

No. 5.— *Additional Notes on the Birds of the Almirante Bay
Region of Panama*

BY JAMES L. PETERS

IN the winter of 1926 Mr. Frederic H. Kennard visited Almirante on a collecting trip of some six weeks' (middle of February to end of March) duration, obtaining 127 species of birds. The collection was reported upon by Kennard and Peters (Proc. Boston Soc. Nat. Hist., 38, no. 10, 26 January 1928, p. 443-465). In the summer of 1927 R. R. Benson also visited this region on behalf of the American Museum of Natural History, and his collection was reported upon very briefly by Griscom (Amer. Mus. Novit., no. 293, 12 January 1928, pp. 1-4).

Before leaving Almirante, Mr. Kennard trained H. Wedel in the art of preparing bird skins — good ones — and from June, 1926 until the beginning of 1929, when Mr. Wedel left for other fields, he had sent in over 1,000 skins, representing 272 species.

The bulk of these birds were generously presented to the Museum of Comparative Zoölogy by Mr. Kennard, and form one of the very best collections ever made in a given region in the American tropics. It is particularly interesting since it is the result of practically two and one-half years' steady work at all seasons, and shows the changes in plumage due to wear and moult not usually found in neotropical collections; it also furnishes some interesting data on the arrival and departure of North American migrants.

Wedel collected chiefly in the region about Almirante at the localities visited by Mr. Kennard at Chiriquicito and, like Mr. Kennard, also made a trip into the mountains reached by the Boquete trail. Several visits were made to the islands enclosing Almirante Bay. Another locality was Cricamola, a peninsula extending into the eastern part of the Chiriqui Lagoon. Wedel's collections emphasize what was already known, that the birds of the Almirante Bay and northern Chiriqui Lagoon regions are the same as those of the Talamanca Valley in south-eastern Costa Rica, but his results at Cricamola show what was not known previously, that this point marks the westward extension of many of the forms not known definitely hitherto beyond the Canal Zone, or in some cases the Rio Calovevora.

Griscom's paper *antea* lists the forms collected by Benson and recorded for the first time from Panama; practically all these birds with a few additions and some omissions were also recorded by Kennard and Peters in their paper fourteen days later.

Kennard and Peters made brief mention of the localities at which Kennard collected but, since Wedel worked at other places besides these, it may be well to append a short glossary, together with a few lines of general description of the region. For much of this information I am indebted to Mr. H. S. Blair, for many years division manager for the United Fruit Company at Almirante.

Most of the suitable land in the Caribbean lowlands in the vicinity of Almirante Bay and the Chiriqui Lagoon had been largely cleared, and planted to bananas by 1900, and for a good many years remained in a state of cultivation. The advent of the so-called "Panama disease" among the bananas, however, brought about a gradual abandonment of the banana lands. This abandonment is now virtually complete in the lands bordering on the Chiriqui Lagoon, though the fruit company properties in the Almirante section and westward toward the Sixaola have been planted to cacao.

A few miles back from the lowlands the hills rise sharply, attaining an elevation of about 7,500 feet on the continental divide, twenty miles from the Caribbean coast. The mountains are covered with the original heavy rain forest and are still absolutely untouched and unspoiled.

The rainfall of about 140 inches annually is well distributed throughout the year. There is no real dry season, but a period of "least rainfall" exists from January to March inclusive.

Almirante. The United Fruit Company headquarters situated on the western shore of Almirante Bay.

Banana River. A small stream of local origin emptying into Almirante Bay three or four miles north of Almirante.

Bocas del Toro. A Panamanian town of a population of about 3,000, capital of the province of Bocas del Toro, situated on the southeastern extremity of the Isla Colon, one of the islands enclosing Almirante Bay.

Boquete Trail. The overland trail from the Chiriqui Lagoon to Boquete on the Pacific slope. It begins at Chiriqui Grande, crosses the Guaruma River a few times and winds up the mountains, crossing at an elevation of about 6,000 feet some twelve or fifteen miles east of Boquete.

Buena Vista. A slight, cleared eminence at an elevation of about 1,200 feet at the northern end of the Boquete trail. A usual camp site for persons using the trail.

Changuinola. A station on the fruit company railway where it crosses the Changuinola River about twelve miles west of Almirante.

Changuinola Canal. A canal about six miles long paralleling the coast

a very short distance inland and extending from the mouth of the Changuinola River to Almirante Bay. It was originally dug to provide a safe waterway to transport bananas from the farms in the lower Changuinola Valley, but is no longer in use, though kept open by a fairly strong current. It passes through swamps for the greater part of its length. A large number of the water birds collected by Wedel were taken along this canal.

Chiriquicito. The almost forgotten terminus of a railway that ran three miles inland from Chiriqui Grande to the Guaruma River.

Chiriqui Grande. A fishing village (formerly a small banana shipping point) on the southern shore of the Chiriqui Lagoon.

Cedar Creek. A small tidal estuary at Almirante. It appears on few maps and then under the name of Quebrada Cedra. A few birds labeled Cider(*sic*) Creek by Wedel were doubtless taken on its banks.

Cricamola. A collection of huts at the mouth of the Rio Cricamola, southeastern end of the Chiriqui Lagoon. Wedel visited this place several times with interesting results.

Fruitdale. A settlement practically adjoining Almirante and synonymous with it. Wedel labeled many birds as coming from Fruitdale, but these have been listed as though taken at Almirante.

Guabo. Apparently has no existence as a place; Mr. Blair has never heard of it. The birds Wedel labeled Guabo appear to have been taken on the banks of the Rio Guabo, an affluent of the Rio Guaruma near Chiriquicito.

Isla Grande. An island in the Sixaola River near Victoria, about twenty miles northwest of Almirante.

Manati River. A short stream flowing through the swamps bordering the southern shore of the Chiriqui Lagoon between Chiriqui Grande and Cricamola.

Quebrada Nigua. A creek flowing into the bay about a mile and a half west of Almirante.

Western River. (Sometimes appearing on maps as Rio Occidente.) A small river emptying into the west side of Almirante Bay.

Shepherd Island. An island about a mile and a half long in the southwestern corner of Almirante Bay. Wedel took a few birds there.

Swan Key. One of the numerous islets enclosing the eastern side of Almirante Bay. It is not distinguished on maps available, but is said to lie between Isla Bastimentos and Isla Popa. It is noted chiefly as having the only known breeding colony of red-billed tropic birds in Panamanian waters.

The following annotated list includes all the species collected in the

Chiriqui Lagoon region by Kennard and Smith as well as Wedel. Mr. Ludlow Griscom has very generously turned over to me the manuscript catalogues of the collections made by R. R. Benson at Bocas del Toro and Almirante and the species taken by him not secured by the other collectors have also been included. Species taken by Wedel, as well as Kennard and Smith, are listed as additional specimens, but this notation is omitted when the latter collectors did not secure the bird. To avoid repetition but for the sake of completeness only, a nominal list of species collected by Kennard and Smith, but not sent in by Wedel, is appended at the end of the annotated list.

TINAMIDAE

TINAMUS MAJOR FUSCIPENNIS Salvadori

Additional specimens. — Boquete trail: 1 ♀ (1,900 feet), 22 March 1928. Cricamola: 1 ♀, 21 August 1928.

CRYPTURELLUS SOUI MODESTUS (Cabanis)

Zegla (near Almirante): 1 ♂, 16 December 1927. Guabo: 1 ♀, 11 April 1928.

These birds are both very dark above, the color of the upper parts nearest to *C. S. nigriceps* Chapman of eastern Ecuador. An example in the American Museum of Natural History collected at Almirante by Benson, 27 May 1927, is also dark. A comparison with topotypical *modestus* Cabanis (Journ. für Orn., 1869, p. 212, type from eastern Costa Rica, collected by Von Frantzius) being desirable, I borrowed four such examples from the Carnegie Museum (Carillo 1 ♂; Guapiles 1 ♂; Tucurrique 1 ♀; Cuabre, Talamanca 1 ♂). In the Museum of Comparative Zoölogy there are 8 ♂ and 6 ♀ from the Terrabá Valley and 4 ♂ and 1 ♀ from Chiriqui. A critical study of this series shows that the range of individual variation is so great that the birds from Costa Rica and western Panama are best regarded, for the present at least, as belonging to one and the same race.

Crypturellus soui is a species not only susceptible to environmental conditions, but some of the races have two color phases not definitely correlated with age or sex. In the "red phase" the underparts are uniform reddish brown (in some subspecies washed with gray on chest and flanks) and the upper parts, especially the wing coverts, washed with rusty or cinnamomeous. The "brown phase" birds are brownish gray or grayish-brown with a rusty tinge in some individuals. Of the

Central American races, *meserythrus* is almost always in the red phase; *panamensis* is about evenly divided between brown and red, while in *modestus* the full development of the red phase seems to be aborted, but traces are discernible in some individuals in the form of a cinnamonous wash.

CRACIDAE

CRAX GLOBICERA GLOBICERA (Linné)

Almirante: 1 ♀, 16 February 1929.

PENELOPE CRISTATA CRISTATA (Linné)

Additional specimen.—Guabo: 1 ♀, 14 April 1928.

ORTALIS CINEREICEPS CINEREICEPS (Gray)

Additional specimens.—Guabo: 5 ♂, 2 ♀, 5–11 April 1928. Cricamola: 1 ♂, 18 September 1927; 2 ♀, 23 July; 1 ♀, 23 August; 1 ♀, 29 August 1928.

The series from the Chiriqui Lagoon, as well as specimens from the Talamanca Valley, are the same as essentially topotypical material from the Canal Zone.

In naming *O. c. saturatus* (Amer. Mus. Novit., no. 25, 1921, p. 1) Messrs. Miller and Griscom wholly overlooked *Ortalis frantzii* (Cabanis) (Journ. für Orn., 1869, p. 211, eastern Costa Rica). Although *saturatus* was described from Nicaragua, its sponsors included eastern Costa Rica in its range on the basis of actual specimens, thus it appears that the Chachalaca of the Caribbean lowlands of eastern Nicaragua and northeastern Costa Rica should be called *Ortalis cinereiceps frantzii* (Cabanis).

ODONTOPHORIDAE

ODONTOPHORUS MELANOTUS COLORATUS Griscom

This well-marked form was originally described from Guaval (1,500 feet) on the Rio Calovevora. Wedel sent in 1 ♂ and 2 not sexed, Boquete trail (1,500–3,500 feet), 21–30 March 1928; 1, not sexed, Guabo, 10 April 1928; 1 ♂, Cricamola, 15 February 1928.

Except that these birds all have the dusky tips to the crest feathers, they agree with *coloratus*; a larger series is necessary to confirm the significance of the presence or absence of this marking.

Neither Kennard nor Benson found this forest quail.

COLUMBIDAE

COLUMBA SPECIOSA Gmelin

Additional specimens.—Almirante: 1 ♂, 20 November 1927. Western River: 1 ♂, 2 June 1928. Cricamola: 2 ♂, 1 ♀, 19 August 1928.

While there is a great deal of variation in this pigeon, it is all individual and not geographical. In some birds the lustre is greenish and in others purplish, the central portion of the breast and neck is sometimes white, sometimes rusty, sometimes both colors are present; females are duller than males.

COLUMBA RUFINA PALLIDICRISSA Chubb

Additional specimens.—Changuinola: 2 ♂, 27 January 1929. Almirante: 1 ♀, 21 August 1927; 2 ♂, 18 December 1928. Western River: 1 ♂, 2 June 1928. Shepherd Island: 1 ♂, 1 ♀, 17 May 1928. Gerchow Key: 1 not sexed, 5 July 1928.

COLUMBA NIGRIROSTRIS Sclater

Additional specimens.—Almirante (and vicinity): 1 ♂, 10 June 1927; 4 ♂, 16 May to 17 July 1928. Guabo: 1 ♂, 5 April 1928. Cricamola: 1 ♂, 13 February 1928; 2 ♂, 11–25 August 1928.

Benson also secured this species at Almirante.

COLUMBIGALLINA RUFIPENNIS RUFIPENNIS (Bonaparte)

Almirante and vicinity: 1 ♂, 3 May; 1 ♂, 16 December 1927. Changuinola: 1 ♂, 1 ♀, 2 December 1927; 1 ♂, 21 October 1928. Isla Grande: 1 ♀, 23 June 1928.

Also collected by Benson at Almirante.

CLARAVIS PRETIOSA PRETIOSA (Ferrari-Perez)

Additional specimens.—Changuinola: 1 ♂, 29 April. Almirante: 1 ♂, 9 November 1928.

LEPTOTILA PLUMBEICEPS NOTIUS subsp. nov.

Type.—No. 137,625 Museum of Comparative Zoölogy, adult male from Almirante, Panama. Collected 15 November 1928 by H. Wedel (orig. no. 1,034).

Characters.—Similar to *L. p. plumbeiceps* (Sclater and Salvin) but deeper olive brown above; gray of head darker and bluer; upper parts

more extensively iridescent. Below deeper and clearer vinaceous; malar and suborbital region buffy instead of brownish gray.

In addition to the type Wedel sent in another specimen, a male, taken at Changuinola, 30 September 1928. Benson collected a ♀ at Bocas del Toro, 23 September 1927.

L. p. malae Griscom appears to be nearer to *L. p. battyi* (Rothschild) of Coiba Island, but is more olive and less reddish brown above. Like *battyi*, *malae* is decidedly washed below with vinaceous plumbeous.

Material examined

L. p. plumbeiceps. Mexico: southern Vera Cruz 1 ♂. Honduras: Ceiba 1 ♂, 2 ♀; Tela 1 ♀. Costa Rica: Bolson 2 ♂.

L. p. malae. Panama: Cape Mala 1 ♀ (the type).¹

L. p. battyi. Coiba Island: 1 ♂,¹ 2 ♀.¹

L. p. notius. 2 ♂, 1 ♀.¹

LEPTOTILA CASSINI CASSINI (Lawrence)

Almirante and vicinity: 1 ♂, 2 November 1927; 1 ♂, 10 November 1928. Changuinola: 1 ♂, 1 ♀, 1 not sexed, 4 October to 9 December 1928. Guabo: 2 ♂, 3 ♀, 10–25 April 1928. Cricamola: 1 ♂, 14 August 1928.

