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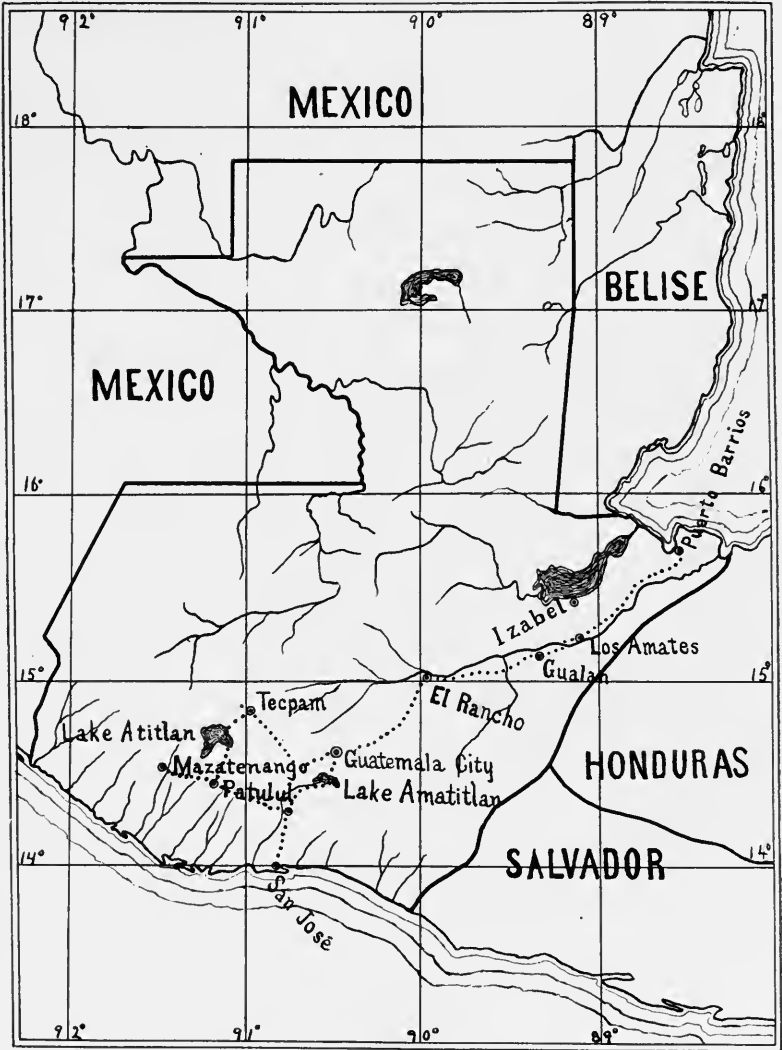
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FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 125.

ORNITHOLOGICAL SERIES.

VOL. I, No. 3.

CATALOGUE OF A COLLECTION
OF BIRDS FROM GUATEMALA

BY

NED DEARBORN,
Assistant Curator of Ornithology.

CHARLES B. CORY, Curator of Department of Zoology.



CHICAGO, U. S. A.

November, 1907.

CATALOGUE OF A COLLECTION OF BIRDS FROM GUATEMALA

BY NED DEARBORN

The collection of birds treated in this paper was derived from three sources. Messrs. Edmund Heller and Charles M. Barber, who spent the winter of 1904-5 in Guatemala making general collections for the Department of Zoology, supplied 49; Mr. Barber, who continued the general collecting the following year, furnished 138; and the writer, making birds his chief object, collected 1,000 during the early part of the year 1906. The total number, then, is 1,187, comprising 305 species and subspecies, mostly skins, though several skeletons and alcoholic specimens are included. All localities represented by specimens are indicated on the accompanying map, which also shows the route followed by the writer.

This route, for the most part, was the line of least resistance. From Puerto Barrios, the port of entry, to El Rancho, the Guatemala Northern R. R. furnished convenient transportation; and from Guatemala City to Mazatenango and San José, by way of Esquintla, the Guatemala Central R. R. was employed. Between El Rancho and Guatemala City, and from Patulul to Tecpam and back to Guatemala City, it was necessary to go on horseback, pack horses or Indians being employed to carry luggage, according to which happened to be the more convenient. As a rule, however, an Indian *mozo* is preferable to a horse as a carrier for packages of 100 pounds or less.

The localities visited and the days spent in collecting at each, are as follows: El Rancho, January 4th to 11th; Los Amates, January 15th to February 9th; Puerto Barrios, February 12th; Gualan, February 14th to 17th; Lake Amatitlan, February 24th to 27th; San José, March 5th to 9th; Mazatenango, March 15th to 21st; Patulul, March 23d to April 5th; Lake Atitlan, April 7th to 10th; Tecpam, April 11th to 15th. The physical aspects of these places, and the conditions encountered at each of them, have such a bearing on the collection that a prefatory word concerning them is not impertinent.

El Rancho, the first stopping place, has an elevation of about 1,000 feet. Its dry season is long, and the rainy season is somewhat uncertain. In January the earth presents a baked appearance.

Cacti are common, and away from the river very few trees have foliage. By ascending the mountains to the north of the town, green trees and brooks of cool water may be found, but these all disappear long before reaching the valley. Perhaps the most striking object in the landscape of the valley is the tree cactus (*Cereus*), which is the especial home of the Santa Cruz woodpecker (*C. sancta-cruzi*) and the cactus wren (*H. capistratus*). Its fruit is much sought by orioles and the long-tailed jays. Birds were fairly abundant. In addition to the species secured here, may be mentioned the mangrove swallow (*I. albilinea*) and the killdeer (*O. vociferus*), neither of which is represented in the collection.

Los Amates, elevation about 60 feet, is in the rubber country. The village is on the bank of the Motagua River, and the region immediately surrounding it is densely covered with a great variety of vegetation. It is practically useless to attempt to collect away from the railroad or a path of some sort. Two weeks were spent at Finca Chapulco, a rubber plantation, three or four miles from the village. Mr. William McFarlane, manager of this estate, is not only a good host but a most agreeable companion, and the stay there was pleasant as well as profitable,—notwithstanding the rain which fell twelve out of the fourteen days. This region, away from the river, offers occasional ridges covered with pine (*P. caribæa*), and also open savannas bearing a coarse grass as high as one's head. Many species of birds occur, but few of them are abundant, and the rank nature of the vegetation makes collecting rather slow.

Puerto Barrios was visited in February for the purpose of sending specimens to Chicago. The steamer was a day late, and an attempt was made to do some collecting. The place is a swamp, the only way out being over the railway. Birds were scarce and well nigh impossible to obtain.

Gualan is at the head of canoe navigation on the Motagua River, and just within the limits of the semi-arid area which extends up the Motagua Valley far beyond El Rancho. Its altitude is about 250 feet. Its proximity to the swamp country makes it a particularly good collecting ground, inasmuch as both lowland and upland species are to be found, and in winter there are comparatively few obstructions to travel in any direction. The way from El Rancho to Guatemala City is mountainous, and until the Pacific side of the divide was reached, perhaps 20 miles northeast of the city, very few birds were seen.

The collecting at Lake Amatitlan was in the neighborhood of

the narrow part of the lake, where the railroad crosses it. The altitude is about 4,000 feet. The depth of the lake is about 100 feet, deep water extending to within a few feet of the shore. A number of hot springs are located along the southern margin. Excepting where erosion has cut down the side of a mountain and filled a portion of the lake, the strip of shore is narrow,—in places there are sheer ascents from the water. Green vegetation was confined to the lake shore, and practically all bird life was near the water. A number of species not encountered on the Atlantic slope were collected here. The jay (*C. melanocyanea*) and the sparrow (*M. biarcuatum*) were the two most striking species, both being new and abundant.

San José was the next locality visited. The heat here was so great that it was found necessary to retreat to the highlands to recuperate, at the end of five days. It is a good collecting ground, however. The lagoons teem with wading birds, and in the woods were found a number of forms not taken elsewhere. Near the beach were found a number of species peculiar to mangrove swamps, while the woods farther inland were well tenanted with birds, and not too hard to get through.

Mazatenango and Patulul are similarly situated, their altitude being about 1,800 feet. This region is watered by numerous streams from the Cordilleras and is largely under cultivation, sugar and coffee being the staple products. The forests contain some of the finest trees that were seen anywhere, and where the underbrush has been removed for planting coffee, finer conditions for collecting can scarcely be imagined. The writer joined Mr. Barber at Patulul and continued in his good company till the work was ended at Tecpam. We were especially fortunate at Patulul in not only being granted the privilege of hunting on property of the land holders, but furthermore, in being entertained by them. Sr. Don Guillermo Peitzener, proprietor of Finca San Julián, a sugar plantation, accorded us full home privileges, with every convenience amply provided. Birds were plentiful, and the collection grew rapidly there in such species as inhabit cultivated land. When we wished to work the woodland forms, we were given an equally cordial welcome at the coffee plantation known as Finca San Fernando, by its owner, Sr. Don Frederico Müller-Winter and his gracious and accomplished wife. When we came to this place after a ride on horseback over a narrow trail for several miles through the forest, we named it Paradise, and still hold that it is a credit to the name. Here is a home so remote from commercial hurry, that nervous wrack is unthinkable. A mountain,

with its base at the very door, on the one hand, a stream of water on the other, a closer environment of useful and ornamental trees and herbs, seclusion, books, a piano, a table well supplied from two continents,—finding all this at San Fernando, and enjoying it, we voted down the "Swiss Family Robinson" and set up a real ideal.

The north shore of Lake Atitlan, near Panajachel, which was our next stopping place, is too precipitous to follow, except where two small streams have worn out short valleys and made a little alluvial soil. Bird life was confined almost entirely to these valleys and the lake, which is about 5,000 feet above the sea, and has a depth of about 1,000 feet. Here we first saw the mockingbird (*M. g. guatemalensis*), the whippoorwill (*A. chiapensis*), the grebe (*C. d. brachypterus*) and the fine, large humming-bird (*C. rufus*). We took two days for the journey from the lake to Tecpam, in order that we might collect some things that we had been unable to obtain previously. Several miles of this road follow a *barranca* having a stream at the bottom, and its sides well wooded with oak and pine. In this place we secured the ant-eating woodpecker (*M. formicivorous*), the black-eared bushtit (*P. melanotis*) and the swift (*S. zonaris*). The altitude of this gorge is about 6,500 feet.

The region about Tecpam presents a striking contrast, in both fauna and flora, to the lowlands. In the vicinity of the town the land is mainly under cultivation, but towards the northwest, only a few miles away, rises Sierra Santa Elena to the height of about 10,000 feet, covered with forest to its summit. The altitude of the town is about 7,500 feet. As one ascends the mountain he finds the long-leaved pine to be the common tree between 8,000 and 9,000 feet, but above the latter elevation cypress trees exclude all other varieties. We passed a night and a day as guests of Sr. Don Guillermo Thom, who lives on the mountain at about 9,500 feet, and is the only practical forester in the republic. Here, again, we found a real home, having all the comforts desired by refined people, in the heart of a cypress forest five days' journey by ox-team from the source of supplies, Guatemala City. Here we found the junco (*J. alticola*), the kinglet (*R. s. clarus*), the green toucan (*A. prasinus*), the thrush (*C. f. alticola*), the red warbler (*E. versicolor*) and other species not seen elsewhere. The cypress woods are quite impenetrable without an ax. Fallen trees, thick bushes and long dripping moss make it almost impossible to move out of the cleared paths. A longer stay at Tecpam would have been profitable, but three days were all that could be spared for it.

Thanks are due, and are hereby heartily rendered, to Mr. F. G. Williamson, General Manager of the Guatemala Northern R. R., and Col. W. P. Tisdell, Assistant Manager of the Guatemala Central R. R., for assistance in transportation; to Consul General Winslow and Vice Consul Owen, both of whom did all in their power to give assistance, which on at least one occasion was sorely needed; and to Mr. William Mac Farlane, Sr. Don Guillermo Peitzener, Sr. Don Frederico Müller-Winter and Sr. Don Guillermo Thom for hunting privileges and hospitality.

It is also a pleasure to acknowledge the kindness of Dr. J. A. Allen, of the American Museum of Natural History of New York, Prof. Robert Ridgway, of the Smithsonian Institution, and Dr. C. Hart Merriam, Chief of the Biological Survey at Washington, in allowing specimens to be sent from the collections in their charge to aid in the study of this collection; and to Mr. E. W. Nelson, Chief Field Naturalist of the Biological Survey, whose knowledge of the birds of Mexico is unequaled, for advice on several doubtful points.

In the following notes, particular attention has been given to dates of capture of such specimens as were migrants from North America, and to all cases of moulting. There are few data published relating to the time when such birds as have a distinctive nuptial plumage acquire it. It may be here remarked, that the resident birds were very rarely found to show any signs of a spring moult, while the migrants taken in April and the latter part of March, as a rule were putting out new feathers. Cases of individual variation have been mentioned, and, while the naturalist bent on collecting, finds scant time to study habits, such as were apparent have been recorded. Colors are designated, as far as possible, according to Ridgway's Nomenclature of Colors.

Family **Podicipedidae.**

1. **Colymbus dominicus brachypterus** *Chapman.*

Seven specimens were taken at Lake Atitlan between March 4th and April 9th. Only one of them, a female, was in nuptial plumage. Two other females, which were assuming the breeding dress, had the chin white and the throat black; showing that the progress of moult on this area is *towards* the bill. One of the males had shed all the primaries of both wings, the pins for the new primaries being about

5 mm. in length. None of the other specimens show any lack of primaries. These little grebes were found in company with *C. n. californicus* and rarely strayed from a patch of floating vegetation. Iris yellow near the pupil, changing to orange at the periphery.

2. *Colymbus nigricollis californicus* (Heermann).

Three were collected at Lake Amatitlan and five at Lake Atitlan. They were common at the latter lake March 20th. Those taken at Lake Amatitlan (Feb. 24) were all in winter plumage. A male taken by Mr. Barber at Lake Atitlan (Feb. 23) has the throat black, only the cheeks and chin remaining white, yet no sign of the ochraceous postocular tufts is visible. The lesser wing coverts of this specimen are tinged with light bay, and another male taken a day earlier had this color on all the upper wing coverts, the majority of the lesser coverts being entirely bay, while the greater coverts were only spotted with it at the tip. Bay wing coverts are evidently an individual variation of rather uncommon occurrence. A male and a female taken the 20th and 15th of March respectively, are nearly in full plumage, the former having a sprinkling of dark bay across the lower part of the foreneck, not found on any other specimen. Iris flame-scarlet near pupil, fading outwardly to white.

Family **Pelecanidæ.**

3. *Pelecanus californicus* Ridgway.

A single specimen was secured from a small flock that daily appeared along the beach at San José. This was an immature female.

Family **Anatidæ.**

4. *Querquedula discors* (Linnæus).

A single female was taken by Mr. Barber (Feb. 23d) at Lake Atitlan. None were found on Lake Amatitlan the last week in February. The deep waters of these lakes may not afford good feeding grounds for them. At all events they were scarce.

Family **Ardeidæ.****5. *Heterocnus cabanisi* Heine.**

One of these bitterns was shot beside a brook in a growth of heavy timber near Los Amates. Another was flushed from a wet place out in an open savanna where grass grew high as one's head. Iris yellow; throat yellow; ocular and loreal area, greenish yellow.

6. *Cochlearis zeledoni* (Ridgway).

Two birds of this species were discovered in a large, densely foliaged tree standing on the bank of the Motagua river at Gualan. One of them was secured; no others were seen. The land in this vicinity is high and rolling and offers no other feeding place for herons than the shores of the river, which are rather abrupt.

7. *Butorides virescens* (Linnæus).

This species was found generally distributed, but nowhere abundant. One specimen was procured at Los Amates and another at Lake Atitlan.

Family **Rallidæ.****8. *Porzana carolina* (Linnæus).**

Three of this species were taken at Lake Atitlan between February 23d and March 9th, and one at Lake Amatitlan February 6th. All had black throats, only one having this color intermixed with gray. A narrow fringe of rushes along the shores of these lakes is all the shelter rails can find, and it is not surprising that they appear to winter there in small numbers.

9. *Gallinula galeata* (Lichtenstein).

The only specimen of this gallinule, that was seen, was taken at Lake Amatitlan February 26th. It was in a patch of rushes on the shore of the lake near a thermal spring where the water is always quite warm.

10. *Fulica americana* (Gmelin).

Hundreds of these birds throng near the shores of lakes Amatitlan and Atitlan all winter. Only three specimens were taken.

Family **Heliornithidæ.****11. Heliornis fulica** (*Boddaert*).

A single specimen, the only one seen, was obtained in a small but rather swift tributary of the Motagua river near Los Amates. It acted very much like a grebe, diving and trying to make its escape under water, though it did not stay down long at a time. Its stomach contained aquatic insects. Iris deep brown.

Family **Scolopacidæ.****12. Actitis macularias** (*Linnæus*).

Two specimens were secured at Lake Atitlan, one on February 27th, the other April 8th. The latter had the outer primary of each wing about half grown; the other remiges are full-grown and un-abraded. Along the flanks of this specimen are a few spotted feathers, not yet fully developed, otherwise the under parts are in winter condition — unspotted. Excepting the nape, the upper parts are freshly moulted. The February specimen has worn plumage throughout. This species was also seen at El Rancho and Lake Amatitlan, but was not common anywhere.

13. Helodromus solitarius (*Wilson*).

One specimen of this species was taken at Los Amates February 2d, but it was ruined by ants. None were seen elsewhere.

