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A REVISION OF THE GOLDEN WARBLERS,
DENDROICA PETECHIA (LINNÉ).

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The Yellow Warbler (*Dendroica aestiva*) of North America is represented in the West Indies, Cozumel Island, the west coast of Colombia and Ecuador, and the Galapagos Archipelago by a closely allied species (*Dendroica petechia*), differing specifically in the primary formula, length of the wing-tip, and relative proportions of the wing and tail. In other words, the structural differences are exactly those that might be expected to develop between a migratory and a sedentary species. A slight color difference also is found. In *D. petechia* the pileum varies from ochraceous to chestnut, and the extent of this color likewise varies. In *D. aestiva* the pileum is golden yellow.

The external structural differences between the two species may be seen from the following table:

<i>Dendroica aestiva.</i>	<i>Dendroica petechia.</i>
7th, 8th and 9th primaries equal and longest.	7th and 8th primaries longest; 9th generally shorter than (sometimes equal to) 6th.
wing-tip $\frac{3}{4}$ (or more) length of tarsus.	wing-tip less than $\frac{3}{4}$ length of tarsus.
tail not over $\frac{4}{5}$ length of wing.	tail over $\frac{4}{5}$ (generally about 85%) length of wing.

For convenience I call *Dendroica petechia* the Golden Warbler, reserving the familiar Yellow Warbler for *Dendroica aestiva*; Mangrove Warbler is most appropriate to *D. rufigula*, *D. erithachorides*, and the various races of *D. bryanti*.

Dendroica petechia occurs on nearly all the islands of the West Indies except St. Lucia, St. Vincent, and some of the Grenadines. It is replaced

on Martinique by a very distinct species (*Dendroica rufigula* Baird) whose nearest affinities are with *Dendroica erithachorides* Baird of northern Colombia, Panama, and the Pearl Islands. Indeed *rufigula* is little more than a small counterpart of its mainland relative, but its characters are so trenchant that I prefer to regard it as a species distinct from *erithachorides*.

In addition to its widespread distribution in the West Indies, *D. petechia* occurs on the islands off the north coast of Venezuela from Aruba to Margarita, on Cozumel Island off the east coast of Yucatan, on St. Andrews Island in the Caribbean Sea, in the Galapagos Archipelago, and on the west coast of Colombia and Ecuador. It is absent from the rest of the South American mainland and from the islands of Trinidad and Tobago.

Ridgway¹ recognized two species covering the distribution just outlined, with an aggregate of eleven races. In this paper I have reduced the number of species to one, since the characters separating *petechia* from *ruficapilla* are merely those of degree, wholly or partly bridged by individual variation, but I have increased the number of recognized forms to fifteen.

Some forms appear to be confined strictly to the mangroves, others frequent the dry bushy pastures as well; none of them occur in the forests.

In song, call-notes and general attitude the resemblance of all of them to *D. aestiva* is very striking.

I am indebted to the authorities of the Field Museum and the American Museum of Natural History for the loan of necessary specimens.

***Dendroica petechia eoa* (Gosse).**

Sylvicola eoa Gosse, Bds. Jam., 1847, p. 158 (Crab Pond, Jamaica.)

Dendroica petechia e. jamaicensis Sundevall, Öfv. K. Vet-Akad. Förh. Stockholm, 26, 1870, p. 608.

Dendroica auricapilla Ridgway, Proc. U. S. Nat. Mus. 10, sig. 36, 6 Aug. 1888, p. 572 (Grand Cayman).

Dendroica petechia auct. nec Linné.

Description.—Adult male. Above bright yellowish olive green, yellower on the rump; crown more or less ochraceous-orange, forehead generally clear yellow; lesser and median coverts broadly edged with yellow with dusky centers and bases; primaries, secondaries and greater coverts dusky, less broadly edged and the yellow more olive except on the inner secondaries; below sides of head, lores, superciliary and auriculars uniform brilliant yellow streaked on the breast and sides with cinnamon rufous or light reddish chestnut. Central tail feathers dusky, narrowly edged with yellowish; balance of the feathers dusky on the outer web and terminal part of the inner web; rest of inner web yellow.