OREOPELIA MONTANA (Linné)

Changuinola: 1 ♀, 31 December 1928. Boquete trail: 1 ♂, 1 April. Guabo: 1 ♂, 5 April 1928.

Also sent in by Benson from Almirante.

OREOPELIA VERAGUENSIS (Lawrence)

Cricamola: 1 ♂, 21 August 1928.

OREOPELIA LAWRENCII LAWRENCII Salvin

Boquete trail: 3 ♂, 2 ♀, 17–30 March 1928 (elevations from 1,500 to 3,500 feet).

This species was originally described from specimens collected at Calobre, Veraguas, by Arcé. It has since been one of the very rarest of quail doves, known besides the type locality only from a few scattered stations in Costa Rica.

In addition to the five specimens listed here, there are in the Museum

¹ Specimens in the American Museum examined.

of Comparative Zoölogy an adult ♂ and an immature ♂ from Tenorio, and an adult ♀ from Carriblanco de Sarapiquí, all in northwestern Costa Rica. I have also been privileged to examine an immature ♂ from the Dwight collection, taken 16 February 1925 by Austin Paul Smith at Guacimo, eastern Costa Rica. To the best of my knowledge, besides these nine specimens, the only other example in this country is a ♂ in the Carnegie Museum, collected by M. A. Carriker, Jr., 20 August 1905, at Carillo, eastern Costa Rica; this bird I have not seen.

The three birds from northwestern Costa Rica represent a very different form from the one inhabiting the mountains above the Chiriqui Lagoon and in eastern Costa Rica. In the absence of strictly topotypical material of *lawrencii* I have made comparison of the two series with the description of the bird in the Catalogue of Birds of the British Museum founded entirely on Veraguas types, and with the excellent plate in the Biologia Centrali-Americana (plate 69). The birds previously enumerated as from the Caribbean slope are certainly typical *lawrencii*, and the bird of northwestern Costa Rica I name

OREOPELIA LAWRENCII LENTIPES subsp. nov.

Type.—Adult ♂, no. 121,126 Museum of Comparative Zoölogy, from Tenorio, Costa Rica, collected 11 February 1908 by C. F. Underwood.

Characters.—Similar to *O. l. lawrencii* but much paler; upper interscapular region "light brownish olive" rather than much browner, less greenish olive. Below noticeably paler; breast lighter and purer gray, and washed with greenish only on the sides; flanks and undertail coverts paler. Size slightly larger.

O. l. lawrencii ♂, wing 137–142 (138); ♀ wing, 139–141 (140).

O. l. lentipes ♂, wing 144–146 (145); ♀ wing 143.

RALLIDAE

ARAMIDES AXILLARIS Lawrence

Quebrada Nigua: 1 ad. ♀, 1 imm. ♀, 14, 15 January 1929.

In addition to these two specimens, I have examined one from the Santa Marta region and two from Costa Rica in the Museum of Comparative Zoölogy, as well as the type of the species from Colombia, a pair of adults from Nicaragua, and an adult and two immature from western Ecuador in the American Museum of Natural History. There

does not appear to be any geographic variation throughout this extensive range.

The species has been recorded from as far north as near San Blas, Nayarit, Mexico (McClellan, Proc. Cal. Acad. Sci. (4), **16**, no. 1, 1927, p. 11.

ARAMIDES CAJANEA CAJANEA (P. L. S. Müller)

Additional specimens.— 18 both sexes, adults and immature, from practically every collecting locality in the region.

AMAUROLIMNAS CONCOLOR GUATEMALENSIS (Lawrence)

Almirante: an ad. ♀, 5 August 1927. The measurements are: wing 110, culmen 25.5.

PORZANA CAROLINA (Linné)

Almirante and Changuinola: 4 ♀, 25 October and 4 November 1926; 29 October 1927; 17 October 1928.

CRECISCUS CINEREICEPS (Lawrence)

Additional specimens.— Almirante and vicinity: 1 ♀, 25 December 1928; 1 ♂, 2 January 1929. Changuinola: 1 ♂, 15 October 1927; 1 ♂, 21 January 1929. Guabo: 1 ♂, 1 ♀, 15 April 1928.

Benson sent in eight adults and two juveniles. Griscom (Amer. Mus. Novit., no. 280, 1927, p. 2 [in text]) records *C. cinereiceps* from the Rio Calovevora; this appears to be its eastern limit in Panama.

GALLINULA CHLOROPUS CACHINNANS Bangs

Additional specimens.— Changuinola: 1 ♀, 28 October 1926; 1 imm., 17 November 1927; 1 ♀, 2 December 1927; 2 ♂, 14 July 1928.

Benson sent in one adult.

Kennard and Peters previously referred a specimen taken in February to this race. The two males collected on 14 July are obviously resident birds, both fully adult, and with swollen frontal shield. I cannot distinguish them from North American examples of the same sex and season, and without the slightest hesitation sink *Gallinula chloropus centralis* Miller and Griscom as a synonym.

IONORNIS MARTINICA (Linné)

Additional specimens.— Changuinola: 1 ♂, 28 October; 1 ♀, 24 November 1926; 1 ♂, 28 November 1927; 1 ♀, 5 November 1928. Banana River: 1 ♂,

15 November 1926. Sixaola, Elena: 1 ♀, 15 January 1927. Cricamola: 1, not sexed, 12 February 1928.

FULICA AMERICANA AMERICANA Gmelin

Almirante: 1 imm. ♀, 14 November 1926. Changuinola: 2 ♂, 1 ♀, 17-25 November 1927.

These birds are not different from North American examples.

HELIORNITHIDAE

HELIORNIS FULICA Boddaert

The fin-foot appears to be a locally common resident. Wedel sent in 1 ♂, 7 ♀, all taken on the Changuinola River and Changuinola Canal between 13 October 1927 and 14 July 1928.

Of the sixteen specimens of this species in the Museum of Comparative Zoölogy, only four are males. It would be of interest to ascertain whether this disparity in sex ratio is constant.

COLYMBIDAE

POLIOCEPHALUS DOMINICUS BRACHYPTERUS (Chapman)

Additional specimens.—Changuinola River and Canal: 1 ♂, 6 ♀, 1 not sexed, 22 November 1926 to 14 July 1928.

PODILYMBUS PODICEPS PODICEPS (Linné)

Almirante: 1 ♀, 22 December 1927.

This specimen, obviously a bird of the year, can be matched exactly by winter examples from Florida.

LARIDAE

CHLIDONIAS NIGRA SURINAMENSIS (Gmelin)

Cricamola: 1 ♀, 19 September 1927.

CHARADRIIDAE

SQUATAROLA SQUATAROLA (Linné)

Changuinola: 2 ♀, 28 October 1926; 8 November 1927.

CHARADRIUS VOCIFERUS VOCIFERUS Linné

Columbus Island: 1 ♂, 30 January 1927. Almirante: 1 ♂, 1 not sexed, 24 November 1927. Changuinola: 1 ♀, 26 November 1927. Banana River: 1 ♀, 8 December 1927.

SCOLOPACIDAE

CATOPTROPHORUS SEMIPALMATUS INORNATUS (Brewster)

Cricamola: 1 ♀, 19 September 1927.

This specimen is a typical example of the western race of the willet. Griscom (Amer. Mus. Novit., no. 282, 1927, p. 3) records this subspecies from the Pacific coast of Panama, but it has never been taken before on the Caribbean slope.

TOTANUS FLAVIPES (Gmelin)

Changuinola: 1 ♀, 2 December 1927.

ACTITIS MACULARIA (Linné)

Fruitdale: 1 ♂, 1 ♀, 29 August; 1 not sexed, 31 August 1927.

The bird shot on 31 August is an adult that has not yet begun to moult. The last of August is not an unusual date of arrival of Spotted Sandpipers from the north even as far south as Panama. Noble collected it in northwestern Peru, 27 August 1916, and Benson took it in Darien 25 July 1928.

CAPELLA GALLINAGO DELICATA (Ord)

Banana River: 1 ♀, 6 December 1927. Almirante: 1 ♂, 16 November 1928.

PARRIDAE

JACANA SPINOSA SPINOSA (Linné)

Additional specimens.—Changuinola River: 1 ♀, 27 May; 1 ♂, 26 November; 1 not sexed, 2 December 1927.

EURYPYGIDAE

EURYPYGA MAJOR MAJOR Hartlaub

Additional specimens.—Cricamola: 1 ♂, 11 September 1927; 1 ♀, 11 February 1928. Guabo, 1 ♀, 14 April 1928.

THRESKIORNITHIDAE

MESEMBRINIBIS CAYENNENSIS (Gmelin)

Changuinola Canal: 1 ♂, 8 November; 1 ♂, 9 December; 1 ♀, 10 December.
Chiriquicito: 1 ♀, 18 April 1928.

As far as I am aware this bird has never been previously recorded west of the Canal Zone.

CICONIIDAE

MYCTERIA AMERICANA Linné

Almirante: 1 ♂, 25 April 1928.

JABIRU MYCTERIA (Lichtenstein)

Cricamola: 1 ♂, 11 August 1927.

ARDEIDAE

ARDEA HERODIAS HERODIAS Linné

Changuinola River: 1 imm. ♀, 31 October 1927.

Oberholser (Proc. U. S. Nat. Mus., **43**, 1912, p. 555) resurrects Wagler's *Ardea lessonii* and applies it to the breeding birds of Mexico, Central America and northern South America. I am not prepared at this time to go into the question of a breeding race of the Great Blue Heron in central Mexico, but there is no evidence at all to show that the bird breeds anywhere in Central America, nor in northern South America. I regard Great Blue Herons from Central America as North American migrants, and consider the occasional summer records as relating to stragglers and not to any resident form.

The average measurements given by Dr. Oberholser for the females of *A. h. herodias*, *A. h. lessonii*, compared with the specimen from Changuinola are tabulated herewith:

	<i>herodias</i>	<i>lessonii</i>	M. C. Z. 137,088
Wing	451.2	455.7	461
Tail	173.7	177	187
Bill	137	125.7	129
Tarsus	175	188.5	170
Middle toe	102	100	103

Immature *herodias* can be distinguished from *A. cocoi* of the corresponding plumage by rusty instead of white tibiae, more rusty on the bend of the wing and underwing coverts, and generally darker, more brownish gray, coloration above.

FLORIDA CAERULEA (Linné)

Additional specimen.—Almirante: 1 ♂, 30 April 1927.

HYDRANASSA TRICOLOR RUFICOLLIS (Gosse)

Almirante: 1 ♀, 17 December 1926.

NYCTANASSA VIOLACEA VIOLACEA (Linné)

Almirante: 2 ♀, 19 December 1926. Bocas del Toro: 1, not sexed, 6 November 1927. Changuinola: 1 ♀, 21 January 1929.

COCHLEARIIUS COCHLEARIA PANAMENSIS Griscom

Fruitdale: 1 ♂, 14 November 1928. Changuinola: 1 ♂, 1 ♀, 29 November 1928.

BUTORIDES VIRESCENS MACULATUS (Boddaert)

The series of green herons from Almirante Bay, including those brought back by Kennard and Smith (previously identified as *B. v. virescens*) consists of 16 specimens; 10 adults and 6 immature. The most striking thing about this series is the large proportion of erythristic or melanistic individuals, no less than five adults and two immature being thus marked. The coloration in these cases is much as in normal examples, except that the maroon portion of the neck is slaty-black with a gray wash; the throat and foreneck instead of being white with blackish marks are uniform deep purplish chestnut; the abdomen is dark slate gray instead of pale gray.

I believe that the large percentage of abnormally colored individuals is easily accounted for. It is well known that *Butorides virescens* has a latent tendency toward the production of erythristic or melanistic individuals, and this tendency may crop out frequently in some regions and not at all in others. This is particularly true of the island of Cuba, where a variant of *B. v. maculatus* is found in which the throat and foreneck are completely maroon or purplish chestnut like the sides and back of the neck.

Before going further into the subspecific identity of the Almirante birds it is necessary to review briefly the characters by which the east-

ern North American, West Indian and Central American green herons may be distinguished. After comparing a splendid series of topotypical *virescens* with an almost equally good series of *maculatus* from various islands in the West Indies, I am convinced that the two races may be separated only on the basis of comparative size and that any color characters are purely seasonal.

<i>B. v. virescens</i>	10 ♂, wing 177-186 (181.2)
	10 ♀, wing 172-186 (178.3)
<i>B. v. maculatus</i>	(various islands in the West Indies)
	10 ♂, wing 159-171 (166.6)
	10 ♀, wing 156-173 (164.6)

The measurements of the West Indian birds are based on summer specimens, obviating the possibility of including migrants.

Of the sixteen Almirante birds, four were taken in the winter and four more in spring or fall, so there are at least eight possible migrants. Tabulating the measurements of undoubted summer residents gives:

Adult	♂, 10 June	Wing 168	} normal coloration
Immature	♂, 21 July	165	
Immature	♂, 21 July	159	
Immature	♂, 21 July	165	
Adult	♂, 26 July	171	} abnormal coloration
Adult	♀, 21 August	170	
Immature	♂, 18 August	166	
Immature	♂, 20 August	157	

These measurements approximate seasonably comparable West Indian examples almost exactly.

The winter, spring and fall individuals measure as follows:

Adult	♂, 21 December	Wing 165	} normal coloration
Adult	♂, 14 February	173	
Adult	♂, 14 February	173	
Adult	♂, 30 September	173	
Immature	♂, 6 May	172	
Adult	♂, 14 February	177	} abnormal coloration
Adult	♂, 3 May	175	
Adult	♀, 1 October	167	

It will be noted that most of these obviously belong to the smaller resident form, others are on the border line and might be referred to either *virescens* or *maculatus*.

I am unable to recognize the bird described by Oberholser under the name of *B. v. hypernotius*, and attributed by him to eastern Central America. The color characters break down, and the measurements are not sufficiently or constantly above those of *maculatus* to separate two forms.

