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FIRST RECORD OF MELANISM IN A *MYIARCHUS* FLYCATCHER

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On 25 May 2008, I observed an aberrantly plumaged Brown-crested Flycatcher (*Myiarchus tyrannulus*) at the China Ranch Date Farm near Tecopa, in southeastern Inyo County, California (35° 48' N, 116° 11' W). Apart from rufous flight and tail feathers, this bird was almost entirely brownish-black—see photo on the outside back cover of this issue of *Western Birds*.

Although it was oddly plumaged, I identified this relatively large flycatcher with a disproportionately large head, bushy crest, heavy bill, and long tail as a *Myiarchus* flycatcher. Furthermore, the bird appeared to be a Brown-crested Flycatcher, because of its larger size and heavier bill relative to the Ash-throated Flycatcher (*M. cinerascens*), the only other *Myiarchus* flycatcher that nests at this location. This individual called several times, giving what has been described as the “vibrato whistle” (Cardiff and Ditmann 2000).

This aberrantly plumaged bird was paired with a normally plumaged Brown-crested Flycatcher and engaged in nest building. I initially encountered the melanistic bird as it was collecting nesting material, and then as it perched out in the open on shrubs and on a tractor. The nesting material appeared to consist of dried grasses, forbs, and twigs. Upon returning to the canopy of the adjacent dense riparian thicket, the melanistic flycatcher interacted with a normally plumaged Brown-crested Flycatcher, engaging in chases and calling. During the interaction with the other bird, I heard one of the birds sing several several short “THREE-for-you” phrases, a component of the dawn song. I interpreted the behavior that I observed as courtship chases (Cardiff and Ditmann 2000, Tweit and Tweit 2002), suggesting these birds were potentially a breeding pair. *Myiarchus* flycatchers sing various components of their dawn songs as part of pair-bond maintenance (Miller and Lanyon 2014). The pair remained close to one another within a small area (~0.1 acre) during the entire time of my observation; however, I was not able to locate their nest cavity.

The only parts of this bird's plumage that appeared normally pigmented were those that are typically rufous, namely, the remiges and rectrices. The rest of the plumage, including the normally gray face and breast and yellow belly, were brownish black. Typical rufous pigmentation was present in the primaries, which could be seen on the folded wing. Wingbars were absent, as the tips of the wing coverts lacked their usual buff color, and the tips were instead the same brownish-black as the rest of the bird. The rectrices were a normal rust color, but the feather edgings were darker than usual, appearing blackish brown instead of a grayish brown. The bill and legs were a typical black color, and the brown coloration of the irides did not appear to be abnormal. In flight, the underside of the bird appeared entirely brownish-black, except for the aforementioned rufous.

Shortly thereafter, I corresponded with Tom and Jo Heindel, *North American Birds* sub-regional editors for Inyo County, regarding my observations. They requested photos of the bird and contacted Steven Cardiff, collections manager at Louisiana State University's Museum of Natural Science, to solicit his opinion. Cardiff suggested the possibility that this bird had been covered with soot from exploring chimneys or exhaust pipes as potential nest locations. To address this possibility, I reviewed photos online of birds covered with soot, many of which had been rescued from chimneys

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and flue pipes. To appear as it did, the Brown-crested Flycatcher at China Ranch would have needed to be quite heavily covered in soot. The photos I reviewed showed birds with matted feathers and ocular discharge. In contrast, the China Ranch bird appeared healthy, with clean plumage in good condition, evenly colored feathers, and no evidence of lighter or normally colored bases to the body or flight feathers. If this bird had acquired soot or dirt from an exogenous source, I would have expected unevenness in the color of the feathers, as some areas, such as the undersides of the wings, would be much less likely to get dirty. Furthermore, soot might be differentially removed by preening or other activities. Although the role of each sex of the Brown-crested Flycatcher in nest-building is not well understood (Cardiff and Dittmann 2000), if both sexes participate in nest-building, or at least enter the cavity, then the mate would be expected to be soiled to some extent. All areas on the bird that are typically yellow or gray were instead brownish-black, whereas the rufous feathers appeared essentially normal, which also suggests a specific pattern of excess melanin. In conclusion, I saw no evidence that any of the dark coloration was due to soot.

Melanism is a plumage condition resulting from excessive deposition of the pigment melanin. Two types of melanin can be found in birds: eumelanin and pheomelanin. Eumelanins are responsible for blackish colors, pheomelanin for reddish brown (Davis 2007, van Grouw 2006). When melanism occurs, the concentration of only one type of melanin is affected (Davis 2007). This Brown-crested Flycatcher exhibited eumelanism, as only areas normally pigmented by eumelanin were affected. The color pattern of this bird reveals that even the yellow underparts, which are colored mainly by carotenoids, also contain eumelanin. The rufous parts of the flight and tail feathers colored by pheomelanin were unaffected. Melanism has been considered normal in dimorphic or polychromatic species in which dark morphs are known, and abnormal in monochromatic species that do not typically have melanistic plumages (Gross 1965, Clark 1998). Although the causes of melanism are not completely understood, both genetic and nutritional factors have been discovered. In wild polymorphic species including the Snow Goose (*Anser caerulescens*), Parasitic Jaeger (*Stercorarius parasiticus*), and Bananaquit (*Coereba flaveola*), the presence of melanistic morphs has been linked to a genetic mutation that results in increased activation of the melanocortin-1 receptor gene (Mundy 2005, Hosner and Lebbin 2006). Melanism associated with nutritional deficiencies has been documented in chickens fed a diet low in vitamin D (Sage 1962).

Plumage abnormalities involving pigment loss are more frequent than are those involving melanism (Gross 1965, Sage 1962). Although plumage abnormalities do not appear to be widespread or frequent in the tyrant flycatchers (family Tyrannidae), leucism (the complete loss of pigment in some or all feathers) and albinism (complete loss of pigment in all feathers and soft parts) (Hosner and Lebbin 2005, Sage 1962) have been documented in the Alder Flycatcher (*Empidonax alnorum*) (Berger 1956), Black Phoebe (*Sayornis nigricans*) (Wolf 1997), Eastern Phoebe (*S. phoebe*) (Hostetter 1934, Wenner et al. 1984), Say's Phoebe (*S. saya*) (Schukman and Wolf 1998), Ash-throated Flycatcher (Cardiff and Dittmann 2002), Western Kingbird (*Tyrannus verticalis*) (Bennett 1935, Gabrielson 1949), and Scissor-tailed Flycatcher (*T. forficatus*) (Ligon 1964). Records of melanism in tyrant flycatchers include a Tropical Pewee (*Contopus cinereus*) (Smith 2016), Vermilion Flycatcher (*Pyrocephalus rubinus*) (van Grouw and Nolzco 2012, Schmitt 2015), and a Western Kingbird from Colorado (Bantol 1984 in Gamble and Bergin 2012). Thus this Brown-crested Flycatcher represents the first record of melanism in a *Myiarchus* flycatcher.

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“Featured Photo” by © Deborah J. House of Bishop, California: melanistic Brown-crested Flycatcher (*Myiarchus tyrannulus*) at China Ranch, Inyo County, California, 25 May 2008. Though this represents the first record of melanism in the genus *Myiarchus*, the existence of several sooty or black species in other genera of flycatchers suggests that melanism like this has played a role in the evolution of the family Tyrannidae.

