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RICHMOND'S SWIFT IN VENEZUELA

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To the best of our knowledge no race of *Chaetura vauxi* (J. K. Townsend), as the species is conceived by Griscom (1932: 196), Aldrich (1937: 68), and Sutton (1941: 231), has thus far been recorded from South America. *Chaetura vauxi vauxi* apparently does not winter farther south than Guatemala (see Peters, 1940: 236); *C. v. gaumeri* Lawrence is resident in the Yucatán Peninsula and on Cozumel Island (Griscom, 1926); *C. v. ochropygia* Aldrich is "known only from the Azuero Peninsula, southern Veraguas, Panamá" (Aldrich, 1937: 68); *C. v. tamaulipensis* Sutton, which may or may not be regularly migratory, has not yet been taken south of Guatemala (Sutton, 1941: 233); and *C. v. richmondi* Ridgway has not thus far been recorded south or east of Chiriquí, Panamá (Griscom, 1935: 318).

The primary purpose of this paper is to report 26 specimens of *C. v. richmondi* collected at 11 localities in northern Venezuela. These represent a considerable range extension for the species *Chaetura vauxi*, and a range extension for the race *richmondi* which probably will continue to be somewhat puzzling until we have ascertained what, if any, race inhabits eastern Panamá (that is, those parts of the Isthmus lying north and east of the Azuero Peninsula) and northern Colombia.

We find it exceedingly hard to believe that the breeding range of *Chaetura vauxi* is discontinuous anywhere in Middle America. Indeed, we believe that the species breeds throughout Panamá and thence eastward without a break at least as far as the states of Monagas and Sucre in Venezuela. Chapman's (1917) and Todd's (1922) failure to list it from Colombia does not greatly surprise us, for swifts can inhabit a region without being detected even by the ablest of field ornithologists; identifying the free-flying birds (especially the smaller species) is virtually impossible in tropical or subtropical regions; and collecting them is notoriously difficult. The forces which have isolated the Azuero Peninsula birds and given rise to an endemic race there are still to be learned. As Aldrich has pointed out, there probably is a zone of intergradation between *ochropygia* and *richmondi* north or northeast of the Peninsula, but the race inhabiting northern Veraguas and the Isthmus as a whole almost certainly is *richmondi*.

The 26 Venezuelan specimens mentioned above are, so far as we know, the only Venezuelan (or South American) specimens of *Chaetura vauxi* in existence. Of these, 24 are in the Phelps Collection in Caracas, Venezuela, and 2 (originally identified as *Chaetura andrei* Berlepsch and Hartert) are in the collection of the American Museum of Natural History. These 2 were collected respectively at Boquerón, state of Lara, and at El Limón, in the Federal District. The Phelps specimens are from the following localities: Bucaral and Pica El Chino (near San Felipe), state of Yaracuy; Cumbre de Valencia, state of Carabobo; Turiamo and Cerro Golfo Triste, state of Aragua; Hacienda Yzcaragua (near Guarenas) and Curupao, state of Miranda; Quebrada Bonita, near Bergantín, state of Anzoátegui; and Caripe, state of Monagas. Of these 11 localities, 9 are within 150 miles of Caracas, only 2 of them being farther away—Quebrada Bonita and Caripe, which are, respectively, 170 and 230 miles east. In elevation the localities range from sea level (Turiamo, Aragua) to 1300 m. (Bucaral, Yaracuy). The specimens were taken in the months of May (1), June (5), July (13), August (2), September (3),

November (1), and December (1), a seasonal range which of itself indicates that the bird probably is sedentary, especially when we note that breeding specimens (June) were taken both at sea level (Turiamo) and at 1300 m. (Bucaral). Were the species to perform even a slight altitudinal migration we might reasonably expect all breeding specimens to come from high elevations, all winter specimens from low elevations. The 3 September specimens are, in fact, from Cerro Golfo Triste (elevation, 800–1100 m.), the November specimen is from Quebrada Bonita (950 m.), and the December specimen is from Boquerón (probably considerably less than 500 m.). The above-named localities have been plotted on maps by Phelps (1944: 412, 416; map opp. p. 418).

