

CHLOROSPINGUS FLAVOVIRENS REDISCOVERED, WITH NOTES ON OTHER PACIFIC COLOMBIAN AND CAUCA VALLEY BIRDS

STEVEN L. HILTY

ABSTRACT.—A specimen of the Yellow-green Bush Tanager collected in 1972 was the first Colombian and third known specimen since the previous two taken in Ecuador in 1935, and the species has not been reported since. Presents notes and new records of 36 other species from this region of high endemism on the western slopes of the western Andes.—*Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, Arizona 85721. Accepted 2 June 1975.*

THE Pacific slope of Colombia records the highest annual rainfall in the Western Hemisphere (Rumney 1968), yet the distribution of many birds in this unique region of high endemism is still known chiefly through early collections (e.g. Cassin 1860; Bangs 1908, 1910; Chapman 1917) and the extensive collections of Von Sheidern (*vide* Meyer de Schauensee) during 1938, 1940, 1941, 1945, and 1946. This and other information has been compiled by Meyer de Schauensee (1948–52, 1964, 1966, 1970). Recent papers by Haffer (1967a, 1967b), Miller (1966), Olivares (1957a, 1957b, 1958), and Ralph and Chaplin (1973) contribute to our knowledge of Pacific Colombian avifauna but the status of many species is still poorly known.

The data reported here were obtained during portions of 1972, 1973 and 1975, chiefly in the Anchicayá Valley at low to moderate elevations on the west slope of the western Andes and in the upper Cauca Valley near Cali, Department of Valle. Llano Bajo, Aguaclara, Saboletas, Danubio, and La Cascada, mentioned in text, are small villages along the Old Buenaventura Road, south of Buenaventura. Yatacué is a site administered by the Corporación Autónoma del Valle del Cauca (C.V.C.) in the upper Anchicayá Valley above the confluence of the Río Digua and Río Anchicayá. Many Anchicayá records are from a site locally known as "Alto Yunda" (1,050 m) near the Río Anchicayá-Río Verde watershed divide, 3°32'N, 76°48'W. These heavily forested watersheds surround two new hydroelectric plants and are completely protected by the C.V.C. Recent clearing of land in the adjacent Río Digua Valley has created some avenues for westward expansion by open country birds from the drier Cauca and Dagua Valleys. This is reflected by the presence in clearings in the Anchicayá Valley of several species that were formerly rare or unknown there (Lehmann pers. comm.).

The Anchicayá Valley lies within a spectrum of "rain forest" habitats characterized as "wet" and "pluvial" tropical and subtropical forest types in the Holdridge nomenclature (Espinal and Montenegro 1963). Most areas above 1000 m are fog-bound by midday. Mean annual temperature at 1050 m is 21.2°C (70.2°F).

Among the 37 species mentioned in this report, one of those collected, the wren *Odontorchilus branickii minor*, is a new race for Colombia. A definite collection locality in Colombia is established for the honeycreeper *Iridophanes pulcherrima*; the tanager *Chlorospingus flavovirens*, hitherto known only from two old specimens, is new for Colombia. The remaining records constitute range extensions or information (chiefly on habitat) of species whose reported status in western Colombia is rare or uncertain. In several cases the species were found lower (to 1,000 m or less) than previously reported. Possibly the very humid cloudy climate of the Pacific slope,

producing mossy forest at unusually low elevations, may depress altitudinal zones in this region. Distributional information is based on Meyer de Schauensee (1966, 1970) unless specifically mentioned. In some cases new data are provided on reproduction, behavior, soft-part colors, and weights. Wing measurements are flat. Specimens have been deposited in the American Museum of Natural History (AMNH), University of Arizona (UA), Museo Departamental de Historia Natural, Cali (MDHN), or Philadelphia Academy of Natural Sciences (PANS). Specimens taken by Ignacio Borrero and mentioned in text are at the Universidad del Valle (UV), Cali, Colombia.

RED-WINGED PARROTLET, *Touit dilectissima dilectissima*. Two males, No. 0427 (59 g; testis 4.5×2 mm) and No. 0428 (71 g including 10 g stomach contents; left testis 6×4 mm) taken 10 June 1975 at Alto Yunda (1,050 m). Iris brown, legs, orbital skin, and cere bluish gray, bill yellow paling greenish basally. Previously collected in Colombia from northern Choco and Nariño, it is an uncommon forest resident from the lowlands to 1,300 m in Valle.

