

## **W. B. Richardson's collecting localities "Santa Cruz" and "Rio Coco," Nicaragua**

The professional collector William B. Richardson obtained bird and mammal specimens in Nicaragua between 1891 and 1917. His earliest Nicaraguan specimens, from 1891 to 1898, were collected for F. D. Godman and O. Salvin and are now (except for some exchanges) in the British Museum (Natural History) [BMNH], at Tring. They constitute almost all of the bird records from Nicaragua in Salvin and Godman's *Biologia Centrali-Americana* (1879-1904). In 1891 Richardson settled in Matagalpa, Nicaragua to grow coffee, and he resumed collecting for Salvin and Godman until 1898. From 1904 to 1908 he collected intermittently in Nicaragua for the American Museum of Natural History [AMNH], New York. From January through April 1905 he made a small collection in Nicaragua and Orosí in northwestern Costa Rica which went to the Field Museum in Chicago. From 1911-1913 he collected for the AMNH in Colombia and Ecuador. From February to June 1917 he was joined in Nicaragua by W. de W. Miller and L. Griscom for several months of collecting there for the AMNH. That year seems to have been his last period of bird collecting. Many of his specimens from Nicaragua and elsewhere in the neotropical region became the types of new species and subspecies, and some were named richardsoni to honor him.

Many of Richardson's Nicaraguan collecting localities were small villages not now found on most maps or were given as undelimited geographic features (e.g., Rio Grande). He never gave distance and direction from a locality and seldom included the Departamento. His handwriting was not always clear and he sometimes used cryptic abbreviations (e.g., Lake Nic, Nic. = Lake Nicaragua, Nicaragua). He always used the American numerical sequence for month/day/year (e.g. 10/6/98 = October 6, 1898). His estimates of altitude were usually too high. All this is understandable considering the difficulties of collecting in his time, and most of his localities have subsequently been identified with sufficient precision. One of Richardson's most enigmatic collecting places, however, is that given on his labels as "Santa Cruz," or "Santa Cruz, Rio Coco," or only as "Rio Coco," sometimes with the elevation 1000 ft or 5000 ft added. He collected birds there from 27 April to 8 May 1896, 15 to 30 March 1898 (specimens in BM(NH)), and from 9 Nov. to 4 December 1908 (specimens in AMNH). I consider these localities to be essentially the same because specimens labelled "Santa Cruz" and "Rio Coco" were sometimes taken on the same day (e.g., on 28 April and again on 4 May 1896), as were some labelled "Rio Coco 1000 ft" and "Rio Coco 5000 ft" (e.g., 20 November 1908). Probably these names represent an area comprising different habitats which were all reachable on foot or by mule-back within the same day. The Second Edition (1976) of *Official Standard Names for Nicaragua* prepared by the Defense Mapping Agency Topographic Center, Washington, D.C. lists eleven populated places named Santa Cruz. The Rio Coco (Rio Segovia, Wanks River) has its headwaters in the north central highlands in the Deptm. de Nueva Segovia, flows generally west through Deptm. de Madriz, forms part of the border between those two Deptms. and Deptm. de Jinotega, and then

reaches the lowlands of the Caribbean slope where it now constitutes most of the boundary between Nicaragua and Honduras. Richardson's Santa Cruz must be close to the Rio Coco, and the area can be narrowed down by the kinds of birds he collected there and his subsequent movements. In 1896 he was collecting at San Sebastián de Yalí, in western Jinotega, on 11 May after last collecting at "Santa Cruz" on 8 May. In 1898, he last collected at "Rio Coco" on 30 March and collected at Jalapa, Nueva Segovia on 3 April. Richardson never collected anywhere along the Rio Coco in the Caribbean lowlands, so Santa Cruz must be in the Nueva Segovia-Jinotega region. There is a village of Santa Cruz on the Rio Coco where it forms the boundary between the two. It is still shown on some modern maps, and its coordinates are 13°27' N and 85°55' W. It is on the south side of the river and thus within Jinotega. San Sebastian de Yalí and Jalapa are approximately equidistant in airline distance (50 and 56 km) from this village.

The birds collected by Richardson at "Santa Cruz" and "Rio Coco" are remarkably varied and include species characteristic in Nicaragua of (1) Caribbean slope, humid lowland forest (2) highland pine forest, (3) humid montane (cloud) forest, and (4) Pacific slope thorn scrub and deciduous forest edge. These include, for example (1) Galbula ruficauda, Malacoptila panamensis, and Laniocera rufescens; (2) Accipiter striatus chionogaster, Melanerpes aurifrons santacruz, and Contopus pertinax; (3) Myadestes unicolor, Atlapetes brunneinucha; (4) Eumomota superciliosa, Basileuterus rufifrons. The diversity of habitats and stated altitudes at essentially a single location not precisely fixed by the collector has given rise to confusion. On the basis of studies of Richardson's mammal collections, I earlier (Buchanan and Howell, 1965) speculated that "Rio Coco" must have been a village about 10 km southeast of Quilalí, Nueva Segovia, where the river forms the boundary with Jinotega. Jones and Engstrom (1986) suggested instead a village called San Juan de Rio Coco about 15 km to the west in Madriz. Fortunately, I have recently found published evidence that makes the location of Richardson's , "Santa Cruz" and "Rio Coco" virtually certain.