TIGRISOMA LINEATUM LINEATUM (Boddaert)

Changuinola: 1 ad. ♀, 13 September 1928; 1 ♂, 1 ♀, 20 February 1929; 1 imm. ♂, 1 imm. ♀, 20 February 1929. Quebrada Nigua: 1 imm. ♀, 14 January 1929. Cricamola: 1 ad. ♂, 13 August 1928.

I can detect no difference between these examples and a series of ten from Surinam, that may be considered topotypical.

ANATIDAE

QUERQUEDULA DISCORS (Linné)

Changuinola: 1 ♂, 2 November; 1 not sexed, 25 November 1927; 1 ♂, 23 September 1928.

NYROCA AFFINIS (Eyton)

Cider Creek: 1 ♀, 15 November 1927. Changuinola: 2, not sexed, 2 December 1927.

PHALACROCORACIDAE

PHALACROCORAX OLIVACEUS OLIVACEUS (Humboldt)

Manati River: 1 ♀, 11 November 1927. Western River: 1 ♀, 27 June 1928.

ANHINGIDAE

ANHINGA ANHINGA (Linné)

Changuinola: 1 ♂, 19 June 1928.

SULIDAE

SULA LEUCOGASTER LEUCOGASTER (Boddaert)

Additional specimens.—Swan Key: 1 ♂, 3 June 1927.

PHAËTHONTIDAE

PHAËTHON AETHEREUS MESONAUTA Peters

Swan Key: 4 ♂, 4 ♀, 3 June 1927.

The presence of a breeding colony of red-billed tropic birds in Almirante Bay was first recorded by Griscom (Amer. Mus. Novit., no. 293, 1928, p. 1) on the basis of nine specimens collected there by Benson. These birds constituted the first record for the species in Panama.

CATHARTIDAE

SARCORHAMPHUS PAPA (Linné)

A King Vulture was received in the flesh from H. S. Blair, taken near Almirante, 6 January 1925. Benson also took a specimen.

FALCONIDAE

DAPTURIUS AMERICANUS AMERICANUS (Boddaert)

Almirante: 5 ♂, 1 ♀, 24 May 1926, 25 March 1927; 1 ♀, 17 February 1929.

Specimens from Almirante appear to be intermediate between this form and *guatemalensis* Swann; since the sexing of the series, however, does not appear to be accurate, I leave the matter of exact subspecific determination in abeyance.

In a paper to be published shortly, I shall show that *Daptorius Vieillot* must replace *Ibycter Vieillot*.

HERPETOTHERES CACHINNANS CACHINNANS (Linné)

Additional specimens.—Cricamola: 1 ♂, 6 August 1928. Almirante: 1 ♀, 12 October 1928.

I believe that the laughing falcons, on the Caribbean slope of Central America north at least to Costa Rica, are best referred to the typical form, though some are obviously intermediate between it and *fulvescens*.

MICRASTUR SEMITORQUATUS NASO (Lesson)

Changuinola: 1 ♂, 10 October 1928. Cricamola: 1 ♀, 24 August 1928.

Carnifex naso Lesson, *Echo du Monde Savant* (6), 2, 1842, col. 1,085 (Realejo, Nicaragua) is an earlier name for *Falco percontator* Cabot,

Journ. Boston Soc. Nat. Hist., 4 January 1844, p. 462 (Chichen-Itza Yucatan).

FALCO SPARVERIUS SPARVERIUS Linné

Additional specimens.—Quebrada Nigua: 1 ♂, 1 ♀, 1 November 1927. Almirante: 1 ♀, 24 November 1927. Banana River: 1 ♀, 8 December 1927.

FALCO ALBIGULARIS ALBIGULARIS Daudin

Changuinola Canal: 1 ♂, 9 December 1927.

FALCO PEREGRINUS ANATUM Bonaparte

Changuinola: 1 ad. ♀, 3 May 1928.

The specimen is in worn and faded plumage and moulting irregularly, having a partly grown left outer primary, the old right outer shed, but not yet replaced; two fresh rectrices on the right side of the tail, and a few scattered, fresh contour feathers.

ACCIPITRIDAE

HARPAGUS BIDENTATUS FASCIATUS Lawrence

Almirante: 1 (♂), 5 March 1927; 1 ♀, 13 September 1928. Changuinola: 1 imm. ♂, 14 November 1927.

To my mind this is a very poorly marked race, and one that probably should be synonymized with *bidentatus*.

SPIZASTUR MELANOLEUCUS (Vieillot)

Banana River: 1 ♀, 10 December 1927.

SPIZAËTUS TYRANNUS (Wied)

Changuinola: 1 ♀, 29 September 1927. Fruitdale: 1 [♀], 18 November 1928.

HARPIA HARPYJA (Linné)

Near Almirante: 1 ?, 15 April 1923; 1 ad. ♂, 26 March 1924. (Both these birds were shot by Mr. H. S. Blair, Division Manager of the United Fruit Company at Almirante, and were frozen and sent to the museum in the flesh.) Banana River: 1 ♂, 21 April 1928 (H. Wedel).

MORPHNUS GUIANENSIS Daudin

Banana River: 1 ♀, 30 January 1928. Changuinola: 1 ♂, 30 November 1928.

CIRCUS CYANEUS HUDSONIUS (Linné)

Fruitdale: 1 ♀, 22 November 1928.

PARABUTEO UNICINCTUS HARRISII (Audubon)

Almirante: 1 ♀, 24 November 1927.

URUBITINGA URUBITINGA RIDGWAYI Gurney¹

Almirante: 2 ♂, 16, 23 April 1927.

URUBITINGA ANTHRACINA ANTHRACINA (Lichtenstein)

Additional specimens.— Almirante: 1 ♂, 3 June 1926; 1 ?, 14 September 1928. Western River: 1 ♀, 24 July; 1 ♂, 30 September; 1 ♂, 24 November 1927. Banana River: 1 ♂, 7 December 1927. Changuinola: 1 ♂, 15 October 1927; 1 ?, 25 February 1928; 1 ?, 19 February 1929.

LEUCOPTERNIS GHIESBREGHTI COSTARICENSIS W. L. Sclater

Additional specimens.— Almirante: 1 ♀, 2 September 1926; 1 ♂, 27 February 1927; 2 ♂, 16, 23 April 1927. Boquete trail (2,000 feet): 1 ♂, 24 March 1928.

The genus *Leucopternis* as understood today is to my mind a very heterogeneous conglomeration of species. Ridgway began its dismemberment by creating *Morphnarchus* (Smithsonian Misc. Coll., 72, no. 4, 1920, p. 2) as a monotypic genus for *L. princeps*. Apparently he did not see some of the other commonly included species or he would doubtless have created additional genera. I am not certain whether *Leucopternis* should be dismembered, or whether some of its species should be transferred to existing genera. One or the other of these courses is certainly indicated, but the choice of action and its execution I leave to others.

LEUCOPTERNIS SEMIPLUMBEA Lawrence

Almirante: 1 ♀, 21 June 1928. Changuinola: 1 ?, 21 January 1929.

BUTEO JAMAICENSIS COSTARICENSIS Ridgway

Changuinola: 1, sex not determined, 9 December 1928.

This bird is in somewhat worn immature plumage, but noticeably darker than most immature red-tailed hawks from North America; it more nearly resembles *B. j. alascensis*; the wing measures 365 mm.

¹ I am entirely aware that *Morphnus* must replace *Urubitinga* by opinion of the International Commission on Zoölogical Nomenclature, but this leaves *Morphnus guianensis* without a generic name, and owing to the uncertainty regarding the dates of publication of the supplement of the Dict. Sci. Nat., I prefer to leave matters in *statu quo* pending a more satisfactory solution of the question.

BUTEO PLATYPTERUS PLATYPTERUS (Vieillot)

Additional specimens.— Changuinola: 1 ♂, 17 November 1928; 1 ♂, 21 January 1929. Banana River: 21 December 1927. Cricamola: 1 ♂, 11 February 1928.

BUTEO BRACHYURA (Vieillot)

Changuinola: 1 ♀, 5 November 1928.

RUPORNIS MAGNIROSTRIS ARGUTA Peters and Griscom

Additional specimens.— Almirante: 1 ♂, 27 May 1927; 1 ♀, 6 February 1928. Western River: 1 ♂, 24 July 1927. Changuinola: 1 ♂, 17 October 1927. Shepherd Island: 1 ♂, 17 May 1928. Cricamola: 1 ♂, 15 August 1928.

ACCIPITER BICOLOR BICOLOR (Vieillot)

Fruitdale: 1 ? (♀ by measurement), 17 February 1929.

This must be a rare bird in the Almirante Bay region, as the single specimen taken by Wedel is the only one collected in the region in three years of field work, neither Kennard nor Benson having found it. The specimen is fully adult. Compared with the type of *A. b. fidens* Bangs and Noble, it substantiates the characters of the latter race, *i.e.*, larger size and darker coloration. *Fidens*, however, appears to be restricted to the northern portion of the range of the species in Vera Cruz. Adult males from Quintana Roo and Honduras (Yaruca) agree in coloration with an adult male from southwestern Costa Rica, though slightly larger. Until additional comparable material is at hand, however, it is best to regard them as intermediates.

STRIGIDAE

PULSATRIX PERSPICILLATA SATURATA Ridgway

Almirante: 1 ♂, 24 October 1926; 1 ♂, 15 January 1927. Changuinola: 1 ♂, 28 November 1927.

CICCABA VIRGATA CENTRALIS Griscom

Neither Kennard's party nor Wedel ever met with this rather common owl. Benson sent one to the American Museum from Almirante in the summer of 1927.

TYTONIDAE

TYTO PERLATA GUATEMALAE (Ridgway)

Additional specimen.— Almirante: 1 ?, 29 March 1927.

PSITTACIDAE

ARA AMBIGUA AMBIGUA (Bechstein)

Almirante: 1 ♂, 20 September 1926; 1 ?, 31 March 1927; 1 ♀, 25 June 1927.
Chiriquicito: 1 ♀, 18 April 1928.

ARATINGA FINSCHI (Salvin)

Additional specimens.—Banana River: 1 ♂, 19 June 1926. Fruitdale: 1 ♀, 10 June 1928.

ARATINGA ASTEC ASTEC (Souancé)

Changuinola: 1 ♀, 3 October 1927.

This paroquet was first recorded from the Almirante region by Griscom (Am. Mus. Novit., no. 293, 1928, p. 2) and described as a new subspecies under the name of *Eupsittula astec extima*. I have examined the type and other specimen, both collected at Bocas del Toro, 24 August 1927, and admit that these birds, compared with the material of typical *astec* and *a. vicinalis* available to Griscom in the American Museum at that time, certainly afforded good grounds for his supposed separation. The material at my command in the Museum of Comparative Zoölogy, however, does not support the claims of *extima* to recognition. The specimen sent in by Wedel is indistinguishable from examples of *a. astec* from Vera Cruz, Guatemala and British Honduras, and is quite unlike any specimen in our series of ten *vicinalis* (including the type).

PYRRHURA HOFFMANNI GAUDENS Bangs

Additional specimens.—Boquete trail, 1,800 feet: 2 ♀, 25 March 1928. Cricamola: 1 ♀, 15 February 1928.

AMAZONA FARINOSA VIRENTICEPS (Salvadori)

Almirante: 1 ♂, 1 ♀, 16 April 1927.

PIONUS MENSTRUUS (Linné)

Additional specimens.—Almirante: 1 ♀, 4 July 1927; 1 ♂, 17 September 1928. Cricamola: 1 ♀, 13 February 1928.

PIONUS SENILIS DECOLORATUS Griscom

Not met with, except by Benson, who took three at Almirante in 1927 (recorded by Griscom, Amer. Mus. Novit., no. 293, 1928, p. 1, as *Pionus senilis* (Spix)).

EUCINETES HAEMATOTIS HAEMATOTIS (Sclater and Salvin)

Additional specimens.—Cricamola: 1 ♂, 1 ♀, 13, 21 August 1928.

It is interesting to note that the two birds listed here are typical of *h. haematotis* in every respect and show no approach to *h. coccineicollaris* (Lawrence) of the Canal Zone and eastward.

From Divala, on the Pacific slope of northwestern Panama, the Museum of Comparative Zoölogy has a series of seven specimens of *Eucinetes haematotis*, five of which are perfectly typical *h. haematotis*, but two others show a decided resemblance to *h. coccineicollaris*, both having the middle of the throat white, and one of them with a strong indication of the rosy jugulum; both, however, have the extensively red auricular region characteristic of the typical form.

ALCEDINIDAE

MEGACERYLE TORQUATA TORQUATA (Linné)

Additional specimens.—Western River: 1 ♂, 1 ♀, 24 July; 7 October 1927. Fruitdale: 1 ♀, 4 August 1927. Cricamola: 1 ♀, 17 September 1927.

MEGACERYLE ALCYON ALCYON (Linné)

Changuinola: 1 ♂, 17 October 1927.

CHLOROCERYLE AMAZONA (Latham)

Additional specimens.—Isla Grande: 1 ♀, 18 July. Almirante: 1 ♀, 29 August. Changuinola: 1 ♀, 16 August. Cricamola: 1 ♂, 18 August 1927.

CHLOROCERYLE AMERICANA ISTHMICA (Goldman)

Additional material.—Many specimens from nearly all collecting stations.

CHLOROCERYLE INDA (Linné)

Additional specimens.—Almirante: 2 ♂, 30 April, 5 May 1927.

CHLOROCERYLE AENEA AENEA (Pallas)

Additional specimens.—Banana River: 1 ♀, 17 June 1926. Almirante: 1 ♀, 16 April; 2 ♂, 4, 27 August 1927. Quebrada Nigua: 1 ♀, 20 July 1927; Changuinola: 2 ♂, 3, 13 October 1927. Chiriquicito: 1 ♂, 16 April 1928. Cricamola: 1 ♂, 1 ♀, 20, 21 September 1927.

