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Probable first breeding record of Indigo Bunting (*Passerina cyanea*; family Cardinalidae) in the West Indies

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Photo: Jim Wiley

Probable first breeding record of Indigo Bunting (*Passerina cyanea*; family Cardinalidae) in the West Indies

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Abstract Indigo Bunting (*Passerina cyanea*) is a non-breeding winter resident in the West Indies, where it occurs from September to early May. On 26 July 2012, a local bird trapper encountered two adult (male and female) buntings associating with three recently fledged buntings (two females, one male) near El Purial (21°55'00"N, 78°42'00"W; 40 m elevation), 18 km north of the city of Ciego de Ávila, Ciego de Ávila province, Cuba. All birds were captured and maintained in captivity. Based on the birds' behavior, physical condition, stage of development of the fledglings, and aviculture activities in the region, we believe this a probable first breeding record of Indigo Bunting in the West Indies.

Keywords breeding, Cuba, Indigo Bunting, *Passerina cyanea*

Resumen Probablemente el primer registro de reproducción del Azulejo (*Passerina cyanea*; Familia Cardinalidae) en las Antillas—El Azulejo (*Passerina cyanea*) es considerada una especie residente invernal en el Caribe donde empieza arribar desde los meses de septiembre hasta mayo. El 26 de julio del 2012 un pajarero local capturo una pareja de adultos con tres pichones volantones (un macho y dos hembras) en los alrededores de el Purial (21°55'00"N, 78°42'00"W, 40 m elevación), 18 km al norte de la ciudad de Ciego de Ávila, Ciego de Ávila provincia, Cuba. Todos los individuos fueron capturados y mantenidos en cautividad. Basados en las conductas, condición física, etapa de desarrollo y el estado de los pichones volantones y la poca actividad aviculturista en esta zona rural, nosotros creemos que es el primer record de la reproducción en estado silvestre para el Azulejo en las Antillas.

Palabras clave Azulejo, Cuba, nidificación, *Passerina cyanea*

Résumé Première reproduction probable du Passerin indigo (*Passerina cyanea*; famille : Cardinalidae) dans les Antilles—Le Passerin indigo (*Passerina cyanea*) est un oiseau hivernant non nicheur dans les Antilles, où il est présent de septembre à début mai. Le 26 juillet 2012, un piégeur d'oiseaux local a rencontré deux individus adultes (un mâle et une femelle) associés à trois jeunes oiseaux juste volants (deux femelles et un mâle) près d'El Purial (21°55'00"N, 78°42'00"W; 40 m d'altitude), à 18 km au nord de la ville de Ciego de Ávila, province de Ciego de Ávila, Cuba. Les cinq oiseaux ont été capturés et maintenus en captivité. Compte tenu du comportement des oiseaux, de leur condition physique, du stade de développement des oisillons, et des activités d'aviculture dans la région, nous pensons qu'il s'agit probablement de la première mention de reproduction du Passerin indigo dans les Antilles.

Mots clés Cuba, Passerin indigo, *Passerina cyanea*, reproduction

Indigo Bunting (*Passerina cyanea*) is a small, migratory, seed-eating bird in the family Cardinalidae (AOU 1998, Payne 2006). It breeds primarily in eastern North America and winters in Mexico and Central America with lesser numbers wintering in the West Indies and southern Florida (Payne 2006). Within its breeding range it is widespread, ranging from southeastern Canada to northern Florida and eastern Texas and in lesser numbers

westward across New Mexico, Arizona, and into southern Nevada and California (AOU 1998, Sibley 2000, Payne 2006). Buntings typically arrive on their breeding ground in late April with peak nesting occurring from May to August (Payne and Payne 1998). Arrival to the wintering grounds starts in September (Payne 2006), with the bulk of the population concentrated in Mexico south into Panama. Smaller numbers winter in southern Florida, South America, and West Indies (AOU 1998, Payne 2006).

In the West Indies, Indigo Bunting is a non-breeding winter resident occurring from September to early May. It is found in the Bahamas, Turks and Caicos Islands, Cuba, Cayman Islands, Hispaniola, U.S. Virgin Islands, and British Virgin Islands; and is rare or accidental in Jamaica, Puerto Rico, Saint-Martin, St. Kitts

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and Nevis, Antigua and Barbuda, Guadeloupe, Dominica, and Barbados (Raffaele *et al.* 1998, Lepage 2015). Within Cuba, Indigo Bunting is a common winter resident found in grassy areas, agricultural fields, and forest-edge habitats from late September to early May. It is also found in Isla de Pinos and some larger cays (Garrido and Kirkconnell 2000). Here we report a probable first breeding record of Indigo Bunting in Cuba.

