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Interactions and Hybridization between Altamira and Audubon's Orioles in the Lower Rio Grande Valley

The Altamira Oriole is a large tropical oriole that occurs regularly in the Lower Rio Grande Valley of Texas (Brush and Pleasants 2005). Little has been published on its life history (Werner 2004, Brush and Pleasants 2005, Werner et al. 2007). In this article, we discuss interactions, including probable hybridization, of this species with the sympatric Audubon's Oriole, possible causes of hybridization, and behavior of the presumed hybrids.

In 1988 the first mixed pair (male Audubon's and female Altamira Oriole) was documented near Ricardo, Kleberg County, Texas, by Palmer. The pair completed three nests (plus one that was left uncompleted), but no eggs were laid. All nests were long, pear-shaped structures typical of Altamira Orioles, and each nest was built by the Altamira Oriole of the pair (presumed female). The Audubon's Oriole (presumed male) was seen by Palmer at the nest, not building but possibly guarding it. Two of the nests were in trees in open pasture, one over a driveway, and one in a shelterbelt. The birds were observed from spring to December of 1988, but their fate in subsequent years is not known.

In 1998 and 1999 a probable hybrid (nicknamed "Smudgy") was observed at Bentsen – Rio Grande Valley State Park (Bentsen) in Mission, Hidalgo County, Texas. It was a male with the overall pattern of an Altamira Oriole, but the black of the throat patch extended up onto the cheeks, and the bill was narrower than a typical Altamira's bill (Jaramillo 1999). The bird mated with a normal-looking Altamira female and attended at least one nest in 1998 and 1999.



Starr County, Texas; May 2005. © Steve Bentsen.

Altamira Oriole (right) and **Audubon's Oriole** (left) are distinctive in their adult plumages, and they are not usually considered to be especially closely related within their genus. This article documents the occurrence of multiple hybrid pairings between the two species, summarizes identification of hybrid offspring, and discusses behavioral interactions between the two species.

(Brush 2005). A photograph of a similar bird appeared in Perrigo (2002). Werner observed two presumed hybrids at Bentsen in 2002 and three there in 2003. All of the hybrids paired with post-second-year orange Altamira Orioles. Based on their nesting behavior, Werner determined that there were one male hybrid and one female hybrid in 2002, plus one male and two female hybrids in 2003. The number of presumed hybrids at Bentsen seemingly did not increase in the mid-2000s: Three were present in the park in 2005 (observed by Patrikeev), and at least two were there in January 2006 (observed by D. and J. Dauphin).

The hybrids exhibited characteristics of both oriole species (Fig. 1, p. 44). The overall coloration was orangish-yellow, more like an immature Altamira Oriole. In addition, the black mask (lores, supralores, and the area around the base of bill) and the thin black throat patch typical of Altamira Oriole was less solid black in the hybrids and extended onto the auriculars. Also, the black on the throat and breast was more extensive than on Altamira. At least one of the hybrids exhibited a streaked mantle (Fig. 2, p. 44). Mantle streaking occurs in neither species whether in adult or immature plumages. The mantle is black in Altamira Oriole and olive-yellow in nominate Audubon's Oriole, the subspecies

Hidalgo County, Texas; July 1993.
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Fig. 1. Hybrid oriole, generally intermediate in characters between parental Altamira and Audubon's Orioles. Bentsen – Rio Grande Valley State Park, Hidalgo County, Texas; 23 March 2006. © Jan Dauphin.

that occurs in Texas (Oberholser 1974, Howell and Webb 1995, Jaramillo and Burke 1999). Hybrids' beaks are more reminiscent of Audubon's Oriole: slightly curved and black with blue-gray, not only on the lower mandible, but also with some gray on the upper mandible as well. In Altamira Oriole, the bill is thick and black, with the lower basal portion of the mandible pale grayish blue (Howell and Webb 1995, Jaramillo and Burke 1999). One of the presumed hybrid females photographed by Werner in 2003 exhibited many characteristics of an adult female Audubon's Oriole (Fig. 3, opposite page). Hybrid orioles of both sexes observed by Werner produced vocalizations that were indistinguishable in the field from normal-looking Altamira Orioles.