RUFESCENT SCREECH-OWL, *Otus ingens columbianus*. A female seen roosting in a pocket of moss 23 January 1973 was collected (AMNH) the next day on the Río Anchicayá-Río Verde watershed divide (1250 m) in cloud forest habitat. This very fat bird had a greatly enlarged reproductive tract with one ovum 16 mm, another 6.5 mm, two ova 5 mm, and numerous smaller ones. Known in Colombia from three specimens (*columbianus*) from the upper Cauca Valley, this record extends the range to the western Andes. Iris dark brown, legs pallid flesh, bill light bluish horn, wing 192 mm, tail 100 mm, culmen 25 mm, tarsus 35 mm, weight 210 g.

LESSER SWALLOW-TAILED SWIFT, *Panyptila cayennensis*. A pair flushed from a cliff face at the confluence of Río Digua and Río Anchicayá (300 m) 12 August 1972. After circling, both birds returned to the cliff. Another pair was noted over a wooded ridge above the Río Anchicayá (900 m) on 9 December 1972, and several birds were seen between Saboletas and Aguacalara (100 m) during June and July 1975. This species has previously been reported south only to the Department of Antioquia in the Pacific Colombian Andes and Chinchina, Caldas in the central Colombian Andes (*vide* Borrero).

CRESTED QUETZAL, *Pharomachrus antisianus*. Single males seen 19 June and 13 July 1972 near Alto Yunda (1,000 m) are the first reported observations for the Pacific slope and the elevation is rather low. In both cases the diagnostic white outer tail feathers were noted, which give the effect of an all white under tail surface when the bird is perched. This species might be expected for it occurs in small numbers at subtropical elevations on the eastern slope of the western Andes.

LANCEOLATED MONKLET, *Micromonacha lanceolata*. I saw one individual of this rare puffbird at close range on 12 October 1972 in the Anchicayá Valley (900 m). An attempt to mist-net the bird failed and it was not found again. A second individual was seen 18 June 1975 (350 m) about $\frac{1}{2}$ km south of La Cascada. In both cases the birds were quite unsuspecting, perching on exposed bare branches 4–5 m above ground at the edge of thin second growth. Borrero (in litt.) mentions taking a recent specimen (UV) at the confluence of the Río Saboletas and Quebrada La Bomba (100 m) on the Pacific slope in Valle. In the western Andes this species has previously been taken only from two widely separated locations.

BUFFY TUFTEDCHEEK, *Pseudocolaptes lawrencii*. Individuals of this uncommon furnariid were seen on mossy tree branches in heavy forest near Alto Yunda in June, July, and October 1972, and April 1973. Borrero (in litt.) mentions taking a specimen (UV) at Atuncela (1,700 m) and another at Río Blanco (1,300–1,400 m) in the Department of Valle but there seem to be no published records north of Cerro Munchique, Cauca on the Pacific Colombian slope.

ESMERALDAS ANTBIRD, *Sipia rosenbergi*. Immature (?), male collected (AMNH) 17 February 1973, Alto Yunda. The skull was largely unossified and the white wing markings appeared slightly smaller than comparative material but otherwise this specimen agrees with examples of adult plumage birds (*vide* Eisenmann). Iris fire red, bill and legs black, wing 71 mm, tail 52 mm, tarsus 29 mm, culmen 20 mm, weight 24 g, testis 4×1 mm. Known from a few scattered localities on the Pacific Colombian coast south to northwestern Ecuador.

BARRED BECARD, *Pachyramphus versicolor*. Male collected (MDHN) at Parque Circumvalación in Cali (1,000 m) 11 May 1973. Apparently this species is frequent in suitable habitat immediately south of Cali (Río Pance) (*vide* Borrero) although no records of this subtropical species occurring this low in Colombia have been published.

WHITE-CROWNED MANAKIN, *Pipra pipra*. Female collected (MDHN) 6 May 1972 at Alto Yunda (1,050 m). Females and immatures were infrequently captured in mist nets throughout the 1972–73 period but no

adult males were ever taken. On 25 June 1972 a lek of five displaying males was located on a steep west-facing slope above the Río Anchicayá (660 m). Easily detected by their buzzy, insectlike call, these birds displayed throughout the study period. Previously recorded on the western slope of the western Andes only in Cauca.