14. Actodromus minutilla (*Vieillot*).

A pair of this species was secured from a flock of forty or more at Los Amates February 2d. None were seen elsewhere.

Family **Tinamidæ.****15. Crypturus soui meserythrus** *Sclater*.

Three specimens were obtained near Los Amates, where they appear to be common. They are difficult to see as they live in the dense forests and will not stir until one is about to step on them.

An egg, said by the natives to belong to this species, was brought in some time in April. Iris light olive.

Family **Tetraonidæ.**

16. *Cyrtonyx ocellatus* Gould.

This handsome quail was first seen on the road from Lake Atitlan to Tecpam at an altitude of about 7,000 feet. They frequent corn-fields and, in that brushy, mountainous country, there is not much use in hunting them anywhere else. Two specimens, purchased by Mr. Barber from an Indian, who had them alive, were all that could be obtained. These were taken near Tecpam at an altitude of about 7,600 feet. Iris clove-brown.

Family **Cracidæ.**

17. *Crax globicera* Linneus.

Curasows are not uncommon in the bottom lands about Los Amates, but one must learn their habits if he would collect them successfully. In February they appeared regularly each afternoon in some tall trees which at that season were clad only in yellow foliage. When wandering about in the jungle, it is only by good luck that one finds them. Four specimens, three males and a female, were taken, all adult. The irides of two of the males were dark red, while those of the female and the other male, which, judging by the small size of the excrescence at the base of its bill, was somewhat younger than the other two, were seal brown.

18. *Penelope purpurascens* Wagler.

The habitat of this species, like that of the curasow, is in the dense swamps, where it feeds on fruits of trees. It flies with vigor, and seems quite at home among the branches. All told, seven specimens were taken, all adults. In hunting them, a dog to flush them when they were on the ground, and send them into the trees, was found useful. When thus disturbed they were easy to discover, and not difficult to approach within gunshot. The naked ocular and loreal space in life is bright blue, the throat is red, the iris dark wine-color, and the legs carmine.

19. *Ortalis vetula plumbeiceps* Gray.

This chachalaca, or chacha as it is called by the natives of Guatemala, was found to be rather common in the lowlands, and adjacent portions of the upland country. They were noted at Gualan, which is well above the swamps though not remote from them, but not at El Rancho. Shortly after sunrise and at intervals during the day, they utter their resounding cries, of which the word *cha-cha-la-ca* is perhaps as good an imitation as can be put into printed syllables. When these vocal evolutions are in progress it is difficult to decide how many birds are calling, or where they are located, except as to general direction. Judging from their cries they are occasionally on or near the ground, but all that were seen were in trees. During the day they remain in heavy timber, but morning and evening they come to the edges of the clearings and to the cane brakes along the streams. Three examples were secured at Los Amates. These had the throat flesh color, the bill and feet horn-blue and the irides dark brown.

20. *Ortalis leucogastra* (Gould).

The white-bellied chachalaca was found only at San José. Here it was tolerably common, but at neither Patulul nor Mazatenango was it seen or heard. This bird was seen to take rather long flights high above the timber. It flies with neck straight and crest raised, which, with its long tail, give it an unusual contour. Its flight is direct and steady, and of moderate speed. The colors of iris and other soft parts are like those of *plumbeiceps*.

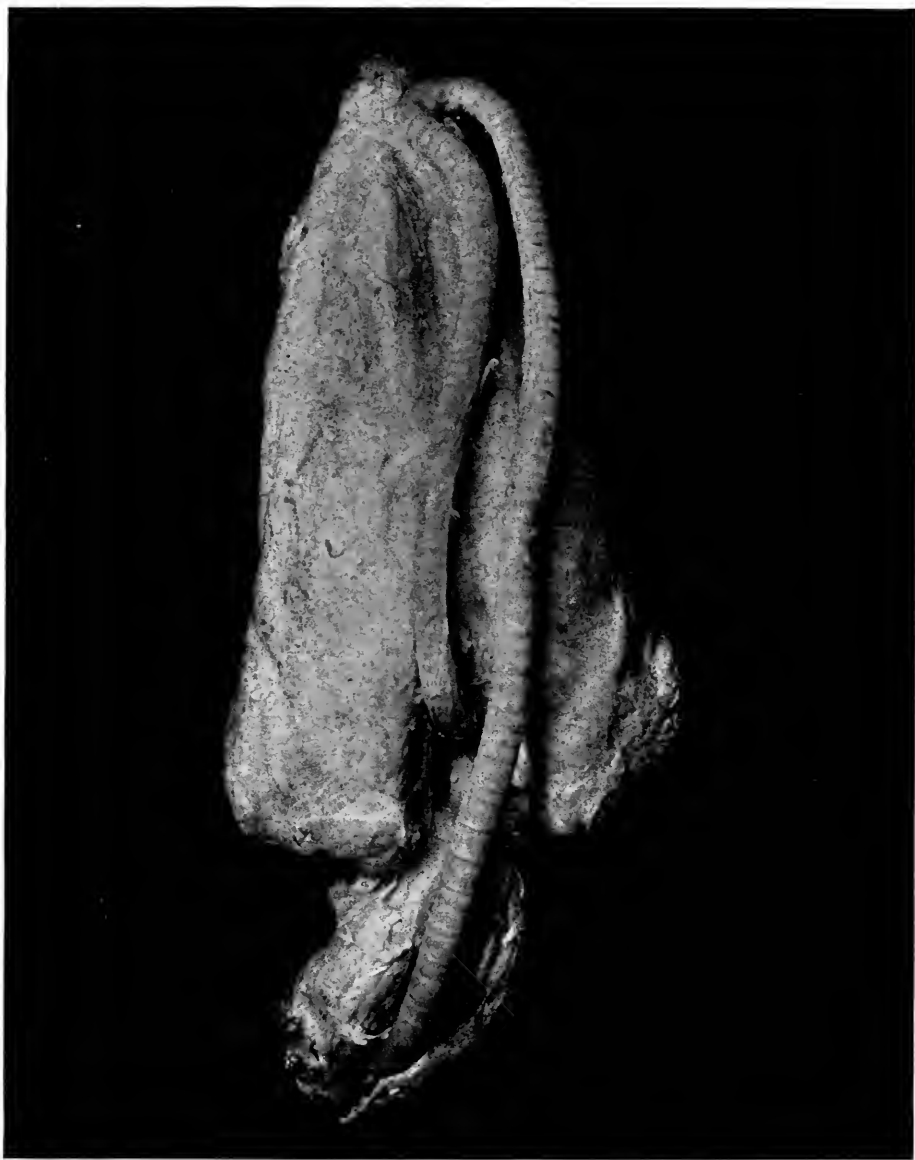
Family **Columbidae.**

21. *Columba flavirostris* Wagler.

A single specimen of this pigeon, taken at San José, was the only one recognized anywhere in the country. Iris orange; eyelids and base of bill red; tip of bill white.

22. *Columba rufina* Temminck and Knip.

The only pigeons of this species, that were found, were two taken at Los Amates, January 27th. Pigeons were numerous in that region, but the thick vegetation usually made it impossible to distinguish one species from another in the trees. It is probable that *rufina* is common there. These specimens, both females, show considerable variation in color of the interscapulars, which may be due



BREAST AND TRACHEA OF MALE
Ortalis vetula plumbeiceps.

to a difference in age. One has this area plumbeus with a tinge of purple; the other, pale seal brown. The former is in perfect feather, the latter has new tertials and inner primaries and outer secondaries, the other remiges being faded and abraded. Iris and feet carmine; bill black.

23. *Columba fasciata* Say.

Mr. Barber took one specimen at an elevation of 8,400 feet near Tecpam. None were seen at lower altitudes.

24. *Columba nigrirostris* Sclater.

Three specimens, one from Puerto Barrios and two from Los Amates, comprise the series. One of the lot, evidently immature, has rusty margins on all of its wing feathers, and scatteringly elsewhere. On the occiput and nape of this specimen the rusty-tipped feathers were being replaced by those of grayish Indian purple characteristic of adults. Iris pink in adults, orange in younger birds; bill black; feet purple.

25. *Zenaidura macroura* (Linnæus).

Mourning doves, by thousands, throng the country between Gualan and El Rancho, at least during the dry season, where they live about the numerous corn fields which at that season are in the harvest. One specimen was taken at El Rancho.

26. *Melopelia leucoptera* (Linnæus).

White-winged doves were found associated with the last species at El Rancho and elsewhere. Two specimens were taken, one at El Rancho, the other near Tecpam.

27. *Claravis pretiosa* (Ferrari-Perez).

This dove was seen only in the Motagua valley near Los Amates. It appeared to prefer shingly beaches along the forest streams instead of cultivated land. Five specimens were secured. Iris lake red; bill pale blue; feet flesh color.

28. *Leptotila fulviventris brachyptera* (Salvadori).

White-fronted doves were found common everywhere. Eleven specimens were taken, as follows: One from Los Amates, one from Gualan, one from Lake Amatitlan, one from Lake Atitlan, one at 8,400 feet, near Tecpam, five at Patulul and one at San José. They were usually found in trees in the forest, and appeared to subsist

mainly on fruit. The irides of the male from San José were red, those of all the others were orange; bare ocular area and legs burnt carmine; bill black.

29. *Leptotila plumbeiceps* (Sclater and Salvin).

One specimen was taken at Los Amates by Messrs. Heller and Barber. None were seen by the writer. Iris lemon.

30. *Scardafella inca* (Lesson).

Inca doves were found to be as much a part of village life in El Rancho and Gualan as English sparrows are at home. They are such graceful, dainty little birds that it is to be hoped the time will never come when the sparrows, which have neither manners nor grace, will dispossess them. One was secured at Gualan and another at El Rancho. None were noticed in the *tierra caliente* or in the mountains. The female had orange irides, while those of the male were red. Feet flesh color; bill pale at base and black at tip.

31. *Chæmepelia passerina pallescens* (Baird).

Four specimens were obtained, two at Gualan and two at Lake Atitlan. It is an abundant species generally distributed. Iris Chinese orange; bill burnt carmine.

32. *Chæmepelia minuta* (Linnæus).

A female of this species, taken near Los Amates, was the only individual known to have been seen. Iris red; bill pale horn; feet flesh color.

33. *Chæmepelia rufipennis* (Bonaparte).

Rufus-winged doves were found only at comparatively low altitudes. A pair was taken at Los Amates and one at San José. Iris red; bill pale horn; feet flesh color.

Family **Cathartidæ.**

34. *Gypagus papa* (Linnæus).

At Los Amates six or eight king vultures came down to assist the village pack of black vultures in disposing of a cow that had died on an island in the Motagua river. Unlike the black vultures,

which constantly stood about the carcass, these patricians spent but little time feeding, and when satisfied, ascended to the tops of some trees in the vicinity. Two adult males and one immature female were secured. Generally speaking, king vultures were scarce; aside from those already mentioned, only two were seen during the entire winter. The writer has yet to see a more beautiful bird than the present species in life. Its black wings and tail, white under parts and pale rose mantle are striking enough, but its chief beauty lies in the brilliant coloring of its head and neck. A sketch in water colors, carefully made from a fresh specimen, bears the following colors, named according to Ridgway's Nomenclature of Colors: Indian yellow, lemon-yellow, poppy-red, scarlet-vermilion, flame-scarlet, flesh color, rose-purple, and Indian purple. Iris lemon-yellow.

35. *Cathartes aura* (Linnaeus).

Turkey buzzards were found at all altitudes. They frequent mountains and open country, leaving the towns to the black vultures. One specimen was taken. Iris dark brown.

36. *Catharista urubu* (Vieillot).

In the towns black vultures vie with the pigs and dogs and chickens as scavengers. They are more numerous than poultry and quite as safe from violence. They understand the ways of humanity very well, and quickly recognize signs of a coming feast. At one time, two men were seen to bring armfuls of boughs and build a temporary shelter from the sun on the dry bed of the river. The black vultures gradually began to assemble. They stood in a circular line, and saw a sheep brought down and slaughtered, and respectfully waited till the men and their mutton had departed, when they made short work of the offal. The slaughtering place of each town is their especial rendezvous. Only one specimen was taken. Iris dark brown.

Family **Falconidæ.**

37. *Accipiter velox* (Wilson).

An immature male, taken at Lake Atitlan April 8th, was the only example of this species known to have been seen. Iris yellow.

38. *Accipiter chionogaster* Kaup.

One specimen, a male, was taken by Mr. Barber at 8,500 feet, near Tecpam. It is apparently not a common species in the regions visited. Iris tawny; legs ochre; cere and eyelid gallstone-yellow.

39. *Buteo platypterus* (Vieillot).

In a heavy forest cleared of underbrush and planted to coffee, near Patulul, this species was found to be common, but not so elsewhere. Three adult specimens and two that were immature were obtained between March 25th and April 3d.

40. *Urubitinga anthracina* (Lichtenstein).

Mexican black hawks were seen in the lowlands near both coasts and also in the interior at least up to 5,000 feet. A pair of adults was taken at San José. They were perched on a tree where they had an extended view of the beach, whence they appeared to derive their food. Iris dark brown; feet and base of bill yellow.

41. *Asturina plagiata* Schlegel.

Three specimens were taken in all, one adult and one immature at Gualan, and another, also immature, at Patulul. At the latter place, a pair was attending a nest high in an enormous tree that stood in a field. What this nest contained there were no means of finding out. The immature plumage of this species is so similar to that of *Buteo platypterus* that at first sight it is difficult to distinguish them, but the white upper tail coverts and four emarginate primaries are diagnostic characters of *plagiata*. Iris dark brown; cere and legs yellow.

42. *Rupornis ruficauda griseocauda* (Ridgway).

This was the most abundant and easily approached hawk encountered in the republic. Four were taken at Los Amates and one at San José. None were noted in the interior highlands. The habits of this hawk are like those of the *Buteos*. They sit in exposed places, where from a height they can keep close watch on the river bank, open swamp or field that happens to be the hunting ground of the particular individual. Only the outer rectrices of the San José specimen show even traces of rufus in the light bars; but this color appears on all the rectrices of the Los Amates birds. Iris, cere and feet yellow.

43. *Spizaëtus ornatus* Daudin.

The only specimen seen was taken near Patulul by Mr. Barber. This is in immature plumage, yet strikingly handsome with its white head adorned by three long occipital plumes of dusky brown, white under parts set off by heavy pectoral and axillary bars, and its long legs, feathered to the toes and barred black and white. We were told that this hawk occasionally visited the chicken yard. It was shot from the top of a high tree in the woods, where it was sitting apparently on the watch for prey. The irides of this bird were straw-color; and they exhibited a graded depth of color from lighter, next the supra-orbital process, to darker at the lower, unshaded portion. This feature has also been noticed in the eyes of other large hawks. The increased pigmentation of the lower half of the iris appears to offset the shading of the upper half by the projecting supra-orbital process, and thereby to render the illumination of the retina more nearly uniform than would otherwise be the case.

44. *Ictinia plumbea* (Gmelin).

Several were seen at Los Amates, but only one was secured. None were seen elsewhere. Iris maroon.

45. *Falco albigularis* Daudin.

One specimen was taken near Patulul and a pair at Mazatenango. At the latter place one or two others were heard in the forest. None were found away from heavy timber. They were in pairs and noisy the third week in March, and were usually found sitting on the highest dead-topped trees available. Iris dark brown.

46. *Falco sparverius* Linnæus.

Two typical males, were taken in the highlands near Tecpam.

47. *Falco sparverius phalœna* Lesson.

Desert sparrow hawks were rather common at every station, where there was much cleared land, below 2,000 feet. Only two specimens were taken, one at Los Amates and one at Gualan. Both were easily referable to this subspecies.

48. *Micrastur melanoleucus* (Vieillot).

A single example of this hawk was taken at San José. It does not appear to be a common species. Iris brown; base of bill, ocular area and feet yellow.

49. *Micrastur guerilla* Cassin.

The only specimen seen, an immature male, was killed in a dense thicket near Los Amates. The only evidence of adult plumage on this specimen consists of a band of slate-colored feathers around the lower hind neck, white chin, slaty throat and a very few scattered feathers on the chest and thighs. Salvin and Godman's description of the juvenile plumage of this species* applies very well to this specimen except as to the number of white bars on the tail; their bird had four; this one has five. The obscure white collar, seen only on immature birds, is probably a vestigial character, which in *melanoleucus* remains permanent, and in *mirandollei* has disappeared altogether. Iris light brown; maxilla black; mandible, feet and bare ocular and loreal area lemon-yellow.

50. *Herpetotheres cachinnans* (Linnaeus).

This curious hawk was encountered only at Los Amates and Mazatenango. It haunted the environs of the former town, and morning and evening made the place resound with its loud calls, often keeping them up till long after dark. One was secured at Los Amates. Iris dark brown; base of bill yellow; from nostril outward, black; feet straw color.

51. *Polyborus cheriway* (Jacquin).

Several caracaras were seen at El Rancho and Gualan, and one was secured at San José.

Family **Strigidae.**

52. *Otus flammeolus* (Kaup).

A single specimen was obtained at Tecpam by Mr. Barber. Iris dark brown; cere gray. Stomach contained beetles.

53. *Speotyto cunicularis hypogæa* Bonaparte.

A few were seen at Gualan and El Rancho in dry gulches. One was secured at the latter place. Iris yellow; bill greenish yellow; feet yellowish green.

54. *Glaucidium brasilianum ridgwayi* Sharpe.

