Recent records of hybrid buntings (*Passerina amoena* x *Passerina cyanea*) in Sacramento County, California

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On the morning of 11 May 2002, we (TM and SW) set up a bird-banding demonstration booth for a public education event sponsored by the Stone Lakes National Wildlife Refuge near Freeport, Sacramento County. We ran a series of mist nets through a revegetation plot of Sandbar Willow (*Salix sessilifolia*) and Valley Oaks (*Quercus lobata*) bordering a stand of larger oaks along Morrison Creek just west of Interstate Highway 5, about 2 km south of Freeport.

At about 1030, SW made a net run and returned to our banding table with, among other things, a male *Passerina* bunting. When he pulled it out of the net bag, TM instantly recognized that it was an apparent hybrid between Lazuli Bunting (*Passerina amoena*) and Indigo Bunting (*Passerina cyanea*). The bird was held for some time and shown to a large number of spectators attending the event. After being banded, measured, photographed (see back cover) and described in our notes, the bird was eventually released at the site of capture.

DESCRIPTION: A small, trim bunting, about 13-14 cm in total length (wing chord measured 70 mm). The bill was conical, the maxilla nearly black. The mandible had a dark tip but was, for the most part, pale gray with a yellow wash on its base. The head was mostly blue with a narrow black ring of feathers around the base of the bill and black lores. The color of the crown, auricular area and chin was a deeper cobalt blue than the blue color elsewhere on the bird. The rest of the head and throat was a paler blue with scattered light brown feathers on the nape. The irides were dark brown.

The feathering of the back was dingy, most feathers dull blue with a dusky central stripe but with a scattering of brown feathers, too. The scapulars and lesser wing coverts were light blue. The median wing coverts were mostly blue with black spots at their bases and a narrow fringe of white. The greater coverts were black, broadly edged with pale blue and very narrowly fringed with white. The tertials were mostly blue, with black along the inner web basally. The primary coverts were dusky, nearly black, and broadly bordered with blue. The primaries and secondaries were dark, nearly black, and narrowly edged with blue. The lower back and rump were lazuli blue. The rectrices were dark brown, edged with blue. The underparts were mostly white, but were mottled with blue feathers nearly throughout, most heavily on the chest, sides, flanks and undertail coverts. There was a pale buff wash on the sides of the chest. The legs were dark gray.

Many, but not all, second-year (SY) males of both these species can be distinguished from after-second-year (ASY) males by plumage characteristics (Pyle 1997). However, while the molt schedules of both species are similar in overall pattern, they differ in some particulars of timing and extent, and molt schedules of hybrids are likely to vary to an unknown extent from the patterns of either parental form.

This hybrid, for example, exhibits some characteristics of both SY and ASY males. Fairly extensive brown feathering on the nape and back is suggestive of SY males of both species, but even some ASY male Indigo Buntings can show some brown feathers in spring and summer and the limited extend of brown feathering on the hybrid was consistent with such birds. On the other hand, SY males of both species, and particularly Indigo Bunting, usually retain some brown juvenal inner primaries, outer secondaries and inner primary coverts, and this bird appeared to have none of these. However, occasional SY male Lazuli Buntings may not retain juvenal flight feathers (Pyle 1997). The extent of wing molt is probably a better indicator of age class than is body plumage (which is highly variable, particularly in Indigo Bunting) and in this case it suggests the bird was an ASY male. However, since the bird was a hybrid, this assessment is tentative at best.

Possibly this bird or another putative hybrid bunting was reported seen on the Bufferlands of the Sacramento Regional Wastewater Treatment Plant about 2 km N of the banding site on 23 May 2002 (Chris Conard pers. comm.). Unfortunately, the legs of the bird observed on 23 May could not be seen well enough to determine if it was banded or not.

Previously, presumed hybrid bunting males were recorded at the Cosumnes River Preserve (CRP) in southern Sacramento County in the years 1996-1998. In 1996, one such bird was found 17 May adjacent to the Tall Forest section of the CRP. Perhaps the same bird relocated to the Wendell's Levee MAPS (Monitoring Avian Productivity and Survivorship) banding station operated by Point Reyes Bird Observatory (PRBO) about 600 m away, where it was regularly seen from 30 May to 20 July and not found on a targeted search on 27 July. At this latter site, another or the same hybrid bunting returned in 1997. It spent a week at the MAPS station beginning 31 May. PRBO personnel netted and banded this bird on 5 June. JT did not record it subsequently. In 1998, again at this same location, he found a putative hybrid male on 30 May but not later. These years coincide with the seasons of greatest numbers of Indigo Buntings at the preserve.

The 1996 bird was mostly dark blue, darkest on the head, with brown feathers admixed in the nape and back. He had conspicuous white wingbars and a diamond-shaped white area on the venter, much like a Black Phoebe (*Sayornis nigricans*). The irides were dark, the bill blackish above and grayish below, the legs and feet dark gray. He sang vigorously through the season a song very like that of Lazuli Buntings in the area. The 1997 hybrid, also possessing brown in the dorsal plumage, was indistinguishable from the bird of the preceding season, based on JT's notes. JT did not record his impression

of the song in 1997 and was not present when the bird was netted. In neither season was the hybrid found to have bred.

The 1998 bird was not well seen. The bird appeared dark blue with white wing bars and a white belly, had dark irides, a blackish maxilla and bluish-gray mandible, and dark legs. JT was unable to tell how much brown, if any, was admixed in the body feathers or if the bird was banded. He made no note of voice. According to Tonya Haff (pers. comm.), then an intern with PRBO, this bird was on territory for a few weeks, but no evidence of breeding was discovered despite intensive searching.

In the not too distant past, the Indigo Bunting and Lazuli Bunting bred in different halves of North America, the former from the Great Plains eastward and the latter in the western half of the continent (e. g., see AOU 1957). Hybridization between the two species on the Great Plains has been well-studied (Sibley and Short 1959, Kroodsma 1975, Emlen et al. 1974). During the middle decades of the 1900s, however, the breeding range of the Indigo Bunting spread westward, particularly into the American Southwest, greatly increasing overlap in the breeding ranges of the two species (Phillips et al. 1964, Hubbard 1978). Indigo Bunting was first observed in California in 1939 (Grinnell and Miller 1944) and was found breeding within the state for the first time in Los Angeles County in 1956 (Bleitz 1958). The first record for the Sacramento area was of a singing male collected along the Sacramento River at Elkhorn Ferry, Yolo County, in July 1963 (DeBenedictis and Chase, Jr., 1963).

Since then, Indigo Bunting has become a rare but regular visitor to California, with an estimated 5 percent of the annual reports being of bird present through the summer (Roberson 1980). These summer records nearly all involve singing, territorial males. Females, less conspicuous and difficult to distinguish from female Lazuli Buntings, probably occur in similar numbers but are often overlooked. None the less, Indigo Bunting males in California are probably more likely to mate with Lazuli Bunting females rather than with congeners, if only because the former greatly outnumber the latter. Roberson (1980) knew of no reports of a pure pair of Indigo Bunting breeding in California but was aware of at least 5 reports of mixed pairs, all involving a male Indigo and a female Lazuli. Not surprisingly, then, a number of hybrids have been reported within the state (e.g., McCaskie et al. 1979, Roberson 1980, Gaines 1988). As far as we know, however, those reported in this paper represent the first such hybrids documented for the Central Valley.

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