WESTERN WOOD PEWEE, *Contopus sordidulus*. Two males collected (AMNH) at Alto Yunda (1,050 m) 25 August and 13 October 1972. The former specimen, in very faded and worn plumage with yellowish basally on the lower mandible, is probably *saturatus* or *veliei* (*fide* Eisenmann). Wing 88 mm, tail 67 mm, culmen 11 mm, weight 10 g. The latter, in rather fresh plumage, was identified as *saturatus* (*fide* Eisenmann). Bill black, light bluish basally; a very dark bird with dusky cap, wing 90 mm, tail 67 mm, culmen 10.5 mm, weight 11.5 g. Although *Contopus* sp. were common in the Anchicayá Valley, the status of this difficult group is not well known in Colombia.

ACADIAN FLYCATCHER, *Empidonax virescens*. Male collected (AMNH) 15 December 1972, Alto Yunda (1,050 m). A bird with buffy yellow wing bars and yellow abdomen (identified by Eisenmann, Farrand, and J. Weske); this species is probably a common winter resident in the Anchicayá Valley. Wing 71 mm, tail 48 mm, culmen 9.5 mm, weight 12 g.

RUDY-TAILED FLYCATCHER, *Terenotriccus erythrurus fulvicularis*. A male collected (AMNH) 18 December 1972 at 450 m elevation in the Anchicayá Valley below Yatacué. This specimen was one of a pair netted in second-growth *Miconia* and *Psidium* near the clearing of an abandoned homestead. Borrero (in litt.) mentions taking a specimen (UV) at 250 m near the Buenaventura-Cali road and Meyer de Schauensee (1948–52) lists specimens for three localities along the Pacific coast. The species is apparently very rare or inconspicuous in the region.

BLACK-HEADED TODY-FLYCATCHER, *Todirostrum nigriceps*. Single individuals were seen 12 April 1972 in the Río Verde Valley (tributary of upper Río Anchicayá) (880 m) and 13 November 1972 and 12 May 1973 in the Anchicayá Valley (950 and 1,050 m respectively). Previously reported from the northern Pacific coast and western Ecuador.

BANK SWALLOW, *Riparia riparia*. Five birds with a small flock of Barn Swallows (*Hirundo rustica*) on 17 October 1972 at Alto Yunda represent the first record of this species on the Pacific slope of the Colombian Andes, although Plenge (1974) reports this species west of the Andes in Peru. Previously reported at three locations in Colombia, it is probably to be expected throughout.

BLACK-CHESTED JAY, *Cyanocorax affinis*. Steven Gniadek and I saw nine individuals on 2 February 1973 in tall second growth along the lower Río Anchicayá at Llano Bajo (100 m). I saw single birds or pairs three times in June and July 1975 near Saboletas (100 m) and Gochfeld and Keith (1974) mention a sighting on the lower Old Buenaventura Road. It has been recorded south only to the middle Río San Juan on the Pacific Colombian coast.

GRAY-MANTLED WREN, *Odontorchilus branickii minor*. Male collected (AMNH) at Alto Yunda (1,050 m) 18 October 1972 represents the first record in Colombia of the race *O. b. minor*, which was described from western Ecuador. Iris light brown, bill and legs horn, skull ossified, wing 49 mm, tail 43 mm, tarsus 14 mm, culmen 6.5 mm, weight 9.0 g. Previously only the nominate race *O. b. branickii* had been taken in Colombia, where it was known from one location in the upper Magdalena Valley. This record establishes the presence of this species on the western slope of the Colombian Andes. Individuals or pairs were also seen during almost all months in either the Anchicayá or Río Verde Valleys (800–1,100 m). Active, very arboreal, and gnatcatcherlike, this species often cocks its tail as it nervously examines large branch and leaf surfaces. It is difficult to detect except in the company of mixed flocks.

BLACK-BELLIED WREN, *Thryothorus fasciatoventris*. Steven Gniadek and I watched a pair on 2 February 1973 carry material to a bulky nest in thick second growth near the Río Anchicayá at Llano Bajo (100 m). Previously reported south only to the Río San Juan on the Pacific coast, it is now resident in the lower Anchicayá Valley.

BLACK SOLITAIRE, *Entomodestes coracinus*. This little-known Pacific Andean endemic was seen or netted more than 15 times at Alto Yunda during late October and November 1972 and May and June 1973. Two birds were seen 3 August 1975 at kilometer 74 (450 m) along the Old Buenaventura Road by Peter Jennings, Sean Furniss, and the author. Rather wary, individuals or pairs were usually seen when feeding with mixed tanager flocks at low or midforest levels on small fruiting shrubs (berries < 10 mm) of *Miconia theaezans*, *Miconia* sp., and *Henriettella* sp. (the latter species probably undescribed, *fide* Wurdack). Previously reported chiefly from the subtropical zone, populations may make local and seasonal altitudinal movements.

