

matic example of a trend that has been noted for several other species, which have either increased the density of peripheral breeding populations or have expanded northward on the Arctic Slope in recent years: Spotted Sandpiper (*Actitis macularia*), Yellow Warbler (*Dendroica petechia*), Gray-cheeked Thrush (*Catharus minima*), Northern Shrike (*Lanius excubitor*), Arctic Warbler (*Phylloscopus borealis*), Gray Jay (*Perisoreus canadensis*), and Wheatear (*Oenanthe oenanthe*). Conspicuous avenues of dispersal for most of these species would be up the south-flowing John or Alatna rivers, across low passes to the adjacent headwaters of the north-flowing Killik, and/or up the south-flowing Aniak River to the adjacent headwaters of the north-flowing Etivluk.

The northern limits of the phoebe as a breeding bird are closely associated with the northern distributional limits of solid, relatively stable, shale or sandstone-limestone cliff structure, approximately at 69° N. In the western part of arctic Alaska, Williamson et al. (Pp. 437-480 in: N. J. Wilimovsky and J. N. Wolfe, Environment of the Cape Thompson region, Alaska, U.S. Atomic Energy Commission, Div. of Tech. Inform., PNE-481, 1966) found a nest on a sea cliff at Cape Thompson, ca. 68°08' N; and Childs (Biol. Pap. Univ. Alaska, No. 10, 1969) found one on the Pitmegea River at ca. 68°50' N in 1959. In 1970, the northernmost pair on the Sagavanirktok River was near the confluence with Lupine River, ca. 69°05' N (White and J. Streater, unpubl. data), and the northernmost pair on the Canning River, was on the east-central part of the slope, ca. 69°45' N (White and W. R. Spofford, unpubl. data). Eastward from the Canning River, mountains and foothills

with firm rocky faces extend farther north, and we would expect to find phoebes as far north as the appropriate cliff structure permits. Cade (unpubl. data) found phoebes nesting several times around Lake Peters at 69°20' N between 1959 and 1963.

Of the three members of the genus *Sayornis*, the Eastern Phoebe (*Sayornis phoebe*) occurs in the deciduous forests and temperate climate of eastern and central North America, the Black Phoebe (*S. nigricans*) is essentially a low temperate to subtropical species occurring as far south as northwestern Argentina, and the Say's Phoebe seemingly occupies the widest range of habitats from the xeric regions of northwestern México to the Arctic tundras. Mayr (1964, op. cit.) has suggested that the family Tyrannidae represents what he terms an "expanding South American" group that has become geographically widespread after having probably originated in tropical Central or South America. The genus *Sayornis* (seemingly of a subtemperate to subtropical origin) expresses the "expanding" nature or colonizing and dispersing abilities of the group through the species *saya*.

Say's Phoebe may have been able to establish itself in the arctic tundras, with their periodic spells of freezing summer weather, for two reasons: the presence of cliffs that provide the essentials of the nesting habitat; and its habit of foraging frequently on the ground and on the talus slopes of the river banks for invertebrates (e.g., spiders or sluggish insects) during freezing and snowy spells when the flying insects most utilized by the flycatchers are scarce.

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A REVIEW OF THE WHITE-BREASTED WOODWRENS OF MÉXICO AND CENTRAL AMERICA

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The White-breasted Wood Wren (*Henicorhina leucosticta*) inhabits the undergrowth of semi-humid to wet tropical forests from México south to Colombia and Brazil. The populations of México and Central America have been divided into three forms: *H. l. prosthaleuca* (Sclater) of eastern México, British Honduras, and all but easternmost Guatemala; *H. l. tropaea* (Bangs and Peters) of the Caribbean coastal areas of easternmost Guatemala through Honduras, Nicaragua, and most of Costa Rica; and *H. l. pittieri* (Cherrie) which occurs in the Golfo Dulce region of Costa Rica and on the Pacific slopes of Panamá, eastward to the Canal Zone (ranges as presented by Paynter 1960). Russell (1964) found much individual variation within the birds of Belize (British Honduras), but considered them to belong to *H. l. prosthaleuca*. Land (1970) summarized the ranges: "*H. l. prosthaleuca*, Mexico to Belice; [in Guatemala] in the Petén only; *H. l. tropaea*, lowlands of Chiapas to Panama. . . ." Monroe (1968), while noting that the