Adult female. Above much darker and greener than the male and lacking the yellow forehead and rufous crown; edging to the wing and wing coverts, narrower and more greenish; below yellow less brilliant,

¹Birds of No. and Mid. Am. 2, 1902, pp. 515-526.

and chestnut streaks usually lacking, sometimes indicated; yellow areas in the tail less extensive.

Measurements.—Male. Wing, 61–68 (64.6); tail, 51–61 (55.45); bill from base, 14–15 (14.43); tarsus, 20.5–23 (21.5). Female.—Wing, 56–63.5 (61.03); tail, 52–58 (53.75); bill from base, 13–15 (14.35); tarsus, 19–22.5 (20.5).

Range.—Jamaica and the Caymans (Little Cayman, Grand Cayman, Cayman Brac). Confined exclusively to the mangroves.

Specimens examined.—Jamaica: 8 ♂, 7 ♀; Grand Cayman: 8 ♂, 4 ♀; Cayman Brac: 2 ♂; Little Cayman: 1 ♂, 1 ♀.

For many years *Motacilla petechia* Linné has been applied to the Jamaican Golden Warbler, but this name is not applicable here, as will be shown. *Motacilla petechia* is based on two references; the first to Brisson (Orn. 3, 1760, p. 488) and the second to Edwards (Gleanings, 1, 1758, p. 99, pl. 256) and as Brisson's bird in turn is founded on Edwards, only the second of the two references need be considered.

The plate represents a male of one of the West Indian Golden Warblers, not a form of *Dendroica aestiva*, because the pileum is shown as red; the text tells us that the bird is drawn natural size, but that its origin is unknown. Edwards believed it to have come from North America, because a specimen that he considered to be a female of this species had been sent him from Pennsylvania by Bartram. Of course this has no bearing on the bird figured and described, besides I feel sure that the "female" referred to is *Dendroica palmarum hypochrysea* Ridgway. Comparing specimens from Jamaica with Edwards' plate, we are struck at once by two glaring discrepancies: in the first place the pileum of the figure is red, not orange-brown, and the size is small, wing 56 mm.; the bill, too, is longer and more slender than in Jamaican examples. That the color of the pileum is not the result of an error in coloring the plate is shown by Edwards' statement that "the top of the head is red."

There is a race of the Golden Warbler that agrees with Edwards' plate in all particulars, that is, the bird from Barbados, heretofore known as *Dendroica capitalis* Lawrence, a form characterized by its smaller size, relatively long and slender bill, and by having the pileum deep chestnut or bay, of a shade that might easily be called "red." Thus *petechia* must be transferred to the bird from Barbados, while for the Jamaican bird we must use Gosse's *Sylvicola eoa*. I have no hesitation whatever in applying this name. When Mr. Outram Bangs was in London during the spring of 1925 he made a special point of examining the type specimens of *Dendroica eoa* in the British Museum, and he tells me that there is nothing really peculiar about them. One of the two is an absolutely normal immature or female; the other has some orange feathers appearing all through the throat and sides of the neck. In other words, the latter of the types is one of those very highly colored individuals in which the yellow becomes orange, just moulting from immature into the adult plumage. Gosse appears to have been deceived by believing that the bird that he called *Sylvicola aestiva* was a Golden Warbler, while in reality it is a Palm Warbler (*Dendroica palmarum palmarum* (Gmelin). Gosse's plate

of *Sylvicola eoa*, published two years after his "Birds of Jamaica," appears to be his conception of how that bird should appear when fully adult, and does not agree with either his description or his types.

It is this highly exaggerated plate of Gosse's that, during the last seventy-five years, has deceived ornithologists as to the true identity of *Dendroica eoa*. It is of interest to note that Sundevall over fifty years ago did not believe that Edwards' plate could represent the Jamaican Golden Warbler, and on that account re-named the form from that island, not being able to connect Gosse's *Sylvicola eoa* with any form of *Dendroica petechia*.

