

11. *Micropogon altipinnis* Günther.

7010. A young specimen, in bad condition.

12. *Gerres peruvianus* C. & V.

5717. One specimen.

Two species allied to the present one occur in the West Indies, and all three have been called *Gerres rhombeus* by authors. One of these, evidently the *Gerres rhombeus* C. & V., has but two anal spines; the other, *Gerres rhombeus*, or *Mojarra rhombea* Poey (= *Gerres olisthostoma* Goode & Bean Mss.), has the ovate groove for the reception of the premaxillary processes completely covered with scales. In *Gerres peruvianus*, as in most species of *Gerres*, this region is entirely naked. There are also minor differences in the length of the fins. We have never seen a specimen with two anal spines on the Pacific coast of tropical America, but the two-spined species (*rhombeus*) is common at Aspinwall.

13. *Citharichthys spilopterus* Günther.

30996. Three specimens, in poor condition.

UNITED STATES NATIONAL MUSEUM, *June 30, 1882.*

**ON A COLLECTION OF BIRDS FROM THE HACIENDA "LA PALMA,"
GULF OF NICOYA, COSTA RICA.**

By C. C. NUTTING.

[WITH CRITICAL NOTES BY R. RIDGWAY.*]

Costa Rica, the southernmost of the Central American States, lies between the eighth and eleventh degrees north latitude, quite a considerable portion being actually south of Panama, owing to the peculiar curve of the continent between Costa Rica and South America proper.

Like all the Central American States, Costa Rica is characterized by comparatively low coast regions, with a rugged interior composed of mountains which reach an altitude of nearly 11,000 feet, as is the case with the volcanoes of "Irazu" and "Turrialba," and elevated valleys sometimes of considerable extent, as the valleys of San José and Cartago.

These physical characteristics render the region a most fertile one for the naturalist, who finds in this favored field vegetable and animal life varying with the altitude of his collecting ground, and embracing both tropical and temperate forms.

On the 13th of February, 1882, I landed in Punta Arenas, the only important point on the Pacific coast of Costa Rica. Although my instructions were to direct my efforts principally to the region of the

*The editor of this paper is responsible for the determination of the species, the nomenclature adopted, and all critical notes.—R. R.

Gulf of Nicoya, I found it necessary to go to San José, the capital, to present certain letters of introduction and confer with Señor Don José Zeledon, of that city, as to the best disposition of the short time at my disposal. This gentleman strongly advised me to spend some time collecting in the interior, more especially in the region of the volcano "Irazu," and I accordingly decided to spend a fortnight there; also, a few days in San José, after which I returned to the coast and spent a month in collecting in the region of the Gulf of Nicoya. These three fields of operation, embracing as they did the three distinctive avi-fauna of low, middle, and high altitudes, seemed to me to be most likely to afford a representative collection of Costa Rican birds.

The collections from the interior having not yet been received, it became necessary to defer lists of the species therein included, but which, it is hoped, may be presented within a reasonable time.

The Gulf of Nicoya extends from northwest to southeast, and is 60 or 80 miles long, dotted with numerous conical islands (the largest being San Lucas, a convict island), and encircled by low hills closely covered with tropical vegetation.

La Palma, the hacienda of Don Ramon Espinach, was my home during my stay in that region, and it is to the courtesy of its kind proprietor that I owe whatever success has attended my visit there. Nothing could be more generous than his conduct toward me, an utter stranger, and it is with the greatest pleasure that I embrace this opportunity to express my sincere thanks, not only for a pleasant home for more than a month, but also for much practical assistance in the way of furnishing horses and men and all other facilities to aid my explorations and increase my collections. La Palma is situated about 10 miles northwest of Colorado, a little hamlet on the northern coast of the gulf.

The region is an exceedingly low one, and in the rainy season becomes a vast swamp, unhealthy and infested with numerous insects. My visit was at the end of the dry season, at which time the earth was exceedingly dry and hard, and checkered with deep cracks caused by the intense heat of the tropical sun.

Notwithstanding the fierce heat, the forests were green and the flowers were blooming luxuriantly, while birds and other animals were extremely abundant. The vegetation is, of course, entirely tropical in its nature. Among the fruit trees the palm, mango, plantain, banana, orange, and "marañon" are worthy of mention. This latter fruit I do not remember to have seen elsewhere. The fruit resembles a red pepper with a bean-shaped seed hanging from its lower end. The taste is slightly acid and very pleasant.

The rubber, red-wood, and mahogany trees are also abundant, although a market for them has not been opened in that region. The forests are composed of other strictly tropical trees, bound together and interlaced with a network of vines of every description and covered

with orchids and parasitic cacti. The ground beneath is freer from obstruction in the way of undergrowth than might be expected, although numerous species of cacti and other thorn-bearing plants are sometimes exceedingly annoying to the collector.

The mammalian fauna is rich and varied. Three species of monkeys were noticed. The "Howling Monkey" (*Myctes palliatus*) is most prominent to the ear, if not to the eye. Its cry is the most diabolical, in the estimation of the writer, of all sounds issuing from animate beings. The "Red Monkey" (*Sapajou melanochir*) is quite numerous, and is the largest in size of Costa Rican Quadrumana. One little domestic scene in connection with this monkey impressed the writer so forcibly that he cannot refrain from describing it. While hunting along a lagoon one day, I suddenly came under a tree in which a troop of these monkeys were disporting themselves. A female, with her "baby" clinging to her back, happened to be nearest me at the end of an overhanging branch. Upon seeing the strange-looking animal below, with true maternal solicitude for her offspring, she hastened to bear it out of danger. As she started for the main trunk of the tree, a male started from the trunk to go out and have a closer look at the intruder. They met about the middle of the branch, when she commenced to chatter and look down at me as if to implore his protection, upon which he put his arms around her and *embraced her*. After standing in that position for several seconds, they parted, each proceeding on its way. After such a scene of almost human affection it is needless to say that the writer could not find the heart to shoot one of the monkeys.

The most abundant by far is the White-faced Monkey (*Cebus hypoleucus*), which is black with the exception of the shoulders and sides of the face, which are covered with rather long white hair, thus giving the appearance of little bald-headed black men. They were often quite annoying from their habit of throwing sticks, nuts, etc., at the traveler passing below them. They soon discovered the place where I took my morning bath, and were so annoying in this particular that I appreciated as never before the pathetic story of the "Boys and the Frogs," and had to shoot one of them in pure self-defense. But I felt like a murderer for it.

The Felidæ are well represented in this region. The Jaguar (*Felis onca*) is quite common, but apparently of a smaller race than in South America. It is not considered dangerous by the natives. *Felis concolor*, the "Leon" of that country, is rather rare and much feared by the inhabitants. Several other animals of this family were seen, especially one entirely black (probably a melanism of the Jaguarundi) which I do not remember with sufficient distinctness to venture to identify.

A beautiful little species of Deer (*Cerrus mexicanus*) is abundant, not at all timid, and easily approached. Its flesh is, of course, excellent food.

The Peccary (*Dicotyles torquatus*) is abundant, though usually seen in small droves of not more than eight or ten. I never heard of their

attacking man, as they are said to do. The natives sever the scent-pouch from the animal as soon as possible after death. Otherwise it is extremely disagreeable both to the taste and smell.

The "Watousa" (*Dasyprocta cristata*) is also quite common, though very shy and mostly confined to the thick forests. Its flesh is, in the opinion of the writer, the most delicious meat he ever had the pleasure of eating.

The Tapir (*Elasmognathus bairdi*) is somewhat rare, and seldom seen, probably on account of its nocturnal habits.

The Coatimundi (*Nasua narica*) is abundant, and though eaten by the Indians is not considered eatable by the Spaniards. It somewhat resembles the Raccoon (*Procyon lotor*) but is diurnal, as a rule, and is frequently found in quite extensive troops of twenty or more.

Smaller mammals are numerous, but not having secured specimens, the writer will not venture to identify them.