southern populations averaged more rufescent above, could see no differences in the crown stripes between Mexican and Costa Rican individuals and considered *tropaea* to be a synonym of *prosthaleuca*. He did not state the museum age of the specimens examined, nor whether he realized the extent of foxing in this species.

Recently, while labeling a specimen from Son-tecomapan, Veracruz, and one from near Flores, Peten, Guatemala, I was amazed at the dramatic differences in dorsal coloration, the Veracruz bird being deep brown and the Peten specimen a paler grayish brown. On assembling additional recently taken material, I found that the Peten population represents an undescribed subspecies and that to make the systematics of the species consistent in Central America another form from Costa Rica must be described. The Mexican and Central American forms of the White-breasted Wood Wren, based on relatively unfoxed specimens collected in the last 20 years, are summarized below. There are no differences in extent of white ventral coloration.

Henicorhina leucosticta prosthaleuca

Scytalopus prosthaleucus Sclater ("1856")

Type locality. Cordoba, Veracruz, México.

Diagnosis. Brownest (grayer, less rufous) dorsally and on crown of Central American forms.

Range. Tropical moist forests of México extending across the southern Peten of Guatemala into Belice. Intergrading with *tropaea* in eastern Guatemala

(Solola and Izabal) (Traylor 1949). For further discussion see below under *H. l. tropaea*.

***Henicorhina leucosticta smithei*, new subspecies**

Type. Adult male No. 802487 American Museum of Natural History: collected 5.5 km E, 6 km SSE San Benito, Department of Peten, Guatemala, 8 April 1966, by Robert W. Dickerman (original field number RWD 13,713).

Diagnosis. Palest dorsally and on flanks of the Central American forms; less rufous than topotypes of *tropaea*; more sandy-colored than Veracruz *prosthaleuca*, grayer dorsally than *pittieri*, and with grayish brown rather than a rich reddish wash on crown. Similar in size to *prosthaleuca* and *tropaea*.

Range. The central Peten of Guatemala and the southern part of the Yucatan Peninsula of México intergrading with *prosthaleuca* in northern Belize (Orange Walk District), and in extreme southern Quintana Roo.

This race is named for Frank B. Smithe in appreciation for his contribution to our knowledge of the avifauna of Guatemala.

In making color comparisons, only specimens taken after 1940 were utilized due to foxing, which increases the rufous tones in this species. A series of 7 specimens from Uaxactun, only 18 km N of Tikal, collected in April 1933, shows a dramatic reddening dorsally, whereas the type is similar to the 13 specimens from Tikal collected in 1957–59. Five specimens from southern Campeche and Quintana Roo in the Peabody Museum, Yale University, are generally pale and represent *smithei*. In a series of three from Agua Blanca, Rio Hondo, on the Belize-Quintana Roo border, one specimen is dark, indicating spread of *prosthaleuca* characters northward through the more humid areas of Belize.

Henicorhina leucosticta tropaea

Henicorhina leucosticta tropaea Bangs and Peters (1927)

Type locality. La Vijagua, Guanacaste, Costa Rica.

Diagnosis. Like *prosthaleuca* but more rufescent dorsally.

Range. In typical form appears restricted to Guanacaste, Costa Rica; but intermediates occur north to eastern Guatemala.

The bills of Costa Rican birds are not consistently larger contrary to the suggestion of Traylor (1949). The chest and breast of both *prosthaleuca* and *tropaea* are pure white, except in soiled or worn specimens (contrary to Bangs and Peters 1927).

