the eastern United States during the winter of 2006-2007, early or reverse migration should be considered in such cases; "lingering" may be a misleading term in some cases (Sullivan 2005).

While there are no accepted U.S. records of Audubon's Oriole away from Texas, the species has been reported from at least three other states. Arizona has at least three reports, New Mexico two, and Ohio one. The latter appears the most credible, a tantalizing winter record. Arizona's reports are from 30 April-1 May 1973 at Cave Creek Canyon, Cochise County (Speich 1975), 15 July 1975 in Madera Canyon, Santa Cruz County (Rosenberg 1999), and April 2001 at Nogales, Santa Cruz County (Boyd 2001, pers. comm.). The 1973 and 1975 records were reviewed by the Arizona Bird Committee but not accepted. The 2001 report was communicated verbally to another birder with no details provided. New Mexico's reports are from Eddy County in April of an unknown year (but prior to 1978) and from Luna County on 21 May 1980. The former record is an apparently secondhand report lacking any details, while the latter report came from an out-of-state visitor who also reported a Streaked-back Oriole and a pair of Black-vented Orioles from the same area. The 1980 Luna County report was not accepted by the New Mexico Bird Records Committee. Both reports from New Mexico are considered to be erroneous identifications (S. O. Williams, pers. comm.). Ohio's report is from Allen

County on 20 December 1995. A man and his wife twice saw a yellow-and-black bird perched in a tree just three meters from their window. The husband documented the sighting on 22 December 1995. He reported that the bird was approximately the size of an American Robin or Common Grackle. It had a totally black head and sharp contrast between the black hood and lemon-yellow upper back and breast. Wings were dark with whitish wing bars. The bill was dark, long, and thin. A simple drawing submitted with the documentation shows a bird with an oriole bill, black hood, dark wings with wing bars, and lemon-yellow back and underparts. Although the documentation is not comprehensive, the written details and the drawing are extremely suggestive of an Audubon's Oriole and seem to rule out other possible species. The only field mark lacking in the description is the black breast spot. The Ohio record was not accepted by the Ohio Bird Records Committee; the vote was eight to three (Fazio 1996). Origin apparently was a more critical factor than identification in the decision to reject the record (V. Fazio, pers. comm.).

## Summary

The appearance of an Audubon's Oriole in Indiana seems to defy conventional wisdom, as the species is thought to be relatively sedentary throughout its range. We held a skeptical view upon learning of and then observing the bird. However, the available evidence provides a credible explanation of how an Audubon's Oriole might appear well away from its range in Texas. Indeed, there is no direct evidence pointing to captive provenance, and all anecdotal information points away from such speculation. While in the end we eschewed conventional birding wisdom and believe that the Audubon's Oriole was most likely of natural provenance, time and additional wanderings and sightings of the species will provide the most convincing evidence of that. Documentation and photographs have been submitted to the Indiana Bird Records Committee.

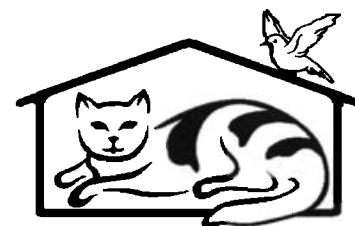
## Acknowledgments

We thank David Willard for access to the collections at the Field Museum in Chicago, Dr. Eduardo E. Inigo-Elias for his insight into the caged-bird trade, the United States Fish and Wildlife Service for data and access to the special agents who provided enlightening comments, Timothy Brush, Alvaro Jaramillo, Sartor O. Williams, Mark Lockwood, Gary Rosenberg, Pam Zeller, Brainard Palmer-Ball, Ed Boyd, Bruce W. Miller, Jan Shaw, Chris Sloan, and Victor Fazio for valuable com-

ments and references, and several reviewers, especially William Murphy, who strengthened this paper.