At El Rancho and Patulul this little owl was common. Two

*Biologia Centrali Americana, Aves, Vol. III, p. 110.

were obtained at the former place and three at the latter. No two are colored alike. The Rancho birds, which represent both color phases, are decidedly paler than those in the corresponding phases from Patulul, which difference can readily be accounted for on climatic grounds. Of the three Patulul specimens, the back of one is near Prout's brown; of another chestnut; and the third somewhere between them. Iris lemon; bill and feet straw color.

Family **Psittacidae**.

55. **Ara macao** (*Linnæus*).

This macaw is tolerably common in the *tierra caliente* of the Atlantic slope. It was seen daily about Los Amates, usually in pairs, flying high and uttering occasional squawks. They are striking looking birds, as seen on the wing against a sky background. Their lengthened contour, red color and steady flight all serve to hold the observer's eye. They fed, in January, on wild figs, and were exceedingly hard to bring down from the tops of the immense fig trees. Four specimens were obtained in all.

56. **Conurus holochlorus rubritorques** *Sclater*.

Four specimens were taken at Gualan, where they appeared to be fairly common. One of these shows no red feathers whatever, and only one of the others has the throat and foreneck mainly red. Iris orange; ocular area dusky.

57. **Conurus aztec** *Souance*.

Three specimens were taken in the lowlands about Los Amates. Iris orange; ocular area white.

58. **Conurus canicularis** (*Linnæus*).

Judging from the localities in which specimens of this parakeet were taken, this species prefers drier and more open country than the last. Five examples were taken; one at Gualan, two at El Rancho, one at Mazatenango and one at San José. Iris straw; ocular area yellow; bill white.

59. **Brotogerys jugularis** *Müller*.

Four specimens were secured at San José, where it was common and easily approached. It was not seen elsewhere. Iris straw color.

60. *Amazona autumnalis* (Linnæus).

This parrot was abundant about Los Amates, and six specimens were obtained there. It was not seen elsewhere. Iris orange; bill straw except cutting edge, which was horn color; feet horn-blue.

61. *Amazona auropalliata* (Lesson).

A pair of these parrots was seen in the woods near San José, and one of them secured. None were encountered elsewhere. The specimen taken had a patch of yellow on its forehead as well as on its nape. Iris orange.

62. *Amazona albifrons* (Sparman).

Three white-fronted parrots were taken at Gualan and two at San José. At the former place they were abundant in February. The foreheads of the Gualan birds are clear white, while those from San José are yellowish. The climatic requirements of this species appear to agree with those of *Conurus canicularis*. Iris straw color; bill yellow; ocular area flesh color.

63. *Pionus senilis* (Spix).

Two specimens were obtained at Gualan. They were a part of a flock that was found feeding on the fruit of a large leguminous tree. This species was not noted elsewhere. Iris dark brown; bill pale green; feet dull yellow.

Family **Cuculidæ.**

64. *Crotophaga sulcirostris* Swainson.

Grooved-billed anis are abundant in the low-country and up to 4,000 feet, above which they were not noted. They are eminently social creatures, which spend much time perching on low bushes, weeds or hedges, often several on the same branch, where they communicate in squealy metallic tones, preen their fluffed feathers and look very shabby. They are thin, loose-jointed, and sparsely feathered birds. The most attractive feature about them is their habit of attending cattle and horses, which they scan for ticks. The animals allow these birds to alight upon their backs, cling to their sides or legs, and investigate their ears, with absolute indifference. The anis do not depend altogether on ticks, however. They often

keep close to the feeding animal's nose and capture such insects as are disturbed by it. Specimens were obtained at Gualan, El Rancho, Lake Amatitlan and Patulul,— six in all. Iris Prout's brown.

65. *Tapera nævius* (Linnaeus).

A single specimen, the only one seen, was taken at Gualan. This bird was discovered in a pile of brush in a pasture. Iris brown; feet horn-blue.

66. *Morococcyx erythropygus* (Lesson).

Three specimens were taken at Gualan. None were seen elsewhere. These were all found on the ground, along roadsides or paths. They were unwary, allowing a near approach, and more inclined to hide than to fly away. Their striking features were the brilliant colors of the naked skin about the eyes, and their habit of staring at an intruder. Iris dark brown; upper portion of maxilla dusky, lower half and all of the mandible yellow; bare ocular area yellow in front of and below the eye, and intense blue above and behind it; legs flesh color.

67. *Geococcyx affinis* Hartlaub.

The distribution of this roadrunner appears to depend upon the character of the country. It was first seen a little above El Rancho on the road to Guatemala City, where the soil was dry, stony and sparsely covered with deciduous bushes. Near Lake Atitlan, where the ground is equally stubborn, it was found again, but nowhere else. One specimen was taken by Mr. Barber at the last named locality. Iris hazel; eyelid white; bare ocular area varying from lavender near the lids to campanular-blue on the post-orbital part.

68. *Piaya cayana mehleri* Bonaparte.

This species was taken at Los Amates, Gualan, Patulul and San José,— six specimens in all. It was seen at Lake Amatitlan, but at no higher altitude. At Gualan it was common, elsewhere, rather scarce. It frequents thickets. Iris carmine; bill and ocular area yellowish green.

Family **Trogonidæ.**

69. *Trogon mexicanus* Swainson.

Two adult males, an immature male and a female were taken above Tecpam at an altitude of 9,500 feet. None were encountered

below the cypress belt. In this dense timber land it is difficult to bring a trogon down with its feathers on, so numerous are the branches, and so slightly attached are the feathers.

70. *Trogon elegans* Gould.

Two specimens, a female and an immature male, were taken on the hills due north of El Rancho. None were seen elsewhere. Iris dark brown; eyelids orange.

71. *Trogon puella* Gould.

Three adult males were obtained near Patulul, the only locality in which this bird was found. Iris dark brown; bill chrome-yellow; eyelids brown.

72. *Trogon melanocephalus* Gould.

This species was found only on the lower portion of the Atlantic slope. At Los Amates it was common and five were added to the collection at that place. Three more were obtained at Gualan. One of these birds, an adult female, exhibits a case of asymmetrical moult. The six rectrices of one side are fully grown, but the fourth, fifth and sixth rectrices of the other side, reckoning towards the middle, are only a third grown, and of equal length. Another female, which was immature, has the second and fourth rectrices of one side about half grown, and nearly of equal length, the other side being complete. Iris dark brown; eyelids blue.

73. *Trogon caligatus* Gould.

Of this trogon one specimen was obtained at Gualan, one at Mazatenango, and two at Patulul. Individual variation in color is very noticeable. One specimen has a marine blue chest and a bronzed grass-green rump; while another has the chest hyacinth blue, and the rump glistening myrtle-green. Both are adult males. Iris dark brown; eyelids yellow.

74. *Trogon massena* Gould.

A single specimen, the only one seen, was taken at Los Amates. Iris brown.

Family **Momotidae.**

75. *Eumomota superciliaris* (Sandbach).

Red-backed motmots were found only at El Rancho and Los

Amates. At the former place they were rather scarce, and those taken were perceptibly paler on the upper parts than those from the humid low lands. Six specimens were obtained. Iris dark brown.

76. *Momotus lessoni* Lesson.

This motmot was found to be common on the Pacific slope, but only one was seen on the east side, this being taken at Los Amates. Three specimens were secured at Mazatenango, and three at Patulul. It was also observed at San José. Iris maroon.

77. *Momotus castaneiceps* Gould.

This species was found only at El Rancho, where it frequented the dry gullies. This was in January, and although there were numerous holes in the banks where it probably breeds, none of these birds was seen near them. Five specimens were obtained. Iris red.

Family **Alecyonidæ.**

78. *Ceryle alcyon* (Linnæus).

One specimen was taken at Lake Atitlan, where this species was fairly common, on April 10th. This specimen is somewhat peculiar in that it has certain conspicuous areas where there has been no renewal of feathers for a long time. The forehead, scattering feathers on the crown, and about half of the blue pectoral band are faded to ecru drab, and much abraded. The lesser wing coverts are much worn but not so badly faded. In the series of 34 skins possessed by this Museum, only one other, which was taken in Florida in January, shows arrested moult in any degree comparable with this.

79. *Ceryle torquata* (Linnæus).

This species was frequently seen at Los Amates. Only one specimen was taken, though several could easily have been secured, as they were rather easy to approach.

80. *Ceryle amazona* (Latham).

This kingfisher was occasionally seen near Los Amates, but it was invariably shy and only one was taken.

81. *Ceryle americana septentrionalis* Sharpe.

This little kingfisher was found to be common and unsuspecting

wherever there was water. Two were taken at Los Amates, and three at Lake Atitlan. There appears to be a color variation in both sexes, due to age. Judging from a comparison of bills they are the younger birds which have the throat tinged with pinkish buff; while adults have this region white. Fully adult females have the transverse bands across the breast much broader than those which are immature.

82. *Ceryle ænea stictoptera* Ridgway.

The only example of this species that was seen was taken at San José in a dense growth of mangroves on the margin of a salt lagoon, where it spent its time perching on twigs within a foot or two of the water. It exhibited very little fear when approached, and when driven from one rest, quickly chose another but a few feet farther on.

Family **Rhamphastidæ.**

83. *Rhamphastos carinatus* Swainson.

This toucan was found common about Los Amates, always in small flocks. They were feeding on a kind of wild fig. In the morning they moved about from place to place, but during the middle of the day they were more quiet, and less frequently observed. Four specimens were collected. The portion of the bill, which on the dried specimen is black, in life is yellowish green. Other portions of the bill do not change very much in drying. The iris is dark sea-green, and the bare ocular area is also green.

84. *Pteroglossus torquatus* (Gmelin).

This species was taken at Los Amates and Mazatenango, and also seen at San José and in the highlands between El Rancho and Guatemala City. Four specimens were secured. The bill does not change color greatly in drying. The elliptical iris is yellow; and the ocular area is lake-red.

85. *Aulacorhamphus prasinus* (Lichtenstein).

A single specimen of this species, the only one seen, was taken at 9,500 feet, near Tecpam.

Family **Galbulidae.****86. *Galbula melanogenia* Sclater.**

Four specimens were taken near Los Amates. None were seen elsewhere. They were quite unsuspecting, and apparently loth to move. They sit in exposed positions, where they can keep an eye on passing insects, and often utter a kind of squeal at the sight of an intruder. Iris dark brown; feet yellow; bill black.

Family **Buceonidae.****87. *Malacoptila inornata* (Du Bus).**

Three specimens, two males and a female, were taken at Los Amates. None were encountered elsewhere. Like the last species, they are quiet birds, not at all timid, and accustomed to watch for insects from the bare branches rather than hunting among the foliage. Iris carmine; feet dull yellow; maxilla black; mandible horn-blue.

Family **Picidae.****88. *Campephilus guatemalensis* (Hartlaub).**

Two specimens were collected at Los Amates and one at Patulul. At the former place the species is rather common, especially among the bambus in the bottom lands. The bambu makes a good sounding-board to give force and character to the woodpecker's drumming. None were seen in other localities than the two above mentioned. Iris yellow.

89. *Celeus castaneus* (Wagler).

This species was found only at Los Amates. It stayed in the swampy places, where the ground was more or less inundated, which made it difficult to obtain, notwithstanding the fact that it was rather unwary. Two females were obtained. In comparing these with a series of fourteen skins of the same sex from various localities, it was noticed that the species is subject to considerable individual variation in color. The pileum on these Guatemalan specimens agrees with the majority, though three of the lot were lighter, and

one somewhat darker. The throat and breast of a Honduras specimen is darker than any of the others. Another specimen from Costa Rica, had the lower back tawny ochraceous, and several others showed traces of it. The width of the irregular bars of black on the under parts varies decidedly in different birds. One had even assumed a rictal streak of red, a character belonging to the other sex. Iris seal-brown.

90. *Dryobates villosus sanctorum* Nelson.

One specimen, a female, was obtained at 8,000 feet, near Tecpam. None were seen lower than the above altitude.

91. *Veniliornis caboti* (Malherbe).

At San José this little woodpecker was rather common, and three specimens were taken at that place. A pair of woodpeckers, apparently of this species, was seen at Los Amates. None were seen outside the *tierra caliente*. Iris brown.

92. *Sphyrapicus varius* (Linnæus).

This sapsucker appears to be generally distributed throughout the country in winter. An adult female was taken December 16th, at 9,500 feet, near Tecpam; another at Lake Atitlan, 5,000 feet, February 27th; and an immature male at Los Amates, 60 feet, January 27th. This last specimen was undergoing a moult from immature to adult plumage. About a quarter of the crown is still black, and the chest is covered with juvenillè feathers, the throat, foreneck and breast being in fresh adult plumage. Birds of this species were found singly and not at all commonly.

93. *Ceophlæus scapularis* (Vigors).

In the swamps about Los Amates, *scapularis* was found associated by a common interest with *C. guatemalensis*. Both of these species were usually found in the river bottoms where bambu thickets interspersed the heavy timber. Only one specimen was taken. Iris straw color; bill white; feet horn-blue.

94. *Melanerpes formicivorus* (Swainson).

The only locality where this bird was encountered was in a gorge, at about 7,000 feet, between Lake Atitlan and Tecpam. The road follows this gorge for several miles, and while journeying over it four specimens were secured. Oak and pine trees constitute the forest in this region. Iris pinkish white; bill black.

95. *Centurus santa-cruzi* Bonaparte.

The type of *Centurus santa-cruzi* was described* from a collection made "during a fortnight's scientific tour in Guatemala." In the same lot of skins with the type of *C. santa-cruzi*, were *Cyanocitta stelleri coronata*, a bird of the highlands, above 4,000 feet, and *Ortalis leucogaster*, which is peculiar to the *tierra caliente* of the Pacific slope. The presumption is, that the type, which was evidently a female judging from the description—"capite et corpore subtus griseo-olivaceis"—came from the interior or from the south coast, as a two weeks' visit in those days would scarcely be sufficient for crossing the continent while collecting 39 species of birds. The original description does not well apply to the Pacific coast form, which is Nelson's *fumosus*.

Of this interior form, eight specimens were secured: four from El Rancho, two from Lake Atitlan, one from Lake Amatitlan, and one from Patulul. Those from El Rancho are decidedly larger than any of the others, as may be seen from the appended measurements.

		entire			
El Rancho	{	Male, wing	136 mm.;	tail 77 mm.;	culmen 35 mm.
		" " "	" 144 " ;	" 84 " ;	" 34 "
		Female, " "	" 136 " ;	" 75 " ;	" 33 "
Atitlan	{	" " "	" 138 " ;	" 80 " ;	" 34 "
		Male, " "	" 129 " ;	" 70 " ;	" 32 "
		" " "	" 125 " ;	" 64 " ;	" 30 "
Amatitlan	{	Female, " "	" 127 " ;	" 71 " ;	" 31 "
Patulul		" " "	" 122 " ;	" 63 " ;	" 30 "

There is considerable color variation on the under parts, some being darker than others, but excepting this they are quite uniform. This species was found most abundant about El Rancho, where it frequents, almost exclusively, the tree cactus, *Cereus*. They are noisy birds, both vocally and mechanically, spending most of their time either drumming or uttering their harsh cries. Iris of male crimson, of female brown; bill black; feet horn color.

96. *Centurus santa-cruzi pauper* Ridgway.

Two topotypes of this subspecies from Truxillo, Honduras, were kindly loaned by the authorities at the Smithsonian Institution for comparison with specimens in this Museum. One specimen collected at Los Amates evidently belongs to this form. We also possess two skins from Belize that are typical. The range of this form, then, appears to be the low country adjacent to the Caribbean Sea and extending through Belize, Guatemala, and, at least, a large part of Honduras. It is not a very well defined variety, judging from the

*Proc. Zool. Soc. 1837, p. 116.

material examined. One of the El Rancho skins is indistinguishable in color from the topotypes, and the skins of *santa-cruzi* from Atitlan, Amatitlan and Patulul are but very little larger than the type of *pauper* as given in the original description. There is no doubt, however, that in a series of *pauper* the white bars of the back average narrower than in a series from the interior of Guatemala, and decidedly narrower than in another series from Tamaulipas, where *santa-cruzi* passes over into *aurifrons*. It is indeed singular that this latter form with its heavily barred primaries, so strikingly different from the typical Guatemalan form, has not been honored with a name.

97. *Centurus santa-cruzi fumosus* Nelson.

A specimen taken at San José has the dark breast, spotted rump and wide bill characteristic of this form which was described by Nelson from Chiapas. In each of these respects it differs from all the other specimens of *Centurus* that were taken.

98. *Colaptes mexicanoides* Lafresnay.

This flicker was first seen at Lake Atitlan, and from that altitude (5,000 feet) up to the limit of timber it appears to be tolerably common. Several were seen at 9,500 feet. A nest, containing four addled eggs and one naked young bird less than a week old, was found at Lake Atitlan, April 10th. The male parent was driven from the nest. The female was not seen, though half an hour was spent about the nest, which was in a willow standing in a growth of coffee. The cavity was in decayed wood, and in all respects was similar to that excavated by our northern species. The nestling, which was preserved in formaldehyde, was badly infested with parasitic larvæ, apparently dipterous. Of the four adult males that were taken, one at Lake Atitlan and three near Tecpam, only one has the white rump immaculate.

Family **Caprimulgidæ.**

99. *Antrostomus chiapensis* Nelson.

At Lake Atitlan, this bird was singing in April and was reported to have begun at least as early as February. Its notes are indistinguishable from those of *A. vociferus*. It was not heard below 5,000 feet. One male was taken at Lake Atitlan and another at Tecpam.

100. *Nyctidromus albicollis* (Gmelin).