I fully agree with the conclusions reached by Bangs¹ that Golden Warblers from the Caymans are identical with those from Jamaica.

***Dendroica petechia gundlachi* Baird.**

Dendroica gundlachi Baird, Rev. Am. Bds. Apr. 1865, p. 197 (Cuba).

Dendroica petechia d. *cubana* Sundevall. Öfv. k. Vet-Akad. Förh. Stockholm, 26, 1870, p. 608.

Subspecific characters.—Male. Similar to *D. p. eoa* but duller and greener above; crown-patch less extensive and more brownish, less orange; averaging less brilliantly yellow below. Females. More olive above than the corresponding sex of *eo*a, and less brilliantly yellow below.

Measurements.—Male: wing, 60.5–68 (64.08); tail, 51–59.5 (55); bill from base, 13.5–15.5 (14.33); tarsus, 19–22 (20.85). Female: wing, 59–60.5 (59.6); tail, 47.5–54 (50.9); bill from base, 12.5–14 (13.8); tarsus, 19–21.5 (19.8).

Range.—Cuba and the Isle of Pines. Confined exclusively to the Mangroves (Barbour, Todd).

Specimens examined.—Cuba: 12 ♂, 3 ♀; Isle of Pines: 4 ♂, 1 ♀.

***Dendroica petechia albicollis* (Gmelin).**

Motacilla albicollis Gmelin, Syst. Nat. 1, pt. 2, 1789, p. 983 (Santo Domingo, ex Brisson).

Motacilla chloroleuca Gmelin, *op. cit.* p. 984 (Santo Domingo).

Subspecific characters.—Similar to *D. p. eoa* but smaller; bill shorter and more slender than in any of the other forms from the Greater Antilles and the Bahamas. Male. Upper parts, sides of head and edging of primaries, secondaries and wing-coverts brighter, more golden yellow (less olive). Female. Similar in color to the female of *D. p. eoa*, but sides of head more golden yellow; forehead with traces of ochraceous.

Measurements.—Male: wing, 61–62.5 (62.75); tail, 53–53.5 (53.25); bill from base, 13.5–14 (13.75); tarsus, 20.5. Female: wing, 60; tail, 55; bill from base, 14; tarsus, 20.

Range.—Island of Haiti. Confined to the Mangroves.²

Specimens examined.—2 ♂, 1 ♀, Monte Christi, Dominican Republic. The Brissonian species upon which Gmelin founded his *Motacilla albi-*

¹Bull. M. C. Z. 60, No. 7, 1916, p. 315.

²cf. Peters, Bull. M. C. Z. 61, No. 11, 1917, p. 421–423.

collis and *M. chloroleuca* both appear to have been based on specimens in a condition often to be found in examples from certain localities, particularly from Jamaica, Cuba and the Bahamas, in which the amount of yellow below is reduced and replaced by white, and the olive of the upper parts interspersed with gray; a condition that does not seem to be definitely correlated with age. Todd¹ believes this state of plumage, which, in the Bahamas, at least, occurs with the greatest frequency among females, may be due to an incomplete prenuptial moult.

***Dendroica petechia flaviceps* Chapman.**

Dendroica petechia flaviceps Chapman, Bull. Am. Mus. Nat. Hist. 4, No. 1, 29, Dec. 1892, p. 310. (Rum Cay, Bahamas).

Subspecific characters.—Similar to *D. p. gundlachi* in the restriction of the amount and extent of ochraceous in the crown of the male, but more nearly approaching *eo*a in coloration; tarsi averaging longer; wing less rounded,—ninth primary often equal to sixth.

Measurements.—Male: wing, 62–65.5 (63.6); tail, 53–56.5 (55.8); bill from base, 13.5–15 (14.2); tarsus, 21.5–23 (22.2). Female: wing, 60.75–62 (61.25); tail, 54.5–58.5 (56.3); bill from base, 15–15.5 (15.2); tarsus, 21–24 (22.5).

Range.—The Bahama Islands. This form appears to be confined to the mangroves.

Specimens examined.—6 ♂; 3 ♀. Andros, Inagua, Elbow Cay, Rail Cay.