Alligators are extremely abundant and constitute a source of constant annoyance, and sometimes of danger, to the collector while hunting along the rivers and lagoons of that region.

The avi-fauna, although strictly tropical, is not so varied as on the eastern coast.

Perhaps the most characteristic birds of the region are the Parrots (*Psittaci*). They are so numerous as to constitute a real source of annoyance to the collector. They are always noisy and apparently always quarreling. Their harsh, discordant cries make such a din that the faint twittering of the smaller birds is entirely drowned, and many rarities are doubtless unobserved by the naturalist who vainly attempts to trace their modest song among the clatter of their gaudy neighbors.

The *Falconidae* are exceedingly numerous and easy to approach. It is by no means unlikely that novelties in this family will yet be reported from the Gulf of Nicoya.

The prevalence of the "zygodactyle" foot is a very marked feature of the birds of this region.

In concluding my remarks upon this region it may be well to mention some of the difficulties to be met by the naturalist, together with a few practical hints as to how they are best surmounted.

The climate is much more bearable than might be supposed. The heat is never so intense as that which we frequently experience in the United States. Indeed I never found it so oppressive as it is here in Washington as I write. The nights are always comfortably cool and one always finds use for his blanket before morning.

By far the most favorable time for collecting is during the dry season (October to May). The seasons (the wet and dry) are very distinctly defined, so that the collector may know what kind of weather to expect.

Ants are very troublesome to the collector. They attack the bills of his specimens and frequently ruin a rare bird in a very few minutes. But there is a sure remedy for this pest in the oil of bitter almonds,

which, if rubbed on the bills of specimens, the ants will religiously leave the birds alone. This method was suggested to me by Don José Zeledon, of San José, and proved to be all that could be desired.

But there is another and far more terrible pest which attacks not the specimens, but the naturalist himself. I refer to a little insect known in those regions as the "Garrapata," which is a very minute species of Tick. During the dry season it is impossible to avoid being actually covered with these diminutive tormentors. They are so numerous that it is impossible to avoid them, and their bite is so aggravating that a man is actually panic-stricken when he finds himself literally alive with them. These insects constituted the most serious difficulty I met in Costa Rica. My body became entirely covered with their bites. The itching caused was frightful, and, although I could control myself during the day, I would wake up at night and find myself literally tearing my flesh in frantic though unconscious efforts to relieve the itching. Working daily with arsenic, this poison unavoidably found its way into the system through the bites of the "Garrapatas," and I was thus severely poisoned and my person covered with festering sores, making it dangerous to pursue my work further at that time. Any preventive for this evil would be a boon to tropical explorers. I regret to say that I know of none that is unobjectionable as well as effective. Moistening the lower part of the pantaloons and sleeves of the coat with a decoction of tobacco juice is a partial success, and so is anointing the entire body with kerosene. The best way to rid one's self of these pests after they have established themselves on the person is to follow the example of the natives, who first procure a piece of the black wax or "cera," which is abundant, and, after removing all their clothing, proceed to strike themselves with the wax. This they do systematically until every portion of the body has been struck. The wax, by adhesion, removes every "Garrapata" that it strikes. This simple and effective method of getting rid of these insects is the universal practice throughout the country.

The slow and inadequate means of transportation, especially in the less-settled portions of the country, is apt to cause long and annoying delays. When possible it is advisable for the collector to keep with him as many of his effects as he expects to need for a fortnight at least, including a large supply of *patience*.

1. *Merula grayi* (Bonap.).

Common. Habits and note similar to the common Robin of the United States, *M. migratorius*. Rather solitary and silent during the time I collected in that region, but this is probably due to the fact that it was the breeding season. Iris brown.

Three specimens obtained near La Palma, as follows:

No. 172. ♂ ad. April 4.

No. 242. ♀ ad. April 24.

No. 296. ♀ ad. April 30.

2. *Polioptila bilineata* (Bonap.).

[NOTE BY R. R.—The black-capped *Polioptila* of Central and South America are involved at present in so much confusion that the following remarks, based upon specimens in the collection of the United States National Museum, may not be out of place. The latest information which we have upon the subject is that contained in SALVIN and GODMAN'S *Biologia Centrali Americana* (Aves, vol. i, pp. 50-55), and this should be carefully consulted in the present connection. The authors of the work quoted recognize in Central America three species of the genus, besides *P. caerulea*, as follows:

(1.) *P. NIGRICEPS* Baird. *Hab.*—Southwestern Mexico (Mazatlan, Tepic, and States of Oaxaca and Tehuantepec); also, Colombia and Venezuela, but not recorded from any part of Central America proper, except San Salvador (La Union).

(2.) *P. BILINEATA* (Bonap.). *Hab.*—Guatemala to Colombia and western Ecuador.

(3.) *P. ALBILORIS* ScL. & Salv. *Hab.*—Southwestern Mexico (Sta. Efigenia and Tehuantepec City), Guatemala, and Nicaragua.

In their treatment of these three species, Messrs. SALVIN and GODMAN make some very interesting generalizations, based upon certain anomalies in their geographical distribution, but which appear to be somewhat negatived by the evidence afforded by additional specimens. Disclaiming, however, any intention of criticising the hypotheses offered by the authors of the great work in question, the following remarks are presented as perhaps throwing some additional light upon this more or less complicated subject.

Of the true *P. nigriceps* we possess specimens only from southwestern Mexico (Mazatlan and Tepic to Tehuantepec and Oaxaca). The seven examples before me may each be very readily distinguished from all black-lored specimens of the genus from more southern localities in the collection by the indistinct gray edgings to the tertials, all of the more southern black-capped forms, with the single exception of *P. bilineata*, having the tertials broadly and very distinctly edged with pure white. *P. bilineata*, however, may, in every plumage, be easily distinguished by the white lores and superciliaries.

The only other black-lored form of which the Museum possesses adult males is *P. leucogastra*. Of this, there are two adult males and two young males from Bahia, and a female from Venezuela. The young male has the crown plumbeous (darker than the back), the feathers darker in the center, and with a distinct postocular patch of glossy black. The Museum also possesses an adult male from Bogota, one from the Pacific coast of Central America (No. 30555, Capt. J. M. Dow), and another from Grenada, Nicaragua (No. 32556), which I cannot distinguish in any way from the Brazilian birds, or true *P. leucogastra*. The broad and conspicuous white edgings to the tertials at once separate them from *P. nigriceps*.

Of *P. albilora* there are in the collection two adult males and two females, as follows: No. 34101, ♂, Realejo (Pacific coast of Nicaragua), February, and 30554, ♀, same locality, July 16; No. 59584, ♂, Tehuantepec City, November 11, and 57470, ♀, Sta. Efigenia, Tehuantepec, December 25. Each of these specimens may be at once distinguished from any examples of *P. bilineata* by the broad and distinct white edging to the tertials; and if not a distinct species, must be a connecting link (possibly a hybrid) between *P. leucogastra* and *P. bilineata*, having the conspicuously white-edged tertials of the former and the white lores of the latter. That it is probably distinct from both these forms is suggested by the fact that its habitat is mostly to the northward of the district inhabited by *P. bilineata* and *P. leucogastra* together, although to the southward (*i. e.*, in Guatemala and Nicaragua) the three are found in the same localities.

P. bilineata is represented by a considerable series, embracing specimens from Venezuela, Panama, Veragua, Costa Rica, Nicaragua (Greytown), and Guatemala. The species is well defined, an adult male each from the first and last localities mentioned above being undistinguishable, except that one is in somewhat worn, the other in fresh and soft, plumage. An adult female from Venezuela is likewise undistinguishable from northern specimens.