Parauques were common up to an elevation of about 4,000 feet, above which none were seen. Three were taken at Los Amates, one at Gualan, two at Lake Amatitlan, one at Patulul and one at San José. It seems as if the upper vertical limit of this species might be approximately coincident with the lower limit of *Antrostomus*. In size these Guatemalan specimens are nearer those from Nicaragua and Costa Rica than they are to Yucatan specimens. One of the Los Amates birds, a male, has the ground color of the crown, nape and interscapular region, a warm brown, similar to walnut-brown of Ridgway's Nomenclature of Colors. A Yucatan specimen taken at San Felipe, is like it except in being a shade paler. Another from Colima in western Mexico, in a much drier climate is yet paler brown, and strikingly different from the normal gray characteristic of average specimens. The occurrence of three pale individuals out of a series of fifteen from Guatemala and southern Mexico indicates dichromatism. In a series of eleven skins from Nicaragua and Costa Rica there is practically no color variation, all being of the gray type.

These birds were often seen in paths, roads, or along the railway, in the evening. In the day time they were usually found on the ground among bushes at the edge of clearings. One of the Los Amates specimens was found, during a cold rainy spell, in a torpid condition, and was picked up alive. At San José three were flushed from the same spot, where they were evidently spending the day in company.

101. *Chordeiles acutipennis texensis* (Lawrence).

The only example of this species met with was at Lake Atitlan, where it was discovered in a tree standing in a field. It proved to be a male in fine plumage.

Family **Micropodidae.****102. *Streptoprocne zonaris* (Shaw).**

This great swift was seen once or twice at Los Amates in January, flying very high over the Motagua River. None were noted again until April, when, in the mountains between Lake Atitlan and Tecpam, at about 6,500 feet, a small colony was discovered. The nesting place was a cliff of friable rock, pierced with cavities running in various directions. A vertical tunnel, or flue, elliptical in cross section and having a major diameter of perhaps twelve feet, was evidently the

home of this colony, as they were seen entering and leaving the lower end of the flue, which is some fifty feet from the foot of the overhanging cliff, and absolutely inaccessible. How far this opening extends upward into the rock, there was no means of ascertaining. It seemed quite dark, and evidently does not continue to the surface above. The birds generally flew high, but early in the morning they occasionally came low enough for a shot. Seven specimens were secured, all in good feather. A few were seen above Tecpam, at 8,000 ft.

103. *Chætura vauxii* (Townsend).

At Mazatenango two pairs of this species were taken, on the 19th of March, from a flock of about fifty. A moult of body feathers was in progress on all of them. The rectrices and remiges, however, show no sign of renewal. Iris dark brown.

104. *Chætura gaumeri* Lawrence.

Two specimens of this swift were secured at Los Amates the last of January. In the dense vegetation of that section it was possible to obtain a swift only by bringing it down as it passed over a shallow stream. Both of these specimens were in unabraded plumage. Iris dark brown.

Family **Trochilidæ.**

105. *Phæthornis longirostris* (Lesson & Delattre).

This species was seen only at Los Amates where it was not uncommon in the forest. Only one specimen was secured. Iris dark brown; maxilla black; mandible flesh color; feet pale.

106. *Phæthornis adolphi* Gould.

A single specimen was taken in the swamps near Puerto Barrios. None were observed outside the *tierra caliente*. Iris dark brown; maxilla and distal half of mandible black; basal half of mandible yellow; feet pale.

107. *Campylopterus rufus* Lesson.

The only locality where this fine hummer was seen was near Panajachel, on the north shore of Lake Atitlan, where three were secured. They frequented a sunny portion of a coffee plantation. This was early in April, when the coffee bushes were blooming, which probably

accounts for their concentration at that particular spot. Iris dark brown.

108. *Agytria candida* (Bourcier & Mulsante).

This species, noticeable on account of its white underparts in contrast to the prevailing greenness of the moist lowlands, was frequently noticed among the flowers of certain vines which climb to the tops of the trees near the margins of clearings. Three specimens were taken at Los Amates. None were observed elsewhere. Iris dark brown; maxilla black; mandible pinkish; feet black.

109. *Saucerottea cyanura gautemalæ* subsp. nov.

Type, No. 22,633, ♂ ad., Field Museum of Natural History; collected at Mazatenango, Department of Suchitepequez, Guatemala, by N. Dearborn, March 18th, 1906.

Subspecific Characters: similar to *S. c. cyanura* (Gould), but differs from it in having: nape and interscapular region bottle-green instead of grass-green; rump, middle primary coverts and greater secondary coverts purple-bronze, instead of copper-bronze; greater primary coverts black, instead of bronze; not more than half of the exposed portion of the secondaries chestnut, instead of two-thirds chestnut; and the chestnut under wing coverts tipped with dull purple for at least a quarter of their length, instead of with a mere trace of dull bronze.

Description of type: Crown, nape and interscapulum shining bottle-green; lower back purple-bronze changing to shining plum-purple on the rump; upper and under tail coverts and rectrices steel blue; under parts glittering grass-green; thighs, a narrow line behind the wings, and the bases of the chin-feathers, white; proximal half of the secondaries and the bases of all but the three outer primaries, chestnut; outer primaries and tips of secondaries dusky purple; under wing coverts chestnut, tipped with dull purple; iris dark brown; maxilla and tip of mandible black; base of mandible pale. Wing 53 mm.; tail 31 mm.; culmen, entire, 21 mm., exposed, 18 mm. An adult female, which equals the type in size has the feathers of the chin slightly edged with white, and those of the abdomen edged with gray. Otherwise the sexes are alike. A young male, taken March 15th, has the lower breast and abdomen gray, but is like adults in other particulars.

Remarks: This hummingbird has heretofore been included with *cyanura*, but when compared with specimens of that species from the

type region, northwestern Nicaragua, the differences above outlined are readily made out. This new form will undoubtedly be found to intergrade with *cyanura*. Seven specimens were collected, five coming from Mazatenango and two from Patulul.

March is the month in which this hummingbird usually finishes its moult of remiges, as specimens taken in this month have imperfect wings, while most of those taken in April have them complete and unabraded.

110. *Saucerottea devillii* (Boucier).

Three male specimens were taken, two at Patulul, and one at Lake Amatitlan. This last specimen, taken February 25th, has copper-bronze rectrices, while those taken at Patulul have these feathers bronze-purple. Other specimens in this Museum show a similar variation in color. Iris dark brown; maxilla and tip of mandible black; mandible, except tip, flesh color; feet black.

111. *Amazilis tzactl* (De la Lave).

This species was found only at Los Amates, where three males were secured. Iris dark brown; bill reddish with black tip; feet black. An immature specimen had the entire maxilla black.

112. *Amazilis cinnamomeus* (Lesson).

One specimen was taken at Gualan and two at El Rancho. Apparently they occupy the dry belt between the swamps of the Atlantic slope and the Cordillera. Iris dark brown; bill red except black tip; feet dark.

113. *Amazilis cinnamomeus saturatus* (Nelson).

This form occupies the Pacific slope from the coast up to, at least, 2,000 ft. Three were taken at San José, one at Patulul, and three at Mazatenango. Iris dark brown; maxilla red with black tip; mandible pale with black tip.

114. *Hylocharis leucotis* (Vieillot).

Two females were taken near Lake Atitlan, at 5,000 feet, and another above Tecpam, at 9,500 feet. In the latter locality they were found in little openings where lumber had been taken out of the cypress forests, while at Lake Atitlan they frequented weedy pastures. Iris dark brown.

115. *Chlorostilbon caniveti* (Lesson).

This species was common in February at Gualan where it was busy with the flowers of a leguminous tree planted to support barbed wire fences. Four males were taken at that place. A female was taken at San José. Iris of male dark brown; base of bill dusky red; tip black.

116. *Petasophora thalassina* (Swainson).

Mr. Barber secured a single specimen, a male, at 9,500 feet, near Tecpam early in January.

117. *Eugenes fulgens* (Swainson).

A male was taken at 7,500 feet, near Tecpam, April 14th. It was attending flowers of an agave. It was near the completion of a moult, the outer primaries being about half grown.

118. *Lampornis amethystinus* Swainson.

Two specimens were taken above Tecpam at 9,600 feet in January by Mr. Barber. Bill black; feet flesh color.

119. *Lamprolæma rhami* Lesson.

A male of this species was taken above Tecpam in January by Mr. Barber.

120. *Anthoscenus superbus pallidiceps* (Gould).

This species was very common in March about the hedges of leguminous trees in the vicinity of Mazatenango and Patulul. Three specimens were secured at the former place and seven at the latter, the sexes being equally represented in the series. Iris dark brown; bill black.

121. *Trochilus colubris* Linnæus.

A female was taken at Gualan on the 14th of February; and a male was taken on April 10th at Lake Atitlan. Neither specimen shows signs of moulting.

Family Cotingidæ.**122. *Tityra semifasciata personata* Jardine & Selby.**

This species was not seen above 1,800 feet, but below that altitude it was rather common. Its food, so far as could be seen, consisted of the berries of certain tall trees. Three were taken at Los Amates, one at El Rancho, one at Manzatzenango, and five at Patulul. In the

series are five adult males, one immature male, two adult females, and two immature females. The immature male was moulting into adult plumage when taken, March 24th. None of the adults were moulting, all being in excellent feather. Iris madder-brown, basal half of bill and bare loreal and ocular areas carmine.

123. *Erator albitorques fraseri* (Kaup).

The only example of this bird that was recognized, was brought down from the top of a pine tree at Los Amates. It was a female in unworn plumage. Iris dark brown; maxilla black; mandible and feet horn-blue.

124. *Platyparis aglaia sumichrasti* Nelson

One was taken at Mazatenango and five at Patulul, four of the series being females and the other two immature males. No adult males were seen, nor were any of this species seen at other than the two localities named. They were found in isolated trees or on the outskirts of woodland behaving very like flycatchers (*Tyrannidae*). Iris dark brown.

125. *Lipaugus holerythrus* Sclater & Salvin.

A single specimen, taken at Los Amates, was the only one observed.

126. *Attila citreopygus salvini* Ridgway.

One specimen was taken at Los Amates, one at San José, one at Patulul and two at Mazatenango. There is considerable variation in color among the series of four males taken on the Pacific slope, which is hardly attributable to a difference in age. In fact, no two of them have the interscapular region of the same shade of brown. Iris orange.

127. *Cotinga amabilis* Gould.

One adult male, three immature males and one female were taken at Los Amates where they were found feeding on berries of some small trees. None were seen elsewhere. Iris blue-gray.

Family **Pipridæ.**

128. *Pipra mentalis* Sclater.

At Los Amates, this pipra was rather common in the thick forest. It was usually flitting about the lower branches, and displayed con-

siderable activity. Two males and three females were secured. One of the females, No. 22,669, has two feathers on her head which are red on one side of the rachis, and green on the other. Iris, of male pale straw, of female dark brown; maxilla horn-color; mandible pale; feet pale.

129. *Chiroprion linearis* (Bonaparte).

Near Mazatenango, this engaging bird was in the heavy timber, where its bell-like notes were often the only evidence of its presence obtainable. The only other locality in which it was found was near Patulul. Here it frequented scrub-land, which, in April, is mainly bare of leaves, and a better opportunity of observing its habits was offered. They are active but not diligent, being concerned with social matters for the most part, rather than with those that are economical. One is seen to alight upon a small branch. Directly, another drops down beside him. Both raise their crimson crests and bow very low several times, turning about as they do so, minuet fashion. A third and possibly a fourth, all males, may join in the performance, their regalia in crimson, black, orange and pale blue being fluffed and flaunted, as they salute opposites and corners. Ventriloquial sounds, weirdly clear, hard to analyse or place, intersperse these proceedings. Suddenly one is gone, then another, and another, and the charm of the glen has gone with them. They appear to go singly, and yet to move in the same direction, so these meetings are frequent. By standing in a favorable place, one may witness two or three meetings in the same locality in an hour. Seven males and two females were taken in all. Iris dark brown; legs orange.

130. *Manacus candæi* Parzudaki.

The only specimen of this manakin encountered was at Puerto Barrios. Its whizzing flight led to its discovery. It was a male in adult plumage. Iris dark brown; legs orange.

131. *Scotothorus veræ-pacis* (Sclater).

A female was taken at Los Amates. Iris brown.

Family **Tyrannidæ.**

132. *Rhynchocyclus cinereiceps* (Sclater).

This flycatcher was rarely seen, only one male and two females

being taken in all, and only one in a place; Los Amates, Mazatenango and Patulul being the localities from which they were taken. They seem to prefer dense woods to open situations. In appearance they resemble the Empidonaces. Iris pale straw color; maxilla horn-blue; mandible pale; feet pale horn-blue.

133. *Todirostrum cinerium finitimum* Bangs.

In the *tierra caliente* on both sides of the country, this species was found in bushes or low trees in open situations. Two were taken at Los Amates and four at San José. A female from the latter locality has a white spot on the crown. The back of this specimen is olive-green and the under parts are canary yellow. Four others have the olive-green back of a duller tone, ranging toward plumbeous, while the remaining specimen has the interscapular area slate gray, only the rump showing a tinge of olive-green; and the under parts are a paler yellow than is on any of the others. This gray specimen matches very closely others in this Museum from Colombia. Iris straw color.

134. *Oncostoma cinereigulare* (Sclater).

The only specimen obtained, or seen, was taken in heavy timber on the side of a mountain near Patulul.

135. *Pipromorpha assimiles* (Sclater).

This species is represented in the collection by a single specimen taken near Patulul, in thick woods. No others were observed.

136. *Elænia viridicata placens* (Sclater).

At Los Amates, San José and Mazatenango, this flycatcher was rather common, but none were observed higher than about 1,200 feet. Six specimens were taken, each of the above named localities being represented. Iris dark brown.

137. *Elænia flavogastra sub-pagana* Sclater & Salvin.

Three specimens were taken at Lake Atitlan, none being seen elsewhere. Apparently it prefers high, open situations. Iris dark brown.

138. *Myiozetetes similis superciliosus* (Bonaparte).

This noisy flycatcher was taken at Los Amates, Gualan, Patulul and Lake Amatitlan; seven specimens all told. They were usually in pairs, in exposed situations, where sunshine and flying insects are

abundant. As often as one alights near another, there is an outburst of salutations that can be heard all over the neighborhood. Iris dark brown.

139. *Pitangus sulphuratus derbianus* (Kaup).

Derby flycatchers were not noticed above 4,000 feet, but they were rather common up to that altitude. They sat where they could see all about them, and acted very much like our northern kingbird in preferring roadsides, pastures and shores to more densely wooded places. Three specimens were taken, one at Los Amates, one at Lake Amatitlan, and one at Mazatenango. Iris dark brown.

140. *Myiodynastes luteiventris* Sclater.

The only place where the sulphur-bellied flycatcher was found was near Patulul, where it frequented woodland which had been thinned and planted to coffee. Here, for the most part, they remained very high, in the tops of the enormous trees that had been left to shade the coffee saplings. Only two were secured. Iris dark brown.

141. *Megarhynchus pitangua mexicanus* (Lafresnay).

A common bird below 2,000 feet. Specimens, seven in all, were taken at Los Amates, El Rancho, Patulul and Mazatenango. So far as could be observed it subsists mainly on berries. The colors and their distribution on this flycatcher, as seen at a distance, are remarkably like those pertaining to *Pitangus* and *Myiozetetes*, so much so that until one has become somewhat familiar with the notes and manners of each of these species, he finds it difficult to decide which he sees. A female taken March 18th, contained an egg that would have been ready for depositing in two or three days. A nest found about April 1st, at Patulul, was saddled on a bare branch about 40 feet above the ground, and about 8 feet from the body of the tree, safely out of the reach of everything unable to fly. One or both of the birds were by it constantly. This species feeds freely on berries. Iris dark brown.

142. *Onychorhynchus mexicanus* Sclater.

Mr. Barber obtained one specimen and saw another at Patulul. Both were in rather thick woods. Iris hazel; maxilla black; mandible wax yellow at base, shading to brownish at tip; legs and feet clay color.

143. *Terenotriccus erythrurus fulvularis* (Salvin & Godman).

A single specimen was secured near Los Amates. This appears to extend the range of the species, as hitherto reported, considerably to the northward.

144. *Sayornis nigricans aquatica* (Sclater & Salvin).

A young bird just out of the nest was taken at Lake Atitlan April 8th. At 6,500 feet, near Tecpam, a pair of adults was secured. These specimens have under tail coverts mottled, black and white. The nest at Lake Atitlan was sheltered beneath the eaves of a house. All that were seen were near water, and every movement was similar to that of *S. phæbe* here in the States. Iris dark brown.

145. *Empidonax fulvifrons fusciceps* Nelson.

This little flycatcher was not seen below 5,000 feet, but between that altitude and about 7,500 feet, it was not uncommon. Three were taken at Lake Atitlan and two in a valley between there and Tecpam. It frequents roadsides and pastures where there are scattered bushes to perch upon and to harbor winged insects. Iris dark brown.

146. *Empidonax trailii* (Audubon).

Seven Trail's flycatchers were taken, Los Amates, Mazatenango and San José being the localities from which they were obtained. None were noticed in the highlands. All of this series are easily referable to this subspecies, none being so dark as *alnorum*. The January specimens, as well as those taken in March, with one exception, were in abraded plumage. Iris dark brown.

147. *Empidonax minimus* (Baird).

The least flycatcher winters abundantly in Guatemala. Sixteen specimens were obtained, representing Los Amates, El Rancho, Lake Amatitlan, Patulul, San José, Mazatenango and Lake Atitlan. Those taken in March had pin feathers on crown and throat, and were evidently beginning to assume the nuptial dress. Iris dark brown; maxilla black; mandible pale.

