

# BIOLOGIA CENTRALI-AMERICANA.

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## ZOOLOGIA.

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### Class AVES.

#### Subclass AVES CARINATÆ.

#### Order PASSERES.

#### Suborder OLIGOMYODÆ.

#### Fam. OXYRHAMPHIDÆ.

#### OXYRHAMPHUS.

*Oxyramphus*, Strickland, Ann. & Mag. N. H. vi. p. 420 (1841); Sci. Cat. Birds Brit. Mus. xiv. p. 280.

*Oxyrhynchus*, Temminck, Pl. Col. livr. 21, 1823 (nec Leach).

*Oxyruncus*, Temminck, Anal. du Syst. gén. d'Orn. in Man. d'Orn. ed. 2, i. p. lxxx (1820).

*Oxyramphus* is a genus of obscure affinities and its position cannot be satisfactorily determined until the internal structure of one of the species has been carefully studied. From an examination of its external characters it has been usually placed by recent authors with the Dendrocolaptidæ or as an independent Family. Under our present knowledge the latter position seems the most convenient.

The coloration of the plumage of *Oxyramphus* recalls that of *Phibalura*, a genus of Cotingidæ, but the form of the bill has no resemblance to that of *Phibalura* nor has its plumage anything in common with any recognized member of the Dendrocolaptidæ.

The bill of *O. frater* (and of both the other species) is acute, the culmen slightly curved, and the tomia nearly straight, with a small angle near the commissure; the nostrils are elongated open slits along the lower edge of the nasal fossa and have an operculum thickened along its lower edge along the upper margin. The rictal bristles are very short. The wings have ten primaries, of which the second, third, and fourth are the longest, the first being a little longer than the fifth and rather more pointed. The barbs of the central portion of the outer web of the outermost primary, in the male, have their extremities destitute of barbules, and these bare points turned rather

abruptly backwards and slightly inwards, the margin of the wing thus forming a strongly serrate edge. In the female the outer web of this feather is normal\*.

The tail is of moderate length and nearly square at its tip. The tarsi are short but stout and enclosed in scutes which cover the front and sides and nearly meet at the back; the toes are short and nearly equal in length, the middle toe slightly exceeding the outer one, the innermost being the shortest. The hind toe and claw are strong.

The genus is a purely Neotropical one containing three closely allied species—one, *O. flammiceps*, the oldest and best known, inhabiting South-east Brazil, another, *O. hypoglaucus*, the Guianan Highlands, and the third, *O. frater*, Costa Rica and the State of Panama.

### 1. *Oxyrhamphus frater*.

*Oxyrhynchus flammiceps*, Lawr. Ann. Lyc. N. Y. ix. p. 106<sup>1</sup>; v. Frantz. J. f. Orn. 1869, p. 304<sup>2</sup>.

*Oxyrhamphus frater*, Scl. & Salv. P. Z. S. 1868, p. 326<sup>3</sup>; Ex. Orn. p. 131, t. 66<sup>4</sup>; Salv. Ibis, 1869, p. 314<sup>5</sup>; P. Z. S. 1870, p. 194<sup>6</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 280<sup>7</sup>.

Viridis, pileo medio sericeo-coccineo utrinque nigro limbo; capitis lateribus griseis, corpore subtus pallide flavo, amboobus nigro guttulis; alis et cauda nigris viridi limbatis, secundariorum et tectricum marginibus externis late et caudæ apice anguste pallide flavis, subalaribus flavis: rostro corneo, pedibus plumbeis. Long. tota 6.5, alæ 3.6, caudæ 2.2, rostri a rictu 0.8, tarsi 0.75. (Descr. maris ex Calovevora, Panama. Mus. nostr.)

♀ mari omnino similis, remige alarum primo extrorsum haud serrato.

*Hab.* COSTA RICA (*Carmioli*), San José<sup>1</sup>, Orosi<sup>2</sup> (v. *Frantzii*); PANAMA, Calovevora<sup>3 5 6</sup>, Chitra<sup>6</sup>, Castillo<sup>7</sup> (*Arcé*).

So far as *Oxyrhamphus frater* is concerned little information has come to hand since the account of it was published in 'Exotic Ornithology' in 1868<sup>4</sup>. Even now nothing has been recorded of its habits, food, or of the kind of forests it frequents. At the time that account was written the only other species known of the genus was *O. flammiceps* of South-eastern Brazil; but a few years ago a third species was discovered by Mr. H. Whitely in the mountains of British Guiana, which we described under the name of *O. hypoglaucus*. This last-named bird differs from both its allies by having the under surface of the body white (not pale yellow) spotted with black. We thus have three very closely allied species of this genus each occupying mountainous districts situated very widely apart, and it singularly happens that no one of them occurs in any portion of the Andes or in the mountains of Venezuela. In our country *O. frater* is restricted to a very limited area extending along the mountain-slopes from Orosi in Costa Rica to Calovevora in the State of Panama. We have no information as to the elevations at which *O. frater* is found, but the allied *O. hypoglaucus* affects the mountains of Merume and Roraima between 2000 and 3500 feet above the sea-level.

\* Attention was drawn to this character in the article on *O. frater* in 'Exotic Ornithology,' but it was noticed by Mikan, who, in his 'Delectus Floræ et Faunæ Brasiliensis,' figured the first primary of *O. serratus*, Mikan (= *O. flammiceps*, Temm.).

## Fam. TYRANNIDÆ\*.

## COPURUS.

*Copurus*, Strickland, P. Z. S. 1841, p. 28 (type *Muscicapa colonus*, Vieill.); Scl. Cat. Birds Brit. Mus. xiv. p. 50.

Two species constitute this well-marked genus, the ranges of which are rather curiously traced: thus the Brazilian *C. colonus* extends over a large portion of Brazil and includes the eastern slopes of the Andes; *C. leuconotus* occurs in Western Ecuador, Colombia, and Central America as far north as Nicaragua, and passes along the northern part of South America to Guiana. Both species come within the reach of the bird-collectors of Bogota, but are doubtless found on different sides of the mountain-chain.

*Copurus* is a rather isolated genus with no very obvious allies. Mr. Sclater places it between *Muscipipra* and *Machetornis* in the "subfamily" Fluvicolinæ, but its short tarsi and arboreal habits are at variance with his definition of that section of Tyrannidæ.

The general coloration of the plumage of *Copurus* is black with grey or white marks on the head and back. The bill is short and broad at the base, the width at the rictus being more than two thirds the length of the tomia; the bristles are well developed and reach beyond the nasal fossa; the nostrils are open, nearly circular, and situated at the end of the nasal fossa; the hook of the maxilla is rather abrupt and projects

\* The Family Tyrannidæ forms one of the most important sections of the American bird-fauna and contains upwards of 400 described species, the greater portion of which belong exclusively to the neotropical region. The remainder are migrants spending their breeding-season in North America, some even reaching Sitka and Greenland in their northern flight. These migratory species almost without exception pass the winter months in Mexico, Central America, and the northern part of South America. The family is well represented in our region by about 104 species, the number of genera and species increasing rapidly in the more southern section of the region.

Tyrannidæ are found at almost all elevations, some occurring in the high pine-forests situated at 10,000 feet and upwards to the limits of vegetation, but it is in the damp forests of the lower lands, where insect-life abounds in endless variety, that the members of the family are to be found in greatest profusion and diversity.

As regards the classification of the Tyrannidæ we are conscious that much remains to be done. In the following pages we have conformed in a great measure to that recently published by Mr. Sclater in the 14th Volume of the Catalogue of Birds, which again is based upon the system adopted by Prof. Cabanis in the 'Museum Heineanum.' Where we have departed from the plan there laid down will be found under the notes attached to each genus. Our chief difficulty lies in the Subfamilies, as defined by Mr. Sclater, into which the system is divided. We find that their definitions are of little practical value, if not altogether misleading.

The subject, however, is an exceedingly complex one, and does not lend itself to subdivision into large groups owing to the multiplicity of forms which pass from one into the other by insensible steps. We have here not attempted to divide the family into subfamilies, but merely grouped the genera into what appear to be their natural affinities. It is only necessary to compare such genera as *Platyrhynchus* with *Serphophaga* (both placed in the Platyrhynchinæ), *Mionectes* with *Myiodynastes* (Elaineinæ), and *Muscivora* with *Empidonax* (Tyranninæ) to show how artificial Mr. Sclater's "Key" to the subfamilies of Tyrannidæ (Catal. p. 3) is.

We see no advantage to be derived from trying to maintain divisions which seem to be incapable of accurate definition.

considerably below the closed mandible, there is a distinct notch at the end of the tomia. The tarsi are short and stout, covered with distinct scutellæ; the toes short, the outer slightly shorter than the inner. The third and fourth quills are equal and longest—2nd > 5th, 1st = 6th. The tail is nearly square at the end, with the exception of the two middle feathers, which are greatly elongated. The web on each side of these feathers is narrow in the middle but widens gradually towards the end, forming an oar-shaped spatule.

### 1. *Copurus leuconotus*.

*Copurus leuconotus*, Lafr. Rev. Zool. 1842, p. 335<sup>1</sup>; Lawr. Ann. Lyc. N. Y. vii. p. 327<sup>2</sup>, ix. p. 110<sup>3</sup>; ScL. & Salv. P. Z. S. 1864, p. 358<sup>4</sup>, 1867, p. 279<sup>5</sup>, 1879, p. 511<sup>6</sup>; Salv. P. Z. S. 1867, p. 146<sup>7</sup>; Ibis, 1872, p. 318<sup>8</sup>; v. Frantz. J. f. Orn. 1869, p. 306<sup>9</sup>; Nutt. & Ridgw. Pr. U. S. Nat. Mus. vi. p. 402<sup>10</sup>; ScL. Cat. Birds Brit. Mus. xiv. p. 51<sup>11</sup>.

*Copurus pæcilonotus*, Cab. in Schomb. Guiana, iii. p. 702<sup>12</sup>.

Niger; fronte, loris et superciliis albis; capite summo griseo-fusco; dorso medio grisescenti-albo, uropygio albo: rostro et pedibus nigris. Long. tota (cauda inclusa) 10·0, alæ 3·0, caudæ rectr. med. (pogoniis medialiter attenuatis) 7·5, reliquis 2·1, rostri a rictu 0·5, tarsi 0·5. (Descr. exempl. ex Tucurriqui, Costa Rica. Mus. nostr.)

*Hab.* NICARAGUA, Chontales (*Belt*<sup>8</sup>), Los Sabalos (*Nutting*<sup>10</sup>), Blewfields (*Wickham*<sup>5</sup>); COSTA RICA, San José, Pacuar (*Carmirol*<sup>3</sup>), Turrialba (*v. Frantz*<sup>9</sup>), Tucurriqui (*Arcé*); PANAMA, Santa Fé (*Arcé*<sup>7</sup>), Lion Hill Station (*M<sup>c</sup>Leannan*<sup>24</sup>), Paraiso Station (*Hughes*).—COLOMBIA<sup>6</sup>; W. ECUADOR<sup>11</sup>; GUIANA<sup>12</sup>; BOLIVIA<sup>1</sup>?

The range of this species seems confined to Western Ecuador, Colombia west of the Andes of Bogota, and Central America as far north as Nicaragua. It has also been traced to Guiana<sup>12</sup>, but its presence in Bolivia requires confirmation. The allied form *C. colonus* (of which we believe *C. fuscicapillus* to consist, only of darker-headed individuals) ranges throughout the Valley of the Amazons from the eastern slope of the Andes of Peru, Ecuador, and Colombia to South-eastern Brazil. The two birds may readily be recognized by the presence in *C. leuconotus* of a light grey dorsal stripe extending from the hind neck to the rump; in *C. colonus* the back is wholly black.

Salmon met with *C. leuconotus* at Remedios in the Colombian State of Antioquia<sup>6</sup>, but he did not find its nest and made no note on its habits. Most other collectors are also silent on this subject, but Mr. Nutting, who found the species rather common at Los Sabalos on the Rio San Juan del Norte in Nicaragua, says that it builds a nest in a hole in a dry tree after the manner of a Woodpecker—perhaps the abandoned nest-holes of the latter<sup>10</sup>. The note he describes as weak.

### PLATYRHYNCHUS.

*Platyrrhynchus*, Desmarest, Hist. Nat. Tod. sub t. 72 (1805); ScL. Cat. Birds Brit. Mus. xiv. p. 64.

*Platyrrhynchus* is a well-marked genus containing nine species, which are distributed

over the forests of the tropical portion of the neotropical region. Three species occur within our limits, whereof *P. cancrominus* has the most northern range, extending from the Mexican State of Vera Cruz to Nicaragua. An allied form, *P. albogularis*, takes its place in Costa Rica and thence spreads through Western Ecuador and Venezuela. Both these birds have near allies in South America in *P. saturatus* of Guiana and *P. mystaceus* of Guiana and Brazil. The third species is *P. superciliaris*, which extends from the State of Panama to Guiana and has a close ally in *P. coronatus* of Eastern Ecuador.

The general plumage of *Platyrhynchus* is brown or olive on the upper surface and ochraceous-yellowish or white on the under surface; the males, and sometimes the females, have a distinct occipital crest which can be laid open or closed by the surrounding feathers at will. The bill is a very characteristic feature, being very broad and with the lateral margins convex, the width at the base about  $= \frac{3}{4}$  the tomia; the upper surface is much flattened, the culmen slightly depressed but more abruptly so towards the tip, on either side of which there is a deep notch; the nostrils are round and open, at the end of the nasal fossa. The tarsi and feet are very slender, the former covered with a single sheath; the outer toe is a little longer than the inner. The wing is short and rounded, 4th quill longest, 3rd=5th, 2nd=6th, 1st<8th. The tail is short and nearly square, <twice tarsus,  $= \frac{1}{2}$  wing.

a. *Stria superciliaris nulla*.

1. **Platyrhynchus cancrominus.**

*Platyrhynchus cancroma*, Scl. P. Z. S. 1856, p. 295<sup>1</sup>, 1859, p. 384<sup>2</sup>; Sumichrast, Mem. Bost. Soc. N. H. i. p. 557<sup>3</sup>.

*Platyrhynchus cancrominus*, Scl. & Salv. P. Z. S. 1860, p. 299<sup>4</sup>; Ibis, 1860, p. 399<sup>5</sup>; Nutt. & Ridgw. Pr. U. S. Nat. Mus. vi. p. 384<sup>6</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 66<sup>7</sup>.

Supra umbrino-brunneus; capite summo obscuriore et crista abscondita flava ornato; alis et cauda nigricanti-brunneis obscure cinnamomeo limbatis; superciliis a naribus, ciliis et abdomine medio pallide ochraceis; gula tota alba; pectore et hypochondriis pallide umbrino-brunneis: rostri maxilla nigra, mandibula pallida, pedibus carneis. Long. tota 4.0, alæ 2.35, caudæ 1.2, rostri a rictu 0.7, tarsi 0.6. (Descr. maris ex Volcan de Agua, Guatemala. Mus. nostr.)