MOMOTIDAE

BARYPHTHENGUS MARTII SEMIRUFUS (Sclater)

Additional specimens.—Almirante: 1 ♀, 14 August 1926; 1 ♂, 16 April 1927; 1 ♂, 12 November 1928. Guabo: 3 ♂, 1 ♀, 2–15 April 1928. Western River: 1 ♂, 12 July 1928. Changuinola: 1 ♀, 15 October 1928. Boquete trail, 1,300 feet: 1 ♂, 14 March 1928. Cricamola: 1 ♂, 13 February 1928.

ELECTRON PLATYRHYNCHUM MINOR (Hartert)

Additional specimens.—Boquete trail, 1,300–3,500 feet: 2 ♂, 1 ♀, 19–29 March 1928.

Carriker in his *Birds of Costa Rica* (p. 495) gives the range of this bird in eastern Costa Rica as “the whole of the Caribbean lowlands up to 2,000 feet.”

CAPRIMULGIDAE

NYCTIDROMUS ALBICOLLIS INTERCEDENS Griscom

Changuinola: 1 ♀, 1 ♀, 30 November, 31 December 1928.

CHORDEILES ACUTIPENNIS MICROMERIS Oberholser

Fruitdale: 1 ♀, 2 January 1929.

APODIDAE

STREPTOPROCNE ZONARIS ALBICINCTA (Cabanis)

Fruitdale: 1 ♂, 1 ♀, 17 November 1928.

CHAETURA PELAGICA (Linné)

Changuinola River: 1 ♀, 24 October 1926.

TROCHILIDAE

THRENETES RUCKERI VENTOSUS Bangs and Penard

Changuinola: 1 ♂, 27 September 1927. Almirante: 1 ♀, 24 February; 1 ♂, 7 November; 1 ♂, 29 December 1928. Guabo: 1 ♂, 16 April 1928.

PHÆTHORNIS SUPERCILIOSA CEPHALA (Bourcier and Mulsant)

Changuinola: 1 ♂, 30 November 1928. Banana River: 1 ♀, 17 July 1928.

PHŒTHORNIS ADOLPHI SATURATUS Ridgway

Changuinola: 1?, 30 September 1928. Cricamola: 1 ♂, 28 August 1928.

Simon in his "Histoire Naturelle des Trochilidae" places this and several closely allied species in the genus *Pygmornis*, at the same time breaking up the genus *Phæthornis* as usually constituted, into six genera. Such a course seems to me to be totally unwarranted. As far as my own field experience goes "*Pygmornis*" is practically a miniature counterpart of *Phæthornis*, fitting into a different niche but with identical notes and habits.

FLORISUGA MELLIVORA MELLIVORA (Linné)

Changuinola: 1 ♂, 24 October 1926; 1 ♀, 3 October 1927; 1 ♀, 29 September 1928. Almirante: 1 ♀, 22 September 1926; 1 ♂, 13 May; 1 ♂, 20 July 1927. Guabo: 1 ♀, 2 April 1928. Cricamola: 1 ♂, 16 August 1928.

POLYERATA AMABILIS (Gould)

Isla Grande: 1 ♂, 18 July 1927. Guabo: 1 ♂, 12 April 1928.

AMIZILIS TZACATL TZACATL (De la Llave)

Almirante: 4 ♂, 2 ♀, 14 May 1927 to 23 May 1928.

All modern authors are now agreed that *Amizilis tzacatl* is not divisible into geographic races, except that in the southwest portion of its range in Colombia and Ecuador there is a resident form with paler posterior underparts (*jucunda* Heine). Throughout the rest of its range from Mexico southward, the bird shows a great deal of variation, due largely to age. Old birds are deeper green above and the upper mandible flesh colored at the base, while those less mature have the upper parts more gold or coppery, and sometimes the entire mandible is black. The length of the bill appears to be purely a matter of individual variation.

CHLOROSTILBON ASSIMILIS Lawrence

Cricamola: 1 ♂, 13 August 1927.

THALURANIA COLOMBICA VENUSTA (Gould)

Found only by Benson who secured two specimens at Almirante and three at Bocas del Toro.

CHALYBURA UROCHRYSA ISAURAE (Gould)

Boquete trail, 1,400–1,500 feet: 2 ♂, 17–20 March 1928. Benson secured this bird at Almirante and Bocas del Toro.

Simon (Hist. Nat. Troch., 1921, pp. 129, 340) has split the genus *Chalybura*, making *Chalybura* monotypic for *buffonii* and its subspecies, and placing *melanorrhoea*, *intermedia* and *urochrysa* in his new genus *Chlorurisca*. The sole difference given to distinguish the two genera is the length of the under tail coverts; this single character is not sufficiently trenchant to form the basis for a generic separation, especially so since *urochrysa* is the “connecting species.”

HELIOTHRYX BARROTI (Bourcier)

Western River: 1 ?, 27 June 1928. Almirante: 1 ♂, 12 October 1928.

HELIOMASTES LONGIROSTRIS LONGIROSTRIS (Vieillot)

Met with only by Benson who took one at Bocas del Toro.

TROGONIDAE

TROGON CURUCUI TENELLUS Cabanis

Boquete trail: 1 ♂, 1 ♀, 14–19 March 1928.

TROGON VIOLACEUS CONCINNUS Lawrence

Quebrada Nigua: 1 ♂, 1 November 1927.

TROGON MASSENA MASSENA Gould

Additional specimens.—Quebrada Nigua: 1 ♂, 1 November 1927. Almirante: 1 ♀, 14 November 1928. Boquete trail, 1,300 feet: 1 ♂, 2 ♀, 17–19 March 1928.

CUCULIDAE

PIAYA CAYANA THERMOPHILA Sclater

Additional specimens.—Almirante: 1 ♂, 7 November 1926; 1 ♀, 13 May 1927; 1 ♀, 10 June 1928; 1 ? July 1928. Isla Grande: 1 ♂, 18 July 1927. Bocas del Toro: 1 ♂, 31 October 1927.

CROTOPHAGA SULCIROSTRIS SULCIROSTRIS Swainson

Additional specimens.—Changuinola: 1 ♂, 13 November 1927. Almirante: 1 ♂, 7 November 1926; 1 ♀, 13 May 1927.

RAMPHASTIDAE

RAMPHASTOS SULPHURATUS BREVICARINATUS Gould

Additional specimens.— Changuinola: 1 ♀, 28 December 1926. Almirante: 1 ♂, 30 June 1927.

RHAMPHASTOS SWAINSONII Gould

Additional specimens.— Almirante and vicinity: 1 ♀, 9 June 1926; 2 ♂, 22 April 1927. Guabo: 1 ♀, 4 April 1928.

PTEROGLOSSUS TORQUATUS TORQUATUS (Gmelin)

Additional specimens.— Almirante: 1 ♀, 7 August 1926; 1 ♀, 23 February; 1 ♂, 19 May; 1 ♀, 29 August 1927. Guabo: 1 ♂, 10 April 1928.

SELENIDERA SPECTABILIS Cassin

Additional specimens.— Almirante: 1 ♂, 7 November 1928. Boquete trail, 1,200–3,500 feet: 1 ♂, 4 ♀, 16–29 March 1928.

GALBULIDAE

GALBULA MELANOGENIA Sclater

Additional specimens.— Guabo: 2 ♂, 13, 15 April 1928. Cricamola: 3 ♂, 1 ♀, 2 ♀, 10–12 September 1927; 1 ♂, 13 February 1928; 3 ♂, 3 ♀, 1 ♀, 10 July–26 August 1928.

JACAMEROPS AUREA PENARDI Bangs and Barbour

Guabo: 1 ♀, 2 April 1928. Buena Vista (Boquete trail, 1,200 feet): 1 ♂, 12 March 1928.

Benson collected an example of this Jacamar at Bocas del Toro.

BUCCONIDAE

BUCCO TECTUS SUBTECTUS P. L. Sclater

Almirante: 1 ♂, 1 November 1928.

This bird has usually been placed in the genus *Notharchus* but fits better, I believe, into *Bucco*.

NOTHARCHUS HYPERRHYNCHUS DYSONI (P. L. Sclater)

Gerray Creek: 1 ♂, 19 December 1926. Almirante: 1 ♂, 5 May 1928; 1 ♂, 15 June 1928; 1 ♀, 18 January 1929.

MALACOPTILA PANAMENSIS COSTARICENSIS Cabanis

Guabo: 2 ♂, 3 April 1928. Boquete trail: 2 ♂, 14, 22 March 1928. Cricamola: 2 ♂, 2 ♀, 13, 16 February 1928; 2 ♂, 3 ♀, 8–25 August 1928.

The *Malacoptila* of northern and eastern Costa Rica and the Caribbean slope of northwestern Panama as far south as the eastern end of the Chiriqui Lagoon is referable to the race described as *Malacoptila costaricensis* by Cabanis in the *Journal für Ornithologie*, 1862, p. 172. No type locality was designated, but since the type was collected by v. Frantzius, eastern Costa Rica may be accepted as the type locality. *Costaricensis* is an intermediate form, but constant over a wide range; both the red and gray phases of plumage show good characters. Gray-brown phase: intermediate between *M. p. inornata* (Du Bus) and *M. panamensis* Lafresnaye in color of pectoral band and intensity of the dark markings below. Red-brown phase: similar to *inornata* in being but faintly streaked below, but rufous of underparts deeper and more extensive than either *inornata* or *panamensis*. The ranges of the three Central American races of *Malacoptila panamensis* are (from north to south): *M. p. inornata* (Du Bus) from Guatemala and Salvador south probably to northern Nicaragua; *M. p. costaricensis* Cabanis, northern Nicaragua to northwestern Costa Rica (La Vijagua, 2 ♂ examined) and eastern Costa Rica (Carillo, 1 ♂ examined) south on the Caribbean slope to eastern end of Chiriqui Lagoon; *M. p. panamensis* Lafresnaye, southwestern Costa Rica (Terrabá Valley, 12 ♂, 10 ♀, examined) through northwestern Panama (Divala 8 ♂, 6 ♀) to the Canal Zone (4 specimens), Darien (1 ♂, 5 ♀, 1 ?) and western Colombia.

PICIDAE

CENTURUS PUCHERANI PUCHERANI (Malherbe)

Additional specimens.— Eleven from all localities.

PICULUS SIMPLEX SIMPLEX (Salvin)

Kennard and Smith secured a single example of this rare woodpecker, but Wedel did not find it at all. On the other hand, Benson took four in the Almirante region. I am sorry not to be able to agree with Griscom as to the validity of his *aurorae* described from Almirante.

CELEUS CASTANEUS (Wagler)

Additional specimens.— Almirante: 1 ♂, 20 April 1927; 1 ♀, 1 ♂, 10 July, 22 November 1928. Guabo: 1 ♂, 2 ♀, 4, 6 April 1928. Changuinola: 1 ♀, 13 June 1928. Western River: 1 ♀, 27 June 1928. Cricamola: 1 ♀, 21 August 1928.

CELEUS LORICATUS DIVERSUS Ridgway

Additional specimen.—Quebrada Nigua: 1 ♀, 1 November 1927.

PHLŒOCEASTES MELANOLEUCOS MALHERBII (Gray)

Cricamola: 1 ♂, 11 August 1928.

Cricamola marks the westernmost point of the range of this woodpecker, though it has previously been recorded for western Panama from Veraguas, Cordillera de Tolé and Calovevora.

PHLŒOCEASTES GUATEMALENSIS GUATEMALENSIS (Hartlaub)

Additional specimens.—Changuinola: 1 ♀, 25 January 1929. Almirante: 1 ♂, 20 April 1927. Western River: 1 ♀, 1 ?, 29 July, 29 September 1927. Guabo: 1 ♀, 4 April 1928. Boquete trail: 1 ♀, 27 March 1928.

PHLŒOCEASTES HAEMATOGASTER SPLENDENS (Hargitt)

Buena Vista (Boquete trail): 1 ♂, 17 March 1928.

This record extends the range of this bird from the Veraguas-Calovevora region where it was collected by Arcé, so that its known range now extends from the Chiriqui Lagoon, southward to northwestern Colombia (Antioquia).

CEOPHLOEUS LINEATUS MESORHYNCHUS Cabanis and Heine

Additional specimens.—Changuinola: 1 ♀, 29 September 1928. Fruitdale: 1 ♂, 7 May 1928.

FORMICARIIDAE

(The sequence of species here used in this family as well as in the Furnariidae and Dendrocolaptidae is that adopted by Hellmayr in parts 3 and 4 of the "Catalogue of Birds of the Americas.")

CYMBILAIMUS LINEATUS FASCIATUS Ridgway

Almirante: 1 ♀, 26 October 1926; 1 ♂, 1 ♀, 16 May, 15 June 1927; 1 ♂, 9 November 1928. Guabo: 2 ♂, 2 ♀, 9–15 April 1928.

TARABA TRANSANDEANA TRANSANDEANA (Sclater)

Additional specimens.—Changuinola: 1 ♂, 1 ♀, 30 September 1928. Near Almirante: 2 ?, 30 July, 21 December 1927; 1 ♀, 10 June 1928; 1 ♀, 18 January 1929. Cricamola: 1 ♂, 18 August 1928.

THAMNOPHILUS PUNCTATUS ATRINUCHA Salvin and Godman

Almirante and vicinity: 5 ♂, 5 ♀, 1 ?, 25 May 1927 to 26 January 1929. Guabo: 1 ♀, 3 April 1928. Cricamola: 1 ♂, 14 September 1927; 1 ♂, 15 August 1928.

THAMNISTES ANABATINUS SATURATUS Ridgway

Boquete trail (3,500 feet): 1 ♂, 27 March 1928.

The single specimen secured by Wedel is strictly referable to *saturatus*, as are two males in the Museum of Comparative Zoölogy collections secured at 2,000 feet on the Caribbean slope of the Volcan de Chiriqui by W. W. Brown, 13 June 1901. On the other hand, Griscom (mss.) refers nine examples in the American Museum, collected on the Rio Calovevora by Benson in the summer of 1926, to *T. a. coronatus* Nelson.

DYSITHAMNUS PUNCTICEPS PUNCTICEPS Salvin

Boquete trail (2,000 feet): 1 ♂, 25 March 1928.