Granting that *P. buffoni* has always the lateral tail-feather white except at the extreme concealed base, it may thus be distinguished from *P. leucogastra*, but of this species or race I have been able to examine but a single specimen, an adult female from Demerara (No. 55161, U. S. Nat. Mus.). This seems very distinct from the female of all the forms discussed above. The upper parts are a decidedly paler and bluer gray, almost exactly as in *P. cerulea*; the lateral pair of rectrices have the exposed portion entirely white, only the extreme concealed base being black; the greater wing-coverts are much paler gray than the back, and pass into grayish white at the tip; this white and also that on the outer webs of the tertials shows in very abrupt and striking contrast to the deep black of the primaries, primary coverts, and alulae. The lores of this specimen are light grayish, and there is a distinct supraocular spot of white.

Upon the whole, it appears, from the material examined, that the following species, or at least well-marked races, of black-capped *Polioptila*, may be recognized as belonging to Central and South America:

A. Pileum and lores wholly black in fully adult males.

a. Lateral tail-feather wholly white for exposed portion.

1. *P. BUFFONI*. Tertials broadly edged with pure white. (Cayenne.)

b. Lateral tail-feather black at base, this usually showing considerably beyond the coverts.

2. *P. LEUCOGASTRA*. Tertials broadly edged with pure white. (Bahia, Bogota, Venezuela, Colombia, Nicaragua.)

3. *P. NIGRICEPS*. Tertiaries narrowly edged with dull gray. (Mazatlan, Tepic, Tapana, Tehuantepec, Quiotepec, Oaxaca.)

B. Pileum black, but lores white, in fully adult males.

4. *P. ALBILORIS*. Lores and eyelids white, but this scarcely passing beyond the eye; tertiaries broadly edged with pure white. (Realejo, Nicaragua; Sta. Efigenia, Tehuantepec.)
 5. *P. BILINEATA*. Lores, eyelids, and superciliary stripe white; tertiaries narrowly edged with gray. (Venezuela, Panama, Veragua, Costa Rica, Nicaragua, Guatemala.)

ADDITIONAL NOTE.—Since the above was written, Mr. GEO. N. LAWRENCE has kindly forwarded for inspection his entire series of black-capped *Polioptila* from Middle and South America, embracing the following specimens: (1) *P. buffoni*: 1 ♀ from Guiana, agreeing with that described above. (2) *P. leucogastra*: 1 ♂ ad. from Bahia, 1 do. from Bogota, and 1 ♂ juv. from Venezuela, the latter being the type of *P. plumbeiceps* Lawr. (3) *P. nigriceps*: 1 ♂ ad. from Sta. Efigenia, Tehuantepec. (4) *P. albiloris*: 1 ♂ ad. from Sta. Efigenia, Tehuantepec, 1 ♀ ad. from Tapana, Tehuantepec, and 1 do. from Guatemala. (5) *P. bilineata*: 2 ♂ ad. and 1 ♀ ad., Panama, including the types of *P. superciliaris* Lawr., and 1 ♂ ad., said to be from Guatemala (but this on authority of a dealer only). This series so fully bears out the indications afforded by the the National Museum specimens that more extended remarks are unnecessary.—R. R.]

Habits similar to our *Mniotiltida*. Seems to prefer the open glades in the forests rather than the denser parts. Quite common near La Palma, although only one specimen was secured.

No. 248. ♀ ad. April 25, 1882.

3. *Campylorhynchus capistratus* (Less.).

[NOTE.—Five Costa Rican specimens of this species differ appreciably from two others from Guatemala and Honduras in much more distinctly streaked rump (even the feathers of the back being appreciably spotted with black beneath the surface), in having the light wing-bars much paler, in larger bill, and in some other characters. Without more specimens, however, from both regions, showing the differences observed to be constant, I hesitate to separate them as races. A single specimen of *C. rufinucha* Lafr. (which some authorities refer to *C. capistratus*) from Mirador (No. 30869, C. SARTORIUS), differs from all the above-mentioned specimens in having the whole back very conspicuously streaked, the abdomen buff instead of white, the crissum barred with black, and the flanks, sides, and breast minutely but sparsely dotted with the same. It seems to be quite distinct, but, cf. SALVIN & GODMAN, *Biologia Americana Centrali*, Aves, i. pp. 64, 65.—R. R.]

This handsome Wren is perhaps the most common and familiar bird of the Gulf region. Its song is very voluble and melodious. Less fond of

low, dense shrubbery than most of its kind, it often nests at a considerable distance from the ground. It is fearless, almost impudent, in its manner, and somewhat inclined to play the bully, in a small way, and seems to take particular delight in tormenting the "Zopilotilla" (*Crotophaga sulcirostris*) when it approaches too closely the home of the former. This Wren seems to be particularly fond of solitary trees along the edge of the forest, where he can always be seen hunting his food much in the same manner as do the Titmice of the north. Their number is so great that the woods continually resound with their lively song, and the naturalist has no trouble in making their acquaintance and securing a full series of skins. Iris brown.

Three specimens secured.

No. 140. ♀ ad. March 20.

No. 164. ♂ ad. April 3.

No. 270. ♂ ad. April 27.

4. *Thryophilus rufalbus* (Lafr).

On several occasions, while hunting in the dense forests near La Palma, I have been suddenly arrested by the enchanting song of this bird. Breaking suddenly upon the ear from the cool depths of the woods, it seemed to me to be the most exquisite melody I had ever heard. This song consists of three notes, the first low and sweet, the second about four notes above the first, and most exquisitely trilled and prolonged, the third high and clear. Sometimes this Wren varies the order of its song, sounding the high note first and the low one last. It also varies the pitch of each note about a semitone, thus producing a remarkably sweet minor strain.

The bird seems to be rather shy and retiring in disposition, and is usually seen in the deep shades and secluded nooks of the forest. Its song is usually stopped at the approach of a stranger, and the bird flits silently away and remains quiet until the danger is passed, thus making it a rather difficult species to secure.

One specimen obtained.

No. 190. ♂ ad. April 15.

5. *Thryothorus rutilus hyperythrus* (Salv. & Godm).*

Only one specimen seen. This one was shot in a dense thicket along a stream which runs near La Palma.

No. 297. ♀ ad. April 30.

6. *Basileuterus semicervinus leucopygius* (Scl. & Salv.).†

Common. Found always (so far as my experience goes) along the rocky bed of the stream mentioned under the last species. It is quite a sprightly little bird, and seems to have habits somewhat similar to

* *Thryothorus hyperythrus* SALV. & GODM. Biol. Centr. Am. Aves, i, p. 91; RIDGW. Proc. U. S. Nat. Mus., vol 4, p. 334 (Carrillos, Alajuela).—(R. R.)

† *Basileuterus leucopygius* SCL. & SALV. Nom. Neotr. 1873, p. 156; SALV. & GODM. Biol. Centr. Am. Aves, i, p. 172.—(R. R.)

those of *Cinclidæ* or Dippers, at least so far as its habitat and manner of flitting along the rocks of water-courses is concerned. Iris brown.

Two specimens.

No. 191. ♂ ad. April 15.

No. 290. ♀ ad. April 29.

7. *Vireosylvia flavoviridis* Cass.

Apparently not very common. Iris red.

One specimen secured.

No. 250. ♀ ad. April 25.

8. *Hylophilus decurtatus* (Bonap.).

Common. Found in thick forest. Iris brown.

Two specimens.

No. 212. ♀. April 17.

No. 273. ♀. April 28.

9. *Progne leucogastra* Baird.

Abundant. Shot in early morning out of the top of a very high tree in an open field. Iris brown.

One specimen.

No. 104. ♂ ad. April 16.

10. *Tanagra cana diaconus* (Less.).

This Tanager seems to be pretty abundantly distributed throughout Costa Rica. It is found in small flocks, and its beautiful blue plumage renders it quite conspicuous. One of the fiercest and most stubbornly prolonged bird-fights I ever saw was between two of this species. Indeed it is quite noticeable for its quarrelsome disposition.

One specimen from this locality.

No. 239. ♂ ad. April 24.

11. *Ramphocelus passerinii* Bonap.