When Dr. Chapman described the Bahaman Golden Warbler he considered the Jamaican and Cuban birds identical, and made direct comparison with a small series from the former island. As a matter of fact, *flaviceps*, as would be expected, is much more nearly related to *gundlachi*, from which some specimens are scarcely distinguishable.

The Bahaman Golden Warbler shows a greater tendency towards the production of the gray and white individuals than do any of the other races of *Dendroica petechia*.

***Dendroica petechia cruciana* Sundevall.**

Dendroica petechia b. *cruciana* Sundevall, Öfv. k. Vet. Akad. Förh. Stockholm, 26, 1870, p. 608 (ex ins. St. Croix).

Subspecific characters.—Similar to *D. p. eo*a, but males with a lesser extent of ochraceous on the pileum; upper parts slightly more yellowish, especially on the rump; more heavily streaked beneath.

Measurements.—Male: wing, 62.25–67 (64.4); tail, 50–58 (54.66); bill from base, 14–16 (15.31); tarsus, 20.5–22 (21.35). Female: wing, 55–64 (59.75); tail, 49.5–53.5 (51.5); bill from base, 15–15.5 (15.25); tarsus, 19.5–20 (19.75).

Range.—Islands of Porto Rico, Vieques Culebra and St. Croix.

Specimens examined.—Porto Rico, 2 ♂, 1 ♀; Vieques, 1 ♂; St. Croix, 2 ♂, 1 ♀.

¹Ann. Carn. Mus. 7, Nos. 3 and 4, 1911, pp. 432–433.

It has long been believed that the Golden Warblers from Porto Rico to Antigua, inclusive, belonged to one and the same form to which Sundevall's *bartholemica* was applied, and of which *cruciana* was regarded as a synonym. I was therefore somewhat astonished, after comparison of a long series from the supposed range of *cruciana*, to find that the birds from St. Croix were quite distinct from those of St. Thomas, but identical with those from Porto Rico and Vieques; in fact, it is a much simpler matter to distinguish the birds from Porto Rico and St. Croix from specimens taken on St. Thomas and islands to the southeast than it is to distinguish them from examples from Jamaica.

Wetmore¹ says that in Porto Rico this species is confined entirely to the coastal plain, coming inland along the river courses to the base of the foot-hills, and that while near the coast it is confined mainly to the mangroves, inland, where this tree does not occur, it is found in shade trees about houses, in reeds and clumps of marsh grass, or even in scanty growths of grass and weeds growing on river sand-bars. Its habitat is thus more general than that of any of the preceding forms.

***Dendroica petechia bartholemica* Sundevall.**

Dendroica petechia a. bartholemica Sundevall, Öfv. k. Vet-Akad. Förh. Stockholm, 26, 1870, p. 607, (ex insula St. Barthelemy).

Subspecific characters.—Similar to *D. p. eoa* but smaller; males with pileum browner; under parts more intensely yellow and with streakings heavier and more numerous. Females closely resembling the same sex of *cruciana*, but averaging smaller, especially the bill.

Measurements.—Male: wing, 58.5–65 (61.85); tail, 49.25–57.5 (53.22); bill from base, 13.5–16.25 (14.34); tarsus, 20–22 (20.95). Female: wing, 57–61.5 (59.44); tail, 48.5–55.25 (51.75); bill from base, 13.25–15 (13.9); tarsus, 19–22 (20.53).

Range.—St. Thomas and closely adjacent islands (except St. Croix) southward and eastward to Antigua.

Specimens examined.—St. Thomas: 5 ♂, 3 ♀; Tortola: 3 ♂; Virgin Gorda: 1 ♀; Anegada: 1 ♂, 4 ♀; Anguilla: 5 ♂, 2 ♀; St. Eustatius: 5 ♂, 5 ♀; St. Kitts: 8 ♂, 3 ♀; Nevis: 1 ♂, 2 ♀; Antigua: 2 ♀.