♀ mari similis, crista verticali nulla.

*Hab.* MEXICO, Hot region of the State of Vera Cruz (*Sumichrast*<sup>3</sup>), Cordova (*Sallé*<sup>1</sup>), Playa Vicente (*Boucard*<sup>2</sup>); BRITISH HONDURAS, Orange Walk (*Gaumer*); GUATEMALA, Choctum<sup>4,5</sup>, Telemán, Volcan de Agua above San Diego, El Paraiso (*O. S. & F. D. G.*); NICARAGUA, Sucuyá (*Nutting*<sup>6</sup>).

An inhabitant of the hot region of the State of Vera Cruz<sup>3</sup> and of the forests bordering both oceans in Guatemala, and, according to Mr. Ridgway, occurring as far south as the banks of the San Juan del Norte river in Nicaragua<sup>6</sup>. *Sallé* observed it as high as Cordova in Mexico<sup>1</sup>, and we found it at an elevation of about 3000 feet in the Volcan de Agua, 1200 feet at Choctum<sup>4</sup>, and at about 300 feet at Paraiso, a hacienda

in the forests of the Pacific slope between the port of Champerico and Retalhuleu. Mr. Gaumer's specimen from Orange Walk was obtained close to the level of the sea. It only occurs in dense high forests, where it keeps about the growth of underwood. Mr. Nutting obtained one specimen at Sucuyá in Nicaragua in deep woods. Both *P. cancrominus* and *P. albogularis* have a close ally in *P. mystaceus* of Guiana and Brazil, but both the northern species have a whiter throat, and, moreover, *P. albogularis* has a black mandible.

## 2. *Platyrrhynchus albogularis*.

*Platyrrhynchus albogularis*, Scl. P. Z. S. 1860, pp. 68<sup>1</sup>, 92<sup>2</sup>, 295<sup>3</sup>; Salv. Ibis, 1869, p. 314<sup>4</sup>; P. Z. S. 1870, p. 196<sup>5</sup>; Berl. & Tacz. P. Z. S. 1883, p. 553<sup>6</sup>; Tacz. Orn. Pér. ii. p. 225<sup>7</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 67, t. 8. f. 2<sup>8</sup>.

*Platyrrhynchus cancroma*, Cass. Pr. Ac. Nat. Sc. Phil. 1860, p. 144<sup>9</sup>.

*Platyrrhynchus cancrominus*, Lawr. Ann. Lyc. N. Y. ix. p. 110<sup>10</sup>; v. Frantz. J. f. Orn. 1869, p. 306<sup>11</sup>.

*P. cancromino* similis, sed supra obscurior, oculorum ambitu (præter ciliam ochraceam) nigricantiore, mandibula quoque nigricante differt.

*Hab.* COSTA RICA<sup>4</sup>, Navarro (*J. Cooper*<sup>10</sup>, v. *Frantz*<sup>11</sup>), Irazu (*Rogers*), Naranjo (*J. Carmiol*<sup>10</sup>); PANAMA, Volcan de Chiriqui<sup>5</sup>, Calovevora<sup>5</sup>, Calobre<sup>5</sup> (*Arcé*); PANAMA, = Chocó-Truando (*Wood*<sup>9</sup>).—VENEZUELA; ECUADOR<sup>1 2 3 6</sup>; PERU<sup>7</sup>.

Western America, from Peru to Costa Rica, and thence eastwards to Venezuela, defines the limits of the range of this *Platyrrhynchus*. Immediately to the northward in Nicaragua its place is taken by *P. cancrominus*. It is thus found throughout Panama and Costa Rica in company with *P. superciliaris*. Mr. Wood observed it on the Truando river, near its junction with the Atrato, in high trees, whence it was difficult to obtain<sup>9</sup>. Fraser met with it in the dark underwood of the forest at Esmeraldas<sup>3</sup>, as well as in other places in Western Ecuador<sup>1 2</sup>, and we have a specimen from Santa Rita in the same region, and Stolzmann also found it at Chimbo<sup>6</sup>. In Peru the last-named collector obtained an example at Tambillo, at an elevation of 5800 feet above the sea<sup>7</sup>. Jelski remarks that its note is monotonous, and that it perches on the small branches of the forest trees.

The existence of a vertical yellow crest does not seem to be always a characteristic of the male, for one of Stolzmann's Chimbo female specimens had this crest well developed.

b. *Caput castaneum, stria superciliaris utrinque nigra.*

## 3. *Platyrrhynchus superciliaris*.

*Platyrrhyncha cancroma*, Lawr. Ann. Lyc. N. Y. vii. p. 330<sup>1</sup>.

*Platyrrhynchus superciliaris*, Lawr. Ibis, 1863, p. 184<sup>2</sup>; Ann. Lyc. N. Y. viii. p. 7<sup>3</sup>, ix. p. 110<sup>4</sup>; Salv. P. Z. S. 1867, p. 146<sup>5</sup>, 1870, p. 196<sup>6</sup>; Ibis, 1885, p. 292<sup>7</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 68<sup>8</sup>.

Supra olivescenti-olivaceus; alis et cauda fuscis umbrino limbatis; vertice medio castaneo utrinque nigro marginato; loris, superciliis, ciliis ipsis, tectricibus auricularibus et corpore subtus flavidis; stria postoculari et altera infra oculos nigris; hypochondriis sordide olivaceis: rostri maxilla nigra, mandibula sordide alba, apice albida; pedibus pallide corylinis. Long. tota 3·4, alæ 2·15, caudæ 0·8, rostri a rictu 0·5, tarsi 0·5. (Descr. maris ex Santa Fé, Panama. Mus. nostr.)

♀ mari similis.

*Hab.* COSTA RICA, Valza (*Carmirol*<sup>4</sup>); PANAMA, Bugaba<sup>6</sup>, Volcan de Chiriqui, Santa Fé<sup>5</sup> (*Arcé*), Lion Hill (*M. Leannan*<sup>1 2 3</sup>).—GUIANA<sup>7</sup>.

This, the smallest of the three species of *Platyrrhynchus* found within our region, appears to be not uncommon in the State of Panama and in Costa Rica, as specimens have been included in most of the large collections made in those districts. We find, however, no accounts of its habits, though doubtless, like its congeners, it frequents the underwood of the denser forests. Mr. H. Whitely met with the same species at Bartica Grove in British Guiana<sup>7</sup>; it occurs also at Albina in Surinam. It has not yet been noticed elsewhere in South America, though we expect it to be found in suitable places in the country intervening between Guiana and Panama.

The only southern species at all closely resembling *P. superciliaris* is *P. coronatus* of the Upper Amazons valley. But the latter is a larger, darker bird, with a less clearly-defined yellow under surface.

## RHYNCHOCYCLUS.

*Cyclorhynchus*, Sundevall, K. Vet. Ak. Handl. 1835, p. 83 (nec Kaup, 1829) (type *Platyrrhynchus olivaceus*).

*Rhynchocyclus*, Cab. & Heine, Mus. Hein. ii. p. 56 (1859); Scl. Cat. Birds Brit. Mus. xiv. p. 165.

Twelve species are included in *Rhynchocyclus* as a whole, all of them belonging to the Neotropical Region, the range of the genus extending from Southern Mexico to South Brazil. All the members are forest birds, as are the species of *Platyrrhynchus*.

This genus seems to us to be quite out of place in Mr. Sclater's arrangement, where it stands in the "Elaineinæ" next *Myiozetetes*.

The bill of *R. brevirostris* is constructed almost exactly like that of *Platyrrhynchus*, the nostrils are similarly shaped and placed in the same position, and the rictal bristles are equally developed. The tarsi are comparatively shorter and the tail much longer. The secondaries are longer in proportion to the primaries, and the members of the genus generally of larger size, and of olivaceous rather than brown tints.

*Rhynchocyclus* is divisible into four sections, only two of which occur in our region. In one of these sections (*R. brevirostris* and its allies) the male is distinguished by the peculiar structure of the outer web of the outermost quill, the barbs of which are slightly recurved and pointed so as to form a stiff pectinated edge, much as in the genera *Stelgidopteryx*, *Oxyrhamphus*, &c.

The section containing *R. sulphureus* and its allies has not this peculiarity.

### 1. *Rhynchocyclus brevirostris*.

*Cyclorhynchus brevirostris*, Cab. in Wieg. Arch. f. Naturg. 1847, i. p. 249<sup>1</sup>; Scl. P. Z. S. 1856, p. 296<sup>2</sup>; Scl. & Salv. Ibis, 1860, p. 399<sup>3</sup>.

*Rhynchocyclus brevirostris*, Cab. & Heine, Mus. Hein. ii. p. 57<sup>4</sup>; Salv. P. Z. S. 1867, p. 148<sup>5</sup>, 1870, p. 197<sup>6</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 166<sup>7</sup>.

*Rhynchocyclus mesorhynchus*, Cab. J. f. Orn. 1865, p. 414<sup>8</sup>.

*Rhynchocyclus griseimentalis*, Lawr. Ann. Lyc. N. Y. ix. p. 112<sup>9</sup>; Salv. Ibis, 1869, p. 315<sup>10</sup>; v. Frantz. J. f. Orn. 1869, p. 307<sup>11</sup>.

Supra olivaceus unicolor; alis et cauda nigricantibus extrorsum olivaceo limbatis; oculorum ambitu griseo, ciliis albis: subtus dilutior, griseo vix tinctus; ventre medio flavo; subalaribus flavo albicantibus: rostri maxilla nigra, mandibula albicante; pedibus corylinis. Long. tota 6.0, alæ 3.1, caudæ 2.75, tarsi 0.75, rostri a rictu 0.7. (Descr. maris ex Choctum, Guatemala. Mus. nostr.)

♀ mari similis, sed pogonio externo remigis primi levi nec aspero.

*Hab.* MEXICO, Jalapa<sup>4</sup> (*M. Trujillo*), Cordova (*Sallé*<sup>2</sup>); GUATEMALA<sup>8</sup>, Choctum<sup>3</sup> (*O. S. & F. D. G.*), La Trinidad, Volcan de Fuego (*O. S.*); COSTA RICA<sup>11</sup> (*Carmirol*<sup>10</sup> & *Endres*), Dota (*Carmirol*<sup>9</sup>), Irazu (*Rogers*); PANAMA, Volcan de Chiriqui<sup>6</sup>, Bugaba<sup>6</sup>, Calovevora<sup>6</sup>, Santa Fé<sup>5</sup> (*Arcé*).

*Rhynchocyclus brevirostris* is the Mexican and Central-American representative of a small section of the genus containing three closely allied members. The oldest known, *R. olivaceus*, is an inhabitant of the forests of South-eastern Brazil; *R. æquinoctialis* occupies the eastern forests of the Andes of Ecuador and enters our fauna as far north as the line of the Panama Railway; the present species then takes its place and spreads northwards as far as the forest-clad slopes of the mountains of the Mexican State of Vera Cruz. Another more remotely allied form, *R. fulvipectus*, occupies Western Ecuador and the Cauca valley of Colombia.

Several attempts have been made to divide *R. brevirostris*: thus, the Guatemalan bird was named *R. mesorhynchus* by Prof. Cabanis and the Costa Rican *R. griseimentalis* by Mr. Lawrence. The latter ornithologist correctly showed that the size of the bill, relied on for the discrimination of *R. mesorhynchus*, is a very unstable character<sup>9</sup>, but the peculiarities of coloration set forth as distinguishing *R. griseimentalis* do not hold good when a series is examined. This is also Mr. Sclater's view<sup>7</sup>, who confirms Salvin's note on this subject<sup>6</sup>. We do not, however, subscribe to Mr. Sclater's statement that *R. brevirostris* and *R. æquinoctialis* gradually merge into one another. The differences are, it is true, very slight, but we have no difficulty in assigning every specimen before us to its proper place, and their geographical boundaries appear to be quite definite.

*R. brevirostris* is a native of the forests of the hotter parts of the countries it inhabits. In Mexico it occurs near Jalapa at an elevation of about 4000 feet. In Guatemala we found it in the forests near Choctum, at an elevation of about 1200 feet above the sea, and on the slopes of the Volcan de Fuego as high as 3000 feet. It probably has a

similar range in altitude in Costa Rica and the more western parts of the State of Panama.

The nest of *R. brevirostris* has not been discovered; but Salmon describes the eggs of *R. fulvipectus*, which he met with at Frontino, in the valley of the Atrato, as white with an indistinct zone of small, very pale-red spots.

## 2. *Rhynchocyclus æquinoctialis*.

*Cyclorhynchus æquinoctialis*, Scl. P. Z. S. 1858, p. 70<sup>1</sup>.

*Rhynchocyclus æquinoctialis*, Cab. & Heine, Mus. Hein. ii. p. 56<sup>2</sup>; Lawr. Ann. Lyc. N. Y. vii. p. 473<sup>3</sup>; Scl. & Salv. P. Z. S. 1864, p. 359<sup>4</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 166<sup>5</sup>.

*Cyclorhynchus brevirostris*, Lawr. Ann. Lyc. N. Y. vii. p. 329 (nec Scl.)<sup>6</sup>; Cassin, Pr. Ac. Phil. 1860, p. 144<sup>7</sup>.

Præcedenti similis, alarum tectricibus pallido-olivaceo distincte limbatis, abdomine quoque pallidiore flavo, distinguendus. (Descr. maris ex Lion Hill, Panama. Mus. nostr.)

*Hab.* PANAMA, Lion Hill (*M<sup>c</sup>Leannan*<sup>3 4 6</sup>), Chepo (*Arcé*), Truando R. (*Wood*<sup>7</sup>).—EASTERN ECUADOR<sup>1 2 5</sup>.

The bill of *R. æquinoctialis* is usually larger than that of *R. brevirostris*, but so much variation is found in this respect in the latter species that this character becomes untrustworthy. The two forms can with more certainty be distinguished by the greater definition of the edging of the wing-coverts and by the paler colour of the abdomen.

The distribution of this species is somewhat remarkable, for, as far as our present knowledge goes, there is a wide gap in its range. We have no record of its occurrence between Eastern Ecuador and the Isthmus of Darien, yet specimens from these widely separated places present no tangible points of difference.

Nothing has been recorded of the habits of this species, which inhabits the dense forests of the eastern side of the Isthmus of Panama, at a slight elevation above the sea-level, and the slopes of the Andes a few thousand feet above the sea.

## 3. *Rhynchocyclus sulphurescens*.

*Platyrhynchus sulphurescens*, Spix, Av. Bras. ii. p. 10, t. 12. f. 1<sup>1</sup>.