In early August 2012, a local birdwatcher told YRC that a Cuban bird trapper was hand-raising three Indigo Bunting fledglings and showed YRC photographs taken of the young birds. YRC then visited the trapper, Luis Gamboa, at his home in El Purial in mid-August 2012. Gamboa told YRC that on 26 July 2012 while bird trapping near orange groves on the outskirts of El Purial (21°55'00"N, 78°42'00"W; 40 m elevation), 18 km north of the city of Ciego de Ávila, Ciego de Ávila province, Cuba, he observed three Indigo Bunting fledglings feeding within Guinea grass (*Panicum maximum*). He estimated them to be about 1–2 days out of the nest due to their plumage and poor flight abilities. Two adult Indigo Buntings were within close range of the fledglings. In North America, buntings leave the nest before their flight feathers are fully grown, usually 9–12 days after hatching (Payne 2006). Young are attended by parents after leaving the nest and become independent about 3 weeks after fledging (Payne 2006). The nearby habitat was a coppice, close to a stream, and surrounded by Guinea grass. Gamboa hand caught the three fledglings (two females, one male), then trapped both parents. The adult male was in breeding plumage. Gamboa searched the area for a nest but did not find one.

YRC verified the three bunting fledglings and their parents as Indigo Buntings, then purchased the five birds from Gamboa and relocated them to his aviary in Ciego de Ávila (Fig. 1). While in captivity at YRC's aviary, the male fledgling mated with a sibling female and the female produced inviable eggs.

This observation suggests a wild breeding record of Indigo Bunting in Cuba. The nearest Indigo Bunting breeding records to the Cuban site are from central Florida (AOU 1998, Payne 2006), making this the first potential nesting record for the species outside of North America. The record also is the first observation of probable breeding by the family Cardinalidae in the West Indies.

Because no nest was located, the authenticity of a breeding record for Cuba could be challenged. An alternate possibility to breeding in the wild is that the family group may have escaped from captivity. Nevertheless, several lines of evidence strongly support the breeding of the buntings on the island, as summarized below:

1. All members of the captured family displayed wild behavior rather than the tameness and approachability of birds that have been held captive (England 1974). Birds that have lived in captivity for some period of time are much less distressed and re-adapt to the caged environment quickly when recaptured.

2. None of the captured buntings showed physical characteristics usually displayed by birds that have been held in captivity, such as damaged cere and frayed or broken feathers from landing on cage sides (England 1974). The captured buntings were in perfect plumage and the adults did not have overgrown claws typical of birds held in captivity.

3. We are familiar with the bird trappers in the region of Ciego de Ávila and none has ever bred the bunting in captivity. How-



Fig. 1. Indigo Buntings captured as fledglings, 26 July 2012, near El Purial, Ciego de Ávila province, Cuba. (A) Male partially molted into adult plumage in captivity. (B) Female incubating inviable egg while housed with sibling male in A. Photographs by Yaroddy Rodríguez Castaneda.

ever, Dr. William Suárez (in litt. to JWW) recalled hearing that a bird-keeper in Bauta (Artemisa province) had at least one pair of buntings that successfully fledged chicks ca. 1994. Other than this possible instance, no confirmed record of captive breeding of the species exists in Cuba (O.H. Garrido pers. comm.; pers. obs.). Although eggs have been produced by captive birds in Cuba, all have been inviable. Suárez also recalled that ca. 1995 a pair of Indigo Buntings kept captive in La Habana by the late Oscar Arredondo constructed incomplete nests for at least 2 yrs. In one nesting attempt, eggs were laid and incubation was begun, but the eggs were ejected from the nest by extra-pair male buntings held in the same aviary. Cuban bird trappers typically capture migrant birds, which are abundant, rather than try to captive-produce individuals for their aviaries or for sale. Further,

it is quite difficult to meet the bunting's dietary requirements in captivity during the nesting season, when adults feed their young invertebrates (Bradley 1948). Although Indigo Bunting has been bred in captivity outside of its native range (e.g., Hopkinson 1926, Kleefisch 1989), successful captive breeding is not common.

4. The site where the bunting family was captured is > 1.5 km from the nearest community (El Purial). When the young birds were captured, they were incapable of flight over the distance between the capture site and the nearest bird-keeper's (i.e., Gamboa's) home.

Indigo Bunting has expanded its breeding range from Florida's panhandle into peninsular Florida since the early to mid-1900s (Payne 2006). The habitat where the bunting family was captured is similar to some nesting habitats in North America (i.e., riparian surrounded by shrub and weedy habitats, and near active and abandoned agricultural fields; Taber and Johnston 1968, Payne 2006).

Indigo Bunting is one of the most desirable species sought by bird trappers in Cuba. Each year large numbers of buntings are trapped throughout Cuba, where they are kept as cage birds. A thriving market exists for this and several other species of native and migrant songbirds, which presents a serious conservation issue that needs to be addressed in Cuba.

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