A series of six birds recently taken from Heredia and Guanacaste, and nine from Volcan Rincon de la Vieja, Guanacaste, collected in 1940 (Wetmore) are uniformly more rufous dorsally than series from other Central American or Mexican localities. Were Guanacaste isolated, *tropaea* would be considered a distinctive race. However, as cited above, some specimens from the Caribbean lowlands of Guatemala are somewhat more rufescent and thus intermediate toward *tropaea*, while series from Honduras and Nicaragua include some individuals that match the Guanacaste series. Thus although the rufous character is clinal northward, the cline is stepped in eastern Guatemala. Although not entirely satisfactory, I consider it best to maintain *tropaea* rather than combining such dissimilar series as those from Guanacaste and Veracruz under the same trinomial. Within

Costa Rica the situation is further complicated by a distinct population of the humid Caribbean slope of Limon and Cartago Provinces which may be known as:

***Henicorhina leucosticta costaricensis*, new subspecies**

Type. Adult (?) male No. 32665, Louisiana State University Museum of Zoology; collected at Turrialba, Cartago Province, Costa Rica, 9 November 1963, by D. G. Huckaby (original field number DGH 67).

Diagnosis. Generally uniformly dark "chocolate brown" dorsally, but always darker and usually less rufescent than other Central American populations. Similar in size to *prosthaleuca* and *tropaea*.

Range. Cartago Province (Turrialba, El Sauce, Moravia, and Jabillos); Limon Province (Cariari and between Manila and Bataan).

A total of 14 specimens has been examined from the localities cited above. The series of five specimens from the type locality shows some individual variation, but the reddest specimen (LSU 32666) is darker than any of the Guanacaste series of *tropaea*, while one bird from Tilaran, Guanacaste (LSU 32570), is nearly as dark as the series of *costaricensis*. The reddest specimen of *costaricensis* (Museum of Zoology, Univ. Mich. 133063) was taken between Manila and Bataan, Limon, on 25 May 1951, later in the year than the rest of the series.

Henicorhina leucosticta pittieri

Henicorhina pittieri Cherrie (1893)

Type locality. Boruca, Puntatenas Arenas Province, Costa Rica.

Diagnosis. Rich reddish brown; strong concolor wash on nape and crown redder; averages larger than other Central American and Mexican forms.

Range. Southwestern Costa Rica and the Pacific slope of Panamá east to the Canal Zone.

Specimens from Chiriqui, Panamá, are typical *pittieri*. Specimens from the Panama Canal Zone, while closer to *pittieri*, having a strong wash on the crown, are paler and represent intergrades with *H. l. darienensis*, a bright-backed form lacking or with a greatly reduced wash on the crown. The wing chord and culmen from nostril measurements in millimeters for six male *pittieri* were 57–61 (59), 12.1–12.2 (12.2); for six female *pittieri*, 53–57 (55) and 10.6–12.0 (11.1), respectively. The wing chords for other Central American populations average 55–56 mm for males, 52–53 for females. The culmen from nostril measurements average 10.5–11.4 (males) and 9.6–10.7 (females).

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FOUR NEW MIGRANTS FOR COSTA RICA

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Sightings of four species of migrant passerines not previously recorded from Costa Rica (Slud 1964; Orians and Paulson 1969; Dickerman 1971) are reported here.

Vireo solitarius. Solitary Vireo. George V. N. Powell saw a bird of this species at Monteverde, Puntarenas Province, in the Cordillera de Tilarán in northwestern Costa Rica on 8 January 1971. The site was at 1540 m in Lower Montane Rain Forest (Holdridge 1967). The vireo attended a small mixed flock containing Golden-crowned Warblers (*Basileuterus culicivorus*) and Common Bush-Tanagers (*Chlorospingus ophthalmicus*). I saw a lone bird, perhaps the same individual, at the same location on 15 March 1971. The bird had a gray helmet, white lores and eye-ring (= spectacles), white throat, olive back, yellow wash on the flanks, and a heavy *Vireo* bill. This species has not previously been reported south of Nicaragua (Eisenmann 1955), where it is rarely encountered (T. R. Howell, pers. comm.).