This bush bird appears to be a rare species as far west as the Chiriqui Lagoon. In addition to the single specimen secured by Wedel, Benson shot one near Almirante. Further east it appears to be common; Benson amassed a series of nineteen on the Rio Calovevora.

MYRMOTHERULA FULVIVENTRIS Lawrence

Boquete trail (2,000 feet): 1 ♂, 25 March 1928.

This species exhibits a considerable range of color variation even in birds from the same locality. The birds inhabiting Costa Rica have been formally recognized by Mr. Todd as a distinct subspecies under the name of *M. f. costaricensis* (Proc. Biol. Soc. Wash., 40, 1927, p. 156), but in the opinion of the present writer the claim of this form to recognition should be denied.

MYRMOTHERULA AXILLARIS ALBIGULA Lawrence

Boquete trail (2,000 feet): 1 ♂, 25 March 1928. Almirante: 1 ♂, 1 November 1928.

MICRORHOPIAS BOUCARDI VIRGATA (Lawrence)

Boquete trail (1,300 feet): 1 ♀, 19 March 1928.

I believe that Chapman is entirely correct in his views regarding the specific distinctness of *boucardi* and *quixensis*.

MYRMECIZA EXSUL EXSUL Sclater

Almirante: 1 ♂, 26 May 1927. Cricamola: 3 ♂, 1 ♀, 15-23 August 1928.

FORMICARIUS ANALIS UMBROSUS Ridgway

Almirante: 1 ♂, 24 May 1927; 1 imm. ♂, 17 July 1928. Guabo: 2 ♂, 1 ♀, 4-9 April 1928. Buena Vista: 1 ♂, 23 March 1928.

This race of the rufous-vented ant thrush has not been previously recorded from Panama, though having been originally described from the Talamanca Valley in Costa Rica, it is the form that would naturally occur in the adjacent part of Panama.

FORMICARIUS NIGRICAPILLUS NIGRICAPILLUS Ridgway

Boquete trail (1,500 feet): 1 ♂, 24 March 1928.

GYMNOPITHYS BICOLOR BICOLOR (Lawrence)

Boquete trail (1,500 feet): 1 ♀, 17 March 1928.

This single specimen is doubtless referable to *b. bicolor*. It tends very slightly to intermediacy in that the forehead is only very narrowly gray, nor is that color on the sides of the head as extensive as in topotypical examples, nevertheless the bird so much more nearly approximates *b. bicolor* than *b. olivascens* that I have no hesitation in referring it to the former race. Griscom (mss.) received six specimens from Benson, collected on the Rio Calovevora.

GYMNOPITHYS BICOLOR OLIVASCENS (Ridgway)

Griscom's manuscript list of the birds taken at Almirante by Benson enumerates three specimens of this subspecies.

HYLOPHYLAX NAEVIOIDES CAPNITIS (Bangs)

Guabo: 1 ♂, 8 April 1928.

The subspecies of *H. naevioides* of this region proves, as was to be expected, clearly referable to the race described by Bangs from Miravalles, Costa Rica. It is the first record of its occurrence in Panama. Hellmayr (Cat. Birds. Am., 3, 1924, p. 308) in defining the range of *capnitis* appears to have overlooked the fact that Carriker (Ann. Carn. Mus., 6, nos. 2-4, 1910, p. 619-620) records it as occurring in northwestern Costa Rica where it is abundant. Specimens taken by Benson on the Rio Calovevora have been listed by Griscom (mss.)

as of this race; thus it would appear that the form inhabits the Pacific lowlands of northwestern Costa Rica and the Caribbean lowlands from at least the Rio Escondido, Nicaragua, south and east to the Rio Calovevora, Panama. When series of *H. n. naevioides* and *H. n. capnitis* are compared, the much deeper gray flanks of the males of the latter are very noticeable.

PHAENOSTICTUS MCLEANNANI SATURATUS (Richmond)

Boquete trail (1,300 feet): 1 ♂, 21 March 1928.

This bird agrees with examples of *saturatus* from Costa Rica, and furnishes further proof, if any more be needed, of the close faunal affinity between Almirante Bay-Chiriqui Lagoon region and that of eastern Costa Rica. This form is an addition to the avifauna of Panama.

The American Museum possesses a series of eleven specimens of *P. m. mcleannani* from the Rio Calovevora (Griscom, mss.).

PITTASOMA MICHLERI ZELEDONI Ridgway

Almirante: 1 ♂, ♀, 1 November 1928.

This pair of ant-pittas is decidedly intermediate between true *michleri* of eastern Panama and *m. zeledoni* of eastern Costa Rica; perhaps a better series and more comparative material would prove the existence of a good intermediate form in western Panama. For the present, however, I refer the birds to *zeledoni*, which they approach in size: ♂ wing 102; ♀, wing 99. The male is completing a wing moult, the inner six primaries being entirely new, the seventh not fully grown, and the three outer ones yet unshed: the female shows a similar condition, but is one primary behind, *i.e.* the sixth is the one not fully grown out. The wing lengths here given are full value, since the fourth or fifth primary is the longest in this species.

GRALLARIA GUATIMALENSIS PRINCEPS Sclater and Salvin

Boquete trail (3,500 feet): 1 ♂, 29 March 1928.

GRALLARIA FULVIVENTRIS FLAMMULATUS (Griscom)

This form was described by Griscom (Am. Mus. Novit., no. 293, 1928, p. 4) from Almirante, whence Benson sent two males to the American Museum. The species was not met with by either Kennard and Smith or Wedel.

GRALLARIA PERSPICILLATA INTERMEDIA Ridgway

Cricamola: 1 ♂, 19 August 1928.

The one example secured by Wedel is certainly *intermedia*, but shows a slight approach to *p. perspicillata* in having traces of black streaking, on the flanks. From Cricamola to the Rio Calovevora the transition from one form to the other must be rapid, since at the latter locality, fifty miles to the eastward true *perspicillata* occurs (fide Griscom mss.).

FURNARIIDAE

SYNALLAXIS BRACHYURA NIGRIFUMOSA Lawrence

Additional specimens.— Changuinola: 1 ♀, 4 October 1928. Almirante: 5 ♂, 1 ♀, 1 ?, 3 May 1927 to 17 July 1928. Cricamola: 1 ?, 14 August 1928.

AUTOMOLUS OCHROLAEMUS HYPOPHAEUS Ridgway

Almirante: 1 ♂, 12 November 1928. Boquete trail: 1 ♂, 2 ?, 13, 14 March, 1 April 1928.

XENOPS MINUTUS RIDGWAYI Hartert and Goodson

Almirante: 2 ♂, 3 ♀, 1 ?, 31 May 1927 to 21 September 1928. Cricamola: 1 ♂, 22 September 1927.

SCLERURUS GUATEMALENSIS GUATEMALENSIS (Hartlaub)

Found only by Benson who took a specimen at Bocas del Toro (Griscom mss.).

DENDROCOLAPTIDAE

DENDROCOLAPTES CERTHIA SANCTI-THOMAE (Lafresnaye)

Changuinola: 1 ♂, 25 January 1929. Almirante: 2 ♂, 1 ♀, 25 May to 10 June, 1927; 1 ♀, 16 January 1929. Boquete trail: 1 ♂, 16 March 1928. Cricamola: 2 ♀, 22, 24 August 1928.

XIPHORHYNCHUS GUTTATUS COSTARICENSIS (Ridgway)

Additional specimens.— Changuinola: 1 ♂, 28 December 1926; 1 ♂, 1 ♀, 29 September to 4 October 1928. Almirante: 1 ♂, 16 May; 1 ♀, 16 June 1927; 2 ♂, 19 January, 1 June 1928. Western River: 1 ♀, 12 July 1928. Guabo: 1 ♂, 3 April 1928.

XIPHORHYNCHUS GUTTATUS NANUS (Lawrence)

Cricamola: 1 ♀, 13 August 1928.

The single bird from Cricamola cannot be referred to *costaricensis*. Compared with summer birds from Almirante, it is much paler, especially below, with the throat nearly white; in fact, it is paler than seasonably comparable specimens of topotypical *nanus*.

XIPHORHYNCHUS LACHRYMOSUS LACHRYMOSUS Lawrence

Additional specimens. — Almirante: 1 ♂, 29 May 1927. Boquete trail (1,200–1,400 feet): 2 ♂, 1 ♀, 15–22 March 1928.

Kennard and Peters recorded birds from Almirante and Boquete Trail under the name of *X. l. eximius* Hellmayr. The receipt of the material listed above together with other specimens since received convinces me that differences claimed to exist between *eximius* and *lachrymosus* are not correlated geographically, and I no longer recognize the former subspecies as distinct.

LEPIDOCOLAPTES SOULEYETHI COMPRESSUS (Cabanis)

Almirante: 2 ♂, 2 ♀, 25 May 1927 to 3 May 1928. Changuinola: 1 ♂, 18 October 1929; 1 ♀, 28 January 1929.

Though perhaps only a coincidence, it is at least worthy of remark that there seems to be a wide gap in the range of *L. souleyethi* on the Caribbean slope of Panama. In eastern Central America, *L. s. compressus* ranges from Nicaragua to Panama, where specimens from Almirante mark its nearest approach to the Canal Zone. From Almirante to Lion Hill, where the range of *L. s. lineaticeps* begins, the species is unrecorded.

Perhaps further field work will reveal the presence of the bird in the intervening area, but it is extremely significant that neither Kennard and Smith nor Wedel met with it on the shores of the Chiriqui Lagoon nor in the forests along the Boquete trail. Benson did not find it on the Calovevora, but both Benson and Wedel secured it at Almirante. The same hiatus, I believe, exists on the Pacific slope from Chiriqui to the Canal Zone.

GLYPHORHYNCHUS SPIRURUS SUBLESTUS Peters

Changuinola: 1 ♂, 16 October 1928. Almirante: 1 ♀, 30 June 1927. Western River: 1 ♀, 6 October 1928. Buena Vista: 1 ♀, 25 March 1928. Cricamola: 3 ♂, 15, 19 August 1928.

DECHONYCHURA TYPICA MINOR Todd

Benson was so fortunate as to secure a specimen of this rare bird at Almirante. Griscom records it in American Museum Novitates, no. 293, p. 1.

DENDROCINCLA MERULOIDES RIDGWAYI Oberholser

Additional specimen.—Cricamola: 1 ♂, 18 August 1928.

TYRANNIDAE

The sequence here followed is that of Hellmayr (Cat. Birds Amer., pt. 5, 1927.)

COLONIA COLONUS LEUCONOTA (Lafresnaye)

Additional specimen.—Almirante: 1 ♂, 18 July 1928.

TYRANNUS TYRANNUS (Linné)

Almirante: 1 ♂, 22 April 1927. Guabo: 1 ♂, 3 April 1928; 1 ♀, 11 October 1928.

TYRANNUS MELANCHOLICUS CHLORONOTUS Berlepsch

Additional specimens.—Almirante: 2 ♂, 29 August 1927. Cricamola: 1 ♀, August 1928.

MEGARYNCHUS PITANGUA MEXICANUS (Lafresnaye)

Cricamola: 1 ♂, 6 August 1928.

MYIOZETETES GRANADENSIS GRANADENSIS Lawrence

Almirante: 1 ♂, 1 imm. ♀, 13, 26 May 1927.

PITANGUS SULPHURATUS GUATIMALENSIS (Lafresnaye)

Additional specimens.—Changuinola: 1 ♀, 27 October 1927. Almirante: 1 ♂, 2 ♀, 7–18 May 1927; 1 ?, 12 November 1928.

While *Pitangus sulphuratus* enjoys a wide distribution in Central and South America, it is absent from Panama except on the Caribbean slope in the western portion, where it extends only to the western shores of Almirante Bay.

MYIARCHUS CRINITUS (Linné)

Additional specimens.—Almirante: 1 ♀, 15 April 1927. Quebrada Nigua: 1 ?, 3 November 1927.

MYIARCHUS TUBERCULIFER BANGSI Nelson

Additional specimens.—Almirante: 1 ♂, 10 June 1927; 1 ♀, 18 July 1928.

NUTTALLORNIS MESOLEUCUS MESOLEUCUS (Lichtenstein)

Benson took a specimen of the Olive-sided Flycatcher at Almirante.

MYIOCHANES VIRENS (Linné)

Almirante: 1 ♀, 17 April 1927. Cricamola: 1 ♂, 21 September 1927.

EMPIDONAX FLAVIVENTRIS (Baird and Baird)

Boquete trail: 1 ?, 19 March. Guabo: 1 ♂, 13 April 1928.

EMPIDONAX VIRESCENS (Vieillot)

Changuinola: 1 ♂, 1 ♀, 16, 18 October 1927. Guabo: 1 ?, 3 November 1927.

EMPIDONAX TRAILLII BREWSTERI Oberholser

Almirante: 1 ♂, 1 ?, 17, 22 September 1928. Cricamola: 1 ♀, 17 February 1928.

TERENOTRICCUS ERYTHRURUS FULVIGULARIS (Salvin and Godman)

Banana River: 1 ♂, 17 July 1928.

Also taken near Almirante by Benson.

MYIOBIUS ATRICAUDUS ATRICAUDUS Lawrence

Almirante: 1 ♂, 4 August 1927.

This specimen appears to constitute the northernmost record for this flycatcher on the Caribbean slope of Central America. On the Pacific slope it ranges as far north as the Gulf of Nicoya.

TODIROSTRUM NIGRICEPS Sclater

Benson collected three examples of this rare Todirostrum at Almirante.

TODIROSTRUM CINEREUM FINITIMUM Bangs

Additional specimens.—Almirante: 4 ♂, 1 ♀, 4 May to 8 June 1927. Cricamola: 1 ♂, 22 August 1928.

TODIROSTRUM SYLVIA SCHISTACEICEPS Sclater

Almirante: 1 ♂, 8 June 1927.

ONCOSTOMA CINEREIGULARE (Sclater)

Benson took five Bent-billed Flycatchers at Almirante, but the bird was not found by the other collectors.

