

## EXTENSION OF THE NORTHERNMOST BREEDING RANGE OF THE WHITE-COLLARED SWIFT IN WESTERN MEXICO

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The White-collared Swift (*Streptoprogne zonaris*) ranges from Argentina and Bolivia in the south to the West Indies and Mexico in the north (Howell and Webb 1995, American Ornithologist's Union 1998). Howell and Webb (1995) described the species as being an uncommon nonbreeding transient, vagrant, or winter visitor in the west-central part of Mexico and suggested that birds from Jalisco and Colima might belong to the subspecies *albicincta* from southern Central America. Edwards (1972) reported the swift without details from Nayarit, and a few northerly vagrants have been reported in the United States (Hardy and Clench 1982, Lasley 1984, Erickson et al. 1989, American Ornithologists' Union 1998). The northernmost breeding population in western Mexico is reported for the state of Guerrero (Rowley and Orr 1962, Howell and Webb 1995).

On 5 June 2000, we searched for swift nests in a small cave (6 m wide, 4 m high, 3 m deep) behind a waterfall on Las Joyas stream, at Las Joyas Research Station (19° 36' N, 104° 17' W) at an altitude of 1600 m, in the Sierra de Manantlán Biosphere Reserve in the municipality of Autlán, Jalisco, Mexico. Aragón Cruz had seen up to eight unidentified swifts emerge from this cave on multiple occasions over several years as far back as 1989, and we suspected that these were possibly White-fronted Swifts (*Cypseloides storeri*) because in 1990 a dead individual of that species was found 200 m downstream from the waterfall (Navarro et al. 1993). As we waded in the stream, approaching the cave's entrance, however, an adult swift emerged and we were able to see the white collar on its upper chest and nape and the bird's notched tail. A month earlier, in May 2000, we twice saw noisy flocks of White-collared Swifts flying over Las Joyas Research Station and adjacent areas. Upon reaching the cave we found a nest with two eggs on a horizontal rock ledge 1.5 m above the water and about 2 m behind the cascade. The nest was a shallow round saucer consisting of mud, mosses, and grasses. It was 10 cm above the ledge floor on a rock. A rock perch covered with excrement was located within the crevice 1.5 m across from the nest ledge. The walls, floor, nest, and eggs were wet from the mist produced by the falling water. The nest was photographed and one egg was collected and deposited in the Zoological Collection of the Instituto Manantlán de Ecología y Conservación de la Biodiversidad (Universidad de Guadalajara-CUCSUR). The egg (36.2 mm × 23.2 mm, eggshell thickness 16.0 μm) was soiled with mud and excrement. The cleaned egg was dull white all over. We searched the cave and found no other active nests, although eggshell fragments on other ledges within the cave indicated that swifts had nested there in previous years.

The stream flows along an ecotone between a deciduous oak (*Quercus magnoliifolia*) forest on a southwest-facing slope and pine-oak forest dominated by *Pinus douglasiana* and *P. oocarpa* on the opposite slope. Dominant tree species along the stream banks are mostly those associated with cloud forests (e.g., *Fraxinus udehi*, *Alnus jorullensis*, and *Clusia salvinii*). Slopes on either side ranged from 30° to 90°. The 6-m high waterfall had a stream of water approximately 1.5 m wide that fell into a pool 8 m × 14 m in area and approximately 1 m deep. The waterfall and pool were below the riparian forest canopy, but the birds had access to the cave through an opening in the canopy formed by a very large (20 m × 30 m) rock devoid

## NOTES

of vegetation, over which the stream flowed immediately beyond the pool. We searched three additional waterfalls downstream and found no signs of nesting swifts. There are no other waterfalls upstream. When we revisited the nesting cave on 2 July we found one dark gray downy chick in good condition but no additional nests.

The nest and eggs of this species have been described from Mexico, Central America, the West Indies and South America (Rowley and Orr 1962, Whitacre 1989, Stiles and Skutch 1989, Howell and Webb 1995, Raffaele et al. 1998, and references therein). The nest we observed coincides most with the descriptions by Stiles and Skutch (1989) and Whitacre (1989) for nests on rocky substrates. White-collared Swifts had previously been reported for this region only in winter (Howell and Webb 1995). Since the publication of Howell and Webb (1995), however, there have been numerous winter sight records in the area at Barranca Beltrán, Jalisco, where the species may also breed (S. N. G. Howell pers. comm.). Our observations show the species to be a year-round breeding resident, extending its known breeding range by some 400 km northwest of the sites in Guerrero. Although the species is generally considered colonial in its nesting habits, it is apparent from our observation that it can nest successfully in solitary situations. Furthermore, it does not restrict its nesting to large caves—small sheltered caves near waterfalls along narrow mountain streams can provide adequate nesting habitat if an opening in the canopy provides aerial access to the nesting ledges.

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