*Rhynchocyclus sulphurescens*, Cab. & Heine, Mus. Hein. ii. p. 56<sup>2</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 168<sup>3</sup>.

*Cyclorhynchus sulphurescens*, Lawr. Ann. Lyc. N. Y. vii. p. 473<sup>4</sup>.

*Rhynchocyclus flavo-olivaceus*, Lawr. Ann. Lyc. N. Y. viii. p. 8<sup>5</sup>; Scl. & Salv. P. Z. S. 1864, p. 359<sup>6</sup>; Salv. P. Z. S. 1867, p. 148<sup>7</sup>, 1870, p. 198<sup>8</sup>; Ibis, 1885, p. 295<sup>9</sup>.

*Cyclorhynchus cinereiceps*, Lawr. Ann. Lyc. N. Y. vii. p. 329<sup>10</sup>.

*Rhynchocyclus marginatus*, Lawr. Pr. Ac. Phil. 1868, p. 429<sup>11</sup>.

Supra olivaceo-viridis; capite summo cinereo lavato; loris et oculorum ambitu albidis; alis fuscis flavo-olivaceo limbatis; cauda fusca dorsi colore extrorsum limbata: subtus sulphureo-flavus; pectore et hypochondriis olivaceo tinctis; gula paulo cinerascens; subalaribus sulphureis: rostri maxilla nigra, mandibula pallida; pedibus corylinis. Long. tota 5·2, alæ 2·7, caudæ 2·3, tarsi 0·8, rostri a rictu 0·65. (Descr. maris ex San Pablo, Panama. Mus. nostr.)

♀ mari similis.

BIOL. CENTR.-AMER., Aves, Vol. II., December 1888.

*Hab.* PANAMA, Calovevora <sup>8</sup>, Santa Fé <sup>7</sup> (*Arcé*), San Pablo Station (*O. S.*), Lion Hill <sup>4 5 6 10 11</sup> (*M<sup>c</sup>Leannan*).—SOUTH AMERICA from Colombia <sup>3</sup> to Guiana <sup>9</sup>, Amazons valley <sup>1</sup> and Brazil <sup>1 2</sup>.

Spix described this species from specimens obtained near Rio Janeiro and in the Amazons valley, and examples from these localities agree with one another and with our series from the State of Panama. Mr. Lawrence separated the Panama bird under the name of *R. flavo-olivaceus* <sup>5</sup>, but a specimen, in our collection, compared with his type appears to us to be inseparable from the true *R. sulphurescens*, though Mr. Sclater places *R. flavo-olivaceus* as a synonym of *R. cinereiceps* <sup>3</sup>.

*Rhynchocyclus marginatus* <sup>11</sup> is another name, apparently applicable to this species, but the type has a slightly greyer head and darker back, the edgings of the wings are a little more distinct, and it is also a trifle greyer on the throat. Mr. Sclater places this name without question amongst the synonyms of *R. sulphurescens* <sup>3</sup>. We do not think the trifling differences alluded to justify its separation.

As will be seen above, *R. sulphurescens* has a very wide range over Tropical America, being probably restricted to the hot low-lying districts.

#### 4. *Rhynchocyclus cinereiceps*.

*Cyclorhynchus cinereiceps*, Scl. Ibis, 1859, p. 443 <sup>1</sup>; P. Z. S. 1859, p. 384 <sup>2</sup>; Scl. & Salv. Ibis, 1860, p. 399 <sup>3</sup>.

*Rhynchocyclus cinereiceps*, Scl. & Salv. P. Z. S. 1864, p. 359 <sup>4</sup>, 1870, p. 837 <sup>5</sup>; Lawr. Ann. Lyc. N. Y. ix. pp. 146 <sup>6</sup>, 201 <sup>7</sup>; Bull. U. S. Nat. Mus. no. 4, p. 26 <sup>8</sup>; Nutting, Pr. U. S. Nat. Mus. v. p. 395 <sup>9</sup>; Nutting & Ridgw. Pr. U. S. Nat. Mus. vi. pp. 374 <sup>10</sup>, 384 <sup>11</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 169 <sup>12</sup>.

*Rhynchocyclus sulphurescens*, Lawr. Ann. Lyc. N. Y. ix. p. 112 <sup>13</sup>.

Precedenti similis, sed capite undique cinereo, gutture toto quoque cinereo, alarum marginibus minus distinctis et abdomine pallidiore, distinguendus. Iride (ave viva) alba.

*Hab.* MEXICO, Oaxaca <sup>1</sup> and Playa Vicente <sup>2</sup> (*Boucard*), Teapa (*H. H. Smith*), Tapana, Sta Efigenia (*Sumichrast* <sup>8</sup>), Merida in Yucatan (*Schott* <sup>7</sup>), Peto in Yucatan, Izalam (*G. F. Gaumer*); BRITISH HONDURAS, Orange Walk (*G. F. Gaumer*); GUATEMALA, Chisec, Choctum, Cahabon (*O. S. & F. D. G.*), Volcan de Agua above San Diego, Escuintla <sup>3</sup> (*O. S.*); HONDURAS, San Pedro (*G. M. Whitely* <sup>5</sup>); NICARAGUA, San Juan del Sur <sup>10</sup> and Sucuyá <sup>11</sup> (*Nutting*); COSTA RICA, La Palma (*Nutting* <sup>9</sup>), Angostura (*Carmirol* <sup>6 13</sup>); PANAMA, Lion Hill (*M<sup>c</sup>Leannan* <sup>4</sup>).

On comparing a series of specimens recently sent us from Teapa, in the Mexican State of Tabasco, by Mr. Herbert Smith, with our examples from Panama, we find no differences, and considering how closely allied the species is to *R. sulphurescens*, its characters are exceedingly constant.

A good deal of confusion has arisen respecting the references to this species and *R. sulphurescens* in Costa Rica and the State of Panama, but we believe we have here

correctly assigned them. In the former country the southern form does not appear to be found, though they both occur on the line of the Panama Railway <sup>4</sup>.

*R. cinereiceps* was first characterized by Mr. Sclater from specimens obtained by Boucard in Oaxaca and others from Playa Vicente in the State of Vera Cruz. We have received specimens from various places in the lowlands of Yucatan and Eastern Guatemala, its range in altitude reaching to about 2000 feet. It also occurs throughout the districts bordering the Pacific, up to about the same height, in the forests which clothe the volcanos of Guatemala. In Nicaragua Mr. Nutting says it is abundant at Sacuyá, where it is a rather silent bird, fond of the deep woods <sup>11</sup>.

Mr. Nutting also secured the nest of this species at La Palma in Costa Rica. Mr. Ridgway describes it as follows <sup>9</sup>:—"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 fibre, 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 two inches above the entrance. The total length of the entire structure is ten inches, the greatest width four inches, the lower 'neck' or wall of the entrance being about two and a half inches in diameter."

#### TODIROSTRUM.

*Todirostrum*, Lesson, *Traité d'Orn.* p. 384 (1831); *Sci. Cat. Birds Brit. Mus.* xiv. p. 69.

Sixteen species are now recognized of this varied genus, which may be distinguished by the elongated flattened bill of its members. Most of the species are well marked, and are distributed over the greater part of the Neotropical region. Two species reach the forests of Southern Mexico, the widely-distributed *T. cinereum* and *T. schistaceiceps*, which, spreading throughout Central America, pass into Colombia. The third species is *T. nigriceps*, a bird of the north-western part of South America, which enters our fauna as far as Panama and Costa Rica. The upper valleys of the Amazons basin are the headquarters of the genus, and here some beautiful and distinct species are found.

*Todirostrum* contains birds of very varied coloration, many of them being brightly clad in olive, black, and clear sulphur-yellow on the under surface, others have greyer tints. *T. cinereum* has an elongated flat bill, the sides of which are nearly parallel until they converge gradually towards the tip, the width at the base is a little more than a third of the length of the tomia, the terminal hook and subterminal notches are small; the nostrils are situated towards the end of the nasal fossa, and are surrounded by a slightly overhanging membrane; the rictal bristles are well developed. The tarsi are long and feeble, covered with distinct scutellæ, the toes short. The wing is rounded,

the 3rd, 4th, and 5th quills nearly equal and longest, 2nd=7th, 1st=10th. The tail is long and much rounded, the feathers narrow, = $\frac{5}{6}$  wing, >2 tarsus.

a. *Abdomen flavum, gula quoque flava.*

1. **Todirostrum cinereum.**

*Todus cinereus*, Linn. Syst. Nat. i. p. 178<sup>1</sup>; Bp. P. Z. S. 1837, p. 117<sup>2</sup>.

*Todirostrum cinereum*, d'Orb. Voy. Am. MÉR., Ois. p. 315<sup>3</sup>; Scl. P. Z. S. 1856, p. 141<sup>4</sup>, 1857, p. 203<sup>5</sup>; Scl. & Salv. Ibis, 1859, p. 124<sup>6</sup>; P. Z. S. 1864, p. 358<sup>7</sup>, 1870, p. 837<sup>8</sup>, 1879, p. 512<sup>9</sup>; Lawr. Ann. Lyc. N. Y. vii. p. 295<sup>10</sup>, viii. p. 182<sup>11</sup>, ix. p. 110<sup>12</sup>; Salv. P. Z. S. 1867, p. 147<sup>13</sup>, 1870, p. 196<sup>14</sup>; Cat. Strickl. Coll. p. 301<sup>15</sup>; Ibis, 1885, p. 292<sup>16</sup>; v. Frantz. J. f. Orn. 1869, p. 307<sup>17</sup>; Nutt. & Ridgw. Pr. U. S. Nat. Mus. v. pp. 384<sup>18</sup>, 402<sup>19</sup>; Tacz. Orn. Pér. ii. p. 225<sup>20</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 71<sup>21</sup>.

*Triccus cinereus*, Cab. J. f. Orn. 1861, p. 243<sup>22</sup>.

Supra olivaceo-cinereum; capite nigro; alis caudaque nigris, illis olivaceo limbatis, hujus rectrice utrinque extima in pogonio externo et ad apicem late albida, rectricibus reliquis (præter duas medias) anguste albo terminatis; subtus omnino flavissimum: rostri maxilla cornea, mandibula flava; pedibus plumbeis. Long. tota 3.6, alæ 1.7, caudæ 1.9, rostri a rictu 0.7, tarsi 0.7. (Descr. exempl. ex Dueñas, Guatemala. Mus. nostr.)

*Hab.* MEXICO, Tlacotalpam (Sallé<sup>5</sup>), Teapa in Tabasco (H. H. Smith), Mugerres I., coast of Yucatan (Gaumer); BRITISH HONDURAS, Orange Walk (Gaumer), Belize (O. S.<sup>6</sup>); GUATEMALA (Velasquez<sup>2</sup>, Constanica<sup>15</sup>), Choctum, Coban, Dueñas, Escuintla, Retalhuleu (O. S. & F. D. G.); HONDURAS, San Pedro<sup>8</sup> (G. M. Whitely); NICARAGUA, Sucuyá<sup>18</sup>, Los Sabalos<sup>19</sup> (Nutting), Greytown (Holland<sup>11</sup>); COSTA RICA, Nicoya (Arcé), Turrialba<sup>12</sup>, Pacuar<sup>12</sup> (Carmiol), Irazu (Rogers), San José (v. Frantz<sup>17</sup>); PANAMA, David (Bridges<sup>4</sup>), Bugaba<sup>14</sup>, Volcan de Chiriqui, Mina de Chorchá<sup>14</sup>, Calovevora<sup>14</sup>, Santa Fé<sup>13</sup>, Calobre<sup>14</sup> (Arcé), Lion Hill (M<sup>c</sup>Leannan<sup>7 10</sup>), Paraiso Station (Hughes).—SOUTH AMERICA, Colombia<sup>9</sup> to Bolivia<sup>3</sup>, South Brazil, Amazons valley and Guiana<sup>16</sup>.

Though apparently rare in Southern Mexico (where our only records of its presence are those of Sallé, who found it at Tlacotalpam, and of Herbert Smith at Teapa), *Todirostrum cinereum* is a common species in Guatemala and throughout the rest of Central America, being for the most part a bird of the lowland forests, but occasionally, though rarely, ascending the mountains to a height of about 5000 feet. Its usual resort is the forest, but it may at times be seen in trees situated in more open country. In South America *T. cinereum* is one of the most widely spread of Tropical birds, notwithstanding its small size. It seems to be generally distributed in the forests of South-American lowlands to the confines of Southern Brazil. In Guiana it occurs up to an elevation of at least 3500 feet, and on the slopes of the Andes doubtless to a still greater height.

Salmon, who took the eggs of this species, says they are white, but he makes no

mention of its nest, nor of the situations in which it is placed. The iris in life is white<sup>9</sup>.

b. *Abdomen flavum, gula alba.*

2. **Todirostrum nigriceps.**

*Todirostrum nigriceps*, Scl. P. Z. S. 1855, p. 66, t. 84. f. 1<sup>1</sup>; Cat. Birds Brit. Mus. xiv. p. 72<sup>2</sup>; Cassin, Pr. Ac. Phil. 1860, p. 144<sup>3</sup>; Lawr. Ann. Lyc. N. Y. vii. p. 330<sup>4</sup>, ix. p. 110<sup>5</sup>; Scl. & Salv. P. Z. S. 1864, p. 358<sup>6</sup>.

Supra flavo-olivaceum; alis et cauda nigris, rectricibus et remigibus primariis stricte, secundariis et alarum tectricibus latius flavido limbatis; pileo toto cum nucha et capitis lateribus nigerrimis; subtus flavum, gutture albo; rostro et pedibus nigris. Long. tota 3.0, alæ 1.4, caudæ 1.1, rostri a rictu 0.6, tarsi 0.6. (Descr. maris ex Lion Hill, Panama. Mus. nostr.)

*Hab.* COSTA RICA, Angostura (*Carmirol*<sup>5</sup>); PANAMA, Lion Hill (*McLeannan*<sup>4 6</sup>), Turbo (*Wood*<sup>3</sup>).—COLOMBIA, Santa Marta<sup>1</sup>; ECUADOR<sup>2</sup>.

This pretty little species appears to have a limited range restricted to the north-western parts of South America, the Isthmus of Panama, and thence to Costa Rica; but from the latter country we have only a single record of its occurrence. No specimens of it were included in the collections sent us from Chiriqui or from the neighbourhood of Santiago de Veraguas. M'Leannan, however, met with it on the line of the Panama Railway, and sent specimens both to Mr. Lawrence and ourselves, and Mr. C. J. Wood found it at Turbo, on the Isthmus of Darien, in the drier parts of the forest<sup>3</sup>. It had the same habits as *T. cinereum*, but was not common.