148. *Empidonax flaviventris* (Baird).

Yellow-bellied flycatchers were found at Los Amates in January, but they did not seem to be very common. The last of March and early in April they were plentiful in Mazatenango and Patulul. It is probable they were then migrating northward, and that the major-

ity pass the winter somewhat farther south. One, taken March 30th, and another April 4th, were just completing the renewal of their primary quills. All of the March specimens had the remiges partly renewed. Eleven were obtained in all. Iris dark brown.

149. *Empidonax salvini* Ridgway.

A single specimen of this species was taken near Tecpam, at 9,500 feet.

150. *Empidonax hammondi* (Xantus).

The only individual encountered was near Tecpam, at 6,500 feet, on the 12th of April.

151. *Empidonax trepidus* Nelson.

One specimen was taken in January near Tecpam, at 9,500 feet, by Mr. Barber.

152. *Myiochanes pertinax* (Cabanis & Heine).

At Lake Atitlan and along the road from there to Tecpam this species was not uncommon. It was not seen below 5,000 feet. It frequents solitary trees and acts very much like its congeners here in the States. Nine specimens were taken, all in the second week of April. No sign of moulting is visible on any of them. Iris dark brown.

153. *Myiochanes richardsonii* (Swainson).

One specimen was taken at Lake Atitlan April 8th. No others were noticed.

154. *Myiochanes brachytarsus* (Sclater).

Although an especial effort was made to capture every small flycatcher that could possibly be obtained, none of this species were taken on the Atlantic slope. On the Pacific side, however, it was not uncommon. Two specimens were taken at San José, three at Patulul, and one at Mazatenango. Iris dark brown.

155. *Myiarchus crinitus* (Linnæus).

Two were taken late in January at Los Amates and another at Gualan February 15th. None were seen on the Pacific side. Iris dark brown.

156. *Myiarchus cinerascens* (Lawrence).

Three were taken at El Rancho in January; and at Lake Atitlan,

two on February 26th, and one on the 11th of March, making six in all. Its habitat appears to be confined to the hillsides, where, during the dry season, the trees are quite bare of leaves, and the earth is baked. It appears probable that the winter range of *crinitus*, which is in the moist lowlands, overlaps that of *cinerascens* but little, if any.

157. *Myiarchus nuttingi* Ridgway.

Three were secured at El Rancho, where they were found on the dry hillsides, in company with the last species. Two others were taken at San José. The El Rancho specimens have, at most, only a trace of dusky at the tip of the inner web of the outer rectrices. Those from San José have nearly a third of the width of this web lying next to the rachis, dusky. All of the rectrices, of these latter specimens have a conspicuous dusky line on the inner web, and thus resemble the specimen mentioned by Nelson*, which came from "the boundary line between Nicaragua and Honduras, 180 miles from the Pacific coast." Except in this particular, there does not appear to be any difference between the birds from the two localities above named. Iris dark brown; bill dark horn color; feet black.

158. *Myiarchus mexicanus* (Kaup).

A single example was collected at Los Amates.

159. *Myiarchus lawrenceii* (Giraud).

A common species in moist situations up to at least 5,000 feet. Seventeen specimens were obtained, representing the following localities: Los Amates, Lake Amatitlan, Lake Atitlan, Patulul and San José. Two of these specimens, taken at Lake Atitlan in February, show comparatively little contrast between pileum and back. These were probably migrants from Mexico, as they agree quite closely with a Nuevo Leon specimen. All the rest, including an April bird from Lake Atitlan, are intermediate in size and color between typical *lawrenceii* and *nigricapillus*, one from Los Amates, No. 22,741, being decidedly nearer the latter form than the former. Iris dark brown; bill and feet black.

160. *Tyrannus verticalis* Say.

Three were collected at El Rancho, where they were rather common in January, and another at Patulul. Iris dark brown; bill and feet black.

*Proceedings of the Biological Society of Washington, vol. xvii (1904), p. 38; North American Mainland *Myiarchus*.

161. *Tyrannus melancholicus satrapa* (Cabanis & Heine).

Six were collected,—Los Amates, El Rancho, Lake Amatitlan and Patulul being represented in the series. Iris dark brown; bill and feet black.

162. *Muscivora forficata* (Gmelin).

Examples were seen at Patulul, near San José, and at Lake Atitlan. One was secured at the last named place. They were invariably in the tops of high, isolated trees and were very wary.

Family **Dendrocolaptidae.****163. *Synallaxis erythrothorax* Sclater.**

Six specimens were taken at Los Amates, one at Patulul and one at San José. The two from the Pacific side are decidedly paler than those from Los Amates. The backs of the former are dark broccoli brown; the tails are chestnut; the throats are steel-gray, *without* well defined white streaks. Of the latter series, the backs are bistre; the tails seal brown; the throats slate-black *with* well defined white stripes. The pale specimens have shorter bills than the dark series, which may indicate that they are not fully mature. The material at hand is not sufficient to determine the significance of the differences here mentioned. The habits of this bird are altogether different from those of the more typical forms of *Dendrocolaptidae*. A thick growth of low bushes by the side of a path or a railroad is its favorite cover. It hurries from one clump of bushes to another, and calls and hides, and peeps out and darts back like a wren, which, indeed, its color and manner of flight, as well as its actions, closely imitate. This species is common at low altitudes, but the collector who takes it must be a patient waiter. Iris dark brown.

164. *Glyphorhynchus cuneatus* (Lichtenstein).

A single example, taken at Los Amates, was the only one noted. This specimen, a male, has the diagnostic characters of Sclater's *pectoralis*,* which has of late fallen into synonymy. However, the pale spots on its breast are decidedly wider and the area they occupy is greater than on any of the 9 skins from Costa Rica, 17 from Nicara-

**Glyphorhynchus pectoralis* Sclater; Proceedings of the Zoological Society of London, Part XXVIII (1860), p. 299.

gua and 1 from Brazil, with which it has been compared. A specimen from "Mexico"—exact locality unknown—is similar to it in regard to the breast spots, but differs in being darker on the upper parts. Iris dark brown.

165. *Dendrocincla anabatina* Sclater.

Three specimens were taken at Los Amates, where the species is not uncommon. Iris brown.

166. *Sittasomus sylvioides* Lafresnay.

Two were taken at Los Amates and four at Patulul. In the latter locality they were found searching the crevices in the bark of the large trees left to shade the coffee. Iris dark brown.

167. *Dendrornis flavigaster* (Swainson).

Three skins and a skeleton were brought from Los Amates and two skins from Patulul. Those from the last named locality are darker above and below, excepting their throats, which, to the contrary, are paler. There is also a difference in size, indicated by wing measurements:

Los Amates	{	♂ wing	118 m.	Patulul	{	♀ wing	103
		♂ "	118 "			♀ "	98
		♀ "	109 "			♀ "	

Iris dark brown; maxilla pale horn; mandible whitish; feet horn-blue.

168. *Dendrornis nana confinis* Bangs.

A pair was taken at Los Amates. They have the throat much paler than specimens from Costa Rica and Panama, and therein confirm Mr. Bangs' diagnosis of his subspecies *confinis*. Iris dark brown; maxilla black; mandible pale; feet horn color.

169. *Picolaptes affinis* (Lafresnay).

A single specimen was taken by Mr. Barber near Tecpam, at 9,500 feet, in January. None were seen elsewhere.

170. *Picolaptes compressus* (Cabanis).

One specimen was taken at Mazatenango, one at San José, and three at Patulul. They are all slightly darker above than a series from western Nicaragua collected at the same time of year.

Family **Formicariidæ.****171. *Thamnophilus doliatus* (Linnæus).**

This species was found very common at Los Amates, where six were collected, and not rare elsewhere up to about 4,000 feet, one being taken at Lake Amatitlan and one at San José. It was found in dense underbrush making its way among the branches, in pairs, as a rule. Its crest was frequently fluffed up, which gave it a striking appearance. Iris straw; maxilla black, and mandible horn-blue, both sexes; feet horn-blue.

172. *Formicivora boucardi* Sclater.

This species was rather common at Los Amates, where it appeared in pairs or flocks, searching foliage after the manner of *Mniotiltidæ*. They frequent the bambus especially. Two specimens, one of each sex, were collected. Iris dark brown; bill black, except for a tomial streak of blue affecting both maxilla and mandible; feet horn-blue.

173. *Rhamphocænus rufiventris* (Bonaparte).

A single specimen, the only one seen, was secured at Los Amates. It was flitting about near the ground in thick woods.

174. *Cercomacra crepera* Bangs.

This species was met only at Los Amates, where four specimens were collected. Both sexes are slightly darker than other specimens from Nicaragua and Costa Rica. Iris, male dark brown, female light brown; maxilla, both sexes, black; mandible, male black, female pale; feet horn-blue.

175. *Gymnocichla chiroleuca* Sclater & Salvin.

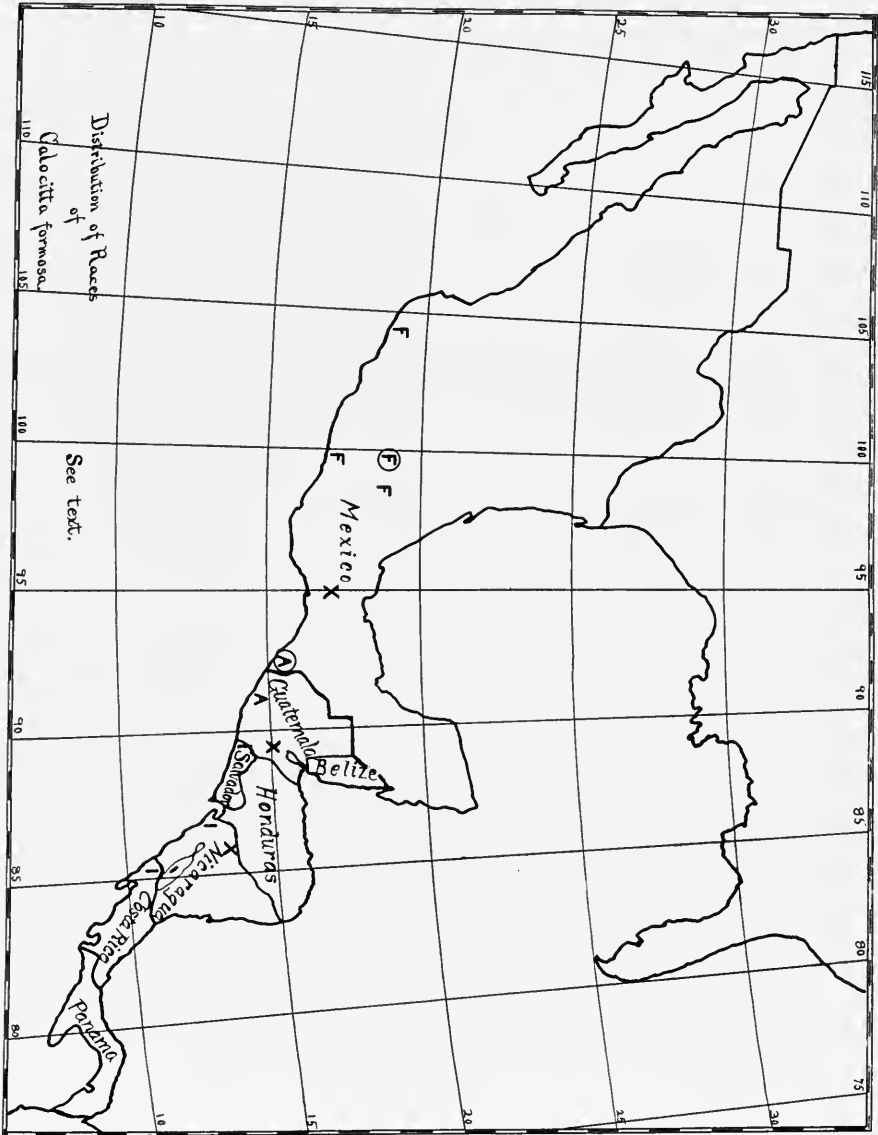
A pair was found in a bambu thicket bordering a stream, and both were secured. They kept among the lower branches and seemed almost fearless. Bare forehead and ocular region French blue; iris maroon; bill and feet horn-blue.

Family **Corvidæ.****176. *Calocitta formosa azurea* Nelson.**

Two specimens were taken at El Rancho, one at Gualan, three

at Mazatenango, two at Patulul, and one at San José. These specimens present so much variation in color that the entire series of the species *formosa* in this Museum has been brought in for comparison. Aside from the Guatemalan specimens, there are six from Apipiluluca, Guerrero, and one from San Geronimo, Oaxaca, Mexico; one from Salvador; two from San Raphael del Norte, Jinotega, nine from San Geronimo, Chinandega, and one from San Emilis, Lake Nicaragua, Nicaragua; and one from Orosi, northwestern Costa Rica. The half dozen from Guerrero have more or less black on the occiput, black malar patches, and bluish gray backs. These are *C. f. formosa*. The Oaxaca specimen and those from Guatemala, Salvador, Nicaragua and Costa Rica have *no black* on either *occiput* or *malar region*, and are thus clearly differentiated from *C. f. formosa* by these characters. They are not, however, all distinguishable from *C. f. formosa* by the color of their backs. Only those from the Pacific side of western Guatemala have their upper parts so dark blue as to be conspicuously different from it in this respect. This dark blue form is typical of Mr. Nelson's *C. f. azurea*. The specimens from San Raphael del Norte, Nicaragua, are as gray above, as those from Guerrero taken in the same month,—that is to say, as gray as *C. f. formosa*. The specimens from Gualan, El Rancho, Salvador, and Oaxaca are all nearer gray than blue above, while those from Orosi and Chinandega are intermediate between the extremes of blue and gray of this blue-crowned, immaculate-cheeked aggregate, which is conveniently included under the name *azurea*. While there is no difficulty in distinguishing the pale interior form from the darker blue *azurea*, which occurs in its typical state only along the Pacific slope of Chiapas and western Guatemala, specimens from the Pacific coast region from southern Guatemala to northern Costa Rica are intermediates between the two types, and the systematic ornithologist would probably find the worry of disposing of these, so great as to outweigh the satisfaction of recognizing a color variant by name.

The map relating to the distribution of the races of *Calocitta formosa* is based mainly upon specimens in this Museum. Material to fix the eastward extension of *C. f. formosa* is not available. *Azurea* is represented by the letter A, the type locality being indicated by a circle. The letter X shows three points from which have come specimens of the pale form, which has unspotted malar areas. These latter localities are all east of the mountain chain that parallels the Pacific coast, and at least two of them,—that is to say, the interior of Guatemala and eastern Oaxaca,—have a semi-arid, cactus-bearing



Distribution of Races
of
Calocitta formosa

See text.

soil, quite different from the habitat of typical *azurea*. Specimens from localities marked I are intermediate between typical *azurea* and the pale interior form.

177. *Psilorhynchus mexicanus cyanogenys* Gray.

Two of this species were collected at Izabel by Heller and Barber, and four were collected by the writer at Los Amates. It was abundant and noisy in the latter locality. None were found elsewhere. Two of these specimens were evidently immature, having yellow bills and feet. Their bills had begun at the apex and along the culmen to turn black, and their feet were growing dusky from the ankle downward. These jays moved about in flocks, keeping close to the shelter of the woods. Iris dark brown; bill and feet of immature birds yellow, of adults black.

178. *Xanthoura luxuosa vivida* Ridgway.

Two were taken near Patulul, the only locality in which this jay was seen. Here it kept in the tops of high trees in heavy timber, and was rarely seen or heard. Iris yellow.

179. *Cissolopha melanocyanea* (Hartlaub).

This species was first seen at Fiscal, some 20 miles from Guatemala City, on the road from El Rancho. Four were secured at Lake Amatitlan and three at Lake Atitlan. Others were seen at about 6,000 feet on the way from the latter lake to Tecpam, the vertical range being approximately from 4,000 to 6,000 feet. This jay was usually seen in roadside shrubbery and in thickets of small trees. Iris greenish yellow; bill of adults black, of immature specimens, more or less yellow.

180. *Cyanocitta stelleri coronata* Swainson.

Seven birds were taken in the neighborhood of Tecpam at altitudes varying from 6,500 to 9,500 feet, and a nest with a set of four eggs was secured near Chimaltenango, on the road from Tecpam to Guatemala City, April 16th. This nest, which is made principally of grass, and strengthened around the outside by having a few oak twigs woven in, was set in a crotch of a small oak tree about 15 feet from the ground. The tree had no leaves, as the dry season was still on, so the nest and the sitting bird were in full view to all who passed that way. The embryos were large and one of the eggs was ruined in blowing, but the other three and the nest were tied up in a focusing

cloth and bound to the back of the saddle, where they endured the forty-mile journey to Guatemala City in safety. The nest measures 20 cm. (8 in.) in extreme diameter and 9 cm. ($3\frac{1}{2}$ in.) in height. The interior diameter is 10 cm. (4 in.) and depth 4 cm. ($1\frac{5}{8}$ in.). The lining is composed of pine needles, fine rootlets and a few hairs. The eggs average 29 x 22 mm. and are pale Nile blue specked with hair brown. This jay was found only where there were evergreens — pines or cypress. The lower limit of their range appears to coincide almost exactly with that of the upper limit of *Cissolopha*. Iris dark brown; legs and bill black.

Family **Icteridæ.**

181. *Zarhynchus wagleri mexicanus* Ridgway.