The series of *bartholemica* before me runs very even, the variation in measurement is small and differences of color simply do not exist. Some males show a larger crown patch than others, but this seems to be due partly to age and partly to season, as birds in fresh plumage have the feathers of the pileum tipped with greenish yellow that wears off as the season advances. Some males, too, appear to be a trifle less heavily streaked below than the average. There seems to be no tendency whatever, in this form toward the production of the gray and white individuals, a fact that Mr. Ridgway noted in 1902, and which is further substantiated in the series of over fifty specimens. Moreover, I have seen large numbers of this form in the field, on nearly every island included in the range, and have yet to observe a bird in that plumage.

¹Birds of Porto Rico (Bull. No. 326, U. S. Dept. of Agriculture, 24 Mar. 1916), p. 105.

Like *cruciana*, this form is found outside the mangroves as well as in them; it is of course absent from the forests on the more lofty islands within its range, but is numerous in the clumps of beach grape and manchineel back of the beaches, in the acacia scrub all over the lowlands and in the vicinity of dwellings.

***Dendroica petechia ruficapilla* (Gmelin).**

Motacilla ruficapilla Gmelin, Syst. Nat. I, pt. 2, 1789, p. 971 (Martinique, ex Brisson. Error. I designate Guadeloupe, Lesser Antilles).

Subspecific characters.—Similar to *D. p. bartholemica* but much smaller; adult male with entire crown orange-rufous or rufous-chestnut; adult female with traces of rufous in the crown.

Measurements.—Male: wing, 54–59.5 (57); tail, 44.5–52.5 (49.76); bill from base, 13–14 (13.67); tarsus, 18.75–20.25 (19.61). Female: wing, 52–56 (53.68); tail, 42.5–48.5 (46.32); bill from base, 12.5–13.75 (13.09); tarsus, 17.5–20 (18.48).

Range.—Islands of Guadeloupe and Dominica (and probably Marie Galante).

Specimens examined.—Guadeloupe: 7 ♂, 5 ♀, 3 not sexed; Dominica: 2 ♂, 2 ♀.

Gmelin's *Motacilla ruficapilla* is based on Brisson's "Figuier de la Martinique" (Orn. 3, p. 490, pl. 22, fig. 4). The description given by Brisson might apply almost equally well to an adult female of *Dendroica rufifigula* except that the throat is said to be yellow, whereas in that sex of *rufifigula* it is generally clouded with rufous. In view of this, and bearing in mind the frequent transposition of specimens and type-localities by early writers, it seems best to correct the original type-locality to Guadeloupe and to retain the well-established name.

In measuring birds from the two islands, I find, just as Ridgway did, that the Dominica birds average larger. I have used entirely different material from Ridgway's, all the specimens I have examined having been collected within the last twenty years. However, the four birds from Dominica are all in fresh plumage, while those from Guadeloupe are in worn summer dress. I believe that a series of comparable specimens would show no appreciable difference in size.

D. d. ruficapilla has been considered as a species distinct from the forms already discussed, but since the differences are entirely those of degree, *bartholemica* being in a sense an intermediate form connecting it with the Greater Antillean races, I see no reason for maintaining its specific distinctness.

According to Noble,¹ on Guadeloupe this bird is common about the mangroves, plantations and sparsely wooded hills up to 2000 feet.

***Dendroica petechia petechia* (Linné).**

Motacilla petechia Linné, Syst. Nat. ed. 12, 1, 1766, p. 234 (Habitat in America septentrionali = Error. Barbados, Lesser Antilles).

¹Bull. M. C. Z. 60, No. 10, 1916, pp. 391–392.

Dendroica capitalis Lawrence, Proc. Ac. Nat. Sci. Phila. 20, Dec. 1868, p. 359. (Barbados, Lesser Antilles).

Dendroica petechia c. barbadensis Sundevall, Öfv. k. Vet. Akad. Förh. Stockholm, 26, 1870, p. 608.

Subspecific characters.—Similar to *D. p. ruficapilla*, but with longer bill; males with the crown and forehead chestnut, sharply defined from the yellow lores and superciliary stripe.