Many specimens seen between San José and Punta Arenas, but having no ammunition with me it was impossible to secure specimens.

12. *Embernagra superciliosa* Salvin.

Rather common. Found in open woods. Iris brown.

Two specimens.

No. 195. ♂. (Breeding.) April 16.

No. 291. ♂. April 29.

13. *Spiza americana* (Gm.).

Only one large flock seen. They had settled upon a small tree near a cactus hedge, where they were literally gorging themselves upon a small black and yellow worm. They all seemed to have fared sumptuously, as the specimens killed were the fattest small birds I ever saw.

Eleven were killed at one shot, but, owing to the difficulty of making presentable skins of such unusually fat birds, I only saved five.

No. 306. ♀ ad. May 1.

No. 307. ♂ ad. May 1.

No. 308. ♀ ad. May 1.

No. 309. ♀ ad. May 1.

No. 310. ♂ ad. May 1.

14. *Volatinia jacarina* (Linn.).

These pretty little black sparrows were very abundant in small flocks, and seemed to prefer the cactus hedges along the cart-roads. They spend a great deal of their time upon the ground, and lead pretty much the same sort of a life as the little ground doves (*Chamapelia rufipennis*) so abundant in that region.

Four specimens.

No. 170. ♂ ad. April 4.

No. 211. — juv. April 17.

No. 266. ♂ ad. April 27.

No. 317. ♂ ad. May 3.

15. *Guiraca cyanooides concreta* (Du Bus).

Only one specimen seen. That was shot when it was taking a drink from a running stream. Iris brown.

No. 316. ♀ ad. May 3.

16. *Molothrus æneus* (Wagl.).

Only one specimen secured. It was found associating with *Crotophaga sulcirostris* in an open field.

No. 210. ♀ juv. April 17.

17. *Agelæus phœniceus* (Linn.).

[The single specimen obtained by Mr. Nutting is an adult male, and agrees exactly with examples from Yucatan and other parts of Mexico. The middle wing-coverts are a rich brown-ochre tint, as in examples from the western United States, and the size is quite as large as in more northern skins.—R. R.]

Common at a large lagoon about 10 miles from La Palma, where it probably breeds. The Spaniards call it by a name which signifies "an officer," on account of its red shoulder patches.

No. 229. ♂ ad. April 20.

18. *Icterus pectoralis espinachi* Nutting (MS.).

[NOTE.—Three specimens of this species from the western coast of Costa Rica differ from more northern examples (one each from San Salvador, Guatemala, and Tehuantepec) in decidedly smaller size, the wing measuring only 3.70–4.05, and the tail 3.85–4.05, instead of 4.30–4.55 and 4.20–4.65, respectively. I am unable, however, to appreciate any tangible differences in coloration. Should the difference in size

prove constant, the Costa Rican bird might form a local race, for which the name given above would be exceedingly appropriate.—R. R.]

A specimen of this beautiful Oriole was kept in a cage at La Palma, and as it hung near the place where I daily prepared my bird-skins, I had an excellent opportunity to observe its notes, and, in part, its habits.

He was the most accomplished vocalist I ever heard, had perfect command of every note in the scale, and apparently took great delight in his accomplishment.

Thinking him to be a promising subject, I undertook to instruct him in the art of whistling, but he scorned my services and went off into trills and harmonies of his own composition which put to shame the sample I had given in the shape of classic "Yankee Doodle." I did succeed in teaching him to run the scale perfectly, an exercise in which he reached great perfection, and gained the admiration of his hearers. He would whistle by the hour, not in a monotonous repetition of the same strain, but constantly varying his music from loud and lively to soft and sweet, reminding me of a flute-player running over bits of harmony from memory. He was an expert fly-catcher, though all sorts of food seemed to suit his taste. His greatest delight seemed to be in sitting on my finger and being "teetered" up and down. I afterward secured two specimens, which I shot in a wild state. Iris yellow.

No. 258. ♂ ad. April 17.

No. 259. ♀ ad. April 17.

19. *Ocyalus wagleri* (Gray & Mitch.).

A remarkable colony of these curious birds was observed on the road from San José to Punta Arenas. A very large dead tree standing in the road had been taken possession of, and from every limb their purse-like nests were suspended. There must have been over two hundred of these curious structures, and their occupants were swarming around them making a great clatter. A remarkable fact was noticed upon this occasion and greatly excited the curiosity both of the Spanish gentlemen of the party and myself. These birds had the novel habit of getting inside their nests and shaking them violently so as to produce a loud rattling noise. This we saw them do repeatedly, but could arrive at no satisfactory conclusion as to the object of so strange a performance.

20. *Calocitta formosa* (Swains.).

This fine Jay is not common, so far as my experience goes. Like all the rest of its kind it seems to like to make itself conspicuous, and is usually seen in the top of a tree calling loudly in a harsh voice. Its recurved crest is a prominent characteristic. It is said by the natives to talk like a parrot ("*habla como loro*"), but I never had an oppor-

tunity to assure myself of its accomplishments in this respect. Three specimens shot, but only one was in a fit condition to preserve.

No. 258. ♂ ad. April 26.

21. *Megarhynchus pitangua* (Linn.).

Common. A noisy and active bird, apparently not restricted to any particular altitude, as it was secured both near San José and on the coast. Iris brown.

No. 276. ♀ ad. April 28.

22. *Pitangus derbianus* Sel.

Abundant. Habits similar to the preceding species, but with even a greater range of altitude. Iris brown.

No. 165. ♂ ad. April 3.

23. *Myiodynastes nobilis* Sel.

Rather common. So far as observed this is rather a silent bird for its family, and it seems to attend to its own business more strictly than many of its relatives. Found usually at the edge of the woods, where it is actively employed in capturing the numerous insects of the region. Iris brown.

Two specimens.

No. 172. ♀ ad. April 4.

No. 251. ♂ ad. April 23.

24. *Tyrannus melancholicus satrapa* (Licht.).

[NOTE.—The specimen obtained by Mr. Nutting is peculiar in the very obtuse primaries, of which the outer ones are very slightly sinuated at the tip; the tail is very nearly truncated, but the two middle pairs of rectrices are wanting. The bird is apparently in molting condition, which may account for some of its peculiarities.—R. R.]

Not common. Single specimen shot near a stream. Iris brown.

No. 187. ♀ ad. April 11.

25. *Myiarchus nuttingi* Ridgway, sp. nov.

[SP. CH.—Similar in general coloration to *M. mexicanus* and *M. cinerascens*, but differing from both in the pattern of the tail-feathers, the inner webs of all the rectrices (except the intermediae) being either wholly rufous or else with a very narrow stripe of dusky next to the shaft of the outer feather. *Adult*: Above brownish gray (exactly as in *M. cinerascens*), occasionally tinged with olive, the pileum much browner and with darker shaft-streaks; wings and middle pair of rectrices dusky brownish, the latter uniform; last row of lesser coverts, middle, and greater coverts, distinctly tipped with light brownish gray; tertials edged exteriorly with grayish white (tinged with sulphur-yellow in fresh plumage), the primaries edged with light rufous toward the base. Outer webs of rectrices dusky brownish (like both webs of the intermediae), the outer pair with the exterior edge much paler (nearly white in some specimens); inner webs of all the rectrices excepting the middle pair clear rufous, including the extreme tip, and usually extending quite to the

shaft, though in some examples separated from the shaft by a very narrow streak of dusky. Chin, throat, and jugulum very pale ash-gray (exactly the same shade as in *M. mexicanus* and *M. cinerascens*), the remaining lower parts sulphur-yellow (same as in *mexicanus* but deeper than in *cinerascens*). Bill black, the mandible sometimes brownish, paler at base; iris brown; legs and feet deep black. Wing 3.45–3.80, tail 3.20–3.80, culmen .60–.80, gonyes .50–.60, width of bill at base .35–.40, tarsus .78–.90, middle toe .45–.52. (Six specimens.)