LOPHOTRICCUS PILEATUS LUTEIVENTRIS (Taczanowski)

Boquete trail: 1 ♂, 17 March 1928.

TYRANNISCUS VILISSIMUS PARVUS Lawrence

Almirante: 1 ♂, 18 May 1927. Cricamola: 1 ♂, 22 August 1928.

PIPMORPHA ASSIMILIS ASSIMILIS Sclater

Changuinola: 1 ♂, 18 October 1928. Almirante: 1 ♀, 26 June; 1 ♂, 5 August 1927. Guabo: 2 ♂, 7, 8 April 1928.

The Caribbean slope race of *P. assimilis* was first recorded from Panama by Griscom (1928), on the basis of ten examples collected by Benson at Almirante.

PIPRIDAE

PIPRA MENTALIS IGNIFERA Bangs

Additional specimens.—Changuinola: 1 ?, 4 October 1928; 1 ♂, 13 June 1929; 1 ?, 1 ♀, 4, 15 October; 1 imm. ♂, 31 December 1928; 1 ♂, 13 June 1929. Almirante: 1 ♂, 26 February; 2 ♂, 15, 20 April 1927; 1 ♂, 15 November 1928. Boquete trail: 2 ♂, 14, 23 March 1928. Cricamola: 1 ?, 15 August 1928.

PIPRA VELUTINA VELUTINA Berlepsch

Cricamola: 1 ♂, 1 ♀, 19, 21 August 1928.

MANACUS CERRITUS Peters

Almirante and Changuinola: 23 specimens, both sexes, 5 May 1927 to 18 January 1929.

Additional material received since the species was described shows that the yellow of the underparts, instead of always extending over the

flanks and abdomen, is sometimes restricted to the throat and breast, leaving the posterior underparts greenish olive.

When I first described this species I believed its closest affinities to be with *aurantiacus*. I am now convinced that *cerritus* is more nearly related to *candei*, from which it differs instantly in having the throat, broad nuchal and scapular areas and lesser wing coverts yellow instead of white; the throat feathers are of about the same length in both species. *Aurantiacus* in color is an intensified *cerritus*, but is a considerably smaller bird. *Vitellinus*, with its black wing coverts, narrow yellow collar and much more elongated throat feathers, is a very different bird from either.

Manacus cerritus has a very limited range; birds from the Talamanca Valley in southeastern Costa Rica are *candei*, showing no approach whatever to *cerritus*, while at Cricamola the next species is found.

MANACUS VITELLINUS VITELLINUS (Gould)

Cricamola: 1 ♂, 26 August 1928.

CORAPIPO LEUCORRHOA ALTERA Hellmayr

Additional specimen.— Boquete trail: 1 ♂, 30 March 1928.

[It is very interesting to note that none of the collectors operating about Almirante secured *Schiffornis turdinus veraepacis* Scl. and Salv.]

COTINGIDAE

TITYRA SEMIFASCIATA COSTARICENSIS Ridgway

Additional specimens.— Almirante, Western River, Quebrada Nigua, Chiriquito, Cricamola: 17, both sexes, 6 May 1927 to 18 July 1928.

ERATOR ALBITORQUES FRASERI (Kaup)

Additional specimens.— Almirante: 7 ♂, 2 ♀, 11 February to 24 August 1927. Isla Grande: 1 ♂, 23 June 1928. Guabo: 1 ♂, 15 April 1928. Cricamola: 1 ♀, 15 February; 1 ♂, 2 ♀, 12–26 August 1928.

PACHYRHAMPHUS CINNAMOMEUS Lawrence

Almirante: 1 ♂, 1 ♀, 5, 9 May 1927; 1 ♂, 1 ♀, 1 ?, 13 July 1928. Guabo: 1 ♂, 3 April 1928. Cricamola: 1 ♂, 17 February; 1 ♂, 1 ♀, 1 ?, 9–20 August 1928.

PACHYRHAMPHUS POLYCHOPTERUS CINEREIVENTRIS Sclater

Almirante: 1 ♂, 1 ♀, 31 May, 21 July 1927. Western River: 1 ♀, 12 July 1928. Chiriquicito: 1 ♀, 27 April 1928.

LIPAUGUS UNIRUFUS CASTANEOTINCTUS (Hartert)

Almirante: 2 ♀, 16 April, 29 June 1927.

RHYTIPTERNA HOLERYTHRA HOLERYTHRA (Sclater and Salvin)

Additional specimens.— Almirante: 1 ♂, May 1928. Buena Vista: 1 ♂, 1 ♀, 16 March 1928. Boquete trail: 1 ♂, 2 ♀, 17, 20, 30 March 1928.

ATTILA CITREOPYGA CITREOPYGA (Bonaparte)

Almirante: 1 ♀, 16 April 1927; 2 ♂, 1 ♀, 1–20 June 1928. Guabo: 2 ♂, 1 ♀, 10, 11 April 1928. Cricamola: 1 ♂, 16 February 1928.

CARPODECTES NITIDUS Salvin

Additional specimens.— Almirante: 2 ♂, 3, 26 May; 3 ♂, 3 ♀, 1 ♀, 3, 4, 29 August 1927; 1 ♂, 31 August 1928.

QUERULA PURPURATA (Müller)

Additional specimens.— Almirante, 3 ♂, 3 ♀, 19, 23 February, 15 June 1927. Western River: 3 ♂, 1 ♀, 5 October 1927, 12 May, 12 July 1928. Zegla: 1 ♀, 16 December 1927. Guabo: 2 ♂, 5 April 1928. Cricamola: 2 ♂, 1 ♀, 17 February, 20, 26 August 1928.

PROCNIAS TRICARUNCULATA (J. and E. Verreaux)

Additional specimens.— Changuinola: 1 ♀, 13 August 1927. Almirante: 1 ♂, 2 ♀, 17, 18 December 1928.

HIRUNDINIDAE

IRIDOPROCNE ALBILINEA (Lawrence)

Changuinola: 1 ♂, 17 June 1928.

HIRUNDO RUSTICA ERYTHROGASTER Boddaert

Almirante: 1 ♀, 21 October 1926; 1 ♂, 9 November 1927.

PROGNE CHALYBEA CHALYBEA (Gmelin)

Additional specimens.— 1 ♂, 1 ♀, Swan Key, 3 June 1927.

STELGIDOPTERYX RUFICOLLIS UROPYGIALIS (Lawrence)

Cricamola: 1 ♂, 16 August 1928.

SYLVIIDAE

RAMPHOCAENUS RUFIVENTRIS RUFIVENTRIS (Bonaparte)

Almirante: 1 ♂, 1 ♀, 31 May, 26 July 1927. Boquete trail (1,500–3,500 feet): 1 ♂, 1 ♀, 17, 29 March 1928. Cricamola: 1 ♀, 22 September 1927.

MICROBATES CINEREIVENTRIS SEMITORQUATUS (Lawrence)

Benson collected a single specimen at Almirante, the only record for the Chiriqui Lagoon region.

POLIOPTILA SUPERCILIARIS SUPERCILIARIS (Lawrence)

Additional specimen.—Western River: 1 ♂, 12 May 1928.

TROGLODYTIDAE

HELEODYTES ZONATUS COSTARICENSIS (Berlepsch)

Cricamola: 7 ♂, 3 ♀, 1 ♀ (adults and immature), 13 August, 9, 12 September 1927, 12, 13 February, 14–23 August 1928.

Benson also collected this bird at Bocas del Toro and at Almirante.

I have had occasion to make direct comparison between the series from Cricamola and the birds taken by Benson as well as with topotypical *costaricensis* and the type series of *H. z. panamensis* Griscom from Santa Fé, Veraguas. The four specimens from Almirante and Bocas are without doubt strictly referable to *costaricensis*. Two February specimens (least worn of the series) from Cricamola approach *panamensis* in having slightly deeper coloration on the posterior underparts, but agree with *costaricensis* in the somewhat larger size of the dark areas on the pileum and lack of any distinct buffy wash on the hind neck; they are best placed with *costaricensis*.

THRYOPHILUS ZELEDONI Ridgway

Additional specimen.—Almirante: 1 ♀, 10 August 1927.

Benson took three more, one at Bocas and two at Almirante.

THRYOPHILUS THORACICUS (Salvin)

Almirante: 1 ♂, 22 May 1927.

THRYOPHILUS CASTANEUS COSTARICENSIS (Sharpe)

Additional specimens.— Twenty-one, from nearly all localities in the Chiriqui Lagoon region.

As Kennard and Peters have already pointed out, the bay wrens from the region about Almirante are clearly referable to *costaricensis*. A series of six from Cricamola (2 ♂, 10, 21 September 1927 and 3 ♂ and 1 ?, 8–16 August 1928) while best referred to *costaricensis*, show an approach towards *castaneus*, not sufficient however to warrant the naming of a very slightly differentiated intermediate race, whose range would turn out to be very small, since according to Griscom (mss.) *T. c. castaneus* is the bird occurring in the Rio Calovevora district.

The original conception of a subspecies was a geographic aggregate of individuals connected by a series of actual intergrades to the next geographic aggregate of the same species. More recently this conception has been broadened, so as to regard representative forms as subspecies, even though actual intergradation does not occur; though some systematists demand intergradation through individual variation before being willing to regard as subspecies two more or less widely separated forms.

It is perfectly obvious that in cases of species having continuous distribution, and divisible into a number of well-marked geographic races, there are bound to be areas of intergradation between the races in which the birds might be referred, some to one adjoining race and some to the other. Of late years with the number of really good geographical subspecies to be named already discriminated, and with a fairly large crop of systematists still at work and anxious to "name something," it is only natural that these intergrading groups of individuals have begun to claim more than their share of attention. It is, of course, an impossibility to lay down a set of rules that will cover any given case. My own practice is to avoid naming intermediates between closely drawn subspecies. Neither does it seem to me to be advancing the science of ornithology to split up a species on "average" characters.

PHEUGOPEDIUS ATROGULARIS (Salvin)

Additional specimens.— Almirante: 1 ♀, 4 November 1926; 1 ♂, 4 November 1927. Western River: 1 ♂, 30 September 1927.

TROGLODYTES MUSCULUS INTERMEDIUS Cabanis

Chiriquicito: 1 ♂, 27 August 1928.

The above skin is that of a bird in worn summer plumage. It differs, however, from a pair of adults from Cricamola (see below), both in a

similar state of wear, in being more buffy brown below and on the sides of the head; characters that place it with *intermedius*.

TROGLODYTES MUSCULUS INQUIETUS Baird

Cricamola: 1 ♂, 1 ♀, 13, 14 August 1928.

HENICORHINA PROSTHELEUCA TROPAEA Bangs and Peters

Almirante: 1 ♂, 1 ♀, 31 May, 15 June 1927. Cricamola: 1 ♂, 21 August 1928.

CYPHORHINUS PHAEOCEPHALUS LAWRENCII Sclater

Almirante: 1 ♀, 26 May 1927.

Under the International Code the genus *Leucolepis* must give way to *Cyphorhinus* Cabanis 1844, since that name is not preoccupied by *Cyphorhina* Lesson 1843.

MIMIDAE

DUMETELLA CAROLINENSIS (Linné)

Changuinola: 1 ?, 2 December 1927. Almirante: 1 ♀ 1 ?, 2, 20 November 1927; 1 ♀, 16 January 1929.

TURDIDAE

TURDUS GRAYI CASIUS (Bonaparte)

Additional specimens.—Changuinola: 1 ♂, 21 January 1929. Almirante: 1 ♂, 16 February; 1 ♂, 19 April; 1 juv. ♂, 1 ♀, 10, 14 June 1929. Western River: 1 ♀, 12 May 1928. Guabo: 1 ♂, 6 April 1928. Chiriquicito: 2 ♀, 17, 18 April 1928. Cricamola: 1 ?, 13 August 1928.

HYLOCICHLA MUSTELINA (Gmelin)

Changuinola: 1 ?, 31 December 1928. Almirante: 1 ?, 30 October 1926; 1 ♀, 1 November 1928.

HYLOCICHLA USTULATA SWAINSONI (Tschudi)

Changuinola: 1 ♀, 15 October 1928. Almirante: 1 ♂, 21 October 1927. Guabo: 2 ♀, 6, 9 April 1928.

CATHARUS MEXICANUS FUMOSUS Ridgway

Boquete trail: 2 ♂, 21, 27 March 1928.

VIREONIDAE

VIREO VIRESCENS Vieillot

Boquete trail: 1 ?, 22 March 1928. Cricamola: 2 ♂, 1 ?, 10, 21, 22 September 1927.

VIREO FLAVOVIRIDIS FLAVOVIRIDIS (Cassin)

Changuinola: 1 ♂, 27 September 1927.

This single specimen is the only record for the Chiriqui Lagoon region; the bird is without doubt a migrant.

HYLOPHILUS DECURTATUS PUSILLUS Lawrence

Almirante: 1 ♂, 25 May 1927. Boquete trail: 1 ♂, 17 March 1928.

MNIOTILTIDAE

MNIOTILTA VARIA (Linné)

Changuinola: 1 ♀, 30 September 1928.

PROTONOTARIA CITREA (Boddaert)

Miscellaneous localities near Almirante: 3 ♂, 2 ?, 1–20 October 1927; 1 ♀, January 1929. Cricamola: 2 ♂, 17, 22 September 1927. Changuinola: 1 ♀, 25 January 1929.

A common winter visitant.

DENDROICA AESTIVA AESTIVA (Gmelin)

Additional specimens.—Almirante: 1 ♂, 1 ♀, 31 August, 27 September 1927; 1 ♂, 3 May 1928; 1 ♀, 13 August 1928.

DENDROICA AESTIVA RUBIGINOSA (Pallas)

Griscom (ms.) cites two examples of this subspecies of the Yellow Warbler taken by Benson at Almirante.

DENDROICA ERITHACHORIDES ERITHACHORIDES Baird

Almirante: 5 ♂, 3 ♀, 1 ?, 18 May, 14 July, 4, 22 August 1927; 10 July, 14 September 1928; 18 January 1929. Quebrada Nigua: 1 ♂, 15 January 1929. Shepherd Island: 1 ♂, 1 ♀, 17 May 1928. Western River: 3 ♂, 1 ♀, 1 ?, 24 July, 2 August, 5 October 1927. Cricamola: 1 ♀, 12 February 1928.