Measurements.—Male: wing, 54–59 (56.75); tail, 48.5–52 (50); bill from base, 14–14.75 (14.4); tarsus, 18.5–19.75 (19.1). Female: wing, 55–56 (55.3); tail, 46.5–52 (49); bill from base, 14–14.5 (14.2); tarsus, 17.5–18.5 (18).

Range.—Island of Barbados, West Indies.

Specimens examined.—10 ♂, 3 ♀.

As has been pointed out elsewhere in this paper, *Motacilla petechia* Linné, based on Edwards, cannot be applied to the Golden Warbler of Jamaica, but certainly belongs to the Barbados bird. While such a substitution of names is to be regretted, there is no reason why so palpable an error of nomenclature which has extended over the better part of three generations, should be perpetuated any longer.

According to Clark¹ this Warbler is common on Barbados, especially about pastures in which grow clumps of seaside grapes.

***Dendroica petechia alsiosa* Peters.**

Dendroica petechia alsiosa Peters, Proc. N. E. Zoöl. Club, 9, 17 Feb. 1926, p. 41 (Prune Island, east of Union Id. Grenadines).

Subspecific characters.—Similar to *D. p. ruficapilla*, but slightly larger; bill stouter and more decurved; adult male with the forehead golden yellow continuous with the lores (instead of the orange-rufous of the crown extending to the base of the bill).

Measurements.—Male: wing, 60.5–63 (61.9); tail, 50.5–53.5 (52); bill from base, 14–14.75 (14.4); tarsus, 19.5–20.5 (20.2). Female: wing, 58.5; tail, 48.5; bill from base, 14; tarsus, 20.25.

Range.—Grenada and the Grenadines:—Carriacou, Union and Prune. Confined to the Mangroves.

Specimens examined.—Carriacou, Grenadines: 4 ♂, 1 ♀; Prune Id. Grenadines: 1 ♂.

Clark² was the first to discover the presence of a resident form of the Golden Warbler on the islands south of St. Vincent, but, because of a lack of comparable material, he did not recognize it as distinct. It is in reality an isolated colony most nearly related to *D. p. ruficapilla*, but separated from that race by three islands,—Martinique, St. Lucia and St. Vincent, on which no form of *Dendroica petechia* occurs, while the form inhabiting Barbados has its nearest affinities with representatives from the islands off the north coast of South America.

¹Proc. Boston Soc. Nat. Hist. 32, No. 7, Oct. 1905, pp. 294–295.

²Proc. Boston Soc. Nat. Hist. 32, No. 7, Oct. 1905, p. 294.

***Dendroica petechia rufopileata* Ridgway.**

Dendroica rufopileata Ridgway, Proc. U. S. Nat. Mus. 7, 29 July 1884, p. 173 (Curaçao).

Subspecific characters.—Similar to *D. p. petechia*, but averaging larger, with smaller bill; above more yellowish; wing edgings broader, paler yellow.

Measurements.—Male: wing, 58.5–61 (59.5); tail, 47–53.5 (50.1); bill from base, 13.5–14 (13.8); tarsus, 18.5–20 (19.5). Female: wing, 53–57 (55); tail, 46.5–52.5 (49.7); bill from base, 13.5–13.75 (13.6); tarsus, 17.5–19 (18.2).

Range.—Islands off the north coast of Venezuela: Aruba, Curaçao, Bonaire, Isla de Aves, Orchilla, Tortuga, Los Testigos, (Margarita Island?).

Specimens examined.—Aruba: 1 ♂; Curaçao: 2 ♂, 2 ♀; Bonaire: 1 ♂, 1 ♀.

This form bears a very close resemblance to *D. p. petechia*, and it is sometimes difficult to separate examples of one race from those of the other. Cory¹ discusses the advisability of separating the Golden Warblers from Los Testigos, Blanquilla and Tortuga, but in view of the very close similarity between the race found on Barbados and the one on the islands off the north coast of Venezuela, I do not see how an intermediate form could be maintained. Hartert² found *rufopileata* common on Curaçao and Bonaire where "it frequents open bushy places as well as mangroves."