RED-BREASTED BLACKBIRD, *Leistes militaris*. A common resident of the Cauca Valley in pastures and cultivated fields. Three individuals were seen 5 October 1972 in pastureland just west of Queremal (1,450 m). This is the first published sighting of this species on the western slope of the western Colombian

Andes, a locality presumably invaded only since recent settlement and clearing in the upper Digua and San Juanita Valleys. Borrero (pers. comm.) informs me that he also found this species in the same region.

BLACKPOLL WARBLER, *Dendroica striata*. Fall plumage birds were seen 26 March and 1 April (two individuals) 1972, at Parque Circumvalación, Cali, Colombia. A fourth individual seen 24 September 1972 in the Anchicayá Valley (1,150 m) represents the first sighting of this species west of the western Colombian Andes. The pale leg color of all individuals was noted and compared with the dusky of the Bay-breasted Warbler (*D. castanea*), a common winter resident in Cali and at elevations below 600 m on the Pacific slope. Though a regular migrant east of the Andes, the Blackpoll Warbler has seldom been recorded in the mountains. The number I have seen suggests that this species may occur more often in the Andes, possibly as a transient, than past data indicate.

GOLDEN-COLLARED HONEYCREEPER, *Iridophanes pulcherrima* (presumably *aureinucha*, *vide* Eisenmann). Immature male (?) collected (AMNH) 16 June 1973 at Alto Yunda (1,050 m) and two adults seen 30 March 1973 feeding *Miconia* sp. berries to a fledgling in disturbed mossy forest above Queremal (1,800 m). Iris rust brown, bill dark horn, lighter below, wing 63 mm, tail 41 mm, tarsus 16.8 mm, bill 14 mm, weight 12 g. These records confirm the presence and breeding of this species in Colombia on the western slope of the western Andes. This honeycreeper was previously known in Colombia from a very few Bogotá trade skins from indefinite localities, and one recent specimen (male) in Cali (MDHN) that was reportedly taken by an exporter in the Dagua Valley on the Pacific slope (Lehmann pers. comm.).

YELLOW-COLLARED CHLOROPHONIA, *Chlorophonia flavirostris minima*. Male and female collected 27 May 1973 and an immature male collected 21 May 1973 (PANS) at Alto Yunda (1,050 m) from fruiting *Miconia* sp. trees were identified by Meyer de Schauensee. Another male (No. 0429) was taken 11 June 1975 at the same locality (immature plumage, skull partly unossified, testis 4 × 2 mm). Adult male, iris sand white, bill and legs orange, eyelids yellow. Previously known in Colombia only from the tropical zone in Nariño, these records extend the range of this little-known tanager north along the Pacific coast. This species is resident locally in the rugged forests of western Valle where I have found it from Llano Bajo (100 m) to the mountains above Queremal (1,900 m). Typically it is in small flocks of 3 to 7 birds but groups numbering more than 20 individuals were encountered near Alto Yunda in January 1973 and near Aguacalara during July and August 1975. I encountered a remarkable concentration of more than 80 birds (mostly in immature or female plumage) following a mixed species flock 3 August 1975, 3 km above Aguacalara (400 m).

CHESTNUT-BREASTED CHLOROPHONIA, *Chlorophonia pyrrhophrys*. Single male seen 3 March 1973 in the forest above Queremal (1,650 m) on the Pacific Andean slope. This chlorophonia, fairly common on the eastern slope up to the divide (1,800 m) above Cali (Meyer de Schauensee 1970, pers. obs.), has not previously been recorded on the Pacific slope but was to be expected (Gochfeld and Keith 1974).

FAWN-BREASTED TANAGER, *Pipraeidea melanonota*. Although Meyer de Schauensee (1966) did not list this species from the Pacific slope, Willis (1966) mentioned its presence at or below Queremal, and two specimens in the Valle museum (UV) have been taken on the Pacific slope (1,220 and 1,550 m) at Zelandia (*vide* Borrero). A tanager of clearings and overgrown pastures, it appears to be expanding its range westward as deforestation continues. Pairs are now established in several isolated clearings in the Anchicayá Valley.