These birds are certainly not referable to *bryanti*, since they are more heavily and boldly streaked below. A comparison with the type of

Dendroica erithachorides Baird from Carthagena, Colombia has been possible through the courtesy of the authorities of the United States National Museum. This comparison fails to reveal any tangible character by which the birds from about Almirante Bay may be separated from the form known to inhabit the northern coast of Colombia. At this point it may not be out of place to hazard the suggestion that *erithachorides* will eventually be found in suitable mangrove swamps the length of the Caribbean shores of Panama.

Birds from the Pacific side of the Canal Zone and from the Pearl Islands have always been referred to *erithachorides*, but are not the same as the specimen from Carthagena. The latter has the chestnut head sharply defined from the rest of the yellow underparts, whereas the Pearl Island specimens have the streaks on the upper part of the breast very broad and coalescent with the posterior border of the throat patch.

Gyldenstolpe (Ark. Zoöl., 19 A, no. 1, 1926, p. 31) has already shown that the type of *Dendroica petechia aequatorialis* Sundevall, supposed to have come from Guayaquil, is identical with specimens from the Pearl Islands, but believing birds from that archipelago to be true *erithachorides*, disposed of *aequatorialis* as a synonym. In a final effort to straighten out the matter I wrote to Dr. Lönnberg to learn more of the history of the type of *aequatorialis*; he replies in part as follows: "... but in the handwritten catalogue recording the birds brought home by Eugenie the following words are written by Sundevall himself concerning this specimen: 'Guayaquil eller Panama, April, which translated means Guayaquil or Panama April.' Eugenie visited both Guayaquil and Panama in April, but left the former place the fifth if I remember rightly. With this record of uncertainty concerning the exact place where Sundevall's specimen was collected, I think that there is no danger in assuming that it really was collected at Panama, especially as this agrees with the appearance of the bird and other facts."

I therefore designate Panama City, Panama as the type locality of *Dendroica petechia aequatorialis* Sundevall, a procedure that is in accordance with the facts, and one which involves no change in nomenclature other than resurrecting the name. Unfortunately the bird of the Pacific end of the Canal Zone and the Pearl Islands becomes *aequatorialis*. I only wish I could believe that this further example of how geographic names can become misnomers would not pass unheeded, but with the general decline of the study of the classics in this day and generation, I can only anticipate an even more general display of ignorance and its resulting "hog latinization" of nomenclature.

Since the determination of the proper name for both the Almirante and Pearl Island series of mangrove warblers has involved an unexpected amount of correspondence and research, it may be well to place on record a few of the facts gathered in regard to the races, ranges and principal synonymy.

DENDROICA ERITHACHORIDES CASTANEICEPS Ridgway

Dendroica bryanti castaneiceps Ridgway, Proc. U. S. Nat. Mus., **8**, 1885, p. 350, footnote (La Paz, Lower California, type in U. S. Nat. Mus.).

Mangrove swamps, Pacific coast of Mexico (Mazatlan) and lower California (lat. 27°) south to Guatemala.

DENDROICA ERITHACHORIDES XANTHOTERA Todd

Dendroica bryanti xanthotera Todd, Proc. Biol. Soc. Wash., **37**, 1924, p. 123 (Punta Arenas, Costa Rica, type in Carnegie Mus.).

Mangrove swamps of the Pacific coast of Central America from Guatemala to Costa Rica (Punta Arenas).

DENDROICA ERITHACHORIDES BRYANTI Ridgway

Dendroica vieillotii var. *bryanti* Ridgway, Am. Nat., **7**, 1873, p. 605 (Belize, British Honduras, type in U. S. Nat. Mus.).

Mangroves and salt water growths on the Gulf coast of Mexico from Tampico south on the Caribbean coast of Central America to Port Limon, Costa Rica.

DENDROICA ERITHACHORIDES ERITHACHORIDES Baird

Dendroica erithachorides (sic) Baird, Rep. Pac. R. R. Survey, **9**, 1858, p. 283, in text (Carthagen, Colombia. Type in U. S. Nat. Mus.).

Dendroica Vieilloti Cassin, Proc. Ac. Nat. Sci., 1860, p. 192 (Carthagen, type in U. S. Nat. Mus., the same specimen as Baird's type of *erithachorides*!).

Rhimamphus ruficeps Cabanis, J. f. O., 1860, p. 326 (Carthagen,¹ type in Berlin Mus.).

Dendroeca petechia i panamensis? Sundevall, Öfv. K. Vet.-Akad. Förh. Stockholm, **26**, 1869 (1870), p. 609 (renaming of *vieillotii* Cass.).

Almirante Bay and Chiriqui Lagoon region of Panama and northern coast of Colombia from Carthagen to the Cienaga Grande.

¹ Dr. Stresemann writes me as follows: "I believe Cabanis based his diagnosis of *Rhimamphus ruficeps* on the specimens possessed at the time by the Berlin Museum, namely 'einige . . . Exemplare dieser Art aus der Küstengegend von Neu-Granada (von Carthagen), und ein aus der alten Bullock'schen Sammlung stammendes Exemplar,' all of which are still preserved in our museum. I, therefore, believe to be justified in making a type, Carthagen, Haeblerlin leg. (Berlin Mus. no. 4,458)."

DENDROICA ERITHACHORIDES AEQUATORIALIS Sundevall

Dendroica erithachorides auct. nec Baird.

Dendroeca petechia h. *aequatorialis* Sundevall, Öfv. K. Vet.-Akad. Förh. Stockholm, **26**, 1869 (1870), p. 609, Guayaquil. Error = Panama City (type in Royal Nat. Hist. Mus., Stockholm).

Pearl Islands and adjacent mainland of Panama.

The bird described as *Dendroeca granadensis* by Sharpe (Cat. Birds Brit. Mus., **10**, 1885, p. 284, Colombia) has, so far as I am aware, never been satisfactorily identified. It may refer to *Dendroica petechia peruviana* in the very high plumage referred to by Chapman (Bull. Am. Mus. Nat. Hist., **36**, 1917, p. 545) or perhaps was based on worn or bleached examples of *erithachorides*. The bird described by Sharpe (l. c., p. 283) as *vieilloti* from a specimen from Gorgona Island, collected by Kellett and Wood, is probably the same as *aequatorialis*, but the description is so detailed in the inconsequential characters and the chief characters misunderstood, that positive identification is impossible without examination of the type.

DENDROICA FUSCA (Müller)

Boquete trail: 1 ♀, 26 March, 1928.

DENDROICA PENNSYLVANICA (Linné)

Almirante: 1 ♀, 12 November; 2 ♂, 29 December 1928. Boquete trail: 1 ♂, 23 March 1928. Cricamola: 1 ♂, 22 September 1927.

OPORORNIS FORMOSA (Wilson)

Changuinola: 1 ♂, 4 October 1928.

OPORORNIS PHILADELPHIA (Wilson)

Almirante: 1 ♂, 12 October 1928. Guabo: 1 ♂, 12 April 1928.

SEIURUS MOTACILLA (Vieillot)

Cricamola: 1 ♂, 24 August 1928.

SEIURUS NOVEBORACENSIS NOTABILIS Ridgway

Changuinola: 1 ?, 1 ♀, 30 September, 4 October, 1928. Almirante: 1 ♂, 12 December 1928. Quebrada Nigua: 1 ♂, 14 January 1929.

GEOTHYLPIS SEMIFLAVA BAIRDI Nutting

Additional specimens.— Changuinola: 2 ♂, 1 ♀, 17 June, 30 September, 7 November 1928. Almirante: 1 ?, 21 June 1928. Isla Grande: 1 ♂, 31 December 1927.

ICTERIA VIRENS VIRENS (Linné)

Almirante: 1 ♂, 16 January 1929.

WILSONIA CANADENSIS (Linné)

Changuinola: 1 ?, 3 October 1927; 1 ?, 15 October 1928. Almirante: 1 ♀, 22 September 1928.

SETOPHAGA RUTICILLA (Linné)

Almirante: 2 ♂, 27, 31 August 1927; 2 ?, 14, 22 September 1928.

PHAEOTHYLPIS LEUCOPYGIA LEUCOPYGIA (Sclater and Salvin)

Western River: 1 ♂, 19 November 1927. Guabo: 3 ♂, 4, 9, 13 April 1928.

I have followed Todd in his recent treatment of this species which was formerly included in the genus *Basileuterus*. (Proc. U. S. Nat. Mus., 74, art. 7, 1929, pp. 1-95.)

FRINGILLIDAE

PHEUCTICUS TIBIALIS Lawrence

Additional specimens.— Guabo: 1 ♂, 30 March 1928. Boquete trail: 1 ♂, 1 ♀, 17, 21 March 1928.

GUIRACA CAERULEA CAERULEA (Linné)

Almirante: 1 ♀, 1 December 1926.

This single specimen, apparently a bird of the year, is referred provisionally to the eastern blue grosbeak. It must be borne in mind that the identification of immature migrants of closely drawn races, especially when far beyond the normal range of subspecies, is always a matter of more or less uncertainty.

CYANOCOMPSA CYANOIDES CAERULESCENS Todd

Additional specimens.— Changuinola: 1 ♂, 3 December 1928. Western River: 1 ♂, 27 June 1928. Almirante: 1 ♂, 24 January 1929.

ORYZOBORUS FUNEREUS Sclater

A species secured by Benson both at Bocas del Toro and Almirante, but strangely enough, not found by the other collectors.

VOLATINIA JACARINI ATRONITENS Todd

Another common, widespread species that was overlooked by all except Benson, who took it at Almirante.

PITYLUS GROSSUS SATURATUS Todd

Guabo: 1 ♂, 8 April 1928. Cricamola: 2 ♂, 26 August 1929.

CARYOTHAUSTES POLIOGASTER SCAPULARIS (Ridgway)

Additional specimens.— Almirante: 1 ♂, 14 June 1927; 2 ♂, 1 June 1928. Boquete trail: 1 ♀, 27 March 1928.

SALTATOR ATRICEPS LACERTOSUS Bangs

Additional specimens.— Almirante: 1 ♂, 13 May 1927. Guabo: 1 ♂, 8 April 1928.

SALTATOR MAXIMUS MAGNOIDES Lafresnaye

Additional specimens.— Almirante: 2 ♂, 22 May, 14 June 1927; 2 ♂, 2 ♀, 1, 15 June, 13 July 1928. Guabo: 1 ♀, 12 April 1928. Cricamola: 1 ♀, 14 August 1928.

This bird was previously recorded by Kennard and Peters as *Saltator magnoides medianus* Ridgway. For the reasons for the change of both specific and subspecific name the reader is referred to Griscom, Bull. Mus. Comp. Zoöl., 69, no. 8, 1929, p. 184 and to Peters, *op. cit.*, no. 12, pp. 467-468.

SPIZA AMERICANA (Gmelin)

Additional specimens. Chiriquicito: 1 ♂, 1 ♀, 17, 18 April 1928.

ARREMONOPS STRIATICEPS RICHMONDI Ridgway

Additional specimens.— Changuinola: 1 ♂, 13 July 1928. Almirante: 1 ♀, 3 February; 1 ♂, 30 April; 2 ♂, 1 juv., 19, 26, 27 May; 1 ♀, 2 November 1927; 2 ♂, 5, 31 May; 1 ♀, 26 July 1928. Quebrada Nigua: 1 ♂, 14 January 1929.

ARREMON AURANTIROSTRIS RUFIDORSALIS Cassin

Boquete trail: 1 ♂, 1 ♀, 19–21 March 1928. Guabo: 1 ♂, 1 ♀, 4 April 1928. Cricamola: 1 ♂, 1 ♀, 11, 19 September 1927; 1 ♂, 12 February; 1 ♀, 9 August 1928.

Arremon aurantirostris ranges from southern Mexico to northern Peru and, as is to be expected, resolves itself into a number of geographic races; at least six having been named. The most northerly one, *saturatus* of Cherrie, has not been currently recognized, being synonymized with *rufidorsalis* by Carriker (Ann. Carn. Mus., 6, 1910, p. 902) and both were regarded as synonyms of *auranti-rostris* by Ridgway (Birds No. and Mid. Amer., pt. 1, 1901, p. 457). Todd (Proc. Biol. Soc. Wash., 35, 1922, p. 90) described *Arremon aurantirostris strictocollaris* from Rio Atrato, Colombia, a form that is now known to range from Darien into northern Colombia.

It is not my intention to make out a case for *saturatus*; with plenty of material, the form can probably be upheld, so I leave that to my colleague, Mr. Griscom, who is now working up the magnificent Dwight Collection of Guatemalan birds for the American Museum. What I wish to point out is that *rufidorsalis* is a perfectly good subspecies. Compared with *a. aurantirostris*, *rufidorsalis* is characterized by having a somewhat broader superorbital stripe more prolonged anteriorly. This stripe in *rufidorsalis* is white throughout its entire length, whereas in *a. aurantirostris* the part lying behind the eye is invaded with gray. *A. a. rufidorsalis* ranges over Costa Rica except in the southwestern part of the country, and extends down the Caribbean slope of western Panama into the Chiriqui Lagoon region. Just where it merges on the north with *saturatus* (provided that form is recognizable) has not been determined. *A. a. aurantirostris* inhabits southwestern Costa Rica and the Pacific slope of Panama south at least to the Canal Zone.

COEREBIDAE

COEREBA MEXICANA MEXICANA (Sclater)

Additional specimens.—Changuinola: 2 ♂, 4, 9 October 1929. Almirante: 1 ♀, 1 juv. ♂, 13, 26 May; 1 ♂, 8 June 1927; 2 ♂, 16 March, 18 July 1928. Western River: 1 ♀, 27 June 1928. Shepherd Island: 1 ♂, 17 May 1928. Gerchow Key: 1 ♂, 1 ♀, 5 July 1928.