Mr. Sclater's type was obtained near Santa Marta<sup>1</sup>.

c. *Abdomen album.*

3. **Todirostrum schistaceiceps.**

*Todirostrum schistaceiceps*, Scl. Ibis, 1859, p. 444<sup>1</sup>; P. Z. S. 1859, p. 384<sup>2</sup>; Cat. Am. B. p. 208, t. 18. f. 2<sup>3</sup>; Cat. Birds Brit. Mus. xiv. p. 74<sup>4</sup>; Scl. & Salv. Ibis, 1860, p. 399<sup>5</sup>; P. Z. S. 1864, p. 358<sup>6</sup>; Lawr. Ann. Lyc. N. Y. vii. p. 473<sup>7</sup>; Bull. U. S. Nat. Mus. no. 4, p. 26<sup>8</sup>; Nutting & Ridgw. Pr. U. S. Nat. Mus. vi. p. 402<sup>9</sup>; Zeledon, Pr. U. S. Nat. Mus. viii. p. 108<sup>10</sup>.

*Todirostrum superciliaris*, Lawr. Ann. Lyc. N. Y. x. p. 9<sup>11</sup>.

Olivaceo-viride; pileo toto cum nucha schistaceis; loris albis; alis et cauda nigris illis viridi-olivaceo hac olivaceo extrorsum limbatis, hujus quoque rectricum externarum bitriente basali cinerascens; subtus cinerascens; abdomine albido; hypochondriis olivaceo indutis; subalaribus et campterio alari flavissimis; rostro nigricante, tomiis pallidis; pedibus corylinis. Long. tota 3.6, alæ 1.9, caudæ 1.4, rostri a rictu 0.6, tarsi 0.75. (Descr. exempl. ex Choctum, Guatemala. Mus. nostr.)

*Hab.* MEXICO<sup>1</sup>, Playa Vicente (*Boucard*<sup>2</sup>), Guichicovi (*Sumichrast*<sup>8</sup>), Teapa in Tabasco (*H. H. Smith*); British Honduras, Orange Walk (*Gaumer*); GUATEMALA, Choctum (*O. S. & F. D. G.*<sup>5</sup>); NICARAGUA, Los Sabalos (*Nutting*<sup>9</sup>); COSTA RICA (*Zeledon*<sup>10</sup>); PANAMA, Lion Hill (*McLeannan*<sup>7 6</sup>).—COLOMBIA<sup>4</sup>; VENEZUELA?<sup>11</sup>.

Specimens from Playa Vicente, in the hot region of the Mexican State of Vera Cruz,

were described by Mr. Sclater under this name. The species was soon after found by us in the forests of the basin of the Rio de la Pasion, in northern Vera Paz, and it has since been traced to Tehuantepec, Tabasco, and British Honduras. It occurs again on the banks of the San Juan del Norte river, in Nicaragua, and on the line of the Panama Railway. Mr. Zeledon includes its name in his list of Costa Rica birds, but has not yet stated in what part of that country it is found<sup>10</sup>. The bird from the mainland of South America has been separated by Mr. Lawrence as *T. superciliaris* on the ground of the under surface being rather whiter, and the white lores extending further over the eye<sup>11</sup>. These differences are indeed slight, and hardly of specific value in our opinion.

### ONCOSTOMA.

*Oncostoma*, Scl. Ibis, 1862, p. 12; Cat. Am. Birds, p. 208; Cat. Birds Brit. Mus. xiv. p. 76.

Only two species are known of this curious form—one from Southern Mexico and Central America, as far south as the Volcan de Chiriqui in the State of Panama, the other peculiar to the isthmus itself along the line of railway.

The two species of this genus are olive-green above, greyish below, with the abdomen yellow, and thus resemble such members of the genus *Todirostrum* as *T. schistaceiceps*. But *Oncostoma* has several important differences. The bill is strongly arched, the culmen still more so, giving the bill a very different outline from that of *Todirostrum*, which is flat, and the culmen nearly straight; the tail is composed of narrow feathers, but is not nearly so rounded; the proportions of tail, wings, and tarsi are much as in *Todirostrum*.

#### 1. *Oncostoma cinereigulare*.

*Todirostrum cinereigulare*, Scl. P. Z. S. 1856, p. 295<sup>1</sup>; 1859, p. 384<sup>2</sup>.

*Oncostoma cinereigulare*, Scl. Cat. Am. B. p. 208, t. 18. f. 1<sup>3</sup>; Cat. Birds Brit. Mus. xiv. p. 77<sup>4</sup>; Salv. Ibis, 1866, p. 194<sup>5</sup>; P. Z. S. 1870, p. 196<sup>6</sup>; Lawr. Ann. Lyc. N. Y. ix. p. 111<sup>7</sup>; Bull. U. S. Nat. Mus. no. 4, p. 26<sup>8</sup>; Sumichrast, Mem. Bost. Soc. N. H. i. p. 557<sup>9</sup>; Boucard, P. Z. S. 1883, p. 447<sup>10</sup>.

Olivaceum; capite summo vix saturatiore; alis et cauda fusco-nigricantibus, extrorsum olivaceo limbatis; capitis lateribus et gutture toto cinereis, hoc albicante striolato; abdomine medio flavicante: rostro corneo; pedibus pallide corylinis. Long. tota 4·0, alæ 2·0, caudæ 1·6, rostri a rictu 0·55, tarsi 0·6. (Descr. exempl. ex Coban, Guatemala. Mus. nostr.)

♀ mari similis.

*Hab.* MEXICO, Cordova (*Sallé*<sup>1</sup>), hot region of Vera Cruz (*Sumichrast*<sup>9</sup>), Teotalcingo and Playa Vicente (*Boucard*<sup>2</sup>), Guichicovi, Cacoprieto, Tapaná, Sta Efigenia (*Sumichrast*<sup>10</sup>), Tizimin<sup>8</sup> and Peto in Yucatan (*Gaumer*); BRITISH HONDURAS, Orange Walk (*Gaumer*); GUATEMALA, Coban<sup>5</sup>, Telemán, Choctum, Savana grande, Volcan de Agua above San Diego, Retalhuleu (*O. S. & F. D. G.*); COSTA RICA, Angostura (*Carmirol*<sup>7</sup>); PANAMA, Bugaba (*Arcé*<sup>6</sup>).

A species of the hotter parts of the State of Vera Cruz according to Sumichrast<sup>9</sup>, but found near Cordova by Sallé<sup>1</sup>. The former naturalist also met with it in several places on the Isthmus of Tehuantepec<sup>8</sup>, thence it spreads over the forest lands of Guatemala bordering the Pacific Ocean, ascending the mountains to an elevation of 3000 or 4000 feet. On the Atlantic side of the cordillera it occurs in the forest-region of northern Vera Paz and in the valley of the Polochic river, and is also not at all uncommon in the neighbourhood of Coban in January at an elevation of about 4500 feet above the sea-level.

The southern extension of this species is rather remarkable, as it does not terminate, like that of so many species where a second is found in the southern section of our fauna, in Honduras and Nicaragua, but it reaches Chiriqui, the allied form occurring on the line of the Panama Railway.

Its habits much resemble those of the various species of *Todirostrum*. The iris in life is greyish white.

## 2. *Oncostoma olivaceum*.

*Todirostrum olivaceum*, Lawr. Ibis, 1862, p. 12<sup>1</sup>.

*Oncostoma olivaceum*, Scl. Ibis, 1862, p. 12 (note)<sup>2</sup>; Cat. Birds Brit. Mus. xiv. p. 77<sup>3</sup>; Lawr. Ann.

Lyc. N. Y. vii. p. 473<sup>4</sup>; Scl. & Salv. P. Z. S. 1864, p. 358<sup>5</sup>.

Præcedenti similis, sed capite summo olivaceo dorso concolore; gula quoque et abdomine concoloribus pallide flavo-olivaceis, tectricibus alarum magis distincte flavido limbatis, distinguendum. (Descr. maris ex Lion Hill, Panama. Mus. nostr.)

*Hab.* PANAMA, Lion Hill (*M'Leannan*<sup>1 2 3 4 5</sup>).

*Oncostoma olivaceum* is a close ally of *O. cinereigulare*, but at the same time easily recognized. So far as we know the only specimens that have been obtained were secured by M'Leannan during the time he was station-master at Lion Hill on the Panama Railway.

## LOPHOTRICCUS.

*Lophotriccus*, H. v. Berlepsch, P. Z. S. 1883, p. 553 (type *Todirostrum spicifer*, Lafr.); Scl. Cat. Birds Brit. Mus. xiv. p. 86.

The two species which now constitute this genus were included in *Euscarthmus* until Count Berlepsch separated them in 1883, but without giving any characters. *L. spicifer* is a species of the upper Amazons valley up to the base of the Andes. *L. squamicristatus* has a wider and more northern and western range over Venezuela, Colombia, and Ecuador, entering our region as far as Costa Rica.

Compared with *Todirostrum* this genus has a much less elongated flattened bill, the sides of which converge from the gape to the tip, the membrane over the nostrils is more developed, the tarsi are covered with a single shield, the tail is less rounded, and the feathers of the head are wide and produced into a conspicuous crest.

### 1. *Lophotriccus squamicristatus*.

*Todirostrum squamæcrista*, Lafr. Rev. Zool. 1846, p. 363<sup>1</sup>.

*Todirostrum squamicristatum*, Scl. P. Z. S. 1859, p. 144<sup>2</sup>.

*Euscarthmus squamicristatus*, Lawr. Ann. Lyc. N. Y. ix. p. 111<sup>3</sup>; v. Frantz. J. f. Orn. 1869, p. 307<sup>4</sup>; Salv. P. Z. S. 1870, p. 196<sup>5</sup>.

*Lophotriccus squamicristatus*, Berl. P. Z. S. 1883, p. 553<sup>6</sup>; Tacz. Orn. Pér. ii. p. 230<sup>7</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 87<sup>8</sup>.

*Lophotriccus squamicristatus*, subsp. *luteiventris*, Berl. apud Tacz. Orn. Pér. ii. p. 230<sup>9</sup>.

Supra olivaceus; alis et cauda nigricantibus flavo-olivaceo limbatis; plumis cristæ elongatis nigris late ferrugineo limbatis: subtus griseo-albidus; abdomine medio flavo vix tincto; gutture toto griseo indistincte striolato; hypochondriis olivaceo indutis: rostro corneo; pedibus corylinis. Long. tota 3·8, alæ 2·0, caudæ 1·5, rostri a rictu 0·5, tarsi 0·6. (Descr. maris ex Calovevora, Panama. Mus. nostr.)

♀ mari similis.

*Hab.* COSTA RICA, Cervantes<sup>3</sup>, Grecia<sup>3</sup> (*Carmiöl*), Dota<sup>3</sup> (*Zeledon*), Quebrada Honda<sup>4</sup> (*v. Frantzius*), Turrialba, Tucurriqui (*Arcé*); PANAMA, Chiriqui<sup>5</sup>, Calovevora<sup>5</sup>, Chitra<sup>5</sup>, Boquete de Chitra<sup>5</sup> (*Arcé*).—COLOMBIA<sup>1</sup>; ECUADOR<sup>2 6</sup>; PERU<sup>7</sup>; VENEZUELA<sup>8</sup>.

Some of our Central-American specimens are rather yellower beneath than others from Ecuador, but the difference is not always appreciable; moreover, a Venezuelan example is yellower than any of the rest of our series.

*L. squamicristatus* was described from Colombian specimens, whence it has since been traced southwards to Central Peru<sup>7</sup>. In Ecuador it occurs in many places on both sides of the cordillera. It is also found in Venezuela, Mr. Göring having met with it on the Cumbre de Valencia. It appears to be absent in the low-lying lands of the Isthmus of Panama, but to occur in some numbers in the more mountainous parts near Calovevora and Chiriqui, and also in similar districts of Costa Rica. In the latter country v. Frantzius says that it is common in the cool forests of the mountain slopes of Quebrada Honda. Hence we infer that it must not be looked for near the sea-level.

Fraser says that the irides in life are orange, the legs and feet flesh-colour, the bill blackish<sup>2</sup>.

### ORCHILUS.

*Orchilus*, Cabanis in Tschudi's Fauna Per. p. 164 (1845) (type *Platyrhynchus auricularis*, Vieill.); Scl. Cat. Birds Brit. Mus. xiv. p. 88.

Three species are included in *Orchilus*, viz. *O. auricularis* of South-eastern Brazil, *O. ecaudatus* of Bolivia, Peru, and Venezuela, and *O. atricapillus* of Costa Rica. The two latter species are somewhat abnormal, having remarkably short tails, whereas the type of the genus (*O. auricularis*) is not so definitely marked in this respect.

*Orchilus*, as represented by the somewhat abnormal *O. ecaudatus*, is another departure from *Todirostrum*, and is mainly distinguished by its very short square tail; the bill is similar to that of *Lophotriccus*, but is longer and rather more arched. Like *Todirostrum* it has no occipital crest.

1. *Orchilus atricapillus*.

*Todirostrum ecaudatum*, Lawr. Ann. Lyc. N. Y. ix. p. 110<sup>1</sup>.

*Orchilus atricapillus*, Lawr. Ibis, 1875, p. 385<sup>2</sup>; Sci. Cat. Birds Brit. Mus. xiv. p. 89<sup>3</sup>.

"The entire crown is black; the lores are also black, except a white mark extending from the bill to the eye on each side, separating them from the black crown; eyelids white; under the eye blackish-ash; the colour on the sides of the head behind the eye, extending to the hind neck and on the upper part of the back, is of a clear bluish-cinereous; breast also cinereous, but lighter in colour; throat greyish-white; abdomen pale yellow; flanks and thighs blackish-ash; under wing-coverts pale yellow; back, rump, and upper tail-coverts yellowish-green; wings black, the primaries narrowly edged with olive-green, the secondaries and wing-coverts conspicuously margined with yellow of a greenish tinge; tail black, the feathers with margins of the colour of the back; bill black; tarsi and toes very pale flesh-colour. First primary shorter than the fifth, third and fourth equal and longest. Length  $2\frac{3}{4}$  inches, wing  $1\frac{7}{8}$ , tail  $\frac{5}{8}$ , bill  $\frac{7}{16}$ , tarsus  $\frac{1}{2}$ ."—Lawrence, loc. cit.

*Hab.* COSTA RICA, Angostura (*Carmioli*<sup>1</sup>), Volcan de Irazu (*Zeledon*<sup>2</sup>).

We have copied Mr. Lawrence's description of this species, as we have no specimen of it ourselves. *O. atricapillus* resembles *O. ecaudatus*, but has a black head instead of a grey one. The first specimen was obtained by Carmiol at Angostura, but being in poor condition was referred by Mr. Lawrence to *O. ecaudatus*. A second and better one was secured during the late Prof. Gabb's expedition to the Talamanca country, this, with a suggestion of Salvin's to the effect that the bird was really distinct and undescribed, led to a fresh examination of the specimens and to their description under the name of *Orchilus atricapillus*<sup>2</sup>. The allied species has a wide range from Venezuela to Bolivia, but is everywhere rare.