SCRUB TANAGER, *Tangara vitriolina*. Another recent invader from semiarid and scrubby pastureland to the east, this species can now be found sparingly at recent clearings near La Cascada, Alto Yunda, and Yatacué in the Anchicayá Valley and in the more remote Río Verde Valley. Despite a preference for fairly xeric or scrubby habitat this species seems capable of colonization in very wet areas too, if clearings and shrubby growth exist.

GOLDEN-CHESTED TANAGER, *Bangsia rothschildi*. Although no specimens were secured, this uncommon tanager was seen during most months of the year from near Yatacué (680 m) to Alto Yunda (1,050 m) in the Anchicayá Valley. On 24 June 1972 a pair was watched carrying nest material and on 10 October 1972 a bird (male?) uttered a high thin unmusical song for several minutes from an exposed perch above the canopy. These tanagers were almost always seen accompanying mixed foraging flocks and only rarely was a bird encountered alone or perched in an exposed position. This Pacific Andean endemic has been previously taken at two locations in Colombia. Borrero (pers. comm.) recently took a specimen (UV) near the Buenaventura-Cali highway (250 m) on the west slope.

YELLOW-GREEN BUSH-TANAGER, *Chlorospingus flavovirens*. Male in breeding condition (testis 8.5 × 5 mm) collected 10 October 1972 at Alto Yunda (AMNH) (1,050 m) represents the first Colombian record and the third known specimen; the previous two were from Ecuador (Griscom 1935). This specimen (like the type, *vide* Eisenmann) has the top and sides of the head olive green (with some dusky edging on suborbital region and ear coverts), *not* "dark slaty gray" as described by Meyer de Schauensee (1970:

396). Iris brown, bill dull horn to gray-brown, total length 153 mm, wing 85 mm, tail 59 mm, tarsus 20 mm, culmen 10 mm. Two additional specimens, a female (ovary 4×3 mm, weight 24 g, No. 0434) and male (testis 4.5×3 mm, weight 25 g, No. 0431) taken 12 June 1975, at Alto Yunda confirm the continued presence of this species at this site. Nothing has been published as to its habitat or behavior. Apparently the Alto Yunda birds are an extremely local population for no individuals were ever encountered elsewhere. Several other examples were netted, banded, and released at Alto Yunda. The Yellow-green Bush-Tanager foraged higher than the more common Yellow-throated Bush-Tanager (*C. flavigularis*) and Dusky-bellied Bush-Tanager (*C. semifuscus*). It was conspicuous and vocal as it searched the mats of epiphytes that sprout from heavy moss jackets coating trunks and large limbs. Most foraging heights recorded were well above 7 m and often at canopy heights (22–30 m); the birds usually seemed reluctant to descend into thickets and lower vegetation although they readily forage out into isolated large trees in clearings. All captured birds were taken in mist nets placed across a partly cleared knife ridge. This species was almost always encountered in groups of three or more and often with mixed foraging flocks. Its persistent and slightly raspy calls made it easy to locate in the flocks.

SAFFRON FINCH, *Sicalis flaveola*. Although there are no published records from the Cauca Valley, at least two pairs were resident at Parque Circumvalación in Cali, and the species (*vide* Borrero) occurs but not abundantly in several parts of the Cauca Valley.

BLACK-HEADED BRUSH-FINCH, *Atlapetes atricapillus*. Two specimens (MDHN) collected 8 April 1972 in the Río Verde Valley (880 m). No published records exist for this species in the western Andes, but two recent specimens taken on the Pacific slope in Valle (*vide* Borrero) are from Río Blanco (700–800 m, 1,300–1,400 m) and a third is from Río Verde (1,120 m) (UV). I also have sight identifications of this species in the Anchicayá Valley between 900 and 1,050 m. Previously known in Colombia from a small number of specimens taken at two sites in the eastern and central Andes, much of the forest habitat at these localities may no longer exist. Subspecific identifications of my two specimens has not been determined but specific identification was made by Carlos Lehmann. The relationship of this species with the allied *A. torquatus assimilis* remains to be worked out.

YELLOW-BELLIED SISKIN, *Spinus xanthogaster*. A bird carefully observed 31 August 1972 at one of the few remaining woodlots around Lago de Sonso, Buga (1,000 m), Cauca Valley, represents a sighting at low elevation. Although formerly it may have ranged throughout this region, the nearest favorable habitat at present is probably Bosque Yotoco (1,450 m) about 11 km west. In the forested and cooler Anchicayá Valley on the Pacific slope this species occurs down to 1,000 m or less.