In 1945, the English naturalist and collector Mervyn G. Palmer published a book entitled "Through Unknown Nicaragua" which described his travels and experiences during 26 months in that country. Curiously, although Palmer gave dates as months and days, he never mentioned the years of his stay. From labels on his bird specimens and his narrative, he must have arrived on the Caribbean coast of Nicaragua in October 1904 and departed from the Pacific port of Corinto on 7 December 1906. In April 1905 he commenced a journey of six months from the mouth of the Rio Coco (Huancs [=Wanks] River in his account) at Cabo Gracias a Dios along the river to the village of Santa Cruz, where he arrived on 11 October 1905. He spent several days there and traveled about the vicinity, which he described and photographed (pp. 76-78, pl. 15-17). He describes (p. 77) reaching the top of the "Sierra de los Sompoperos at Santa Cruz" (pl. 17, fig. 1; = Cerro Sompopera) and seeing "Forest and mountain peak, pine-clad hills and wild undulating open country between them and beneath, the mighty river winding its

way eastward on its long and broken journey to the sea." He shot a deer among the pines and included a photo (pl. 15, fig. 2). On p. 76 he describes climbing a little hill 300 ft high "which was densely clothed with prickly mimosa and a new plant to me" which was extremely thorny. This suggests the presence of patches of thorn scrub characteristic of the Pacific slope habitat. On the road south to Jinotega he climbed a mountain "with its forest-covered summit enveloped in the mist." The altitude at the top was 3550 ft according to his aneroid barometer. There he heard "the sweetest, silvery bird's voice...in that mournful setting of mist and dreary wet forest. I learnt that it was the Jilguero ..." This is the Nicaraguan name for the Slate-colored Solitaire (*Myadestes unicolor*), in Nicaragua recorded only from cloud forest. Palmer does not tell how far south he was from Santa Cruz, but he earlier mentioned and photographed the prominent Ventilla Hills. Fila Ventilla, alt. 1200 m, is 13.5 km north of Santa Cruz, and as the altitude is essentially the same as 3550 ft (see above), there was presumably cloud forest at the summit. Palmer gave the altitude of the village of Santa Cruz as 1400 ft (about 452 m) and at that elevation along the Rio Coco there would have been (unless cleared) humid lowland forest characteristic of the Caribbean slope.

Thus, the vicinity of Santa Cruz includes within less than a day's journey all of the four different habitats from which Richardson obtained characteristic birds. As the Rio Coco at Santa Cruz is the Jinotega-Nueva Segovia boundary, Richardson's specimens may have come from either Departamento. When he collected some distance away from the village, and with no other named place nearby, he appears to have used only "Rio Coco" as his locality. His estimate of 5000 ft elevation appears too high, but he may have assumed that figure when he encountered cloud forest. If Santa Cruz is at 1400 ft, 1000 ft. would be a reasonably close estimate of the altitude of the Rio Coco nearby. Palmer described Santa Cruz as the port of debarkation for Jinotega from the Rio Coco, and in the era when the river was an important travel route for people and cargo the village was doubtless better known than at present. It appears on the small-scale map of Central America in vol. 3 of 7 the *Biologia Centrali-Americana* (1904) at what appears to be the same - coordinates given above, but the scale does not permit an exact determination.

From Jinotega the road south continued to Matagalpa, where Richardson had settled in 1891. Palmer later continued on to Matagalpa, and on arriving he mentioned that his pack mules were quartered "at Mr. Richardson's stables." This must surely refer to William B. Richardson, but there is no further mention of his name and apparently the two collectors did not meet. They later did meet in South America as members of F. M. Chapman's team of collectors between 1911-1913, and one of Richardson's letters from that period mentions Palmer by name.

The most detailed map of the Santa Cruz-Rio Coco region that I have seen is that of the Direction General de Cartografía de Nicaragua, Servicio Geodésico Interamericano, Hoja 3056 III y IV, serie E 751, Wiwili

(1967). The scale is 1:50,000, with contour lines at 20 m intervals. The name Santa Cruz appears by a point 1.5 km south of the Rio Coco, at an elevation of about 400 m. This location is at 13°27' N and 85°55' W, as given for Santa Cruz, Jinotega, in the 1967 gazetteer of Official Standard Names for Nicaragua. Other localities mentioned by Palmer are shown on the same map. Cerro Sompopera, summit 810 m, is 4 km northeast of Santa Cruz. Fila Ventilla is due north of the village. Symbols representing pine forest are shown on numerous ridges within 6 km of Santa Cruz at elevations from 400 to 665 m. All of the data are consistent with the hypothesis that Richardson's specimens labelled "Santa Cruz" and "Rio Coco" come from this area.

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