DACNIS CAYANA ULTRAMARINA Lawrence

Almirante: 1 ♀, 5 May; 1 ♂, 1 ♀, 14 July 1927; 11 ♂, 2 ♀, 21 June to 15 November 1928.

CYANERPES LUCIDUS ISTHMICUS Bangs

Additional specimens.—Almirante: 4 ♂, 4 ♀, 21 June to 2 July 1928.

CHLOROPHANES SPIZA ARGUTA Bangs and Barbour

Additional specimens.—Changuinola: 1 ♂, 9 December 1928. Almirante: 2 ♂, 15 November 1928. Boquete trail: 5 ♂, 2 ♀, 11–27 March 1928.

THRAUPIDAE

TANAGRA LUTEICAPILLA (Cabanis)

Additional specimens.—Changuinola: 1 ♂, 9 December 1927. Almirante: 2 ♂, 1 ♀, 1 ?, 10 November to 29 December 1928.

TANAGRA GOULDI PRAETERMISSA Peters

Additional specimens.—Changuinola: 1 ♂, 1 ♀, 29, 30 September 1929. Almirante: 1 ♂, 3 May 1927; 1 ?, 13 July 1928. Guabo: 3 ♂, 2 ♀, 3–9 April 1928. Cricamola: 1 ♂, 14 August, 1927; 1 ♂, 1 ♀, 11, 15 February; 1 ♂, 1 ♀, 14 August 1928.

TANAGRA OLIVACEA HUMILIS (Cabanis)

Almirante: 2 ♂, 15 November, 29 December 1928.

TANGARA GUTTATA EUSTICTA Todd

Additional specimen.—Boquete trail: 1 ♂, 25 March 1928.

TANGARA LARVATA FRANCISCAE (Sclater)

Additional specimens.—Changuinola: 1 ♂, 13 June; 1 ♀, 30 September; 1 ♀, 30 November 1928. Almirante: 1 ♀, 15 April; 1 ♂, 1 ♀, 16 May; 3 ♂, 1 ♀, 28 July to 29 August 1927; 1 ♀, 21 June 1928. Zegla: 1 ?, 1 ♀, 16–31 December 1927; 2 ♂, 16 November 1928. Cricamola: 1 ♂, 14 August 1929.

In our report on the birds of the Almirante Bay region, Mr. Kennard and I overlooked the fact that *Calliste franciscae* "Lafr." (Sclater, Proc. Zoöl. Soc. London, 1856, p. 142, Rio David, Chiriqui) is an earlier name for this form than *centralis* Berlepsch. Sclater believed his bird from Chiriqui to be the same as *Aglaia fanny* Lafresnaye of northwestern South America, but pointed out the characters by which the bird from western Panama differed from typical *larvata* of northern Central America and southern Mexico. He no doubt imagined that he was merely emending *fanny*, but under the present rules of

nomenclature *franciscæ* is a different name from *fanny*, and being earlier than *centralis* and applying to the same bird, must replace it.

This seems to be an opportune place for pointing out what may happen as a result of the temptation to "emend" or otherwise tinker with another author's names.

TANGARA LAVINIA DALMASI Hellmayr

Boquete trail: 1 ♀, 20 March 1929.

THRAUPIS CANA DIACONUS (Lesson)

Additional specimens.— Changuinola: 1 ?, 28 December 1926; 1 ♀, 27 September 1927. Almirante: 2 ♂, 1 ♀, 7–27 May; 1 ♀, 8 June; 1 ♂, 29 August 1927. Isla Grande: 1 ♂, 18 July 1927. Cricamola: 1 ♀, 17 February 1928.

THRAUPIS PALMARUM ATRIPENNIS Todd

Almirante: 1 ♂, 16 May 1928. Chiriquicito: 1 ♂, 1 imm. ♂, 16 April 1928.

RAMPHOCELUS PASSERINII Bonaparte

Additional specimens.— Almirante: 12 ad. ♂, 4 imm. ♂, 5 ♀, 19 April 1927 to 18 November 1928. Banana River: 1 ♀, 17 July 1928. Chiriquicito: 2 ♂, 16, 17 April 1928. Cricamola: 1 ♂, 27 September 1927.

RAMPHOCELUS ICTERONOTUS Bonaparte

Cricamola: 2 ad. ♂, 1 imm. ♂, 14, 18 August, 12 September, 1927; 2 ♂, 1 ?, 20–26 August 1928.

These specimens mark the western limit of the range of the species on the Caribbean slope of Panama. It has been recorded from Santiago de Veraguas on the basis of birds collected by Arcé. It was also taken on the Rio Calovevora by Benson in 1926 (Griscom ms.).

PHLOGOTHRAUPIS SANGUINOLENTA APRICA Bangs

Almirante: 1 ♂, 8 November 1928.

PIRANGA RUBRA RUBRA (Linné)

Additional specimens.— Changuinola: 1 ♂, 27 January 1929. Almirante: 1 ♂, 1 ♀, 22 November, 7 December 1928. Boquete trail: 1 ?, 20 March 1928.

PIRANGA FLAVA TESTACEA Salvin and Godman

Boquete trail: 2 ♂, 26 March 1928.

CHLOROTHAUPIS CARMIOLO CARMIOLO (Lawrence)

Additional specimens.— Boquete trail (1,300–1,800 feet): 1 ♂, 1 ♀, 19–25 March 1929.

The specimens from the Almirante Bay region show an approach to *C. c. magnirostris* Griscom in having a slightly heavier bill, with the upper mandible a trifle swollen basally; otherwise they do not differ from a large series of typical *carmioli*, to which I believe they should be referred.

HABIA FUSCICAUDA Cabanis

Changuinola: 1 ♂, 3 October 1927; 1 ♂, 29 September; 1 ♂, 31 December 1928. Almirante: 6 ♂, 1 ♀, 3–25 May; 1 ♂, 1 ♀, 10, 15 June 1927; 1 ♂, 19 January; 1 ♀, 7 May; 1 ♂, 21 June; 1 ♀, 26 July; 1 ♂, 17 September 1928. Western River: 1 ♂, 12 May 1928. Cricamola: 1 ♀, 11 August 1928.

LANIO LEUCOTHORAX ICTUS Kennard and Peters

Additional specimens.— Boquete trail (1,500–2,000 feet): 2 ♂, 1 ♀, 17–25 March 1928.

The range of this intermediate form remains to be determined. So far it is known from five specimens, all secured on the Boquete trail, between 1,500 and 2,300 feet.

HETEROSPINGUS RUBRIFRONS (Lawrence)

Western River: 1 ♂, 12 July 1928.

TACHYPHONUS RUFUS (Boddaert)

Changuinola: 1 ?, 25 January 1929. Almirante: 1 ♂, 1 ♀, 6, 16 May, 1927; 1 ♂, 3 May; 1 ♂, 14 June; 2 ♀, 15, 27 November 1928. Chiriquicito: 1 ♂, 14 June 1927.

TACHYPHONUS AXILLARIS (Lawrence)

Additional specimens.— Changuinola: 1 ?, 25 January 1929. Boquete trail: 3 ♂, 16–26 March 1928.

TACHYPHONUS DELATRII Lafresnaye

Additional specimens.— Boquete trail: 5 ♂, 11–19 March 1928. Cricamola: 1 ♀, 19 August 1928.

CHRYSOTHYLPIS CHRYSOMELAS CHRYSOMELAS (Sclater and Salvin)

Additional specimens.— Boquete trail: 5 ♂, 2 ?, 11–27 March 1928.

MITROSPINGUS CASSINII COSTARICENSIS Todd

Boquete trail (3,500 feet): 1 ♂, 29 March 1928. Guabo: 3 ♂, 2, 12 April 1928.

This subspecies is just about recognizable; the characters separating it from *M. c. cassinii* being best appreciated when series are viewed. The specimens here listed are the first to be recorded from Panama.

MITROSPINGUS CASSINII CASSINII (Lawrence)

Cricamola: 1 ♂, 28 August 1928.

This bird agrees better with examples of the typical form from the Canal Zone than with birds from eastern Costa Rica and the four listed above.

ICTERIDAE

ZARHYNCHUS WAGLERI WAGLERI (Gray)

Additional specimens.—Almirante: 1 ?, 21 August; 1 ♀, 23 December 1926.

GYMNOSTINOPS MONTEZUMA (Lesson)

Additional specimen.—Sixaola: 1 ♂, 15 January 1927.

CACICUS MICRORHYNCHUS Sclater and Salvin

Additional specimens.—Changuinola: 1 ♂, 13 June; 1 imm. ♂, 26 September 1928. Almirante: 1 ♂, 30 April; 1 ♂, 1 ♀, 6 May; 1 ♂, 1 ♀, 15, 26 June 1927; 1 ♂, 7 May; 1 ♂, 2 July 1928. Western River: 2 ♂, 1 ♀, 29 June to 12 July 1928. Boquete trail: 3 ♂, 2 ?, 14–28 March 1928. Guabo: 1 ♂, 1 ♀, 3 April 1928. Cricamola: 1 ♂, 20 August 1928.

AMBLYCERCUS HOLOSERICEUS HOLOSERICEUS (Lichtenstein)

Additional specimens.—Almirante: 1 ♀, 19 April; 1 ♂, 17 May; 1 ♂, 8 June; 1 ?, 30 July 1927; 1 ♂, 1 ♀, 10, 20 June, 1928; 1 ?, 18 January 1929. Cricamola: 1 ?, 8 August 1928.

PSOMOCOLAX ORYZIVORUS IMPACIFUS Peters

Additional specimens.—Almirante: 2 ♂, 10 May, 7 December 1928.

Kennard and I originally recorded the rice grackles from about Almirante as *violeus*, but I am now convinced that they are best referred to *impacifus*. They are not quite typical of that form in that there are traces of a bronzy wash present on two of the three males, but in other respects are much nearer to *impacifus*.

ICTERUS GALBULA (Linné)

Additional specimens.—Sixaola: 1 ♂, 15 January; 1 ♂, 16 November 1927
Changuinola: 1 ♂, 31 January; 1 ♀, 30 September 1928. Almirante: 1 ♂, 1 ♀
1 ?, 4 October, 9, 16 November 1928; 1 ♂, 18 January 1929.

ICTERUS SPURIUS (Linné)

Additional specimen.—Cricamola: 1 ♂, 16 February 1928.

ICTERUS PROSTHEMELAS (Strickland)

Additional specimens.—Changuinola: 1 ♀, 19 May 1927; 1 ♂, 30 September 1928. Almirante: 1 ♂, 19 April 1927. Western River: 1 ♂, 12 July 1928. Chiriquicito: 1 ♀, 16 April 1928.

ICTERUS MESOMELAS SALVINI Cassin

Additional specimens.—Changuinola: 2 ♂, 14 July 1928. Almirante: 1 ♂, 25 May 1926; 1 ♂, 19 February; 1 ♂, 25 May; 1 ♂, 14 June 1927; 1 ♀, 20 June; 1 ♂, 12 November 1928. Western River: 1 ♂, 27 June 1928. Guabo: 1 ♀, 10 April 1928.

CORVIDAE

CYANOCORAX AFFINIS ZELEDONI Ridgway

Additional specimens.—Changuinola: 1 ♀, 23 September 1928. Guabo: 2 ♂, 1 ♀, 2–13 April 1928. Boquete trail: 1 ♀, 1 April 1928. Cricamola: 1 ♀, 1 ?, 14, 20 August; 5 ♂, 1 ♀, 1 ?, 9–11 September 1927; 2 ♂, 2 ♀, 10–16 February; 1 ♂, 3 ♀, 2 ?, 5–11 August 1928.

PSILORHINUS MEXICANUS CAPTUS Kennard and Peters

Additional specimens.—Guabo: 1 ♂, 1 ♀, 1 ?, 7–15 April 1928. Chiriquicito: 1 ♂, 17 April 1928. Cricamola: 1 ♂, 27 August; 4 ♂, 9 September 1927; 1 ♂, 2 ♀, 17 February; 4 ♂, 1 ♀, 13–22 August 1928.

Total number of species collected by Wedel is 272, 17 more included in this report were met with only by Benson, while the following 18 species were collected only by Kennard and Smith:

Chamaepetes unicolor Salvin

Columba leucocephala Linné (also taken by Benson)

Leucopternis princeps Sclater

Elanoides forficatus yetapa Vieillot

Chaetura cinereiventris phaeopygos Hellmayr
Monasa grandior Sclater and Salvin
Thripadectes rufobrunnea (Lawrence)
Dendrocincla meruloides ridgwayi Oberholser
Myiozetetes similis columbianus Cabanis and Heine
Empidonax albigularis australis Miller and Griscom
Empidonax traillii traillii (Audubon)
Empidonax difficilis flavescens Lawrence
Tolmomyias flavotectus (Hartert)
Stelgidopteryx ruficollis serripennis (Audubon)
Turdus plebejus Cabanis
Sporophila corvina (Sclater)
Tangara gyroloides bangsi (Hellmayr)
Cyanolyca cucullata (Ridgway)

Sometime after this paper went to press, Dr. Chapman published a note in the Auk (48, Jan. 1931, p. 119-121) listing 31 species of North American migrants (by their vernacular names only!), collected by R. R. Benson at Cocoplum, Bocas del Toro, between 24 October and 12 November 1927. I have not been able to place Cocoplum on any map available, and time does not permit of inquiry, but inasmuch as the Almirante Bay region and the Panamanian province of Bocas del Toro are practically synonymous, I do not hesitate to include the following nine species given by Chapman, which appear to be new to the region.

Coccyzus americanus americanus (Linné)
Hylocichla minima aliciae (Baird)
Vireo philadelphica (Cassin)
Vermivora chrysoptera (Linné)
Vermivora peregrina (Wilson)
Dendroica coronata (Linné)
Dendroica magnolia (Wilson)
Dendroica castanea (Wilson)
Passerina cyanea (Linné)

Making a total of 316 species now recorded from the Almirante Bay and Chiriqui Lagoon region of Panama.



Peters, James Lee. 1931. "Birds of the Almirante Bay Region of Panama."
Bulletin of the Museum of Comparative Zoology at Harvard College 71, 293–345.

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