## COLOPTERUS.

*Colopterus*, Cabanis, Monatsber. Ak. Berlin, 1845, p. 216 (type *Motacilla galeata*, Bodd.); Sci. Cat. Birds Brit. Mus. xiv. p. 90.

This singular genus contains two species which differ from one another in that *C. galeatus*, the type, has elongated occipital feathers like *Lophotriccus*, while *C. pileatus* is not so adorned. The range of the genus extends from the State of Panama to Colombia, Venezuela, Guiana, and the lower part of the Amazons valley.

In the form of the bill, tail, and tarsi this genus is like *Lophotriccus*, but the peculiar modification of the wings makes it easy to recognize both from *Lophotriccus* and the rest of this group of genera. In the male of *C. pileatus* the outermost four primaries are attenuated and shortened to little more than half the longest of the remaining normal feathers. Of these four shortened feathers the outermost is the longest, and the rest are gradually shorter, the fourth being the shortest of the series. In the female this feature is not carried to nearly the same extent, moreover the outermost or first primary is the shortest, and the fourth nearly attains its normal place in the wing. In *C. galeatus* the male has three attenuated primaries instead of four.

### 1. *Colopterus pilaris*.

*Todus pilaris*, Licht. Mus. Berol. (fide Cabanis<sup>1</sup>).

*Colopterus pilaris*, Cab. Arch. f. Naturg. 1847, i. p. 253, t. 5<sup>2</sup>; Cab. & Heine, Mus. Hein. ii. p. 52<sup>3</sup>; Salv. P. Z. S. 1867, p. 147<sup>4</sup>; Salv. & Godm. Ibis, 1880, p. 124<sup>5</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 90<sup>6</sup>.

*Todirostrum exile*, Scl. P. Z. S. 1857, p. 83, t. 125. f. 3<sup>7</sup>; Cassin, Pr. Ac. Nat. Sc. Phil. 1860, p. 144<sup>8</sup>.

*Todirostrum megacephalum*, Lawr. Ann. Lyc. N. Y. vii. p. 330 (nec Swainson)<sup>9</sup>.

Supra olivaceus, pileo vix obscuriore; alis et cauda fusco-nigris, extrorsum pallide olivaceo limbatis; loris et capitis lateribus pallide fuscis: subtus margaritaceo-albus; hypochondriis flavido tinctis; gutture et pectore griseo obsoletissime striolatis: rostro nigro, mandibulæ basi pallida; pedibus carneis. Long. tota 3·5, alæ 1·7, caudæ 1·5, rostri a rictu 0·5, tarsi 0·65. (Descr. maris ex Santa Fé, Panama. Mus. nostr.)

*Hab.* PANAMA, Santa Fé (*Arcé*<sup>4</sup>), line of railway (*M'Leannan*<sup>9</sup>).—COLOMBIA<sup>3 5 7 8</sup>.

The headquarters of this curious species seem to be Colombia, where it has been noticed in several places. Specimens occur, but not very frequently, in the trade collections made in the neighbourhood of Bogota, but the bird is more common in the northern parts of the country. Within our region it has been observed by two collectors—*M'Leannan*, who met with it on the line of the Panama Railway, and sent specimens to Mr. Lawrence, in whose lists they appear as *Todirostrum megacephalum*<sup>9</sup>; and *Arcé*, who sent us two male specimens from Santa Fé in the State of Panama<sup>4</sup>. Mr. C. J. Wood says he met with this species near Carthagena, in the bushes and low trees, constantly flying after insects, and uttering a single chirp, by which it could easily be traced and shot<sup>8</sup>. He frequently saw it in the month of April. Mr. Simons, who sent us specimens from Minca in the Sierra Nevada of Santa Marta, says that the iris in life is white, shading into brown or yellowish white<sup>5</sup>.

### LEPTOTRICCUS.

*Leptotriccus*, Cabanis & Heine, Mus. Hein. ii. p. 54 (1859) (type *Muscicapa sylviola*, Licht.); Scl. Cat. Birds Brit. Mus. xiv. p. 99.

*Leptotriccus*, which was founded on the Brazilian *L. sylviola*, contains but two species, that just named and *L. superciliaris* of the State of Panama.

With a bill similar to that of *Lophotriccus* the rictal bristles appear to be longer, there is no occipital crest, the 2nd, 3rd, 4th, and 5th quills are nearly equal, 1st=8th, the tail is long and very slightly rounded, and the feathers wider than in *Todirostrum*, nearly = wing, the tarsus =  $\frac{1}{3}$  wing.

### 1. *Leptotriccus superciliaris*. (Tab. XXXVI. fig. 2.)

*Leptotriccus superciliaris*, Scl. & Salv. P. Z. S. 1868, p. 389<sup>1</sup>; Salv. P. Z. S. 1870, p. 196<sup>2</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 100<sup>3</sup>.

Supra viridi-olivaceus; alis caudaque nigricantibus, flavicanti-olivaceo extrorsum limbatis; pileo et collo postico

nigricanti-cinereis; superciliis castaneis; linea frontali et regione parotica albis: subtus margaritaceo-albus; pectore præcipue ad latera cinereo perfuso; ventre et crisso flavicantibus; subalaribus albis: rostro nigro; pedibus obscure corylinis. Long. tota 4.0, alæ 1.95, caudæ 2.0, rostri a rictu 0.55, tarsi 0.65. (Descr. feminae ex Calovevora, Panama. Mus. nostr.)

*Hab.* PANAMA, Calovevora<sup>2</sup>, Chitra<sup>1 2</sup> (*Arcé*).

Of this pretty species we have as yet only seen the two original specimens sent us by *Arcé* in 1868, and described in the 'Proceedings' of the Zoological Society for that year. Both these specimens are marked as females, so that the male is not yet known, but it, in all probability, is quite similar to the female in its plumage.

In its long slender tarsi and delicate feet this species resembles *Leptotriccus sylviola* of Brazil, and it also has the pointed wings and long tail of that bird; the bill, however, is somewhat larger and wider.

The distinct chestnut superciliary streak over each eye is a strongly marked characteristic feature of *L. superciliaris*.

### POGONOTRICCUS.

*Pogonotriccus*, Cabanis & Heine, Mus. Hein. ii. p. 54 (1859) (type *Muscicapa eximia*, Temm.);  
Scl. Cat. Birds Brit. Mus. xiv. p. 97.

Mr. Sclater recognizes four species as belonging to this genus, its range extending from Costa Rica to South Brazil.

The general colour of all the species is bright olive above and yellowish beneath, the head varying from grey to dark plumbeous. The bill in *P. eximius* narrows rather abruptly, the width at the rictus being considerably more than half the length of the tomia; the culmen is gradually curved from the forehead, more rapidly towards the tip; the rictal bristles are very fully developed; the tarsi are rather short and slender, the enclosing scutellæ almost obliterated into one shield; the feet are feeble, the outer and middle toes being nearly equal, the inner one shorter. The wing is rounded, the 3rd quill a little < 2nd and 4th, 5th = 2nd, 1st = 9th; tail rather long and square, the feathers narrow, a little < wing, > 3 times tarsus.

#### 1. *Pogonotriccus zeledoni*.

*Pogonotriccus*? *zeledoni*, Lawr. Ann. Lyc. N. Y. ix. p. 144<sup>1</sup>.

Supra olivaceus; capite summo et nucha plumbeis; alis caudaque fusco-nigris, extus pallide olivaceo limbatis; capitis lateribus et gula cinereo-albis; loris albis: abdomine toto olivaceo-flavo, medialiter cum subalaribus flavido-albidis: rostro et pedibus obscure corylinis, mandibula pallida. Long. tota 4.2, alæ 2.4, caudæ 2.0, tarsi 0.65. (Descr. feminae exempl. typ. ex Barranca, Costa Rica. Mus. G. N. Lawrence.)

*Hab.* COSTA RICA, Dota Mountains, Barranca (*Carmirol*<sup>1</sup>).

We have never obtained a specimen of this species, but have taken our description from the type of the female lent us by Mr. Lawrence. This bird has a close ally in *P. plumbeiceps*, Lawr., of Colombia, but the bill is rather wider, the mandible paler,

and the spots on the wing-coverts not quite so prominent. Mr. Sclater regards this species as probably the same as *P. ophthalmicus* (Cat. Birds Brit. Mus. xiv. p. 98), over which name *P. zeledoni* has several years' priority.

### SERPAPHAGA.

*Serpophaga*, Gould, Zool. Voy. Beagle, iii. p. 49 (1841) (type *Sylvia subcristata*, Vieill.).

*Serpophaga*, Cabanis & Heine, Mus. Hein. ii. p. 53; Scl. Cat. Birds Brit. Mus. xiv. p. 101.

*Serpophaga* consists of seven species widely distributed over South America as far south as the Argentine Republic. Only one species, the wide-spread Andean *S. cinerea*, enters our fauna as far as Costa Rica.

Black, grey, and white are the prevailing colours of the various species of *Serpophaga*. They are all small birds, some of them with peculiar habits as described below. The bill of *S. cinerea* is rather wide for its length, the sides converging rather rapidly to the tip, the width at the rictus being about half the length of the tomia, the nostrils are open at the end of the nasal fossa, the rictal bristles not very well developed, considerably less than those of the foregoing genera, but more so than in *Mionectes*, which follows; the tarsi and feet are rather stouter than in the preceding genera, the former being covered with scutellæ; the wing is rounded, the 3rd quill slightly > the 2nd and 4th, 1st = 8th; tail moderate and slightly rounded, considerably < wing, < 3 tarsus. Wing a little > 3 tarsus.

#### 1. *Serpophaga cinerea*.

*Euscarthmus cinereus*, Strickl. Ann. & Mag. N. H. xiii. p. 414<sup>1</sup>.

*Serpophaga cinerea*, Scl. P. Z. S. 1858, p. 458<sup>2</sup>; Salv. P. Z. S. 1867, p. 147<sup>3</sup>; Ibis, 1869, p. 319<sup>4</sup>; Boucard, P. Z. S. 1878, p. 62<sup>5</sup>.

*Serpophaga cinerea*, Cab. & Heine Mus. Hein. ii. p. 53<sup>6</sup>; Scl. & Salv. P. Z. S. 1879, pp. 512<sup>7</sup>, 613<sup>8</sup>; Salv. Cat. Strickl. Coll. p. 304<sup>9</sup>; Tacz. Orn. Pér. ii. p. 236<sup>10</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 103<sup>11</sup>.

*Serpophaga grisea*, Lawr. Ann. Lyc. N. Y. x. p. 139<sup>12</sup>.

Supra cinerea, uropygio fusco; capite summo (aliquando albo medialiter notato) et lateribus nigricantibus; alis et cauda ejusdem coloris, illarum tectricibus, hujus apice albido terminatis: subtus albida; hypochondriis et crisso griseo tinctis: rostro et pedibus nigris. Long. tota 4.0, alæ 2.0, caudæ 1.7, rostri a rictu 0.45, tarsi 0.6. (Descr. exempl. ex Costa Rica. Mus. nostr.)

*Hab.* COSTA RICA (*Endres*<sup>4</sup>, *Carmirol*<sup>12</sup>), Naranjo (*Boucard*<sup>5</sup>); PANAMA, Santa Fé (*Arcé*<sup>3</sup>).—COLOMBIA<sup>7</sup>; ECUADOR<sup>10</sup>; PERU<sup>10</sup>; BOLIVIA<sup>8</sup>.

The only difference we can see between Central-American and Southern specimens is their small size, a character we seldom like to admit to be of specific value. In the present case there is more difference between two examples from Sical in Ecuador than between any of the Central-American and the other South-American specimens before us, so that size cannot here be considered of much importance.

The other characters referred to by Mr. Lawrence when defining his *S. grisea* as

distinguishing it from *S. cinerea* all break down ; for the vertical feathers of the head of some of our northern specimens have white at their bases, just as in southern ones ; the wing-coverts are tipped with dusky white, and the under surfaces of the two forms are not to be distinguished in colour.

*Serphophaga cinerea* was described in 1844 by Strickland from a specimen said to have come from Chili<sup>1</sup>, probably a wrong locality ; but the species has a wide range throughout the Andes from Bolivia northwards to the valley of the Cauca. Missing the Isthmus of Panama, it reappears in the more mountainous parts of that State and in Costa Rica. It frequents the highland forests up to an elevation of 5000 and 10,000 feet, for Tschudi records it from the Sierra de Tarma (10,000 feet), Fraser from Cuenca (8200 feet), and Salmon from Envigado (5500 feet), but it is also found, according to Jelski and Stolzmann, at a low level in the environs of Lima<sup>9</sup>.

Its habit of living near running streams has been recorded by several travellers. Fraser speaks of it as hopping from stone to stone in the Gualaquiza river, and Boucard, who observed it at Naranjo in Costa Rica, says it lives along the streams and sits on the stones lying in or near the water just in the manner of *Sayornis aquatica*. Stolzmann also speaks of its having the same habits in Peru. The last-named traveller found its nest towards the end of June attached to the extremity of a bough, to which it was suspended over the surface of the water. The nest was composed almost exclusively of moss and lined with feathers, and fixed by its lower surface to the branch. Salmon also found its nest, which he does not describe, but says the eggs are creamy white<sup>7</sup>.

### MIONECTES.

*Mionectes*, Cabanis in Tschudi's Fauna Per. p. 147 (1845) (type *Muscicapa straticollis*, d'Orb. & Lafr.) ; Sci. Cat. Birds Brit. Mus. xiv. p. 111.

*Mionectes* is the first of our genera which is placed in the "Elaineinæ" by Mr. Sclater, but the rictal bristles, though shorter than in most of the "Platyrrhynchinæ," are quite obvious, and the structure of the bill is similar to that of the genera we have just discussed.

The genus itself is a neotropical one spread over the greater part of South America as far as South Brazil on the one hand and Southern Mexico on the other. Of the two sections into which the four species of *Mionectes* are now divided, *M. olivaceus* reaches Costa Rica and *M. oleagineus* Southern Mexico, both being also found in the southern continent.

The general plumage of the members of *Mionectes* is olivaceous, with the abdomen either yellowish or cinnamon. The bill of *M. olivaceus* is rather elongated and compressed, the sides converging gradually to the tip, the width at the gape being considerably less than half the length of the tomia, the culmen is nearly straight for the greater part of its length and then curves abruptly to the tip ; the nostrils are open,

oval, and surrounded by membrane, the rectal bristles rather feeble; the tarsi and feet are moderately stout, the former covered with well-defined scutellæ, the outer toe is a little longer than the inner; the wing is rounded, 4th and 5th quills longest, 3rd=6th, 2nd=7th, 1st=longest secondaries; the tail is moderate, nearly square at the end,  $> 3$  tarsus,  $> \frac{3}{4}$  wing.