***Dendroica petechia obscura* Cory.**

Dendroica ruficapilla obscura Cory, Field Mus. Nat. Hist. Publ. Orn. Ser. I, No. 5, 25 Oct. 1909, p. 217 (Los Roques).

Subspecific characters.—Similar to *Dendroica p. petechia* but larger.

Measurements.—Male: wing, 62.5; tail, 54; bill from base, 13.75; tarsus, 19.25. Female: wing, 58; tail, 51; bill from base, 14; tarsus, 20.25.

Range.—Los Roques Island, Venezuela.

Specimens examined.—Los Roques Id., 1 ♂, 1 ♀.

This appears to be a fairly well defined form occupying a small group of cays.

***Dendroica petechia flava* Cory.**

Dendroica flava Cory, Auk, 4, July 1887, p. 179. Separately paged reprints issued 28 May 1887, p. 3 (St. Andrews Id., Caribbean Sea).

Subspecific characters.—Similar to *D. p. eoa* but smaller; males more olive-green above; wing edgings narrower and more greenish; below very heavily and densely streaked.

Measurements.—Male: wing, 59–62 (60.6); tail, 55.5–58 (56.9); bill from base, 12.75–13.5 (13.1); tarsus, 19–20.25 (19.7). Female: wing, 58; tail, 57; bill, from base, 12.5; tarsus, 19.7.

¹Field Mus. Nat. Hist. Publ. Orn. Ser. 1, No. 5, 25 Oct. 1909, pp. 218–219.

²Ibis (6), 5, 1893, p. 312.

Specimens examined.—4 ♂, 1 ♀, including the type, all from the Field Museum.

Range.—St. Andrews Island, Caribbean Sea.

Remarks.—The St. Andrews Golden Warbler is a very distinct race whose nearest relationships are obscure. While I have made direct comparison with the Jamaican Golden Warbler by reason of the similarity of the coloration of the upper parts, the males differ from all other forms except *peruviana*, in having the under parts much more heavily and densely streaked with rufous. This form has a tendency toward the production of individuals in which the yellows and olive-greens become paler, in this direction approaching some of the Greater Antillean races.

***Dendroica petechia rufivertex* Ridgway.**

Dendroica petechia rufivertex Ridgway, Proc. Biol. Soc. Wash. 3, 1885, p. 21; separately paged advance copies, 26 Feb. 1885, p. 1 (Cozumel Island, Yucatan).

Subspecific characters.—Similar to *D. p. ruficapilla*, but averaging slightly larger; male with under parts more heavily streaked.

Measurements.—(according to Ridgway, Bds. No. and Mid. Am. pt. 2, 190, p. 524). Male: wing, 56–60 (58.2); tail, 44.48 (46.6); exposed culmen, 10–11 (10.8); tarsus, 19–21 (20). Female: wing, 55–56 (55.6); tail, 45–47 (45.8); exposed culmen, 10–11 (10.5); tarsus, 18–21 (20).

Specimens examined.—Cozumel Island: 1 ♂.

Remarks.—The occurrence of a Golden Warbler on Cozumel Island, within sight of the coast of Yucatan, is correlated with the presence there of several other representative species of birds that are otherwise characteristically West Indian in their distribution.

Superficially this form appears to be more closely related to *D. p. ruficapilla* than to any of the races occupying some of the less distant islands. It is more probable, however, that its resemblance to *ruficapilla* is merely fortuitous, and is the result of parallelism or convergence.

***Dendroica petechia aureola* (Gould).**

Sylvicola aureola Gould, Zoöl. Voy. "Beagle," 3. birds, pl. 28, July 1839; p. 86, Nov. 1839 (Galapagos Islands).

Dendroica petechia f. *gallapagensis* Sundevall, Öfv. k. Vet-Akad. Förh. Stockholm, 26, 1870, p. 608 (James, Charles and Chatham Islands, Galapagos Archipelago).

Subspecific characters.—Similar to *D. p. eoa*, but tail shorter; darker olive-green above (approaching *gundlachi* in this respect). Males with pileum more nearly rufous chestnut, less ochraceous.