At Finca Chapulco near Los Amates, a large flock of this species passed night and morning nearly over the house. On account of their large size and yellow tails they were not at first distinguished from *Gymnostinops*, but after it was discovered that both species were present, the more undulating flight of this one served to establish its identity as far as it could be seen. Only one specimen was obtained. Iris blue; bill yellow at base and horn-blue at tip; feet black.

182. *Gymnostinops montezuma* (Lesson).

Five skins and a skeleton were obtained at Los Amates, where this species was very plentiful. Morning and evening these birds were assembled in flocks evidently owing to their habit of passing the night in company, but during the day it was not at all uncommon to find single birds feeding alone in the deep swamp forest and occasionally uttering their guttural notes. A few were seen at Gualan. Iris dark brown; basal half of bill black, distal half red; bare malar and post-ocular areas flesh color; bare forehead and sides of throat pale rose-purple.

183. *Amblycercus holosericeus* (Lichtenstein).

Nine skins and a skeleton. Specimens were taken at Los Amates, Lake Amatitlan, Lake Atitlan, Patulul and San José. From both coasts up to 5,000 feet it is common. It is a busy and unsuspecting bird, which spends its time in investigating tangles of brush and vines, and in chiseling its way into hard things with its bill like a woodpecker. Its pale bill and eyes give it a peculiar look. The enormous

development of its jaw muscles is remarkable. Iris and bill straw color; feet horn-blue.

184. *Tangavius involucratus* (Lesson).

This species was first noted at El Rancho, but none were obtained there for the reason that they were never encountered outside of the village. One specimen was taken at Lake Atitlan and three others at Tecpam. One of the latter, an immature male, taken April 15th, was beginning to moult around the bill; otherwise all were in firm feather. Iris carmine in an adult male, reddish brown in an immature male, and dark brown in a female.

185. *Megaquiscalus major macrourus* (Swainson).

Great-tailed grackles are to be found in every village from the rubber swamps up to at least 7,500 feet, the highest town visited. They stick so closely to the thickly-settled districts that it is only occasionally that the collector is able to obtain specimens. It is claimed by those who are familiar with this bird in Guatemala that the males are polygamous. At El Rancho a colony nests in a large tree in the village square, under which the Indians daily sit with their baskets of fruit to sell. Iris yellow.

186. *Icterus wagleri* Sclater.

This oriole was first seen at Lake Amatitlan, where a pair was secured in some rushes growing at the margin of the lake. Two others were obtained at Lake Atitlan and one at Tecpam. The last mentioned was immature, having only the chin and lores and a few interscapulars black. Its range is apparently in the high lands. Iris dark brown.

187. *Icterus prothemelas* (Strickland).

A single adult specimen was obtained at Los Amates. Iris dark brown.

188. *Icterus spurius* (Linnaeus).

Guatemala is evidently a favorite region with orchard orioles in winter. They were common at El Rancho the first week in January, where both adult and immature birds were seen gleaning insects in the village trees. Specimens were taken at Los Amates (Jan.), Gualan (Feb.), Lake Amatitlan (Feb.), San José (Mar.), Mazatenango (Mar.), Patulul (Mar. 31st) — ten in all. Two were adult

males, two immature males, and six females. Evidently the nature of the country has little or no effect on the winter distribution of this oriole for the *tierra caliente* and the dry highlands, at least up to 4,000 feet, were alike inhabited by it. The only sign of moult in the entire series is on the head of an adult male taken March 31st. Iris dark brown.

189. *Icterus pectoralis* (Wagler).

This species was found only at Patulul, where one adult male and three immature males were secured. Iris dark brown.

190. *Icterus gularis* (Wagler).

The small series of three specimens of this fine oriole presents so much individual variation that it is regrettable that it is not much larger. All are fully adult. The differences may be tabulated as follows:

Locality	Sex	Head, breast, etc.	Wing	Tail	Tarsus
El Rancho	female	orange-chrome	123	109	32.5
"	male	cadmium-orange	129	109	32.5
Mazatenango	"	cadmium-yellow	112	106	29.

All are in unabraded plumage. The Mazatenango specimen has its bill as long as those from El Rancho, but it has less depth at the base by somewhat more than a millimeter. The female is by far the richest colored of the lot. At El Rancho this species was feeding on the rose-red fruits of the tree cactus (*Cereus*). Iris dark brown.

191. *Icterus giraudii* Cassin.

Two specimens, one from Lake Atitlan and one from Tecpam. Others were seen among some scattered pines on the way between the above mentioned points. It appears to belong to the upland region.

192. *Icterus sclateri* Cassin.

Five examples of this variable species were taken at El Rancho. An adult male has the scapulars and interscapulars solid black; and an immature male has only narrow orange edgings to its otherwise black interscapulars. The females, all immature, have the golden edgings of the interscapulars broader, producing a striped half-and-half appearance. This series of skins, when compared with others in similar plumage from Nicaragua and Oaxaca, has the back decidedly less spotted than either; the coloration of the Guatemala

specimens approaches very closely to that of *gularis*, while those from southern Mexico and Nicaragua, so far as it has been possible to ascertain, are near the color pattern of *pustulatus*. Inasmuch as this oriole was not found elsewhere it is probably chiefly confined to the semi-arid, cactus region. Iris dark brown; maxilla and tip of mandible black; base of mandible and feet horn-blue.

193. *Icterus mesomelas* (Wagler).

Three adults were secured at Los Amates. They were found in the vicinity of cultivated land. This species apparently inhabits the *tierra caliente* exclusively. Iris dark brown.

194. *Icterus galbula* (Linnæus).

Baltimore orioles were very common the latter half of March at Mazatenango and Patulul. None had been encountered prior to that time, which suggests that the majority, at least, winter farther south, and that the latter part of March marks the height of their spring migration in Guatemala. One adult male, one immature male, and two immature females were secured in the above named localities. The young male had just begun to assume the adult nuptial dress, a few scattered black feathers showing on crown, nape and back, while the malar and sub-ocular areas were quite black (March 21st). At Mazatenango these orioles frequented a grove of large coffee trees, which were then in full bloom.

Family **Fringillidæ**

195. *Astragalinus psaltria croceus* (Jouy).

One adult male was obtained at Mazatenango, where it was found in a pasture bearing, in addition to grass, a quantity of weeds and scattered bushes. This goldfinch was not met with in any other locality. Iris dark brown.

196. *Spiza americana* (Gmelin).

A small flock, containing five or six individuals, was found in an irrigated field where the grass was tall and green, at Lake Atitlan, April 9th. One was secured. This specimen, an adult male, was in perfect plumage, and showed no indication of moulting in any part. Iris dark brown.

197. *Coturniculus savannarum bimaculatus* Swainson.

Two females were taken at Patulul (March 24th, 26th). They were feeding on weed seeds at the edge of a field of sugar cane. This species was not seen anywhere else. Iris dark brown.

198. *Aimophila ruficauda lawrencei* (Salvin and Godman).

Five specimens, three adult and two apparently immature, were taken at El Rancho. The adults have the clear black lateral crown stripes and auriculars and the larger size that characterize *r. lawrencei* as distinguished from *r. ruficauda*. The two younger specimens have traces of rufous in the lateral crown stripes, and the lower posterior sections of their ear coverts are grayish brown, which give them the appearance of true *ruficauda*,—originally described from Nicaragua. Apparently Salvin and Godman, in writing their description of *ruficauda* and setting the limits of its distribution,* had one of these immature birds in hand, as the specimen which they described came from the same drainage basin, that of the Motagua River, as these El Rancho birds. Therefore, unless these specimens were migrants from Mexico, which is not probable, the Guatemalan birds belong to *lawrencei* and not to *ruficauda*, as currently supposed. This species inhabits the low tangles of thorny shrubs and the brush fences and stone walls of the dry hillsides, remaining much upon the ground, and taking refuge on the far side of its cover when interrupted. Iris of adults orange-red, of immature birds dark brown; maxilla dark horn color; mandible white; feet flesh color.

199. *Aimophila rufescens* Swainson.

This large sparrow was found in moist situations between 5,000 and 6,500 feet. Three were taken at Lake Atitlan and one in a valley below Tecpam. One of the Atitlan specimens has the chest and sides of the neck decidedly grayer, less buff, than either of the other three. This same bird had its tail about three-fourths grown, all the rectrices showing white tips, a character that the others had lost by abrasion. No other sign of moult appears on any of them. Iris mummy-brown; maxilla slate-black; mandible plumbeous.

200. *Junco alticola* Salvin.

Seven were secured near the summit of Sierra Santa Elena, 9,500 feet, where they were found in a field cleared from the cypress forest. None were seen at a lower altitude. Iris orange.

* *Biologia Centrali Americana*, Aves, Vol. I, p. 396.

201. *Brachospiza capensis peruviana* (Lesson).

This sparrow was seen within the limits of Guatemala City. Two were taken at Lake Atitlan, which has about the same altitude as Guatemala City, nearly 5,000 feet, and two were taken near Tecpam (7,500 feet), where it was very common. Its song strongly reminds one of the eastern meadow-lark, though, of course, the volume is somewhat less. It is a bird of fields and highways, rather than of shrubbery or timber. Iris dark brown.

202. *Melospiza lincolni* (Audubon).

A female was taken at Lake Atitlan April 8th. Its spring moult had barely commenced on chin and forehead.

203. *Hortulanus maculatus* (Swainson).

The spotted Towhee was first met at Lake Atitlan, where two were obtained. Four others were taken between the Lake and Sierra Santa Elena, above Tecpam. A female, taken at 9,500 feet, April 14th, contained an egg nearly ready to be laid. One of the Atitlan specimens, a female, had orange rufous irides, while in one of the same sex from Sierra Santa Elena they were gray; bill black; feet vinaceous buff.

204. *Melozone biarcuatum* (Prévost).

This species was first seen at Fiscal, on the way from El Rancho to Guatemala City. Thirteen specimens, representing Lake Amatitlan, Lake Atitlan, Patulul and Mazatenango, were secured. It is an inhabitant of scrub land, where stones, weeds and bushes prevail, feeding on the ground and taking refuge in the trees where disturbed. Iris brown.

205. *Arremonops chloronotus* (Salvin).

A pair was secured at Los Amates. None were seen elsewhere. Iris brown; maxilla black; mandible horn-blue; feet pale.

206. *Arremon aurantiirostris* Lafresnay.

This species was found only in the deep forest near Los Amates, where it stayed chiefly upon the ground, in the shelter of fallen branches or decaying logs. In the obscurity of the swamp it was difficult to see, the more especially as only one was found in a place. One specimen was taken. Bill orange-red.

207. *Atlapetes gutturalis* (Lafresnay).

Two were taken near Tecpam, at 9,500 feet, by Mr. Barber, in January.

208. *Buarremon brunneinuchus* (Lafresnay).

Three were secured above Tecpam, between 8,500 and 9,500 feet. They were found, among bushes and low trees, usually on the ground. Iris dark brown.

209. *Volatina jacarina splendens* (Vieillot).

This species was found at Los Amates, Gualan, Mazatenango and San José. Six specimens were taken, representing each of the above named localities. On the savannas near Los Amates they were common. They are essentially birds of the field, rank grass and weeds being their usual habitat. None were seen above 1,800 feet. Iris dark brown.

210. *Sporophila morelleti* (Bonaparte).

This seedeater inhabits practically the same situations as the last, though it was found as high as 5,000 feet. Six specimens from Los Amates, four from Mazatenango, three from Patulul, and one from Lake Atitlan, make up the series. Those taken late in March were beginning to moult on the crown and throat. Iris dark brown.

211. *Passerina cyanea* (Linnæus).

Indigo birds were very common, at least up to 4,000 feet, all winter. April 4th is the date on which the last specimen was taken. By the middle of March adult males had about half of the head and breast blue, the back and under parts being still in fall plumage. Males taken in January had a few scattered blue feathers both above and below. Nine specimens were obtained, representing Los Amates, El Rancho, Patulul, Mazatenango and Lake Amatitlan. At Finca Chapulco, near Los Amates, these birds were daily feeding on the ground in the door yard. Often they were found in company with *Sporophila* among the weeds that flourish along the railroad. Iris dark brown.

212. *Passerina ciris* (Linnæus).

The winter distribution of this species, so far as the results of this expedition indicate, is the same as that of *cyanea*. Nine speci-

mens make up the series. April 4th is the latest date of capture. Adult males wore their regalia of red, blue and green all winter. An immature male, taken March 31st, had just begun to come into adult plumage, a few blue feathers showing among the auriculars. This bunting was seen at Gualan, and specimens were taken at Los Amates, El Rancho, Mazatenango, Patulul and Lake Amatitlan. Iris dark brown.

213. *Passerina versicolor* (Bonaparte).

An adult male was taken at El Rancho January 5th. None were observed elsewhere. Iris dark brown.

214. *Cyanocompsa parellina* (Bonaparte).

Two were obtained at Los Amates and two at Patulul. The species was not common. This series comprises two adults of each sex. Their bills are heavier than any of the half dozen specimens from eastern Mexico with which they have been compared. The females are considerably darker than those from Tamaulipas, the back being between Vandyke brown and burnt umber. The males have foreheads pale blue, and occiput and nape azure blue; they also have a wash of azure on the lower breast,—in each of these particulars they differ from Mexican specimens. These specimens are nearer subspecies *parellina* than any other that has been described, both in size and color. The species has not heretofore been recorded south of Mexico, but it extends at least as far as Nicaragua, and when sufficient specimens from the southernmost portion of its range are obtained, it is probable they will be found worthy of description and a name. When this has been done, these Guatemalan birds will probably appear as intermediates. Iris dark brown.

215. *Guiraca cærulea lazula* (Lesson).

The western blue grosbeak was found to be generally distributed, yet nowhere very abundant. Six specimens were taken,—two from El Rancho and one each from Los Amates, Patulul, Lake Amatitlan and Lake Atitlan. An adult male, taken in January, has brown tips to the body feathers, which only need to be abraded to put him into summer dress. A young male, taken February 26th, has a few blue feathers around each eye and one or two on its chest, which mark the beginning of the spring moult. Another, taken just a month later, has the crown, chest and sides of the neck mainly blue. Iris dark brown.

216. *Zamelodia ludoviciana* (Linnæus).

A male was seen at Los Amates in January; a female was taken at Lake Atitlan February 24th; another at San José March 7th; two males and a female at Mazatenango March 17th, and a female at Patulul April 2d. During the latter half of March rose-breasted grosbeaks were common about Mazatenango, where they were in small flocks and apparently migrating. Although a winter resident of Guatemala, it seems probable that the majority go farther south to spend the winter. An adult male taken March 17th, had not even a trace of approaching summer dress. An immature male, taken March 20th, had a few pinfeathers on its chin. A female, taken April 2d, has its under wing coverts, and a suffusion on its throat, geranium-pink. The ovaries were normally developed, and there was no uncertainty about the sex. The upper parts of this specimen are in no way variant from the ordinary type of the sex. Iris dark brown.

217. *Pheuticus aurantiacus* (Salvin & Godman).

The only example of this species that came to notice was a female collected on a mountain north of El Rancho, just below the limit of pine growth. Iris dark brown.

218. *Saltator atriceps* Lesson.

Eight specimens, representing Gaulan, Mazatenango, Patulul and Lake Amatitlan, were obtained. This species frequents the borders of woodland, where it can combine the advantages of the field for food and the woods for shelter. It evidently prefers dry ground at an altitude less than 5,000 feet. Iris brown.

219. *Saltator magnoides medianus* Ridgway.

Three specimens were secured at Los Amates, the only place where this species was found. It was noisy, like others of this genus, calling vociferously when in the trees, but nothing that could be called a song was heard. A flock came to the cleared strip bordering the railroad to feed, and took to the bambus whenever disturbed. Iris dark brown.

220. *Saltator grandis* (Lichtenstein).

This species was seen only on the Pacific side of the divide. San José, Lake Amatitlan and Patulul together furnished seven specimens. Iris dark brown.

Family **Tanagridæ.****221. Euphonia affinis** (*Lesson*).

Specimens, five in all, were taken at Gualan, Patulul, Mazatenango and San José. They were found in scattering trees, on cultivated land, feeding on small fruits. Iris dark brown.

222. Euphonia hirundinacea *Bonaparte*.

This species was seen only at Mazatenango, where three were collected. Iris dark brown.

223. Euphonia gouldi *Sclater*.

A single specimen was taken at Los Amates, the only locality in which this species was noticed. Iris dark brown.

224. Tanagra cana *Swainson*.

Blue tanagers were seen at Los Amates, Mazatenango and San José. Four specimens were collected. Berries form a large part of their fare. Iris dark brown.

225. Tanagra abbas *Lichtenstein*.

This tanager was common locally up to 5,000 feet. In the series of fourteen skins, Los Amates, Patulul, Mazatenango and Lake Atitlan are represented. Iris dark brown.

226. Piranga rubra (*Linnæus*).

One specimen was taken at Los Amates, but not preserved; four were taken at Gualan, two at Patulul and one at Lake Atitlan. The spring moult on an immature male, taken March 31st, had progressed over the sinciput, throat and auriculars. Scattering red feathers had also appeared on the breast, interscapulum and rump. Iris dark brown.

227. Piranga ludoviciana (*Wilson*).

Fifteen specimens, all from the west side of the country, were taken between February 25th and April 2d. Patulul, Mazatenango and Lake Atitlan are the localities from which they came. During the latter part of March these tanagers were so abundant that it is probable they were in migration from some point to the southward, though this species does not appear to have been recorded from south of Guatemala. The spring moult evidently begins early in March,

the yellow median wing coverts and the frontal, loreal and gular feathers being replaced first. Three immature males, taken between the 15th and 31st of March, have new tertials. Iris dark brown.