Pairs that included a presumed hybrid attended a total of four nests in both 2002 and 2003, observed by Werner. All three nests built by hybrid females were much shorter than typical Altamira nests, but the attachment to the branch was typical of that species (Fig. 3). In 2002 a pair with a hybrid male fledged 5 young from two successive nests after their first nest failed. Another pair with a hybrid female fledged two young orioles and two young Bronzed Cowbirds from the same nest, observed by Werner. The 2003 reproductive season was less successful. A pair with a hybrid male raised three young orioles and three cowbirds from two successive nests, respectively. Two other pairs with hybrid females built only two nests: One fledged three Bronzed Cowbirds and the other failed, as observed by Werner. The offspring of these pairs were not banded, and their whereabouts after fledging were not determined.

In April of 2005 no hybrid pairs were present at Bentsen, but Patri-

keev observed at least two trios that consisted of one orange adult Altamira (post-second-year plumage), one yellow-orangish adult Altamira (second-year plumage), and one presumed hybrid. One such trio was observed near a nest attached to a power line on 29 May (Fig. 4, opposite page). While the yellow-orangish Altamira female was finishing the nest, the hybrid nearby was observed attacking and harassing her. The nest produced no young. On 8 July Patrikeev encountered a post-second-year Altamira Oriole accompanied by a presumed hybrid in the immediate vicinity of that nest. It is possible that the aggressiveness of the hybrid displaced the Altamira's mate. A similar interaction was observed by Werner in 2003, when a hybrid female that was already building a nest chased off a second-year Altamira that began weaving some strands on a branch in the same tree. The second-year female nested successfully soon thereafter at a different location 200 meters away. Interestingly, both females were possibly mated with the same adult male Altamira Oriole, although the suspected male was not color-banded.

On 28 May 2005 a mixed pair of Altamira and Audubon's Orioles was observed in the El Morillo Tract east of and adjacent to Bentsen. The Audubon's Oriole (probably a female) searched for nesting material on tree trunks and was building a nest in a fork in the upper third of a lead tree (*Leucaena leucocephala*) approximately 6.5 meters above the ground. The nest was a shallow basket typical of Audubon's Oriole (Flood 1990). The pair was closely followed by a Bronzed Cowbird. By 10 June there was no activity at the nest, and it is not clear whether any eggs were laid. Patrikeev did not observe the pair in the immediate vicinity.

Discussion

The parentage of the presumed hybrids is not known. Although some observers accept that the hybrids were indeed offspring of a mixed pair of Altamira × Audubon's Oriole (Brush 2005), others suggest that it might have been a hybrid Altamira × Baltimore Oriole (Rountree 2006). Studies of DNA (Omland et al. 1999) suggest that Altamira Oriole is most closely related to neotropical Yellow (*I. nigrogularis*), Orange (*I. auratus*), and Jamaican (*I. leucopteryx*) Orioles and in North America to Bullock's and Baltimore Orioles. Audubon's Oriole is most closely related to Yellow-backed Oriole (*I. chrysater*) and Scott's Oriole (Omland et al. 1999). Our observations,



Fig. 2. Hybrid oriole with streaked mantle, a character shown by neither parental species. Bentsen – Rio Grande Valley State Park, Hidalgo County, Texas; 15 January 2005. © Andy Garcia.

however, suggest the possibility of a closer relationship between the Altamira and Audubon's Orioles than has previously been recognized. Although Bullock's and Hooded Orioles are known to breed in the Lower Rio Grande Valley, there have been no known pairings of these species with Altamira or Audubon's Orioles.