### 1. *Mionectes olivaceus*.

*Mionectes striaticollis*, Lawr. Ann. Lyc. N. Y. vii. p. 328<sup>1</sup>; Scl. & Salv. P. Z. S. 1864, p. 358<sup>2</sup>; 1868, p. 628<sup>3</sup> (nec d'Orb. & Lafr.).

*Mionectes olivaceus*, Lawr. Ann. Lyc. N. Y. ix. p. 111<sup>4</sup>; Salv. Ibis, 1869, p. 314<sup>5</sup>; P. Z. S. 1870, p. 196<sup>6</sup>; Boucard, P. Z. S. 1878, p. 63<sup>7</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 112<sup>8</sup>.

Supra viridi-olivaceus; capite summo vix obscuriore; alis et cauda umbrino-fuscis, extrorsum olivaceo limbatis, illis introrsum cervinis; macula postoculari flavida: subtus gutture toto, cum pectore et hypochondriis olivaceis, plumis omnibus medialiter flavis; abdomine medio et subalaribus flavis: rostro nigro, mandibulæ basi pallida; pedibus corylinis. Long. tota 5.0, alæ 2.75, caudæ 2.15, rostri a rictu 0.6, tarsi 0.6. (Descr. maris ex Chiriqui, Panama. Mus. nostr.)

♀ mari similis.

*Hab.* COSTA RICA, Barranca<sup>4</sup>, Dota<sup>4</sup>, Buena Vista (*Carmirol*), San Mateo (*Boucard*<sup>7</sup>); PANAMA, Volcan de Chiriqui, Chitra, Boquete de Chitra, Calovevora (*Arcé*<sup>6</sup>), Lion Hill (*McLeannan*<sup>1 2</sup>).—VENEZUELA<sup>3</sup>; ECUADOR<sup>8</sup>.

This *Mionectes* is readily distinguished from its near ally *M. striaticollis* by its olive head and throat, which in the other species are slate-coloured. The distribution of the two forms is rather curious. *M. striaticollis* spreads from Bolivia and Peru to Colombia, being probably found in Western Ecuador. It occurs in the trade collections of Bogota, and Salmon found it near Medellin in the Cauca valley of Colombia; this seems to be its most northern limit. *M. olivaceus* spreads over the whole of Costa Rica and the State of Panama; it occurs again in Venezuela and in Eastern Ecuador.

We have no records of the habits of *M. olivaceus*; but *M. striaticollis* according to Stolzmann\* has a considerable range in the mountains of Peru, being found as high as 9300 feet above the sea at Cutervo. He adds that it frequents thick forests, keeping amongst the low herbage, but sometimes ascending into the upper part of the higher trees. Salmon obtained the eggs of *M. striaticollis* at Santa Elena in the Cauca valley; they were pure white.

### 2. *Mionectes oleagineus*.

*Muscicapa oleaginea*, Licht. Verz. Doubl. p. 55<sup>1</sup>.

*Mionectes oleagineus*, Cab. in Tsch. Faun. Per., Orn. p. 148<sup>2</sup>; Scl. P. Z. S. 1856, p. 296<sup>3</sup>; Cat. Birds Brit. Mus. xiv. p. 112<sup>4</sup>; Scl. & Salv. P. Z. S. 1864, p. 358<sup>5</sup>, 1879, p. 512<sup>6</sup>; Salv. P. Z. S. 1867, p. 147<sup>7</sup>, 1870, p. 196<sup>8</sup>; Nutt. & Ridgw. Pr. U. S. Nat. Mus. vi. p. 402<sup>9</sup>; Tacz. Orn. Pér. ii. p. 245<sup>10</sup>.

\* Tacz. Orn. Pér. ii. p. 244.

*Mionectes assimilis*, *Scl. P. Z. S.* 1859, pp. 46<sup>11</sup>, 366<sup>12</sup>; *Scl. & Salv. Ibis*, 1859, p. 124<sup>13</sup>; *P. Z. S.* 1870, p. 837<sup>14</sup>; *Lawr. Ann. Lyc. N. Y.* vii. p. 328<sup>15</sup>, ix. p. 111<sup>16</sup>; *Sumichrast, Mem. Bost. Soc. N. H.* i. p. 556<sup>17</sup>.

Olivaceus; alis et cauda fusco-nigricantibus, pallide fulvescenti-viridi extrorsum limbatis; abdomine et subalaribus fulvis: subtus gutture et pectore cinerascanti-olivaceis: rostro nigro, mandibulæ basi rufescente; pedibus corylinis. Long. tota 4·8, alæ 2·7, caudæ 2·0, rostri a rictu 0·65, tarsi 0·6. (Deser. maris ex Volcan de Agua, Guatemala. Mus. nostr.)

♀ mari similis.

*Hab.* MEXICO, Cordova (*Sallé*<sup>3</sup>), Jalapa (*de Oca*<sup>12</sup>, *M. Trujillo*), hot region of the State of Vera Cruz (*Sumichrast*<sup>17</sup>), Hacienda de los Atlixcos (*F. D. G.*), Teapa (*H. H. Smith*); BRITISH HONDURAS, Vicinity of Belize (*Blancaneaux*); GUATEMALA (*Skinner*<sup>13</sup>), Choctum, Coban, Lanquin, Volcan de Agua above San Diego, Retalhuleu (*O. S. & F. D. G.*); HONDURAS, San Pedro (*G. M. Whitely*<sup>14</sup>); NICARAGUA, Los Sabalos (*Nutting*<sup>9</sup>); COSTA RICA, Angostura, Guaitil, Pacuar (*Carmiol*<sup>16</sup>), Turrialba (*Arcé*); PANAMA, Chiriqui, Bugaba<sup>8</sup>, Boquete de Chitra<sup>8</sup>, Calovevora<sup>8</sup>, Santa Fé<sup>7</sup> (*Arcé*), Lion Hill (*McLeannan*<sup>5 15</sup>).—SOUTH AMERICA, from Colombia<sup>6</sup> to Bolivia<sup>4</sup>, Amazons valley<sup>4</sup>, Eastern Brazil<sup>1</sup>, and Guiana<sup>4</sup>.

Mr. Sclater separated the Mexican and Guatemalan form of this species under the name of *M. assimilis*, defining it as of larger size, as having a longer bill, and with the throat and neck more tinged with ash-colour. The difference of dimensions between the northern and southern forms is slight and not more than can be found in a series of either of them. The difference in the colour of the throat is not very pronounced, and though more apparent in northern examples seems to be less evident in those from Costa Rica and the State of Panama, so that the two forms blend so gradually the one into the other that we think they should both pass under the title *M. oleagineus*. In South America *M. oleagineus* enjoys a wide range over nearly the whole of the tropical portion of the continent, for it is not until we come to Southern Brazil that we find a race that is perhaps distinct, having a dark grey head and darker fulvous abdomen; this is the *M. rufiventris* of Cabanis.

Little has been recorded of this species. In Guatemala we found it only in the heavily forested country of Vera Paz, where it occurs from near the sea-level to an elevation of upwards of 4000 feet, and on the mountain-slopes stretching towards the Pacific Ocean. In Mexico its range does not extend beyond the forests of the hotter portions of the State of Vera Cruz, and it has not been noticed on the Isthmus of Tehuantepec, though a little further south it occurs at Retalhuleu.

In British Guiana Mr. H. Whitely obtained specimens near the sea-level at Bartica Grove and at an altitude of 3500 feet in the mountains of Roraima.

## LEPTOPOGON.

*Leptopogon*, Cabanis in Tschudi's Fauna Per. p. 161 (1845) (type *L. superciliaris*, Cab.); Scl. Cat. Birds Brit. Mus. xiv. p. 114.

*Leptopogon* contains eleven or twelve species, all belonging to the Neotropical region, only three of which enter our fauna, viz. the typical species, *L. superciliaris*, which reaches Costa Rica and has an extended range in South America; *L. pileatus*, one of the doubtful forms of the Brazilian *L. amaurocephalus*, found only in part of Central America and the Mexican State of Vera Cruz; and *L. flavovirens* of Panama.

*Leptopogon* has a bill shaped much as in *Mionectes*, but the nostrils are more linear and are overhung by a membrane; the rictal bristles are more strongly developed, the tarsi comparatively shorter, and the feet weaker; the 3rd, 4th, and 5th quills are nearly equal and longest, 2nd > 6th, 1st < longest secondaries; tail long, nearly = wing, = 4 tarsus.

1. *Leptopogon superciliaris*.

*Leptopogon superciliaris*, Cab. in Tsch. Fauna Per. p. 161, t. 10. f. 2<sup>1</sup>; Salv. Ibis, 1870, p. 115<sup>2</sup>; P. Z. S. 1870, p. 197<sup>3</sup>; Scl. & Salv. P. Z. S. 1879, p. 613<sup>4</sup>; Tacz. Orn. Pér. ii. p. 246<sup>5</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 115<sup>6</sup>.

Supra viridi-olivaceis; pileo toto plumbeo; superciliis albo et cinereo variegatis; macula auriculari fusca; alis et cauda nigricantibus viridi-olivaceo limbatis, illarum tectricibus rufescenti-ochraceo terminatis: subtus gutture toto usque ad pectus griseo-olivaceo; abdomine viridi-sulphureo: rostro et pedibus plumbeis, mandibulæ basi pallida. Long. tota 5·3, alæ 2·7, caudæ 2·5, rostri a rictu 0·65, tarsi 0·65. (Descr. exempl. ex Costa Rica. Mus. nostr.)

*Hab.* COSTA RICA (*Carmirol*<sup>2</sup>); PANAMA, Volcan de Chiriqui, Bugaba, Calovevora (*Arcé*<sup>3</sup>). — COLOMBIA<sup>6</sup>; ECUADOR<sup>6</sup>; PERU<sup>15</sup>; BOLIVIA<sup>6</sup>.

*Leptopogon superciliaris* was discovered by Tschudi in Peru, where it has since been found in many places by Jelski and Stolzmann up to an elevation of 4000 feet. It spreads southwards to Bolivia, where Buckley met with it, and it is also found in Colombia, as skins of it occur in the trade collections of Bogota. In Ecuador it is found on both sides of the Cordillera, as we have skins of it obtained by Buckley at Sarayacu and others from the Balzar Mountains near Guayaquil; but between the eastern and western birds Dr. Taczanowski and Graf von Berlepsch trace some differences and call the western one *L. s. transandinus*. The head seems to be a trifle greener, but the difference is not greater than what we find between birds of opposite sexes from the State of Panama. Our Central-American examples have the tips of the wing-coverts a little less rufescent than those from more southern localities, with the exception of Bolivia; our only skin from that country has hardly any rufescent tint on these feathers.

*L. superciliaris* probably lives in forests lying at a higher elevation than those frequented by *L. pileatus*, but our information concerning both species is very meagre.

## 2. *Leptopogon flavovirens*.

*Tyrannula flaviventris*, Lawr. Ann. Lyc. N. Y. vii. p. 328<sup>1</sup>.

*Leptopogon flavovirens*, Lawr. Ann. Lyc. N. Y. vii. p. 472<sup>2</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 119<sup>3</sup>.

Supra olivaceus; alis et cauda nigricantibus, illis distincte olivaceo-albido marginatis et bifasciatis, hac olivaceo limbata; oculorum ambitu albo: subtus olivaceo-flavidus, mento albicante; subalaribus dilutioribus: rostro corneo, mandibula pallida; pedibus plumbeis; iride (ave viva) brunnea. Long. tota 4.2, alæ 2.1, caudæ 2.0, rostri a rictu 0.6, tarsi 0.7. (Descr. exempl. typ. ex Panama. Mus. G. N. Lawrence.)

*Hab.* PANAMA, line of Railway (*M'Leannan*<sup>1 2</sup>).

This species is closely allied to *L. tristis*, Scl. & Salv., which may have to be merged with it when a better series of specimens is available for comparison. Compared with our only specimen of *L. tristis* from Bolivia the type of *L. flavovirens* is rather brighter olive-colour on the back, the wing-bars are more confluent and not so much broken into spots as in *L. tristis*. The latter bird, too, has a distinct spot on several of the median secondaries on the outer web near the tip which we do not see in *L. flavovirens*.

The type specimen in Mr. Lawrence's collection, which we now have an opportunity of describing, is the only example we have seen of this species. It was contained in one of M'Leannan's collections made on the Isthmus of Panama. It was found on high trees.

## 3. *Leptopogon pileatus*.

*Leptopogon amaurocephalus*, Scl. P. Z. S. 1859, p. 384<sup>1</sup> (nec Cabanis); Scl. & Salv. Ibis, 1860, p. 399<sup>2</sup>; P. Z. S. 1864, p. 358<sup>3</sup>; Lawr. Ann. Lyc. N. Y. vii. p. 328<sup>4</sup>.

*Leptopogon pileatus*, Cab. J. f. Orn. 1865, p. 414<sup>5</sup>; Salv. Ibis, 1869, p. 319<sup>6</sup>; P. Z. S. 1870, p. 197<sup>7</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 117<sup>8</sup>.

Olivaceus; capite toto summo umbrino-brunneo; alis et cauda nigricanti-brunneis, extrorsum ochraceo-olivaceo limbatis, illarum tectricibus pallide umbrino terminatis: subtus gutture toto usque ad pectus pallide olivaceo; abdomine medio flavo-olivaceo; subalaribus et alis intus pallide umbrinis: rostro corneo, mandibulæ basi albicante; pedibus corylinis. Long. tota 4.8, alæ 2.4, caudæ 2.1, rostri a rictu 0.65, tarsi 0.5. (Descr. exempl. ex Choctum, Guatemala. Mus. nostr.)

*Hab.* MEXICO, Playa Vicente (*Boucard*<sup>1</sup>), Teapa in Tabasco (*H. H. Smith*); GUATEMALA<sup>5</sup>, Choctum (*O. S. & F. D. G.*<sup>2</sup>); COSTA RICA, Valza (*Carmirol*<sup>6</sup>); PANAMA, Calovevora (*Arcé*<sup>7</sup>), Lion-Hill Station (*M'Leannan*<sup>3 4</sup>), San Pablo Station (*O. S.*).

This is a northern race of the Brazilian *Leptopogon amaurocephalus*, from which it differs but slightly; the size is considerably less, the crown of the head rather darker, and the under wing-coverts, as well as the inner margin of the wing-feathers, of a darker umber tint.

For some years our bird was not considered to be separable from *L. amaurocephalus*, but in 1865 Dr. Cabanis named it *L. pileatus* from Guatemalan examples. Since then the latter title has been adopted.