228. *Piranga leucoptera* Trudeau.

Seven specimens were obtained from Patulul and Mazatenango, the only places where this species was seen. Iris dark brown.

229. *Rhamphocelus passerinii* Bonaparte.

Eight specimens were taken at Los Amates. None were seen away from the swamps, where, however, they are quite plentiful. An immature male in the series is indistinguishable, as to color, from the females, but in size it is fully equal to adult males. This tanager is usually seen around the margins of clearings. Iris of adult male red, of immature male maroon, of female brown; bill plumbeous blue.

230. *Lanio aurantius* Lafresnay.

A single specimen was collected at Los Amates. No others were observed. Iris dark brown.

231. *Eucometis spodocephala* Bonaparte.

Los Amates, one specimen, which, on comparison with specimens of *spodocephala* from Nicaragua and *pallida* from Yucatan, is seen to belong to the former subspecies. Its upper parts are fully as dark as those from Nicaragua though it is slightly paler below. Prof. Ridgway* mentions a Guatemalan specimen that agrees with *pallida*, and a Belize specimen that is intermediate between the two. Iris brown.

232. *Phænicothraupis rubica rubricoides* (Lafresnay).

Near Patulul this tanager was rather common in heavy timber on the hillsides. Nine specimens were taken. An adult male in the lot, collected April 3d, has three new olive-green rectrices and nine old red ones—an interesting reversal of the usual order of moult—and furthermore, they are unsymmetrically located, one green feather being an outer retrix on the right side, while the other two are next the middle on the left side. Iris dark brown.

233. *Phænicothraupis salvini* Berlepsch.

A single specimen was collected near Mazatenango, in a low moist locality covered with primeval forest. Iris dark brown.

*Bull. U. S. Nat. Mus. No. 50, part II, p. 141.

234. *Phænicothraupis salvini littoralis* (Nelson).

A pair of this subspecies, taken at Los Amates, agree very closely with specimens from Teapa and Tampico, the colors of the head and throat being of the same shade, and those of the body, wings and tail being but slightly darker than on the corresponding parts of the Mexican specimens. Iris brown.

Family **Hirundinidæ.****235. *Progne chalybea* (Gmelin).**

Two specimens were taken at El Rancho where this species was very common. Several came regularly to pass the night on the plates of the high veranda of the hotel. Iris dark brown.

236. *Stelgidopteryx serripennis* (Audubon).

Specimens, five altogether, were collected at Mazatenango, Patulul and Lake Atitlan — the time limits being March 17th to April 8th. All of these skins agree in color with others from the States, but the one from Lake Atitlan, a male, has the unusual wing length of 118 mm. Of the other four, two females and a male have a wing length of 104 mm. and the other one, a female, is only 98 mm. Iris dark brown.

237. *Notiochelidon pileata* (Gould).

Coban swallows were plentiful about Tecpam, where one was taken by Mr. Barber in January. April 15th they were drilling holes in the banks by the roadside on the mountain west of the town. They also appeared to be nesting in the walls of the cathedral where bricks had been left out for staging supports.

238. *Iridoprocne bicolor* (Vieillot).

One immature specimen, sex unknown but apparently a female, was taken at Lake Atitlan March 3d, by Mr. Barber.

Family **Ptilognathidæ.****239. *Ptilogonys cinereus molybdophanes* Ridgway.**

This species was first seen on the road from Lake Atitlan to Tecpam at about 6,500 feet. Above Tecpam at 9,000 to 9,500 feet it was

found in flocks feeding on berries. Six males and two females were collected. The females exhibit a decided difference in color. One has back and breast brocoli brown in decided contrast with an olive-gray head; the other has back smoke-gray, breast drab-gray, and head olive-gray, with only a slight contrast between the interscapulum and crown. Iris dark brown.

Family **Vireonidae.**

240. *Vireosylva flavoviridis* Cassin.

One specimen was taken at Mazatenango, where this vireo was frequently heard singing in the tops of the enormous trees that form the forest in the low land south of the town. Its song is so similar to that of *V. olivaceus* that, until one of the birds was collected, it was supposed to belong to that species. Iris red-brown.

241. *Vireosylva gilvus swainsonii* (Baird).

One was taken and another seen at El Rancho January 6th. No more were seen until March 24th, when they were found at Patulul in abundance, and so continued, at least, until April 2d. Seven were collected at Patulul. At this time, they were passing through the trees in loose flocks and were evidently migrating. The March and April specimens were undergoing a scattered moult, not a general renewal, on head and breast. Iris dark brown.

242. *Lanivireo flavifrons* (Vieillot).

Yellow-throated vireos were found at Gaulan and near El Rancho. Two specimens were collected at the former place early in February. Iris dark brown.

243. *Lanivireo solitarius* (Wilson).

One was taken at Lake Atitlan April 10th, and another was taken two days later, on the road to Tecpam, at 6,500 feet. Both were near the completion of the spring moult, covering the head, interscapulum and breast,—partially at least. Iris dark brown.

244. *Vireo ochraceus* Salvin.

This species was found only in the mangroves. One specimen was collected at Puerto Barrios and five at San José. At the latter place they were abundant. All of the San José series were olive-

green above and wax-yellow beneath, and all had straw-colored irides. The Puerto Barrios bird was olive-gray above, and only locally and slightly tinged with yellow beneath, and had dark-brown irides. The dark iris was an index of immaturity, and it seems probable that the color variation so conspicuous in any large series of this species is due to difference in age, the pale specimens being younger than those of brighter color.

245. Vireo bellii *Audubon.*

Bell's vireos do not appear to have been heretofore recorded from south of Tehuantepec, but apparently they reach southern Guatemala in considerable numbers. Two were taken at Gualan February 15th, two at San José, March 8th, and one at Patulul March 25th. No evidence of a recent moult is discernible on any of the lot. Iris dark brown.

246. Vireolanius melitophrys *Du Bus.*

One specimen, the only one seen, was taken at Lake Atitlan. Iris Nile-blue.

247. Vireolanius pulchellus *Sclater & Salvin.*

This species was found only in the wooded valleys near Patulul, but even there it was scarce. Two specimens were collected. Iris dark brown.

248. Cyclarhis flaviventris *Lafresnay.*

Nine were collected, in all; one at Mazatenango, five at Patulul and three at Lake Atitlan. The song of this bird is rather loud, smooth and pleasant to hear. Iris orange, and elliptical in shape, with the longer axis horizontal.

Family **Cœrebidæ.**

249. Diglossa montana *sp. nov.*

Type No. 23,424, ♂ ad., Field Museum of Natural History; collected on Sierra Santa Elena, at altitude 9,500 feet, near Tecpam, by C. M. Barber, January 13th, 1906.

Specific characters: Similar to *D. baritula*, but differs from that species in having the throat slate-gray like the back — not russet like the breast;— and in having the under parts darker,— near mars brown.

Description of type: Pileum, lores and auriculars slate-black; throat, sides of neck, back, lesser wing coverts and upper tail coverts slate color, passing into plumbeous on the rump; wings and tail black, edged with slate; breast, abdomen and under tail coverts mars brown. Wing 58 mm.; tail 45 mm.; exposed culmen 10 mm.; tarsus 18 mm.

Female: Upper parts olive; throat broccoli brown; breast, abdomen, and under tail coverts vinaceus-cinnamon. Wings and tail dusky, edged with olive; secondaries and greater wing coverts edged with buff. Wing 56 mm.; tail 43 mm.; exposed culmen 10 mm.; tarsus 18 mm.

Two specimens were taken in the type locality by Mr. Barber. It is probable that *montana* intergrades with *baritula*, but in the small series at hand — two of the former and seven of the latter — there is no indication of it. This form has hitherto been included under the name *baritula* which was originally applied by Wagler to a specimen from Mexico. Salvin and Godman* mention the difference in color of throat on Mexican and Guatemalan specimens; and Ridgway** calls attention to this and other differences between the single Guatemalan skin in the United States National Museum, and a series from Mexico. Apparently Sclater based his description of *baritula* in the Catalogue of Birds in the British Museum*** upon a Guatemalan specimen, for he says "throat plumbeous like the back."

His final statement that "Guatemalan specimens have *less* (Italics mine) plumbeous on the throat, thereby approaching *D. sittoides*" indicates very plainly that he had the two forms confused, for it is the Mexican and not the Guatemalan form that has less plumbeous.

250. *Cyanerpes cyaneus* (Linnæus).

Two from Patulul and seven from Mazatenango were collected between the 15th and the 31st of March. This series indicates that the body plumage of immature males changes from the green of the first autumn to the adult blue and black by a rapid and thorough moult in March; and that the wing and tail feathers are renewed just enough in advance of the contour feathers to be practically grown when the latter begin to shed about the head and interscapulum. Adults apparently moult more gradually and less completely at this time. These honey creepers were as often seen foraging among the branches of roadside trees as in the woods. They were usually in flocks. Iris dark brown; feet vermilion.

* Biologia Centrali Americana, Aves, I, p. 242.

** Bulletin U. S. National Museum, No. 50, part II, p. 381, footnote.

*** Cat. Birds Brit. Mus. Vol. XI, p. 4.

Family **Mniotiltidae**.**251. Mniotilta varia** (*Linnæus*).

One was taken March 19th at Mazatenango and another, an adult male, at Patulul March 31st. A few were seen at Gualan February 15th. Black-and-white warblers winter here only in small numbers. Iris dark brown.

252. Helmintheros vermivorus (*Gmelin*).

A female was taken at Patulul April 2d. No others were seen.

253. Helminthophila pinus (*Linnæus*).

One specimen was taken at Gualan February 15th. Iris dark brown.

254. Helminthophila peregrina (*Wilson*).

Tennessee warblers were abundant at Mazatenango, and six were collected there between the 19th and 21st of March. Between March 25th and April 2d three others were taken at Patulul. As none were seen elsewhere, it seems probable that these specimens were out of a migration wave sweeping up from a lower latitude. In the series of eight, only one was a male, taken April 2d. All show a condition of scattering moult on pileum, throat and interscapulum. Iris dark brown.

255. Helminthophila celata lutescens (*Ridgway*).

One specimen was taken at 9,500 feet, near Tecpam, December 16th, by Mr. Barber.

256. Oreothlypis superciliosa (*Hartlaub*).

This species was rather common in the cypress-covered heights above Tecpam, where three specimens were taken. It was usually found in bushes and small trees at the edge of the forest or in partial clearings.

257. Compsothlypis americana ramalinæ *Ridgway*.

One was collected at Gualan, February 7th; and another at San José March 7th. The latter was just beginning the spring moult on forehead and auriculars.

258. *Dendroica æstiva* (Gmelin).

The yellow warbler is a common winter resident. Ten specimens were collected, the following localities contributing: Los Amates (Jan.), Lake Amatitlan (Feb.), Patulul, Mazatenango and San José (March). Those taken about March 1st, were just beginning the spring moult, and those taken during the last week of the same month had new feathers on head, neck, interscapulum, breast and flanks; while the lower back, rump and abdomen showed no indication of renewal.

259. *Dendroica æstiva sonora* Brewster.

A female was taken at El Rancho in January, and a male at San José March 9th.

260. *Dendroica bryanti castaneiceps* Ridgway.

Several were seen among the mangroves along the beach at San José, but only one was secured. This one, an immature male, was just beginning to show a few chestnut feathers on its head, March 7th. Iris dark brown.

261. *Dendroica maculosa* (Gmelin).

An abundant winter resident from the swamps along the coast up, at least, to 4,000 feet. Specimens, seven in all, were collected at Los Amates, Lake Amatitlan, Patulul and Mazatenango. The only specimen in moult is a male, taken April 2d, which has a few new feathers on its throat and breast. Iris dark brown.

262. *Dendroica coronata* (Linnæus).

Myrtle warblers were first noticed at sea, December 31st, when two came aboard the ship about 20 miles south of Chinchorrow Key. At Belize, January 1st, they were common in the botanical garden. Many were seen at Puerto Barrios and Los Amates in January. Again, April 12th, a few were seen and one, a female in dilapidated plumage, collected near Tecpam, at 7,500 feet. In the low country, they fed mostly upon the ground along the railroad and in door yards.

263. *Dendroica townsendi* (Townsend).

This warbler winters in the pine belt. Four were taken near Tecpam, one in January at 7,600 feet, and three April 12th, at 6,500 feet. None were seen elsewhere.

264. *Dendroica virens* (Gmelin).

One was taken near El Rancho (Jan. 6th), one at Lake Amatitlan (Feb. 27th), and two at Lake Atitlan (April 10th). Few were seen, none below 2,000 feet. One of the April specimens had just begun to moult about the base of the bill and the auriculars.

265. *Oporornis formosa* (Wilson).

Two were secured at Los Amates (Jan. 22d and Feb. 9th) and one at Mazatenango (Mar. 15th).

266. *Oporornis tolmiei* (Townsend).

One was taken at Lake Amatitlan (Feb. 26th), two at Patulul (Mar. 26th) and two at Lake Atitlan (Apr. 10th). It is probable, judging from these dates of occurrence, that at least the Lake Amatitlan specimen was passing the winter at Guatemala. The others may have been passing migrants. One of the April specimens had pinfeathers on gular, frontal and auricular areas.

267. *Seiurus aurocapillus* (Linnæus).

One was collected at Mazatenango March 21st.

268. *Seiurus noveboracensis notabilis* Ridgway.

One, taken at Los Amates (Jan. 16th) and another at Lake Amatitlan (Feb. 27th) belong to the intermediates between *S. n. noveboracensis* and *S. n. notabilis*, such as occur spring and fall in Chicago, and which are referred to the latter form on account of their color, notwithstanding they are somewhat smaller than typical *notabilis*. This species (subspecies uncertain) was also seen at Puerto Barrios moving about among a pile of mahogany logs on the shore. At Los Amates, they were frequently seen near the river. Both of the specimens collected were undergoing a gradual moult on the head. Iris dark brown.

269. *Geothlypis trichas brachydactyla* Swainson.

Eleven specimens were collected, time and place as follows: Los Amates (Jan.), Lake Amatitlan (Feb.), Mazatenango and San José (March), Lake Atitlan (Apr. 7th). An immature male, taken January 16th, was in autumnal plumage. Another, taken February 1st, had begun to assume the black mask. An adult male, taken April 7th, was moulting on chin and crown. This yellow-throat is a common winter resident in moist, reedy places, up to 5,000 feet and perhaps higher.

270. *Chamæthlypis caninucha* Ridgway.

Two were collected at Mazatenango and two at Patulul. At first sight one is reminded of a yellow-throat (*G. trichas*) but this species lives mainly on the ground in highways and pastures where vegetation is low, rather than in bushes, or rank grass, as do yellow-throats. None were observed on the Atlantic side of the watershed, or either very high or very low on the Pacific side, the more elevated parts of the *tierra caliente* being, apparently, their ordinary habitat. The pair, male and female, taken at Mazatenango (Mar. 19th, 21st) had not begun to moult; but the pair from Patulul (Mar. 24th, 25th) both have pinfeathers on the interramal space. Iris dark brown.

271. *Icteria virens* (Linnæus).

The chat was found very generally distributed. Two were collected at Los Amates (Jan.), one at Lake Amatitlan (Feb.), two at San José (March), one at Mazatenango (March), two at Patulul (Mar., Apr.) and one at Lake Atitlan, (Apr. 7th). In this series of nine birds only one was in moult. This one, an adult male taken March 19th, had the forehead and a patch on the throat in pinfeathers. Iris dark brown.

272. *Wilsonia mitrata* (Gmelin).

One was collected at Los Amates January 26th, and two at Patulul, one March 26th, and the other April 5th. While undoubtedly a winter resident, it is not a common one, as no others were observed. The Patulul specimens were probably passing migrants. Iris dark brown.

273. *Wilsonia pusilla* (Wilson).

A fully adult male was taken at Los Amates January 16th; and a young male and a female were taken above Tecpam (9,000 ft.) April 13th. The female, the only one showing any moult whatever, had numerous scattering pinfeathers on her throat. Iris dark brown; maxilla horn-blue; mandible pale; feet dull yellow.

274. *Setophaga ruticilla* (Linnæus).

An adult male was seen at Belize January 1st, and a female was taken at Gualan February 15th. Iris dark brown.

275. *Setophaga picta guatemalæ* Sharpe.

The only one seen was collected at 6,500 feet, near Tecpam.

276. *Myioborus mimatus flammeus* (Kaup).

One was taken from a flock of warblers, mainly *Oreothlypis superciliosa*, at 8,000 feet near Tecpam. Iris hazel.

277. *Basileuterus rufifrons dugesi* Ridgway.

Three specimens, a male and two females, were taken April 10th at Lake Atitlan. They have been compared with six specimens of *B. r. rufifrons* from eastern Mexico, and with the same number of May specimens of *B. r. dugesi* from Jalisco, and they evidently belong to the latter subspecies. If this form were a permanent resident it would undoubtedly have been reported from Guatemala before this; hence it is reasonable to conclude that these birds were migrants. Such a migration as this must be due to an instinctive impulse, rather than to necessity, as the bird's summer range is not uninhabitable in winter. These specimens were found in the low shrubbery that covers the precipitous shore of the lake near Panajachel.

278. *Basileuterus rufifrons delatirii* Bonaparte.