## Literature cited

- Booker, J. 2005. Audubon's Oriole reported 130 miles north of Houston. Online posting. 9 September 2005. <<http://listserv.uh.edu/cgi-bin/wa?A2=ind0509&L=tebirds&D=1&T=0&O=D&P=19923>>. [accessed 27 March 2007].
- Boyd, E. Brown-crested Flycatcher and Audubon's Oriole (what a combination). Online posting. 26 April 2001. <<http://listserv.arizona.edu/cgi-bin/wa?A2=ind0104D&L=BRDWDG05&P=R2818&I=3>>. [accessed 27 March 2007].
- Brush, T. 2000. Audubon's Oriole: the shy, beautiful whistler of south Texas. *Texas Birds* 2: 4-9.
- Brush, T. 2001. Audubon's Oriole. *The Texas Breeding Bird Atlas*. Texas A&M University System, College Station and Corpus Christi, Texas. <<http://tbba.cbi.tamucc.edu>>. [accessed 24 March 2007].
- Brush, T. 2005. *Nesting birds of a tropical frontier: the Lower Rio Grande Valley of Texas*. Texas A&M University Press, College Station, Texas.
- Bunkley-Williams, L., and E. H. Williams, Jr. 1996. Observations of an Audubon's [Black-headed] Oriole *Icterus graduacauda* in Puerto Rico, the first record for the Caribbean. *El Pitirre* 9 (2): 2.
- Campbell, R. K. 1997. Limestone ledges and "crawfish flats": the bluegrass natural region. *The Natural Heritage of Indiana* (M. T. Jackson, ed). Indiana University Press, Bloomington, Indiana.
- Dunning, J. B., and J. H. Brown. 1982. Summer rainfall and winter sparrow densities: a test of the food limitation hypothesis. *Auk* 99: 123-129.
- Fazio, V. 1996. Spring 1996 quarterly report of the Ohio Bird Records Committee. <<http://aves.net/rarities/obrcsp96.htm>>. [accessed 27 March 2007].
- Flood, N. J., J. D. Rising, and T. Brush. 2002. Audubon's Oriole (*Icterus graduacauda*). *The Birds of North America*, No. 691 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, Pennsylvania.
- George, T. L., A. C. Fowler, R. L. Knight, and L. C. McEwen. 1992. Impacts of a severe drought on grassland birds in western North Dakota. *Ecological Applications* 2: 275-284.
- Gorney, D. 2007. Audubon's Oriole (*Icterus graduacauda*): a little help in aging and sexing individuals. <<http://www.dongorney.com/AudubonsOriole.htm>>.
- Hamilton, R. A. 2001. Appendix D: Records of caged birds in Baja California. *Birds of the Baja California peninsula: status, distribution, and taxonomy* (R. Erickson and S. Howell, eds.). American Birding Association. *Monographs in Field Ornithology* no. 3. International Species Information System. ISIS Species Holdings. <<http://app.isis.org/abstracts/abs.asp>>. [accessed 9 February 2007].
- Jaramillo, A. 1999. *New World Blackbirds: The Icterids*. Princeton University Press, Princeton, New Jersey.
- Lockwood, M. W., and B. Freeman. 2004. *The TOS Handbook of Texas Birds*. Texas A&M University, College Station, Texas.
- National Climatic Data Center. United States Department of Commerce. <<http://www.ncdc.noaa.gov/oa/climate/research/2006/dec/us-drought.html#DetOverview>>. [accessed 27 May 2007].
- O'Driscoll, P. Bird species showing up farther north. *USA Today* [online version]. 18 March 2007. <[http://www.usatoday.com/weather/climate/globalwarming/2007-03-18-birds-winter\\_N.htm](http://www.usatoday.com/weather/climate/globalwarming/2007-03-18-birds-winter_N.htm)>. [accessed 21 April 2007].
- Priddy, T. Kentucky Weather Summary 2007. University of Kentucky Agricultural Weather Center. <<http://www.wagwx.ca.uky.edu/public/KYWKCRC07>>. [accessed 22 May 2007].
- Priddy, T. Kentucky Weather Summary 2006. University of Kentucky Agricultural Weather Center. <<http://www.wagwx.ca.uky.edu/public/KYWKCRC06>>. [accessed 22 May 2007].
- Pyle, P. 1997. *Identification Guide to North American Birds. Part I: Columbidae to Ploceidae*. Slate Creek Press, Bolinas, California.
- Rosenberg, G. H., and J. L. Witzeman. 1999. Arizona Bird Committee Report, 1974-1996: Part 2 (Passerines). *Western Birds* 30: 94-120.
- Sibley, D. A. 2000. *The Sibley Guide to Birds*. Knopf, New York.
- Speich, S. M. 1975. Arizona birds records, 1973, with additional notes. *Western Birds* 6: 145-155.
- Sykes, P. W. 2006. A brief report on the illegal cage-bird trade in southern Florida: a potentially serious negative impact on the eastern population of Painted Bunting (*Passerina ciris*). *North American Birds*. 60: 310-313.
- Vega, J. H., and J. H. Rappole. 1994. Composition and phenology of an avian community in the Rio Grande Plain of Texas. *Wilson Bulletin* 106: 366-380.
- Whan, B. 2007. Winter 2006-2007 overview and reports. *The Ohio Cardinal*. 30: 45-65.



## CATS INDOORS!

THE CAMPAIGN FOR SAFER BIRDS & CATS

## WHAT DO INDOOR CATS MISS?

- ★ Killing Birds
- ★ Getting Lost
- ★ Getting Stolen
- ★ Getting Hit By A Car
- ★ Fatal Feline Diseases
- ★ Dog Attacks
- ★ Abscesses
- ★ Worms
- ★ Fleas
- ★ Ticks

**Protect cats, birds,  
and other wildlife by  
keeping cats indoors!**

For more information, contact:  
**AMERICAN BIRD  
CONSERVANCY**  
Cats Indoors!

The Campaign for Safer Birds and Cats  
1834 Jefferson Place, NW  
Washington, DC 20036  
Phone: 202-452-1535;  
Fax: 202-452-1534;  
E-mail: [abc@abcbirds.org](mailto:abc@abcbirds.org);  
Web: [www.abcbirds.org](http://www.abcbirds.org)