The following species are considered subtropical (4,500–5,000 to 7,500–8,000 feet, i.e. between 1,370–1,525 to 2,135–2,440 m, using the definition of Meyer de Schauensee 1970) on the Pacific slope of the western Andes, although a few have been taken lower (Meyer de Schauensee 1948–52). I have collected or seen all of them in the upper tropical zone (at elevations of 1,050 m or lower) of the Anchicayá Valley, where they appear to be of regular occurrence although some only seasonably so: Andean Emerald, *Amazilia franciae*, two females collected 13 October and 13 December 1972 (1,050 m) (AMNH and UA) and sightings in January and March 1973; Whitetip, *Urosticte benjamini*, resident (1,000 m); Empress Brilliant, *Heliodoxa imperatrix*, resident (1,000 m); Greenish Puffleg, *Haplophaedia aureliae*, male collected 13 December 1972 (1,000 m) (AMNH); Buff-fronted Foliage-Gleaner, *Philydor rufus*, nesting 20 June 1972 (1,050 m); Rufous-rumped Antwren, *Terenura callinota*, adult male collected 7 May 1972 (1,050 m) (MDHN); Andean Solitaire, *Myadestes ralloides*, resident (900 m); Pale-eyed Thrush, *Platycichla leucops*, nesting 22 June 1972 (1,050 m); Glossy-black Thrush, *Turdus serranus*, sightings September and October (1,050 m).

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LITERATURE CITED

- BANGS, O. 1908. Notes on birds in western Colombia. *Proc. Biol. Soc. Washington* 21: 157-161.
- . 1910. New or rare birds in western Colombia. *Proc. Biol. Soc. Washington* 23: 71-76.
- CASSIN, J. 1860. Catalogue of birds collected on the Isthmus of Darien by Michler. *Proc. Acad. Nat. Sci. Philadelphia* 12: 132-144; 188-197.
- CHAPMAN, F. M. 1917. The distribution of bird-life in Colombia. *Bull. Amer. Mus. Nat. Hist.* No. 36.
- ESPINAL, L. S., & E. MONTENEGRO. 1963. Formaciones vegetales de Colombia. Bogotá, Instituto Geografico "Augustin Codazzi."
- GOCHFELD, M., & G. S. KEITH. 1974. A sight record of the Chestnut-breasted Chlorophonia from Central Peru. *Amer. Birds* 28: 960-962.
- GRISCOM, L. 1935. The rediscovery of *Chlorospingus flavovirens* (Lawrence). *Auk* 52: 94-95.
- HAFFER, J. 1967a. Speciation in Colombian forest birds west of the Andes. *Amer. Mus. Novitates* No. 2294.
- . 1967b. Zoogeographical notes on the "nonforest" bird faunas of northwestern South America. *Hornero* 10: 315-333.
- MEYER DE SCHAUENSEE, R. 1948-52. The birds of the Republic of Colombia. *Caldasia* 5: 251-1212.
- . 1964. The birds of Colombia. Narberth, Pennsylvania, Livingston Publ. Co.
- . 1966. The species of birds of South America. Narberth, Pennsylvania, Livingston Publ. Co.
- . 1970. A guide to the birds of South America. Wynnewood, Pennsylvania, Livingston Publ. Co.
- MILLER, A. 1966. Seasonal activity and ecology of the avifauna of an American equatorial cloud forest. *Univ. California Publ. Zool.* 66: 1-74.
- OLIVARES, F. A. 1957a. Aves de la costa del Pacifico, Municipio de Guapi, Cauca, Colombia I. *Caldasia* 7: 359-381.
- . 1957b. Aves de la costa del Pacifico, Municipio de Guapi, Cauca, Colombia II. *Caldasia* 8: 33-93.
- . 1958. Aves de la costa del Pacifico, Municipio de Guapi, Cauca, Colombia III. *Caldasia* 8: 217-251.
- PLENGE, M. A. 1974. Notes on some birds in West-central Peru. *Condor* 76: 326-330.
- RALPH, C., & S. CHAPLIN. 1973. Some birds of Isla Punta Arenas, Pacific coast, Colombia. *Condor* 75:357-359.
- RUMNEY, G. R. 1968. Climatology and the world's climates. New York, Macmillan Co.
- WILLIS, E. O. 1966. Competitive exclusion and birds at fruiting trees in western Colombia. *Auk* 83: 479-480.