Does hybridization or pairing between Altamira and Audubon's Orioles occur where numbers of one or both species are low? Patrikeev and Eitniear did not observe any interactions between the two species at Salineño (Starr County, Texas), where both species were relatively common during 2001. To our knowledge, the mixed pairs and presumed hybrids have been observed only at two sites: (1) Bentsen, where the number of Altamira Orioles was low (8–11 pairs) in the 1990s and into the early 2000s (Werner 2004, Brush 2005; Patrikeev, personal observation) and where Audubon's Oriole is accidental (Brush 2005); and (2) in Kleberg County, where both species are very rare (Palmer, personal observation).

Normally, in Altamira Oriole, adults of both sexes are bright orange and easily identified (Howell and Webb 1995, Jaramillo and Burke 1999). Between 1974 and 1978, all nesting adults observed in Santa Ana National Wildlife Refuge (Hidalgo County, Texas) had orange post-second-year plumage (Pleasants 1981). Pairs observed by Patrikeev at Resaca de la Palma State Park (Cameron County, Texas) in 2005 and at Salineño in 2001 also were consistent with that description. At Santa Ana and Bentsen, however, approximately 20% of the breeding populations in 1997–1999 and 2002–2003 were second-year yellow-orangish birds (Hathcock 2000, Hathcock and Brush 2004, Werner et al. 2007).

Do post-second-year Altamira Orioles mate with second-year birds because of a lack of potential partners more than one year old? Altamira Oriole is a year-round resident in the valley (Brush and Pleasants 2005), and its movements (if any) are poorly known. Werner (2004) reported 59% nesting success in Altamira Orioles in Hidalgo County (1.4 ± 0.2 fledglings per nest), but information on post-fledging survival rates is lacking. If adult and fledgling survival rates are low, then the only recruitment may be of dispersing second-year birds from elsewhere. Perhaps adult Altamira Orioles that are unable to mate with other adults of the species mate instead with second-



Fig. 3. Presumed hybrid female showing characters closer to Audubon's Oriole than to Altamira Oriole. Bentsen – Rio Grande Valley State Park, Hidalgo County, Texas; May 2003.

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year Altamira Orioles, with Audubon's Orioles, or with the presumed hybrids. Although Audubon's Orioles no longer nest at Bentsen (Brush 2005), wandering individuals are likely there. Both male and female Audubon's Orioles readily answer the songs of their conspecifics, particularly before nesting begins (Flood et al. 2002), and thus may pair with an Altamira Oriole if partners of the same species are not available.

Mate scarcity may be a cause of physical aggression between Altamira Orioles at Bentsen, where an altercation between two post-second-year birds was observed by Patrikeev on 8 May 2005. The orioles

fought on an almost completed nest, entangling into a ball, pecking each other and clinging to each other with their feet, and then falling on the ground from the height of 10.5 m. Once on the ground, the birds disengaged and one flew away while the other returned to the nest where another orange Altamira Oriole (possibly a female) waited. (Aggressiveness of a presumed hybrid toward a second-year female is discussed on p. 44.) Normally, intraspecific aggression is rare in Altamira Orioles, and, if it occurs, consists mostly of a ritualized "bill-up" posture while birds are perched in a tree (Pleasants 1981, Brush and Pleasants 2005).

Presumed hybrids were able to persist in Bentsen from 1998 into 2006, albeit in very small numbers. Werner's observations suggest that male hybrids raise more young orioles than hybrid females. This may be a result of better security provided by deep-hanging nests built by post-second-year Altamira females paired with hybrid males,



Fig. 4. Presumed Altamira \times Audubon's Oriole hybrid (left), second-year Altamira Oriole female (center), and adult Altamira Oriole male (right). Bentsen – Rio Grande Valley State Park, Hidalgo County, Texas; 29 May 2005 © Michael Patrikeev.

whereas hybrid females tend to build shallow structures typical of Audubon's Oriole. Bronzed Cowbirds likely find shorter nests built by hybrid females to be more easily parasitized.

Further study is required to elucidate the prevalence and viability of presumed Altamira × Audubon's Oriole hybrids, and indeed to confirm their parentage. Documentation of the song of such a hybrid would also be noteworthy.

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