Seven specimens, five males and two females, were taken at Patulul between March 26th and April 5th. All of these have the nape olive-green, slightly darker than the back. Two other specimens, one of each sex, taken at Lake Amatitlan February 27th, have gray napes, otherwise they are like those from Patulul. According to Ridgway* the gray nape is a characteristic of *delatirii*; but according to Salvin and Godman**, the nape of this form should be "olive like the back."

If this series includes only one form, and that *delatirii*, which appears to be the case, both authorities have hit the truth. Prof. Ridgway kindly allowed the type of *B. r. salvini* Cherrie, to be sent on from Washington for examination in this connection. But none of this series has a trace of white on the ear-coverts, while *salvini* belongs to the group having the lower portion of the auriculars whitish. There is no sign of moult on any of these specimens and there is nothing about them to indicate any difference in age between those with gray napes and those with olive napes. Iris dark brown.

279. *Basileuterus culicivorus* (Lichtenstein).

Two were collected at Patulul. Iris dark brown.

280. *Ergaticus versicolor* (Salvin).

This species was found only in the cypress region above 9,000 feet.

*Bull. U. S. Nat. Mus., No. 50, part II, p. 749.

**Biologia Centrali Americana, Aves, vol. I, p. 177.

It is exceedingly active, so much so that it is rather difficult to obtain. It frequents thickets of young cypress and shrubbery of various sorts. Eight specimens were secured. Iris dark brown.

Family **Mimidae**.

281. *Mimus gilvus guatemalensis* Ridgway.

One specimen was collected at Lake Atitlan, the only locality where this species was found, and it was not common there.

282. *Galeoscoptes carolinensis* (Linnæus).

Catbirds were common at Belize and at Los Amates. None were observed outside the low, wet *tierra caliente* of the Atlantic side of the country. In the almost impenetrable thickets of that region, the collector rarely knows what he is shooting at, and as a rule it does not matter, but if he hails from the north, he very soon becomes tired of picking up catbirds. Two specimens were brought home, both from Los Amates, one collected in January and the other April 1st, both in excellent plumage.

283. *Melanotis hypoleucus* Hartlaub.

This fine mocker was found between 5,000 feet and 6,500 feet, along the road from Lake Atitlan to Tecpam. It frequents the thick bushes which grow in water-courses, and acts in general like the more familiar members of its family,—the catbird, mockingbird and thrasher. Three specimens were collected. Iris dark brown.

Family **Troglodytidae**.

284. *Heleodytes capistratus* (Lesson).

Seven specimens were collected, the localities represented being El Rancho, Lake Amatitlan, Patulul and San José. The Patulul and San José specimens differ from those from El Rancho in having the back darker and without the obscure bars more or less observable on all the birds from the latter place. Evidently they are intermediates between *H. c. capistratus* and *H. c. nigricaudatus*. Several nests were found in the course of construction as early as February 15th, but so far as could be judged they were built in response to an instinct for

nest building developed long past the needs of procreation, rather than for immediate occupancy by eggs. This wren was usually found in hedges away from the woods. It is a very good singer. Iris reddish brown.

285. *Heleodytes zonatus* (Lesson).

This species was first seen at Lake Amatitlan where two specimens were taken. Four were taken at Lake Atitlan, one at 6,500 feet, between there and Tecpam, and two at 8,400 feet, near the last named town. Its vertical distribution almost exactly supplements that of *H. capistratus*, which was not found higher than Lake Amatitlan. These wrens were for the most part in trees in gorges, though at Lake Atitlan, where they were quite numerous, they were in a small coffee plantation, hedged in between the mountains and the lake. Their ordinary notes are harsh and unpleasant. Iris hazel.

286. *Pheugopedius maculatus umbrinus* (Ridgway).

Two specimens were taken at Los Amates, one at Izabel, one at Patulul and one at San José. Iris brown.

287. *Troglodytes musculus hypaëdon* (Sclater).

This wren was found at Los Amates, where one came daily to the so-called "hotel" and took a look into each room as it made its way along the plate, singing and catching lively tenants of the hostelry. The good offices of this bird were so highly appreciated that no attempt was made to make a skin of it. One was taken at Lake Amatitlan, in some tall grass at the edge of a field, and another at 6,500 feet, on the way from Lake Atitlan to Tecpam. Others were seen in the cypress forest, at 9,500 feet near Tecpam. There is a decided difference in the color of the upper parts of these two specimens, the Amatitlan bird being much the darker; but this difference is probably due to environment, the dark one coming from a moist situation covered with green vegetation, while the other came from a mountain side, which during the dry season has but little verdure. This pale specimen is even lighter than *intermedius* from Costa Rica. The under parts of these two specimens are quite similarly colored. Iris dark brown.

288. *Henicorhina prosthleuca* (Sclater).

Two were collected at Los Amates and five at Patulul. All were found in moist dark woods. Iris dark brown.

289. *Thryophilus modestus* (Cabanis).

This species was more common on the Pacific side, near the coast, than in the interior. Ten specimens were collected,—Gualan, Lake Atitlan, Lake Amatitlan, Patulul and San José being the localities. These specimens show decided individual variation as to color and distinctness of barring on the tail. The wings and the tails of this series average slightly less than those of Costa Rican specimens. As to color, in this series of ten there are specimens that are lighter than the three adult examples from Costa Rica in this Museum, and others that are darker; while some have the dark tail-bars more distinct, and some less distinct than those from Costa Rica. Iris dark brown.

290. *Thryophilus rufalbus* (Lafresnay).

Two were secured at Mazatenango, the only locality where any were seen. Iris dark brown.

291. *Thryophilus pleurostictus* (Sclater).

A single specimen was collected at Gualan. Iris dark brown.

Family **Certhiidae.**

292. *Certhia familiaris alticola* Miller.

Mr. Barber collected one specimen at 9,500 feet, near Tecpam.

Family **Paridae.**

293. *Psaltriparus melanotis* (Hartlaub).

Four specimens were collected in the highlands between Lake Atitlan and Tecpam at 5,000 to 6,500 feet. None were seen below this elevation.

Family **Sylviidae.**

294. *Regulus satrapa clarus* subsp. nov.

Type No. 23,270, ♂ ad., Field Museum of Natural History; collected on Sierra Santa Elena, at altitude 9,500 feet, near Tecpam, Guatemala, by N. Dearborn, April 13th, 1906.

Subspecific characters: Similar to *R. s. olivaceous* but having the olive-green of the upper parts distinctly brighter green, and the gray nuchal collar not more than half as wide.

Description of type: Interscapulum, rump and edgings of wing and tail feathers bright olive-green; median area of pileum cadmium-orange, bounded anteriorly and laterally by a line of lemon-yellow; which in turn, is bounded anteriorly and laterally by a line of black; and this, again, is bounded anteriorly and laterally by a line of white, which covers the frontal and superciliary areas. Ocular and malar areas dusky, separated by a narrow white line. Sides of head and cervix olive-gray. Underparts smoke-gray, abdomen and under tail coverts slightly paler than the breast and throat. Wing 54 mm.; tail 40 mm.; exposed culmen 8 mm.; tarsus 18 mm. Greater wing coverts tipped with pale buff.

Adult female: Colored like male except central line of pileum which is entirely lemon-yellow. Wing 52 mm.; tail 37 mm.; exposed culmen 8 mm.; tarsus 17 mm.

Remarks: This form is as much brighter colored than *R. s. olivaceous* as that form is brighter than *R. s. satrapa*; and the gray collar, which on *s. satrapa* invades the interscapulum, and grades so gradually into the olive-green of the rump that the back shows as much gray as it does olive-green; and which in *s. olivaceous* reaches well on to the interscapulum where it ends more abruptly; in *clarus* does not reach the interscapulum at all, the bright olive-green extending clear up over the shoulders. Through the kindness of Dr. Allen of the American Museum of Natural History I have been able to compare these Guatemalan specimens with the specimen named *aztecus* Ridgway, from Mexico City, in the Lawrence collection, which is apparently only an unusually dark example of *olivaceous*, and less like these than is the usual type of *olivaceous*. Three specimens were collected; a male, January 2d, and a male and female April 13th. They were among second growth cypress at altitude 9,500 feet, and considering the dates, were probably residents. At all events the character of the timber land is precisely such as this species ordinarily selects to breed in.

295. *Polioptila cærulea mexicana* Ridgway.

This gnat-catcher is apparently restricted to the low country. Two specimens, both females, were taken,—one at Los Amates January 31st, and the other at San José March 7th. This last bird

was near the end of a spring moult involving nearly all the body plumage. Iris dark brown.

296. *Polioptila albiloris* Sclater & Salvin.

White-lore'd gnat-catchers were common at El Rancho, where five were collected. One was also taken at Gualan. They were found among the leafless hillside shrubbery, usually in pairs. Iris dark brown.

Family **Turdidæ.**

297. *Hylocichla ustulata* Nuttall.

One was taken at Los Amates January 31st, four at Mazatenango March 16th—20th, and six at Patulul March 31st—April 3d. This species was abundant in the last two localities and appeared to be migrating. The one collected at Los Amates was the only one seen on the east side of the divide. None were moulting. Iris dark brown.

298. *Hylocichla guttata auduboni* (Baird).

One specimen was collected near Tecpam, January 1st, by Mr. Barber.

299. *Planesticus grayi* Bonaparte, and

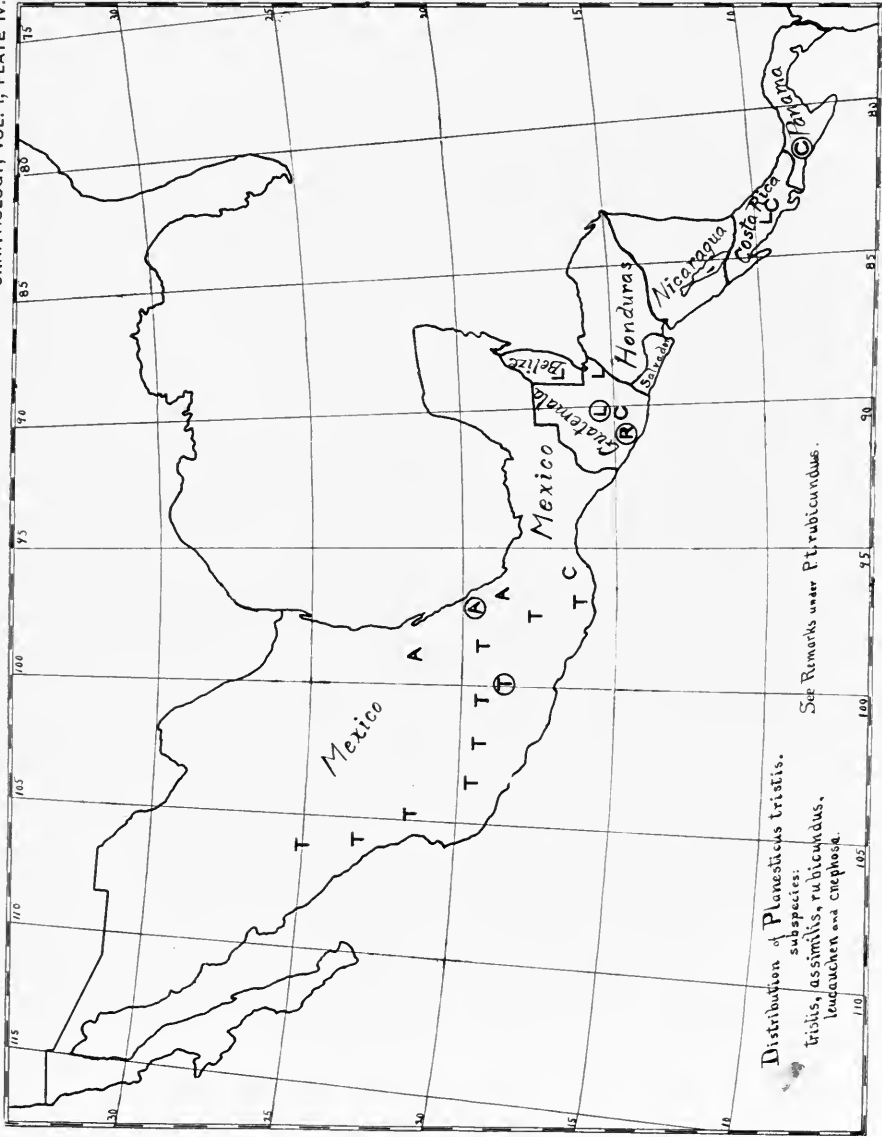
300. *Planesticus grayi tamaulipensis* Nelson.

Fourteen specimens: Los Amates three; El Rancho four; Lake Amatitlan one; Lake Atitlan three; San José one; Mazatenango two. Three of those from El Rancho are indistinguishable from examples of *P. g. tamaulipensis* taken near Tampico. All of the others are darker beneath. The type of *grayi* came from Guatemala, probably from the Pacific coast region, inasmuch as Colonel Velasquez de Leon, who made the collection reviewed by Bonaparte in the *Proceedings of the Zoological Society* for 1837 (pp. 114-119), where *grayi* was first described, was in the country but a fortnight, and several of his birds are restricted to that region.

As to the distribution of the pale and dark forms: the pale one, *tamaulipensis*, originally described by Nelson* from Tamaulipas, and later extended by Hellmayer** to Yucatan and the islands Cozumel, Mugerés and Mecó, evidently occurs in the dry *tierra templada* region

*Auk, 1897, p. 75.

**J. f. O. 1902, p. 50.



of Guatemala, between the Cordillera and the Atlantic lowlands, and also in the similar region of western Nicaragua. Eight specimens from Nicaragua in this Museum, six from San Geronomo, Chinandega, one from San Rafael and one from San Emilis, Lake Nicaragua, are all indistinguishable from Tampico specimens taken in the same month—April. This thrush frequents trees about cultivated land, and in March and April its song was heard daily on the plantations. None were seen above 5,000 feet. In the dry regions they were found only along streams where trees retain their foliage the year round. Iris brown; bill yellowish green.

301. *Planesticus tristis leucauchen* *Sclater*.

Two specimens were taken at Los Amates late in January. They are not quite typical as to color, being more olive above, less cinereous, than specimens from Vera Paz and western Belize, where the ashy phase of *tristis* seems to culminate. It may not be out of place here to call attention to the fact that there is a skin in this Museum *ex* Boucard, collected in Guatemala, which agrees exactly, as to color, with a topotype (*) of *cnephosa* Bangs and is even smaller.

In his original description of *cnephosa*, Mr. Bangs makes "smaller and darker" the characters that distinguish it from *leucauchen* of Guatemala. As a matter of fact *typical leucauchen* is *darker* than *cnephosa*, ("*Supra nigricanti-cinereus*"—Sclater). There is, indeed, little to choose between *leucauchen* and *cnephosa* as a name for Los Amates specimens, and it may yet turn out that the latter name is applicable to them. This bird was found only in the dense woods, where it was apparently not at all common. Iris brown; bill straw-color; eye-ring yellow; feet pale.

302. *Planesticus tristis rubicundus* subsp. nov.

Type No. 23,292 ♀ ad., Field Museum of Natural History; collected at Patulul, Solola, Guatemala, March 30th, 1907.

Subspecific characters: Similar to *tristis assimilis* but more ferruginous above, and with wings and tail much darker.

Description of type: Interscapulum a rusty tone of mummy brown, gradually turning to bistre on the crown and auriculars and to olive on the upper tail coverts; primaries and rectrices sooty, edged with sepia; wing coverts and exposed portions of secondaries bistre. Gular area streaked, black and white, jugulum and abdomen white; breast, sides and thighs broccoli brown; under tail coverts with

*No. 188,582 U. S. National Museum.

basal half hair brown and tip white. Wing 119 mm.; tail 95 mm.; exposed culmen 19 mm.; tarsus 28 mm. Iris dark brown.

Remarks: This is a reddish brown form decidedly different from the slaty form of Vera Paz and western Belize; and readily distinguishable from the olive-brown Mexican forms, *t. tristis* and *t. assimilis*. A single specimen, the only one observed, was collected in thick woods near Patulul.

The appended map showing the distribution of the subspecies of *P. tristis* was made according to specimens in this Museum, and Prof. Ridgway's latest work.* Localities are indicated by the initial of the subspecies found there, and type localities by a circle enclosing the initial. *Assimilis*, *tristis* and *rubicundus* are brown forms, while *leucauchen* and *cnephosa* are olive or slaty. It here appears that *rubicundus* is separated from the other brown forms by a dark olive race, *cnephosa*. Incidentally, the peculiar relative distribution of *leucauchen* and *cnephosa* indicates the need of further study to ascertain the exact status of the latter.

303. *Planesticus rufitorques* Hartlaub.

Eleven specimens were collected between 6,500 feet and 9,500 feet altitude, near Tecpam. None were seen below 6,500 feet. The manners and song of this species are almost identical with those of *P. migratoria* in the United States. Specimens were taken in December, January and April. None of them was in moult. There is a decided difference in the color of the abdomen of some of the spring males, which indicates that this area is the last to become clothed in adult plumage. Iris dark brown; bill cadmium-yellow; feet gall-stone yellow.

304. *Catharus frantzii alticola* Salvin & Godman.

Four were collected in the cypress timber near the summit of Sierra Santa Elena near Tecpam. This species was not seen in any other locality. Iris dark brown.

305. *Sialia sialis guatemalæ* Ridgway.

The bluebird of Guatemala was first seen in the environs of Guatemala City. From that altitude,—about 5,000 feet—up to about 9,000 feet, it was not uncommon in cultivated districts. Two specimens were secured, both near Tecpam. Iris dark brown.

*Bulletin of the U. S. National Museum No. 50, part IV, pp. 108-112.