The range of this species seems to be strictly confined to the denser hot tropical forests, and at present has only been found in such districts in Mexico and Guatemala

which lie on the eastern side of the Cordillera. Our specimens from Costa Rica and Panama are also from the Atlantic side of the mountains.

The specimen obtained by Salvin at San Pablo Station on the Panama Railway was shot from a tree on the edge of the forest near the railway-bridge which crosses the Chagres river at Barbacoas.

### MYIOPAGIS, gen. nov.

(Type *Elainea placens*, Scl.)

The form of the nostril of *Elainea placens* and its allies makes it necessary to separate this section of *Elainea* and place it under a distinct generic name; and though the outlines of the bill of *Myiopagis* are similar to those of *E. pagana*, we think that it is best placed near *Leptopogon*, which has somewhat similar nostrils, but a higher, more compressed bill.

The species we think ought to be removed from *Elainea* and placed under the new genus are:—*E. placens*, *E. subplacens*, *E. cotta*, *E. gaimardi*, *E. flavivertex*, *E. caniceps*, and perhaps *E. ruficeps*.

The general colours of the plumage of *Myiopagis* are olive above, with greyish throat and yellowish abdomen; there is also a concealed vertical crest of yellow or white: this crest is not, like that of *Elainea*, simply a few white feathers, but one constructed after that of *Tyrannus* and many other genera of this family.

The bill is moderately long, the sides nearly straight, converging gradually from the gape, the width of which is about half the length of the tomia; the nostrils are open, oval, and placed at the end of the nasal fossa, a membrane bordering them along the upper and hinder edges; the rictal bristles are moderately developed, hardly so much so as in *Elainea*; the tarsi are moderately stout and covered with distinct scutellæ; the outer toe is a little less than the inner toe; the 3rd and 4th quills are the longest in the wing; 5th > 2nd, 1st = 8th; the tail is long and scarcely emarginate, nearly = wing, wing nearly = 4 tarsus.

The distribution of *Myiopagis* includes nearly the whole of tropical America from Southern Mexico to Paraguay.

#### 1. *Myiopagis placens*.

*Elainea placens*, Scl. P. Z. S. 1859, p. 46<sup>1</sup>; Cat. Birds Brit. Mus. xiv. p. 148<sup>2</sup>; Scl. & Salv. Ibis, 1859, p. 123, t. 4. f. 2<sup>3</sup>; P. Z. S. 1864, p. 359<sup>4</sup>; Salv. Ibis, 1860, p. 194<sup>5</sup>; P. Z. S. 1870, p. 197<sup>6</sup>; Lawr. Ann. Lyc. N. Y. vii. p. 328<sup>7</sup>, ix. pp. 112<sup>8</sup>, 201<sup>9</sup>; Mem. Bost. Soc. N. H. ii. p. 286<sup>10</sup>; Grayson, Pr. Bost. Soc. N. H. xiv. p. 279<sup>11</sup>; Ridgway, Pr. U. S. Nat. Mus. viii. p. 571<sup>12</sup>.

*Elainea*, sp.?, Scl. P. Z. S. 1856, p. 297, no. 113<sup>13</sup>.

*Sylvia viridicata*, Vieill. N. Dict. d'Hist. N. xi. p. 171<sup>14</sup>? (cf. Scl. Cat. Birds Brit. Mus. xiv. p. 148).

*Muscicapa viridicata*, d'Orb. Voy. Ois. p. 325<sup>15</sup>.

*Elainea regulus*, Licht. Nomencl. p. 17<sup>16</sup>.

Supra olivaceo-viridis; capite summo obscure cinereo, medialiter læte flavo suberistato; loris et capitis lateribus cinereis albo intermixtis; alis et cauda nigricantibus, extrorsum olivaceo-viridi stricte limbatis: subtus gula albicante; pectore pallide cinereo; abdomine crisso et subalaribus pallide sulphureis: rostro et pedibus nigris. Long. tota 4·7, alæ 2·5, caudæ 2·3, tarsi 0·6, rostri a rictu 0·6. (Descr. maris ex Jalapa, Mexico. Mus. nostr.)

♀ mari similis.

*Hab.* MEXICO, Tres Marias I. (Grayson<sup>11</sup>, Forrer), Cordova (Sallé<sup>13</sup>), Jalapa (M. Trujillo), Alvarado (Deppe), Merida in Yucatan (Schott<sup>9</sup>), Muges I. (Gaumer), Cozumel I. (Benedict<sup>12</sup>, Gaumer); GUATEMALA (Skinner<sup>3</sup>), Coban<sup>5</sup>, Cahabon, Choctum, Retalhuleu (O. S. & F. D. G.), Volcan de Agua (O. S.); COSTA RICA, Barranca, Guaitil, Grecia (Carmiol<sup>8</sup>); PANAMA, Volcan de Chiriqui, Chitra<sup>6</sup>, Boquete de Chitra<sup>6</sup>, Calovevora<sup>6</sup> (Arcé), Lion Hill (M. Leannan<sup>4 7</sup>).—SOUTH AMERICA, Colombia to Bolivia<sup>15</sup>; Brazil; Paraguay<sup>14</sup>?

It is quite possible that this bird should bear the name of *M. viridicata* (Vieill.), which was based upon a bird of Paraguay, the "Contramaestre pardo verdoso corona amarilla" of Azara; but until specimens are examined from that country it is safer to continue the use of Mr. Sclater's name, *Elainea placens*, bestowed upon a Mexican bird which formed part of M. Sallé's first collection made in the vicinity of Cordova<sup>13</sup>.

The species enjoys a wide range in our country, being abundant in Guatemala in the more heavily forested parts of the temperate and hot districts. We found it especially abundant in the cocoa-plantations near Retalhuleu in the Pacific coast district of Guatemala. Here it frequented the lower branches of the forest trees, its habits being similar to those of the arboreal species of the family. The northern range of *M. placens* reaches the Tres Marias Islands, where both Grayson and Forrer met with it, but where it is not common. It occurs nowhere else in Western Mexico, but in the forests of the eastern slope of the mountains it has been found in several places.

*M. placens* occurs rarely in Yucatan, but appears to be very common on the island of Cozumel. Mr. Ridgway seemed doubtful whether the bird of this island was really the same as that of the mainland, but with many specimens from both places before us we do not see any grounds for their separation.

## 2. *Myiopagis macilvaini*.

*Elainea macilvainii*, Lawr. Ann. Lyc. N. Y. x. p. 10<sup>1</sup>.

*Elainea caniceps*?, Scl. & Salv. P. Z. S. 1864, p. 359<sup>2</sup>; Salv. Ibis, 1874, p. 315<sup>3</sup>.

Præcedenti similis, sed crista pallida et fasciis alarum duabus obviis, distinguenda. (Descr. feminæ ex Panama. Mus. nostr.)

*Hab.* PANAMA, Lion-Hill Station (M. Leannan<sup>2</sup>).—VENEZUELA?<sup>1</sup>.

In 1864 Sclater and Salvin considered this Panama bird to belong probably to *E. caniceps* (Sw.), recognizing at the same time *E. elegans* of Pelzeln as distinct<sup>2</sup>. In his recent revision of the Tyrannidæ, Mr. Sclater unites the so-called *E. caniceps* with

*E. elegans*, and places them under d'Orbigny's older title *E. gaimardi*, at the same time using Swainson's name for a very different bird.

We, however, still think the Panama bird distinct from *E. elegans* sive *E. gaimardi*; and, as it is not, as we supposed, *E. caniceps*, Sw., Mr. Lawrence's name, *E. macilvaini*, is available for it. In 1874 Salvin compared Mr. Lawrence's type with the Panama bird, and found them to agree<sup>3</sup>.

The type of *E. macilvaini* was supposed to have been obtained in Venezuela; but as the true *E. gaimardi* occurs there it is probable that country is not included in its domicile.

*E. macilvaini* is closely allied to *E. gaimardi*, but may be distinguished by its yellower crest. In this respect it is intermediate between *E. gaimardi* and *E. placens*. From the latter it may be also recognized by the bands on the wings.

We have only seen three specimens of this bird, besides the type; these were all obtained by M'Leannan on the line of the Panama Railway.

### CAPSIEMPIS.

*Capsiempis*, Cabanis & Heine, Mus. Hein. ii. p. 56 (1859) (type *Muscicapa flaveola*, Licht.); Scl. Cat. Birds Brit. Mus. xiv. p. 120.

A genus of two species, whereof the widely-ranging *C. flaveola* is only known to us.

Its affinities are not very clear, and its position here, close to *Ornithion* and *Elainea*, open to question.

The general colour is olivaceous above and yellowish beneath. The bill is wider at the base than that of *Mionectes*, and the rictal bristles much longer and stronger; the culmen is gradually decurved from the forehead, and the nostrils oval and open, without overhanging membrane as in *Leptopogon*. The wing is short and rounded, the points of the quills acute; 3rd, 4th, and 5th quills longest; 2nd=6th, 1st<10th; the tail is long and rounded, =wing, >3 tarsus.

#### 1. *Capsiempis flaveola*.

*Muscicapa flaveola*, Licht. Verz. Doubl. p. 56<sup>1</sup>.

*Capsiempis flaveola*, Cab. & Hein. Mus. Hein. ii. p. 56<sup>2</sup>; Pelz. Orn. Bras. p. 104<sup>3</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 120<sup>4</sup>.

*Muscipeta flaveola*, Burm. Syst. Ueb. ii. p. 488<sup>5</sup>.

*Tyrannula modesta*, Sw. Orn. Draw. t. 48<sup>6</sup>.

*Elainea semiflava*, Lawr. Ann. Lyc. N. Y. viii. pp. 177<sup>7</sup>, 182<sup>8</sup>; Salv. P. Z. S. 1867, p. 147<sup>9</sup>.

Supra olivacea, capite summo vix obscuriore; alis et cauda nigricanti-fuscis, extrorsum flavo limbatis, harum tectricibus mediis et majoribus sordide flavo-albido terminatis; loris, superciliis et corpore toto subtus flavis: rostro fusco-corneo, mandibula ad basin pallida; pedibus nigricantibus. Long. tota 4.0, alæ 2.0, caudæ 2.0, rostri a rictu 0.5, tarsi 0.65. (Descr. exempl. ex Chiriqui, Panama. Mus. nostr.)

*Hab.* NICARAGUA, Greytown (*Holland*<sup>8</sup>); PANAMA, David (*Hicks*<sup>7</sup>), Chiriqui (*Arcé*).—  
COLOMBIA?; BRAZIL<sup>1 2 3 4 6</sup>.

Though this species has been traced as far north as Greytown in Nicaragua, and has also been noticed in the neighbourhood of Chiriqui, it is apparently a rare bird in our region, whence at present we have only one Chiriqui specimen. This agrees closely with an example from Bahia, and we have no doubt as to the identity of the species, though its range is so great, and, so far as we know at present, interrupted in the Amazons region, whence no examples have yet reached us.

Mr. Lawrence's *Elainea semiflava* we have no doubt belongs here. Some years ago we examined his type and came to this conclusion, which was confirmed more recently by a re-examination and comparison of the type with our own and Mr. Sclater's examples.

In Brazil *C. flaveola* appears to be more common. Natterer obtained five specimens, and speaks of having met with a small flock at Goiaz in the month of August.

## ORNITHION.

*Ornithion*, Hartlaub, J. f. Orn. 1853, p. 35 (type *O. inerme*, Hartl.); Scl. Cat. Birds Brit. Mus. xiv. p. 125.

A genus of four species of small size and dull colour, the species of our region being of a brownish plumage hardly relieved by yellowish beneath. The rictal bristles are but feebly developed and less conspicuous than in *Elainea*, to which *Ornithion* has some affinity. The bill is much compressed, the sides concave, the width at the gape being about  $\frac{1}{2}$  the length of tomia, the culmen is gradually arched from the forehead; the nostrils are in the middle of a membrane, and thus differ from the foregoing genera, but resemble those which immediately follow; the tarsi are long, and the feet comparatively strong. The wing is short and rounded, offering no peculiar feature; the tail is short and square at the end, =  $\frac{5}{6}$  wing, wing = 3 tarsus.

### 1. *Ornithion imberbe*.

*Camptostoma imberbe*, Scl. P. Z. S. 1857, p. 203<sup>1</sup>; Ibis, 1859, p. 444, t. 14. f. 1<sup>2</sup>; Scl. & Salv.

Ibis, 1860, p. 400<sup>3</sup>; Lawr. Ann. Lyc. N. Y. ix. p. 201<sup>4</sup>; Mem. Bost. Soc. N. H. ii. p. 286<sup>5</sup>.

*Ornithion imberbe*, Coues, Bull. U. S. Geol. Surv. v. p. 406<sup>6</sup>; Ridgw. Man. N. Am. B. p. 346<sup>7</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 126.

*Ornithion incanescens*, Scl. P. Z. S. 1873, p. 577<sup>8</sup>; Lawr. Bull. U. S. Nat. Mus. no. 4, p. 26<sup>9</sup> (nec Wied).

*Ornithion imberbe ridgwayi*, Brewster, Bull. Nutt. Orn. Club, vii. p. 208<sup>10</sup>; Ridgw. Man. N. Am. B. p. 346<sup>11</sup>.

Supra fuscum; pileo vix obscuriore; uropygio sensim dilutius; alis fusco-nigricantibus, extrorsum pallide fusco limbatis, harum tectricibus majoribus et mediis ferrugineo-fusco terminatis; stria superciliari et corpore subtus albicanti-fuscis; campterio alari et subalaribus flavido vix suffusus: rostro corneo, mandibula

pallida; pedibus saturate plumbeis. Long. tota 3·70, alæ 1·95, caudæ 1·45, rostri a rictu 0·4, tarsi 0·6. (Descr. exempl. ex Cozumel I., Yucatan. Mus. nostr.)

*Hab.* NORTH AMERICA, Texas <sup>6</sup> 7, Arizona <sup>10</sup> 11.—MEXICO, Xenotencal and Aldama in Tamaulipas (*W. B. Richardson*), Mazatlan, San Blas (*Grayson* <sup>5</sup>), Presidio near Mazatlan (*Forrer*), San Andres Tuxtla (*Sallé* <sup>1</sup>), Tehuantepec (*Sumichrast* <sup>9</sup>), Merida in Yucatan (*Schott* <sup>4</sup>), Cozumel I. (*G. F. Gaumer*); GUATEMALA, Escuintla (*O. S.* <sup>3</sup>); NICARAGUA, Corinto (*O. S.*).—ECUADOR <sup>8</sup>; BRAZIL, Bahia (*Mus. nostr.*).