Dendroica occidentalis. Hermit Warbler. Peter Feinsinger and I observed a single individual foraging low in a planted row of Guatemalan cypress (*Cupressus Benthami* Endl.) along a wood's edge in Monteverde on 20 October 1971, elevation 1450 m. The bird fed alone though several other migrants, including Townsend's Warblers (*Dendroica townsendi*) and Black-throated Green Warblers (*Dendroica virens*), were nearby. The bird was in immature or female plumage and was identified by its gray crown, nape, and back; yellow cheeks with hint of dark auriculars; unmarked white throat, chin, and underparts. Numerous other North American migrants were present on this date.

Dendroica townsendi. Townsend's Warbler. I saw this species frequently at Monteverde between 20 October and 5 April. Largest numbers (as many as six seen on 20 October 1971) and most frequent sightings occurred during the fall though a few birds were seen throughout the winter months. F. G. Stiles (pers. comm.) first observed the species at Monteverde on 16 September 1968. This is the earliest Costa Rican fall record. The bird was an "adult male" foraging in second growth. Edmund Stiles found a bird there on 28 January 1970. The species was

present at Monteverde during four consecutive winter seasons: 1968-69, 1969-70, 1970-71, and 1971-72. The range in elevation of my sightings was from 1390 to 1540 m along the transition between Lower Montane Wet and Lower Montane Rain Forest zones in the vicinity of Monteverde. With the exception of two or three birds in isolated broad-leaf pasture trees, all individuals were found in edge situations, in or close by Guatemalan cypress plantings. Most Monteverde sightings were of fall-plumaged birds in which extensive yellow on the underparts and dark auriculars were used as primary field marks for their identification. A few spring birds were in plumages intermediate between those of winter and summer. Most Townsend's Warblers occurred in loose associations with other wintering migrants, usually with Black-throated Green and Wilson's (*Wilsonia pusilla*) Warblers.

Elsewhere in Costa Rica, James Richardson (pers. comm.) observed a single singing male in "brilliant nuptial plumage . . . well up on the slope" of Volcán Irazú, Cartago Province, on 30 March 1969. The bird was feeding in a small clump of evergreen oaks in a cow pasture. I saw a single winter-plumaged bird working pasture trees at a site 1 km N of Rancho Redondo, San José Province, elevation 1950 m on 8 January 1972. These are the only records from the central plateau of the country. The southernmost and highest sighting of the species in Costa Rica was of a male observed by F. G. Stiles at 3150 m on Cerro Chirripó, Limón Province, on 4 March 1972. Stiles (pers. comm.) found "very large concentrations of migratory warblers at high elevations" on that date.

Dolichonyx oryzivorus. Bobolink. I found a single fall-plumaged Bobolink at the mouth of the Rio Nosara, approximately 4 km W of Nosara, Guanacaste Province, on 7 October 1971. The bird perched atop a hedge of *Bromelia Pinguin* L. on a grassy beach ridge and gave the characteristic pink call note of the species as it flew off. It was in a flock of about 30 seedeaters (*Sporophila* sp.).

Slud (1964), in his discussion of this species in Costa Rica, stated: "It would not be at all unreasonable to expect an occasional individual, especially along the Caribbean slope, but there is no evidence that the species has ever been seen or taken in Costa Rica." The present record is from the Pacific coast. The presence of a tropical storm in the Caribbean at the time of this observation may be significant.

Both warblers are known to winter rather commonly in the highland pine forest of northern Central America as far south as Nicaragua (Monroe 1968; T. R. Howell, pers. comm.). No conifers are native