It is apparent from even a casual examination of the series that length of tail spines is definitely correlated with season—breeding birds (May, June, July) having very short tail spines or none at all, birds in fresh winter plumage having long tail spines. The El Limón and Boquerón specimens (August and December, respectively) both have tail spines about 7 mm. long, being similar in this respect to freshly plumaged *richmondii* from Costa Rica and *gaumeri* from Yucatán. As Sutton (1941: 232) has pointed out, shortness of tail spine is not a diagnostic character of *gaumeri* (in spite of the opinion of Ridgway, 1911: 716, 721). In Yucatán these swifts nest customarily on the sides of limestone wells, or *cenotes*; and their tails are so worn down during the process of building the nests and feeding the young that Yucatán breeding birds often have no tail spines whatsoever. We know nothing about the breeding habits of Venezuelan birds, but the fact that all 10 specimens taken at Curupao in July had much enlarged gonads and virtually no tail spines indicates that they too probably were nesting in caves or on cliffs where perforce they would be clinging frequently to a rock surface.

A correlation between color and season also is apparent on careful examination of the series. The breeding plumage, particularly of the wing, has a purplish gloss which is readily perceptible in good light, while the fresh winter plumage is

glossed with green. This difference, which is discernible in any series of *richmondi* from Costa Rica or Guatemala that includes both breeding birds and birds in fresh winter plumage, we at first thought to be in the nature of individual variation, a concept which seemed the more plausible in view of the fact that 2 birds taken at Caripe on the very same day, July 31, 1943 (Phelps Collection Nos. 22855-56), represented the 2 color extremes. But on careful inspection of these 2 specimens, we found that the purple-winged one had not molted its old, worn wing feathers, whereas the green-winged one was in fresh winter plumage throughout; furthermore, close scrutiny of the El Limón August specimen (American Museum of Natural History No. 150208), which was in the midst of the molt, revealed the highly significant fact that the old, unmolted primaries had a purplish gloss, whereas the new, incoming primaries had a greenish gloss.

In size the Venezuelan birds do not differ appreciably from Costa Rican, Guatemalan, and southern Mexican specimens of *C. v. richmondi*. Sutton examined 22 of the 24 specimens in the Phelps Collection (13 males, 9 females), finding the wing measurement of the males to be 107-117.5 mm. (average, 112.6 mm.); of the females, 108-117 mm. (average, 113 mm.); of both sexes (average), 112.8 mm. The wings of 11 Costa Rican birds measured by Phelps averaged: males, 110.7 mm.; females, 109 mm.; both sexes, 110 mm. The wings of 10 birds (4 males, 6 females) from Chiapas, Mexico (4), Guatemala (3), and Costa Rica (3) in the University of Michigan Museum of Zoology measure: males, 108-115 mm. (average, 111.8 mm.); females, 109-116 mm. (average, 113.5 mm.); general average, 112.8 mm.—exactly the same general average as that of the 24 Venezuelan specimens.

Finally, we consider it advisable to make clear that first Phelps and John T. Zimmer and, later, Sutton all arrived more or less independently at the same conclusion concerning these Venezuelan birds—namely that they were *richmondi* rather than *ochropygia*, *gaumeri*, or an undescribed form. While at

the American Museum of Natural History in 1941, Phelps compared the 11 Venezuelan specimens he then had with 6 *gaumeri* (including the type), a trayful of Costa Rican and Guatemalan *richmondi*, and the 2 small swifts from Boquerón and El Limón (see third paragraph of this paper) whose identification he questioned. In 1944 he and Zimmer compared 9 more Venezuelan birds, which had just been added to the Phelps Collection, with 37 Costa Rican specimens of *richmondi* and 5 specimens of *ochropygia* from Veraguas, Panamá. In 1946 Sutton compared 24 of the 26 Venezuelan birds with a large and exceptionally fine series of *gaumeri* from Yucatán and 10 *richmondi* from Chiapas (Mexico), Guatemala, and Costa Rica in the collection of the University of Michigan Museum of Zoology, as well as with 5 *tamaulipensis* (including the type) from Tamaulipas, Mexico, in his own collection.

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