Hab.—Southwestern Mexico (Tehuantepec) to Costa Rica (Pacific side).

The above diagnosis is drawn up from six specimens of a *Myiarchus*, which cannot be referred to either *M. mexicanus* or *M. cinerascens*, though evidently very closely related to both of them. All the specimens hitherto seen are from the Pacific coast of Central America (Costa Rica to Tehuantepec, southwestern Mexico), a region where either *M. mexicanus* or *M. cinerascens*, or both, also occurs. It doubtless, however, represents the resident form specially characteristic of the district named, the other two occurring there as stragglers from other districts. In all respects, except the pattern of the tail-feathers, this form agrees to the minutest degree with the two species named above, except that in *M. cinerascens* the abdomen is a slightly paler sulphur-yellow. The most conspicuous specific character distinguishing *M. cinerascens* consists, however, in the terminal dusky space on the inner webs of the rectrices, of which there is no trace in *M. nuttingi*. *M. mexicanus* (in all its forms) has, on the other hand, a broad and very distinct stripe of dusky next the shaft on the inner webs of the rectrices, while in *M. nuttingi* there is never more than a mere indication of this stripe. Thus it may be seen that the present form, whether species or race, cannot be referred to either of the species named, and that it must, therefore, be considered quite as distinct from them both as they are from one another.—R. R.]

Rather common, more especially in open woods. Iris brown.

Two specimens.

No. 243. ♂ ad. April 24.

No. 256. ♀ ad. April 26.

26. *Rhynchocyclus cinereiceps* ScL.

Apparently not common. Two specimens secured in thick woods, near the water. Iris *white*. Nest secured.*

No. 227. ♂ ad. April 24.

No. 279. ♀ ad. April 28.

*The nest of this bird is a most remarkable structure, well worthy of description. It is a pendulous inverted pouch, suspended from a single twig, composed almost entirely of slender black filaments resembling horse-hairs (probably a vegetable fiber related to, if not identical with, the "Spanish Moss," or *Tillandsia* of the Southern United States), and so loosely built as to be easily seen through when held up to the light. The entrance is at the extreme lower end, the nest proper being a sort of pocket on one side, about 2 inches above the entrance. The total length of the entire structure is 10 inches, the greatest width 4 inches, the lower "neck," or wall of the entrance, being about 2½ inches in diameter.—R. R.

27. *Muscivora mexicana* Scl.

This exquisitely ornamented Flycatcher is abundant in the vicinity of La Palma, especially along the water courses. Indeed, I never saw it away from the water. It builds its nest on a branch overhanging a stream, seems to be quite contented to remain in the immediate vicinity of its home, and is quiet and modest in manner.

Never having seen this bird before, my surprise and admiration were unbounded when I held one in my hand for the first time, and saw its wonderfully brilliant fan-shaped crest. The bird was only wounded, and the crest was fully spread, while the head was slowly moved from side to side, which gave it the appearance of a bright flower nodding in the wind. While admiring this new wonder, I heard a twitter of distress immediately above me and, looking up, was delighted to see the female perched on a twig not more than ten feet above me, with her crest erected and spread, and making the same waving motion of the head. Is it not possible that this bird is provided with its remarkable crest for the purpose of attracting its insect prey, and that the slow and regular waving motion is calculated to still further deceive by a simulation of a flower nodding in the breeze?

It is a singular fact that while this bird is quite common in that region, the natives had never discovered its peculiar ornamentation before I showed it to them.

Seven specimens secured and five preserved. Iris light brown.

No. 234. ♂ ad. April 29.

No. 287. ♀ ad. April 29.

No. 295. ♀ ad. April 30.

No. 298. ♂ ad. April 30.

No. 300. ♂ ad. April 30.

28. *Myiobius atricaudus* (Lawr.).*

Common. Prefers dense undergrowth, and is rather shy and noiseless.

One specimen.

No. 285. ♀. April 29.

29. *Chiroziphia linearis* Bp.

Common. One of the most exquisite little birds of Costa Rica. It seems to prefer the dense thickets and underbrush. Its note closely resembles the discordant "meow" of the Cat-Bird, although it occasionally gives utterance to a clear, melodious whistle. Native name "Gallinita" or "Little Cock." Iris brown.

Four specimens secured.

No. 265. ♂ ad. April 27.

No. 304. ♂ ad. May 1.

No. 305. ♂ juv. May 1.

♂ juv. (Label missing.)

* The example obtained by Mr. Nutting agrees minutely with two from Panama city, which seem to me to differ much more from either *M. barbatus* or *M. sulphureipygius* (of both which the National Museum possesses numerous specimens) than these do from one another.—R. R.

30. *Tityra personata* Jard. & Selby.

Rare. At least I saw but one, and the natives appeared to be unacquainted with it. Shot in a large tree standing in an open field. Iris brown. Bill and orbital region carmine.

No. 202. ♂ ad. April 16.

31. *Tityra albitorques fraseri* (Kaup).

Common. Usually found in rather open country associating in small flocks of six or eight. Noisy and quarrelsome.

Two specimens secured.

No. 267. ♀ ad. April 27.

No. 268. ♂ ad. April 27.

32. *Hadrostomus homochrous* ScL. (?)

[NOTE.—The single specimen, an adult female, obtained by Mr. Nutting is almost certainly not referable to *H. aglaiae*. It agrees much more closely in coloration with specimens of *H. atricapillus* from Ceara and Bahia, having, like them, the pileum slate-colored, the other upper parts a clear light rufous, and the lower parts ochraceous-white medially. In fact, I do not see how it can be distinguished by color alone. Geographical considerations, however, preclude the probability of its being *H. atricapillus*; and since *H. homochrous*, which is known to occur from Ecuador to Panama, may very likely extend its range still further along the coast to the Nicoya district, I with some doubt refer the specimen in question to the latter species, which is not represented in the collection of the National Museum.—R. R.]

Rare. But one seen, and that was shot near a large fresh-water lagoon.

No. 213. ♀ ad. April 17.

33. *Picolaptes compressus* (Cab.).

Common. A silent bird, as a rule. The nests, like those of Woodpeckers, are usually placed in a hollow tree. They usually hunt in pairs in the thick forests.

Two specimens.

No. 138. ♂ ad. March 20.

No. 249. ♂ ad. April 25.

34. *Thamnophilus doliatus affinis* (Caban.).

Habits similar to our Wrens. A quiet and industrious bird, usually seen in an active search for ants and other small insects. They seem to prefer the dense woods, but are occasionally seen in isolated trees. Iris white.

Five specimens.

No. 171. ♂ ad. April 9.

No. 189. ♂ ad. April 15.

No. 203. ♂ ad. April 16.

No. 247. ♂ ad. April 25.

No. 338. ♂ ad. April 24.

35. *Myrmeciza immaculata* ScL. & Salv. (?)

[NOTE.—The female from La Palma is referred doubtfully to this species. It differs markedly from three other Costa Rican specimens, from the Atlantic coast, in having the jugulum and breast bright chestnut instead of dull chestnut-brown, but I am unable to detect any other differences.—R. R.]

Not common. Only one specimen seen, and that was secured near a running stream.

No. 286. ♀ ad. April 29.

36. *Amazilia fuscicaudata* (Fraser).

Abundant. The period during which I collected at "La Palma" being the latter part of the dry season, most of the birds had gathered in the vicinity of the water courses. The Humming-birds seemed to be especially affected by the drought, but knowing that the *Trochilidae* had been especially well worked up, I preferred to devote my time to groups more likely to yield novelties.

One specimen.

No. 303. ♀ ad. April 27.

37. *Nyctidromus albicollis* (Gmel.).

Exceedingly abundant in the vicinity of La Palma, where five or six may be heard at the same time. The Spaniards give it a name signifying "bird of the night."