Measurements.—Male: wing, 63–68 (65.5); tail, 51–57.5 (53.7); bill from base, 14.25–15.75 (15.1); tarsus, 20.5–22 (21.1). Female: wing, 60–63 (61.3); tail, 48–54.5 (50.8); bill from base, 14.75–16 (15.3); tarsus, 20–20.5 (20.15).

Range.—The Galapagos Archipelago; Cocos Island?

Specimens examined.—Albemarle, 1 ♂, 1 ♀; Charles, 1 ♀; Chatham, 2 ♂, 1 ♀; Indefatigable, 2 ♂, 1 ♀; James, 1 ♀; Wenman, 1 ♂.

Remarks.—The series of eleven skins of the Galapagos Golden Warbler before me is rather unsatisfactory, owing to its unevenness as regards distribution and plumage: some of the birds are adults, more or less worn, some immature but fresh, while four are in the gray and white plumage. It is impossible to say whether a good representative series from all the islands in the group would show further need of subdivision. I have not seen specimens from Cocos Island.

***Dendroica petechia peruviana* Sundevall.**

Dendroica petechia g. *peruviana* Sundevall, Öfv. k. Vet-Akad. Förh. Stockholm, 26, 1870, p. 609 (Callao, Peru; Guayaquil, and Puna Island, Ecuador).

Dendroica petechia h. *aequatorialis* Sundevall, *op. cit.* (Guayaquil).

Subspecific characters.—Similar to *D. p. aureola*, but yellow much more brilliant. Males heavily and densely streaked below, throat sometimes clouded with rufous brown and in such cases this color extends onto the cheeks and auricular region.

Measurements.—Male: wing, 65.5–67 (66.25); tail, 55–57 (56.25); bill from base, 14.5–15 (14.75); tarsus, 19.5–21 (20.25). Female: wing, 62–64 (63); tail, 49.5–52 (50.7); bill from base, 14–15.5 (15.8); tarsus, 20–21 (20.5).

Range.—From Tumaco, Columbia, south along the coast of Ecuador and possibly to Callao, Peru. Confined to the mangroves (Chapman).

Specimens examined.—Colombia: Narino, Tumaco, 1 ♂, 1 ♀. Ecuador: Esmeraldas, 1 ♂; coast of Manavi, 1 ♀; Prov. del Oro, Isla de Jambeli, 2 ♂, 1 ♀. (All from the American Museum of Natural History.)

Remarks.—As in most of the races of *Dendroica petechia*, the males of this form offer the best diagnostic characters. It is the most heavily streaked of any of the subspecies and is recognizable almost at a glance.

As far as I can ascertain *peruviana* is the name by which specimens of the Golden Warbler from the west coast of South America must be known. Dr. Chapman has pointed out¹ the characters in which these examples differ from the form inhabiting the Galapagos Islands, listing them as *aequatorialis*, quite rightly ignoring the name *peruviana* in the absence of specimens from Peru. Still more recently, however, Count Gyldenstolpe, in an account of the types in the Royal Natural History Museum of Stockholm,² expresses the opinion that *Dendroica petechia aequatorialis* Sund. is identical with *Dendroica erithachorides* Baird, and synonymizes *peruviana* with *aureola*, pointing out at the same time that the type specimen of *peruviana* from Callao differs from Galapagan examples in having broader and better defined chestnut streaks on the breast. Therefore, it appears practically certain that *peruviana* is the name for the Golden Warbler occurring on the west coast of South America.

It seems strange that if the type of *aequatorialis* really came from Guayaquil that *Dendroica erithachorides* has not been met with by recent collectors in Ecuador and southwestern Colombia.

¹Bull. Am. Mus. Nat. Hist. 36, 1917, p. 545, and 55, 1926, p. 594.

²Ark. för Zool. K. Sv. Vet. Akad. band 19 A. No. 1. 1926, p. 30–31.



Peters, James Lee. 1927. "A revision of the golden warblers, *Dendroica petechia* (Linne)." *Proceedings of the Biological Society of Washington* 40, 31–41.

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