Frequently in passing through the thick brush I have flushed this bird. It would flit silently ahead a short distance, and then apparently alight on the ground; but upon reaching the spot I would find that, like the "Irishman's flea," it was not there. Upon closer observation I found that the bird did not really alight when it appeared to, but would suddenly descend to the ground, over which it would hover for an instant as if in the act of alighting, and then glide silently on close to the ground for some little distance, and finally settle down in the dead leaves near a tree-trunk or bush.

One specimen.

No. 201. ♀ ad. April 16.

38. *Campephilus guatemalensis* Hartl.

Common. This handsome Woodpecker was not seen during the early part of my stay at La Palma, but it suddenly became quite common about the 27th of April, and from time to time until my departure. One of the commonest sounds of the forest was its quick, loud tap. It usually taps but twice in rapid succession, hunts in pairs, and seems to prefer the thick forests to the more open woods.

Five specimens secured.

No. 271. ♀ ad. April 27.

No. 272. ♂ ad. April 27.

No. 278. ♀ ad. April 28.

No. 282. ♂ ad. April 28.

No. 292. ♂ ad. April 29.

39. Centurus aurifrons hoffmanni (Caban.).

The common Woodpecker of Costa Rica. Found everywhere except on the more elevated mountains. Iris white.

Two specimens.

No. 156. ♀ ad. March 31.

No. 197. ♂ juv. April 16.

40. Momotus lessoni Less.

Not so common on the coast as in the interior. In the former locality it seems to prefer the thick woods, while in the latter it is often seen in the more open fields. Generally a silent bird, but not shy.

One specimen.

No. 320. ♂ ad. May 5.

41. Eumomota superciliaris (Sw.).

This exquisitely-colored Motmot is common throughout the coast region, where it bears the rather insulting name of "Bobo" (stupid). The natives account for this name by saying that the bird hasn't sufficient sense to fly away at the approach of the hunter. In truth it seems to be quite fearless, and seldom disturbs itself on account of human proximity. Although a very silent bird (I never heard its voice), its peculiar spatulate tail-feathers are apt to attract attention. It seems to be solitary in its habits, and not very industrious, as it is most often seen sitting on a limb not far from the ground apparently engaged in deep meditation, from which it is not aroused by the presence of the collector. Iris brown.

Three specimens.

No. 199. ♂ ad. April 16.

No. 207. ♂ ad. April 17.

No. 288. ♂ ad. April 29.

42. Ceryle torquata (Linn.).

Common. Habits almost precisely the same as *C. alcyon*, but not so noisy, as a rule.

One specimen.

No. 137. ♀ ad. March 30.

43. Ceryle americana cabanisi (Tschudi).

Abundant. The collector is sure to meet with them while following along the streams of that region. They are quite fearless and are not at all disturbed by the presence of man, but pursue their fishing after a short but emphatic expostulation at his approach. Iris brown.

Four specimens.

No. 168. ♂ ad. April 3.

No. 213. ♂ ad. April 17.

No. 240. ♀ juv. April 13.

No. 241. ♀ ad. April 13.

44. *Ceryle superciliosa* (Linn.)

Rare. This beautiful, diminutive Kingfisher is the smallest American species of its family, but is not a whit less spirited and courageous than the largest, of which it is almost an exact epitome except in coloration. Two seen and one secured.

No. 314. ♀ ad. May 2.

45. *Trogon massena* Gould.

Common. The largest Trogon of the coast region. I have never seen this species associating in flocks as the others do. On the contrary, it seemed to be rather a silent bird, preferring the deep recesses of the tropical forests. Its note is a kind of clucking noise hard to describe. Native name, "Bula." In common with all the smaller species of this genus it seems to be rather a stupid bird, hardly ever taking alarm at the approach of man.

Four specimens.

No. 179. ♂ ad. April 7.

No. 180. ♀ ad. April 7.

No. 196. ♀ ad. April 16.

No. 233. ♂ ad. April 22.

46. *Trogon melanocephalus* Gould.

Very abundant. Often seen in flocks of a dozen or more. Commonly seen in the dry open woods away from the water. It has a sort of a chattering note, low and soft. They are not startled at the report of a gun, and an entire flock may be shot out of the same tree. Iris brown orbital region sky-blue.

Nine specimens secured.

No. 185. ♀ ad. April 14.

No. 228. ♀ ad. April 20.

No. 231. ♀ ad. April 21.

No. 244. ♀ ad. April 25.

No. 254. ♂ ad. April 26.

No. 255. ♂ ad. April 26.

No. 262. ♀ ad. April 26.

No. 274. ♂ ad. April 28.

No. 313. ♂ ad. May 2.

47. *Trogon caligatus* Gould.

This elegant little bird, although not so common as the last, is frequently seen in this region. It is the only Trogon that I ever heard give utterance to a clear, distinct whistle. There is probably no bird more difficult to skin than this one, both on account of the looseness of the plumage and the extreme delicacy of the skin, especially about the head.

Five specimens.

No. 181. ♀ ad. April 9.

No. 188. ♀ ad. April 15.

No. 234. ♂ ad. April 24.

No. 236. ♀ ad. April 24.

No. 301. ♂ ad. May 1.

48. *Galbula melanogenia* Sel.

Only one specimen of this beautiful bird secured. It was shot in the thick forest while flitting through the undergrowth. Iris brown.

No. 246. ♂ ad. April 25.

49. *Bucco dysoni* Sel.

One specimen secured in open forest.

No. 260. ♀ ad. April 26.

50. *Crotophaga sulcirostris* Swains.

One of the most abundant and familiar birds in Costa Rica. Found everywhere and in great numbers. Habits remarkably similar to those of our common Cowbird (*Molothrus ater*). They are usually in flocks in the open fields. Native name "*Zopilotilla*" or "*Little Buzzard*." They are said to destroy immense numbers of "Garrapatas" or ticks.

Two specimens from La Palma.

No. 269. ♀ ad. April 27.

No. 280. ♂ ad. April 28.

51. *Piaya cayana mehleri* (Bp.).

These graceful birds are also common throughout Costa Rica. Like the other true Cuckoos, it is a silent and solitary bird for the most part, although when disturbed it utters a loud, harsh note at regular intervals as it looks down upon the intruder and flirts its beautiful tail with angry jerks. Iris red.

Two specimens.

No. 169. ♀ ad. April 3.

No. 186. ♀ ad. April 14.

52. *Coccyzus sericulus* (Lath.).

Rare in the region of La Palma. Only one seen and shot out of a high tree. Iris brown.

No. 281. ♂ ad. April 28.

53. *Pteroglossus torquatus* (Gm.).

This is the only species of Toucan that I saw on the Pacific coast, although another species was described to me. It seems to prefer the open forest. Its uncouth bill would convey the idea that it is a clumsy bird, but on the contrary it is rather graceful and handles its immense beak with ease. The bill is very light, being cellular in its internal structure. I know from experience that it is capable of giving quite a severe bite, a fact to which a scar on my finger still testifies. I never heard its note although I observed several. Iris yellow, bill yellow, red, and black.

One specimen.

No. 157. ♂ ad. March 31.

54. *Ara macao* (Linn.).

Abundant. The size, gaudy colors, and loud voice of this bird make it, perhaps, the most noticeable one of the region. It feeds almost exclusively upon fruits and nuts, is strictly monogamous and, although matrimonial jars are of daily and hourly occurrence, is very affectionate. The bill is so enormous and strong and the bite so dangerous that the collector is sometimes at a loss as to the best manner of killing this bird when wounded. I solved the difficulty very quickly and satisfactorily by breaking its neck with a vigorous blow with the back of a "machete," the long heavy knife universally carried by the natives and absolutely indispensable to the collector. This is a sure and effective means of killing the Macaw. These birds generally sit in pairs close to each other, and both can usually be killed with one shot. Iris very pale yellow. Bare parts of the head pinkish white.

Five specimens.

No. 149. ♂ ad. March 31.

No. 150. ♀ ad. March 31.

No. 177. ♂ ad. April 1.

No. 205. ♂ ad. April 17.

No. 206. ♀ ad. April 17.

55. *Brotogeris tovi* (Gm.).

Exceedingly abundant. The common Parakeet of the region. It is found in flocks varying from half a dozen to one hundred or more. It is a remarkably tough little bird and hard to kill. When struck by the shot it does not fly like most birds, but grasps the limb tightly with its strong feet and hangs on until quite dead. It seems to prefer solitary trees standing in open fields, although it is found in almost all situations except on the ground. Iris brown. Cere white.

Eight specimens.

No. 141. ♂ ad. March 30.

No. 200. ♀ ad. April 16.

No. 235. ♀ ad. April 24.

No. 252. ♀ ad. April 25.

No. 257. ♀ ad. April 26.

No. 277. ♂ ad. April 28.

No. 318. ♂ ad. May 3.

No. 319. ♀ ad. May 3.

56. *Chrysotis auripalliata* (Schleg.).

Abundant. Its harsh cry is always heard throughout that region from sunrise to sunset. As night comes on they begin to gather into some particular tree, coming always in pairs and making a great deal of noise in settling for the night. It seems difficult for them to suit themselves as to their quarters for the night, and they try a number of situations, discussing each with many querulous expressions of discon-

tent. Finally they settle down, each crowding close to its mate. I have often seen them in moonlight nights remain quietly asleep for several hours, and then as if by a common impulse leave the tree with a loud whirring of wings, but otherwise in utter silence, to seek another tree. I was unable to discover the cause of these strange maneuvers. Iris orange.

Five specimens.

No. 151. ♀ ad. March 31.

No. 167. ♂ ad. April 3.

No. 174. ♀ ad. April 4.

No. 245. ♂ ad. April 25.

No. 275. ♀ ad. April 28.

57. *Pulsatrix torquata* (Daud.).

Not common. Only one specimen seen and shot out of a high tree in the thick forest.

No. 144. ♂ ad. March 30.

58. *Tinnunculus sparverius* (Linn.).

Apparently not common in the coast region. One specimen.

No. 145. ♂ ad. March 31.

59. *Rogerhinus uncinatus* (Temm.).

Commonly heard, especially in the evening. Note "oóah!" "oóah!" None secured.

60. *Rupornis ruficauda* (Sci. & Salv.).

Abundant. The commonest Hawk of the region. Seems to prefer rather open woods, although often seen in the thickest forests. Iris yellow. Cere orange-yellow.

Five specimens secured.

No. 142. — juv. March 30.

No. 148. ♀ ad. March 31.

No. 166. ♂ ad. April 3.

No. 175. ♀ ad. April 4.

No. 243. ♂ juv. April 26.

61. *Asturina plagiata* (Schleg.).

This bird is apparently not common in that region. While out hunting one day I shot at one of these Hawks, but it flew away apparently unhurt. Three days afterward, while in a different direction, I found this same bird dead in a hollow tree, where it had evidently just died of starvation on account of a single shot in the last joint of the wing. Iris brown. Cere and feet yellow.

No. 183. — juv. April 13.

62. *Parabuteo** *unicinctus harrisi* (Aud.).

Abundant. Associates with the Carrion Crow, and eats offal. Notwithstanding this it is an inveterate poultry thief. The specimen obtained was shot with a revolver while carrying off one of Don Ramon's chickens. Iris brown. Cere and feet yellow.

No. 184. ♀ ad. April 13.

63. *Buteo borealis costaricensis* Ridgw.

One specimen shot, but so badly injured that it was not saved.

64. *Urubitinga zonura* (Shaw).

Common. Usually found in the vicinity of the water-courses. Iris brown. Cere and legs yellow.

Three specimens.

No. 217. ♀ ad. April 18.

No. 283. ♀ ad. April 29.

No. 312. — ad. May 2.

65. *Urubitinga anthracina* (Nitzsch.).

Common. Feeds largely upon reptiles. Iris nearly white.

Two specimens.

No. 143. ♂ ad. March 30.

No. 294. ♀ ad. April 13.

66. *Spizæetus ornatus* (Daud.).

Not common. Only one specimen secured.

No. 178. ♂ juv. April 4.

67. *Busarellus nigricollis* (Lath.).

[The young specimen obtained by Mr. NUTTING is in plumage so different from that described by me in Bull. U. S. Geol. and Geog. Survey Terr. (vol. ii, No. 2, p. 143), that a detailed description seems desirable.

Young (No. 87446, La Palma, Costa Rica, April 11, 1882, C. C. NUTTING): Head and neck creamy buff, deeper posteriorly and becoming nearly white on frontlet, lores, and chin, each feather marked with a distinct lanceolate mesial streak of dusky, except on the whitish parts named above, where the feathers have merely narrow, dusky shaft-streaks. Lower parts, rump, and upper tail-coverts rusty ochraceous; lower part of throat crossed by a somewhat crescentic patch or bar of dull black, and breast crossed by a similar but broader band of chestnut-rufous, each feather having a central dusky, pointed spot; feathers of jugulum and lower part of breast marked with distinct mesial streaks

*The name *Antenor*, which was proposed by me in 1873 for this genus, is, as I have recently discovered, preoccupied in Conchology (MONTFORT, 1808); another name being therefore necessary, I have selected the one given above in preference to a new one, on account of its being already on record, in Hist. N. Am. Birds, vol. iii, 1874, p. 250, where, by an oversight in correcting proof-sheets, "*Parabuteo*" is allowed to stand instead of *Antenor*.—R. R.

of black; abdomen and flanks irregularly variegated with rusty and dusky; crissum nearly immaculate ochraceous. Rump and upper tail-coverts ochraceous, marked with arrow-heads and connected bars of dusky; basal half of tail rufous, crossed by several narrow bands of black, these narrower on the inner webs, which are ochraceous instead of rufous; terminal half of tail dusky black, the tip (narrowly) ochraceous. Back, scapulars, and wings rich chestnut-rufous, each feather dusky centrally; the tertials and inner secondaries crossed by narrow bars of dusky; primaries and outer secondaries nearly uniform black. Bill entirely black; "cere black; iris brown; legs and feet very pale flesh-color"; claws black. Wing 14.50, tail 8.50, culmen 1.10, tarsus 3.40, middle toe 1.80.—R. R.]

This bird I found to be abundant in the vicinity of the "Zapotal," a large fresh-water lagoon. It is exceedingly fearless, so far as man is concerned, although this may be due to the fact that it has not yet learned to fear him.

Two specimens.

No. 156. — juv. April 1.

No. 157. ♂ ad. April 1.

68. *Gyparchus papa* (Linn.).

Rather rare. Local name "Rey de Zopilotes," or King of the Vultures. One specimen, found dead. It was in such a condition that it would have been unsafe to attempt to skin it. The following notes were taken: Shoulders, lower neck, back, and below yellowish white. Tail, rump, and remiges black. Bare parts red. Iris white.

69. *Cathartes aura* (Linn.).

Common. None secured.

70. *Catharista atrata* (Bartr.).

The most efficient scavenger of tropical regions. These vultures are probably the most useful birds in existence. Indeed, they are absolutely indispensable in hot regions, where, in many instances, pestilence is doubtless averted by their valuable presence.

71. *Tachypetes aquila* (Linn.).

Abundant on the shores of the gulf.

72. *Pelecanus fuscus* Linn.

Abundant along the entire coast.

73. *Sula leucogastra* (Bodd.).

"Booby Gannet." Seems to be common all along the Pacific coast of Central America.

74. *Plotus anhinga* Linn.

Abundant, especially in the neighborhood of the "Zapotal," the lagoon where most of my water birds were secured. This bird has the

smallest brain of any bird of its size that I ever dissected. It is expert at fishing, and may be seen sitting for hours at a time on a limb projecting over the water where it is watching for its prey. In habits it resembles the Kingfishers.

One specimen.

No. 223. ♀ juv. April 18.

75. *Herodias egretta* (Gm.).

Exceedingly abundant at the lagoon. Iris yellow.

Three specimens.

No. 215. ♀ ad. April 8.

No. 226. ♂ ad. April 20.

No. 227. ♀ ad. April 20.

76. *Florida cærulea* (Linn.).

Not common. Only one seen.

No. 222. ♂ juv. tr. April 19.

77. *Butorides virescens*. (Linn.).

Abundant wherever there is water.

No. 136. ♀ ad. March 30.

No. 225. ♂ ad. April 19.

78. *Nycticorax griseus nævius* (Bodd.).

Abundant. Found at the "Zapatol." Iris red.

Two specimens.

No. 216. ♂ ad. April 18.

No. 224. ♂ ad. April 19.

79. *Tigrisoma cabanisi* Heine.

Exceedingly abundant. The curious note of this Bittern is well calculated to startle the inexperienced collector in these regions. It is something between a bark and a growl, and sounds like the angry warning note of some fierce animal. At the lagoon I suppose a person could kill a wagon-load of these birds in a single day. Iris brown. Bare place in neck bright yellow.

Three specimens secured.

No. 176. ♂ ad. April 18.

— ad. (Label lost.)

— juv. (Label lost.)

80. *Cancroma cochlearia* Linn.

Common. This curious bird seems to have habits similar to the Herons. Its note is a harsh croak. They generally associate in small flocks. Iris brown. Sac under bill, and legs, flesh color.

Four specimens.

No. 192. ♀ ad. April 15.

No. 193. ♂ ad. April 15.

No. 194. ♀ ad. April 15.

No. 198. — juv. April 16.

81. Mycteria americana Linn.

[Juv. (No. 87485, La Palma, Costa Rica, April 21, 1882; C. C. Nutting): Pileum and occiput clothed with dusky black hair-like feathers, these longest on the occiput, where they form somewhat of a bushy crest; feathered portion of lower neck light brownish gray; rump, upper tail-coverts, and tail white; rest of upper part soft brownish gray, irregularly mixed with pure white feathers (of the adult livery?), these most numerous among the lesser wing-coverts and anterior scapulars; primaries white, tinged with gray at ends. Lower parts entirely white. Bill, all the naked portion of head and neck (except lower portion of the latter), legs, and feet black; "collar round lower neck bright scarlet; iris brown." Wing 24.50, tail 9.50, culmen 9.75, tarsus 11.25, middle toe 4.50.—R. R.]

Common. The natives have a name for this Stork which is extremely well chosen. It is "*Galan sin ventura*," or, literally, "Shabby Gentle." The fitness of this name can be appreciated only by one who has seen him in his native lagoon. The contrast between the gay red collar, stately bearing, and dignified movements and the general shabbiness of his dirty white coat and scaly legs is extremely ridiculous, and causes a realization of the appropriateness of its name.

The chief occupation of this bird is fishing, of course, although frogs and reptiles are by no means slighted.

One specimen.

— juv. (Label lost.)

82. Tantalus loculator Linn.

Abundant. The habits of this bird are so well known as to require no comment. Iris brown.

One specimen.

No. 155. — juv. April 1.

83. Eudocimus albus (Linn.).

Common. This Ibis is commonly seen in flocks, and seems less shy than the other water birds of the region. Iris blue; bill red; legs pale.

Two specimens.

No. 159. ♀ juv. tr. April 21.

No. 232. ♂ ad. April 21.

84. Ajaja rosea Reich.

This beautiful bird is quite common at the "Zapotal." It seems to prefer the small muddy branches of the lagoon to the main body, and delights in dabbling in the muddy water with its curious spoon-shaped bill, which it manages as the ducks do theirs. Iris red. Bill pinkish.

Two specimens.

No. 221. ♂ juv. April 19.

No. —, — ad. (Label lost.)

85. *Dendrocycna autumnalis* (Linn.).

Abundant. Found wild at the "Zapotal" and domesticated at La Palma. Sexes alike. Its note is loud, shrill, and discordant. Iris brown. Bill reddish. Legs flesh color.

Two specimens.

No. 154. — ad. April 1. (Wild.)

No. 311. ♀ ad. May 1. (Domestic.)

86. *Cairina moschata* (Linn.).

This magnificent Duck is common both at La Palma and the lagoon. I never saw more than four or five in a flock together. They seem to live a somewhat secluded life, and when not feeding on the water are usually seen perched in trees much after the manner of our Wood-Duck. It is the shyest and most difficult of any Costa Rican bird I have seen. Iris brown. Legs black. Excrescences on bill red and black.

One specimen.

No. 160. ♂ ad. April 1.

87. *Melopelia leucoptera* (Linn.).

Common in the dry season, but disappears in the wet season. Associates with *Engyptila verreauxi*. The song of this Dove is remarkably varied and melodious. Frequently seen near the houses and in rather open woods. Iris yellow. Feet red. Orbital region sky-blue.

One specimen.

No. 293. ♂ ad. April 29.

88. *Engyptila verreauxi* (Bonap.).

Abundant. The common Dove of the region. Iris yellow. Feet red,

No. 259. ♀ ad. April 26.

No. 315. ♀ ad. May 3.

89. *Chamæpelina passerina* (Linn.).

Common. Associates with *C. rufipennis*. Lives mostly on the ground, especially along the roads and cattle-paths.

One specimen.

No. 264. ♂ ad. April 27.

90. *Chamæpelina talpacoti rufipennis* (Bp.).

Very abundant. This beautiful little Dove is very similar in its habits to our common *Zenaidura carolinensis*, but is found in larger flocks. Iris red.

Two specimens.

No. 263. ♂ ad. April 27.

No. —. —. (Label lost.)

91. *Crax globicera* Linn.

This fine species was seen, but not secured. From what I could learn from the natives it is not very abundant, but well known on account of the excellence of its flesh.

92. *Penelope cristata* (Linn.).

Common. Found generally in the thick forest, perching in high trees. Local name "Pavo." As a game bird it seems to be a substitute for our Wild Turkey, and is much sought after for its finely-flavored flesh. Iris orange-yellow. Bare place on neck; front and back scutella on legs red. Bill black.

One specimen.

No. 182. ♂ ad. April 11.

93. *Aramus pictus* (Bartr.).

[NOTE.—There seems to be no essential difference between the La Palma specimen and some Floridan examples. It is rather darker-colored, however, than most northern specimens, though occasionally the latter approach it very closely in richness of coloration.—R. R.]

Abundant at the "Zapotal," where its harsh and rather mournful cry is often heard. Prefers marshy country to open water. Flesh very good eating.

No. 214. — ad. April 18.

94. *Parra gymnostoma* Wagl.

This remarkable bird is very abundant at the lagoon, where it may always be seen running over the lily-pads in search of its food. The alligators are its worst enemies, and are always on the watch for a chance to steal upon it unawares. The Jacana, on the other hand, is always on the lookout for its dreaded foe, and never alights without first hovering directly over the lily-pads and closely scrutinizing the water for alligators. The curious spurs on the wings of this bird are used as a weapon, and fierce fights are of frequent occurrence. Iris brown. Frontlet and spurs bright yellow.

Four specimens.

No. 161. ♂ ad. April 1.

No. 162. ♂ ad. April 1.

No. 219. ♂ juv. April 18.

No. 230. ♀ ad. April 20.

95. *Larus* (species undetermined).

Many Gulls were seen, but none secured.

96. *Crypturus sallæi* Bonap.

Rather rare. Found in the thick forests, where they live on the ground and are quiet and secluded in their habits. Native name "Galinos de las montañas," or "Wood-hens." Iris brown.

One specimen.

No. 153. ♀ ad. April 1.

97. *Crypturus pileatus* (Bodd.).

Common. Habits the same as the last. Iris brown. Legs greenish.

Two specimens.

No. 163. ♀ ad. April 3.

No. 289. ♀ ad. April 28.