The specimen described above is of rather small dimensions, another larger one from the same source has a wing 2·1 inches long, and is as large as one from the vicinity of Mazatlan. The birds found along the Mexican frontier in Arizona and the valley of the Rio Grande have been separated by Mr. Brewster, and recognized by Mr. Ridgway as *O. imberbe ridgwayi* and *O. imberbe*, the former being described as larger and greyer with hardly any sulphur-yellow tint to the lower plumage, and with a bill larger and thicker. This race extends, according to Mr. Ridgway, as far south as Mazatlan. We have a specimen from the last-named locality, but are unable to see wherein it differs from our series from more eastern and southern places. Moreover, it seems to us that an example from Sarayacu in Ecuador and two from Bahia in Brazil are not sufficiently distinct to admit of separation. The former is a young bird the latter adult, slightly darker in general tint, and with somewhat darker heads and greyer chests.

Mr. Sennett first discovered this species in the valley of the Rio Grande at Lomita <sup>6</sup>, where others have since been found by Mr. Frazer <sup>9</sup>. Mr. Richardson has now sent us specimens from the State of Tamaulipas on the southern side of the valley.

The Arizona birds were shot by Mr. F. Stephens near Tucson, where, however, they were not common. The males he describes as having a habit of perching on the tops of trees and uttering a singular song at sunrise.

We only met with *O. imberbe* on one occasion in Guatemala, when a female was secured in January near Escuintla, others being observed in the vicinity. Our two specimens from Nicaragua were shot, 16th March 1863, close to Corinto on the Pacific coast; they are both young birds in their first plumage. On both occasions the birds were observed on the outer branches of forest-trees on the edge of clearings.

## 2. *Ornithion pusillum*.

*Myiopatis pusilla*, Cab. & Heine, Mus. Hein. ii. p. 58 <sup>1</sup>; Pelz. Orn. Bras. p. 106 <sup>2</sup>.

*Ornithion pusillum*, ScL. P. Z. S. 1873, p. 577 <sup>3</sup>; Cat. Birds Brit. Mus. xiv. p. 126 <sup>4</sup>.

*Camptostoma imberbe*, Lawr. Ann. Lyc. N. Y. vii. p. 473 <sup>5</sup>; Taylor, Ibis, 1864, p. 86 <sup>6</sup>.

*Camptostoma flaviventre*, ScL. & Salv. P. Z. S. 1864, p. 358 <sup>7</sup>, 1867, p. 576 <sup>8</sup>; Salv. P. Z. S. 1870, p. 197 <sup>9</sup>; Ibis, 1885, p. 294 <sup>10</sup>.

Præcedenti similis, sed dorso toto olivaceo, fasciis alarum duabus sordide albis et corpore subtus flavicante distinguendum.

*Hab.* PANAMA, Bugaba (*Arcé* <sup>9</sup>), Lion-Hill Station (*M<sup>c</sup>Leannan* <sup>5</sup> 7). — COLOMBIA <sup>1</sup>; AMAZONS VALLEY <sup>2</sup> 8; TRINIDAD <sup>6</sup>; GUIANA <sup>10</sup>.

*O. pusillum* was described in 1859 from a specimen in the Berlin Museum from Cartagena in Northern Colombia, and it received another name, *Camptostoma flaviventre*, in 1864, the latter being based upon Panama examples. There can be little doubt both these names refer to the same species, which has a wide range over the northern portion of South America from the mouth of the Amazons and Guiana to Colombia and Western Ecuador, entering the Isthmus as far north as Chiriqui.

### TYRANNULUS.

*Tyrannulus*, Vieillot, Analyse, p. 31 (1816) (type *Sylvia elata*, Latham); Scl. Cat. Birds Brit. Mus. xiv. p. 128.

All three of the species forming this genus occur within our limits, the type *T. elatus*, which is widely spread in South America, entering our border as far as Chiriqui. Both the other species are confined to Central America—*T. semiflavus* ranging from Southern Mexico to Nicaragua, and *T. brunneicapillus* from Costa Rica to Panama.

The latter species are closely allied, but differ from the type in their shorter tails and the absence of an occipital crest.

The bill of *Tyrannulus* is compressed, but hardly so much so as in *Ornithion*, the nostrils are similarly placed in the middle of a membrane, the rectal bristles are short and feebly developed, the wings offer no peculiarity, the tail (in *T. elatus*) =  $\frac{4}{5}$  wing = 3 tarsus (in *T. semiflavus* =  $\frac{1}{2}$  wing =  $\frac{3}{2}$  tarsus).

#### a. *Crista verticalis conspicua.*

##### 1. *Tyrannulus elatus.*

*Sylvia elata*, Lath. Ind. Orn. p. 549<sup>1</sup>.

*Tyrannulus elatus*, Vieill. N. Dict. d'Hist. N. xxxv. p. 94<sup>2</sup>; Gal. Ois. i. p. 93, t. 71<sup>3</sup>; Scl. P. Z. S. 1856, p. 141<sup>4</sup>; Cat. Birds Brit. Mus. xiv. p. 128<sup>5</sup>; Pelz. Orn. Bras. p. 106<sup>6</sup>; Scl. & Salv. P. Z. S. 1879, p. 512<sup>7</sup>; Salv. Ibis, 1885, p. 294<sup>8</sup>.

Olivaceus; capite summo nigricante; crista verticali elongata flava ornata; alis et cauda nigricanti-fuscis, harum secundariis in pogonio externo ad apicem, tectricibus majoribus et mediis pallide viridi-flavo limbatis: subtus dilutior; gula grisea; abdomine medio flavo: rostro et pedibus nigris. Long. tota 4.0, alæ 2.0, caudæ 1.6, rostri a rictu 0.4, tarsi 0.5. (Descr. maris ex Remedios, Antioquia, Colombia. Mus. nostr.)

*Hab.* PANAMA, David (*Bridges*<sup>4</sup>), Paraiso Station (*Hughes*).—SOUTH AMERICA from Colombia<sup>7</sup> to Amazons valley<sup>6</sup>, Guiana<sup>8</sup>, and Brazil.

This well-known Tyrant enjoys a wide range over the northern part of South America, and has been recorded from South-eastern Brazil. It appears to be far from uncommon in Colombia, Guiana, and the Amazons valley. Within our limits we know but little of it; a specimen was contained in the small collection made by Bridges in Chiriqui, and described by Sclater in 1856<sup>4</sup>, and one was sent us by Mr. Hughes from Paraiso

station on the Panama Railway. We have never seen specimens in any of the other large collections made in the State of Panama, nor have any been recorded.

*T. elatus* is easily recognized by its yellow crest, the rest of the plumage resembling that of several species of *Tyranniscus*, none of which, however, are crested.

b. *Crista verticalis nulla, cauda abbreviata.*

2. ***Tyrannulus semiflavus.*** (Tab. XXXVI. fig. 1.)

*Tyrannulus semiflavus*, Scl. & Salv. P. Z. S. 1860, p. 300<sup>1</sup>; Ibis, 1860, p. 400<sup>2</sup>; Lawr. Ann. Lyc. N. Y. viii. p. 182<sup>3</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 129<sup>4</sup>.

Olivaceus; pileo toto cinereo; fronte et superciliis elongatis albis, alis et cauda fuscis olivaceo limbatis: subtus pure flavus: rostro et pedibus nigris. Long. tota 3·0, alæ 1·8, caudæ 1·1, rostri a rictu 0·4, tarsi 0·5. (Descr. exempl. typ. ex Choctum, Guatemala. Mus. nostr.)

*Hab.* MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Choctum (*O. S. & F. D. G.*<sup>1 2</sup>); NICARAGUA, Greytown (*Holland*<sup>3</sup>).

This distinct form was described from a specimen obtained by one of our collectors in the neighbourhood of the hamlet of Choctum in the forest-region of Northern Vera Paz at an elevation of 1200 feet above the sea. Subsequently others were procured from the same district. We have no record of its occurrence elsewhere in Guatemala; but Mr. Lawrence includes its name in his list of the birds of Mr. Holland's collection made in the vicinity of Greytown, Nicaragua<sup>3</sup>, and we have recently received a female specimen from Teapa in Tabasco which was sent us by Mr. Herbert Smith.

3. ***Tyrannulus brunneicapillus.***

*Tyrannulus brunneicapillus*, Lawr. Ibis, 1862, p. 12<sup>1</sup>; Ann. Lyc. N. Y. vii. p. 473<sup>2</sup>; ix. p. 111<sup>3</sup>; Scl. & Salv. P. Z. S. 1864, p. 359<sup>4</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 129<sup>5</sup>.

Præcedenti similis, sed capite summo brunneo nec cinereo distinguendus. (Descr. maris ex Lion Hill, Panama. Mus. nostr.)

*Hab.* COSTA RICA, Angostura (*Carmioli*<sup>3</sup>); PANAMA<sup>1</sup>, Lion Hill Station (*M'Leannan*<sup>2 4</sup>).

A close ally of *T. semiflavus*, but readily distinguished by its brown head. The first specimens were sent to Mr. G. N. Lawrence from Lion Hill on the Panama Railway by M'Leannan, who subsequently forwarded others to us from the same place. Its range northwards extends to Costa Rica, where Carmiol met with it at Angostura. We have no record of it from the intermediate districts of Chiriqui and Veraguas.

TYRANNISCUS.

*Tyranniscus*, Cabanis & Heine, Mus. Hein. ii. p. 57 (1859) (type *Tyrannulus nigricapillus*); Scl. Cat. Birds Brit. Mus. xiv. p. 130.

About twelve species constitute this genus, which is closely allied to *Tyrannulus*, but,

besides being devoid of an occipital crest, it has a shorter, wider bill, and more fully developed rictal bristles. The tail is normal, not short as in *Tyrannulus semiflavus*.

The range of *Tyranniscus* extends over most of Tropical America as far north as Guatemala, where *T. vilissimus* occurs, its place being taken in Costa Rica and the State of Panama by *T. parvus*, the two constituting the only representatives of the genus within our border.

### 1. *Tyranniscus vilissimus*.

*Elainia vilissima*, Scl. & Salv. Ibis, 1859, p. 122, t. 4. f. 1<sup>1</sup>; Salv. Ibis, 1860, p. 194<sup>2</sup>.

*Tyranniscus vilissimus*, Scl. Cat. Am. B. p. 216<sup>3</sup>; Cat. Birds Brit. Mus. xiv. p. 132<sup>4</sup>; Scl. & Salv. P. Z. S. 1870, p. 843<sup>5</sup>.

Olivaceus; pileo nigricanti-cinereo; fronte et superciliis albis; alis fusco-nigris, tectricibus majoribus, secundariis et primariis secunda, tertia, quarta et quinta ad basin viridi-flavo extrorsum anguste limbatis; cauda fusco-nigricante olivaceo marginata: subtus cinerascens; abdomine toto viridi-flavicante, medialiter pallidiore; hypochondriis olivaceo substriatis: rostro nigricante, mandibula pallidiore; pedibus nigricantibus. Long. tota 4.7, alæ 2.35, caudæ 2.0, rostri a rictu 0.4, tarsi 0.65. (Descr. maris ex Volcan de Fuego, Guatemala. Mus. nostr.)

♀ mari similis, sed (ut videtur) minor.

*Hab.* GUATEMALA (*Skinner*<sup>1</sup>), Dueñas, Calderas, Tactic, Choctum (*O. S. & F. D. G.*), Coban (*O. S.*<sup>2</sup>); HONDURAS, San Pedro (*G. M. Whitely*<sup>5</sup>).

This species, though also found in the low forest-country near Choctum, is very common in the neighbourhood of Coban at an altitude of about 4000 feet, and many specimens were brought us by the Indian boys of that town killed by their blow-guns<sup>2</sup>. *T. vilissimus* frequents the margins of the forest-clearings and the hedgerows dividing gardens or fields. Near Dueñas it is more rare than at Coban, but we obtained several specimens from the woods clothing the Volcan de Fuego up to an elevation of 7000 feet above the sea-level.

*T. vilissimus* is included both by Mr. Lawrence and Mr. Zeledon in their lists of Costa Rican birds, but, from specimens in our possession from that country, *T. parvus* is the *Tyranniscus* of this form that is found there. This view is confirmed by a specimen from Angostura sent us by Baird as *T. vilissimus*, but which is undoubtedly *T. parvus*.

### 2. *Tyranniscus parvus*.

*Tyranniscus parvus*, Lawr. Ibis, 1862, p. 12<sup>1</sup>; Ann. Lyc. N. Y. vii. p. 473<sup>2</sup>; Scl. & Salv. P. Z. S. 1864, p. 359<sup>3</sup>, 1870, p. 843<sup>4</sup>; Salv. P. Z. S. 1867, p. 147<sup>5</sup>, 1870, p. 197<sup>6</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 132<sup>7</sup>.

*Tyranniscus vilissimus*, Lawr. Ann. Lyc. N. Y. ix. p. 111<sup>8</sup>.

Præcedenti similis, sed multo minor; corpore subtus albicante, hypochondriis et crisso tantum olivaceo tinctis distinguendus. (Descr. exempl. ex Panama. Mus. nostr.)

*Hab.* COSTA RICA, Turrialba (*Arcé*<sup>5</sup>), Angostura, Dota, Turrialba, and Barranca (*Carmirol*<sup>8</sup>); PANAMA<sup>1</sup>, Chiriqui<sup>6</sup>, Bugaba<sup>6</sup>, Calovevora<sup>6</sup>, Boquete de Chitra<sup>6</sup>, Santa Fé<sup>5</sup> (*Arcé*), Lion Hill (*M<sup>c</sup>Leannan*<sup>1 2 3</sup>).

BIOL. CENTR.-AMER., Aves, Vol. II., December 1888.

This is a southern form of *T. vilissimus* of Guatemala, differing in its smaller size and paler under surface, which is a very pale grey, with the flanks and crissum alone olive-coloured. These differences are not very trenchant, but they seem to be associated with a distinct region, the mountain-system of Costa Rica and Panama. We have received many specimens from the State of Panama, where this bird would appear to be quite common.

Mr. Sclater, in a note appended to Mr. Lawrence's original description<sup>1</sup>, states that this bird is allied to *T. chrysops*, but its alliance is certainly with *T. vilissimus*. *T. chrysops*, besides having the head almost the same colour as the back, has, as its name implies, the forehead yellow.

### ELAINEA.

*Elanea*, Sundevall, K. Vet.-Ak. Handl. 1835, p. 89 (type *Muscicapa pagana*, Licht.).

*Elainea*, Scl. Cat. Birds Brit. Mus. xiv. p. 136 (partim).

Upon close examination of the species included in *Elainea* by Mr. Sclater, we find that they belong to two different groups, easily separated by the form of the nostril as described below. Moreover, that the somewhat peculiar *Elainea arenarum* is best placed in the genus *Sublegatus*, being, in fact, identical with *E. glaber*, the type of *Sublegatus*!

*Elainea*, then, according to our views, contains only the first portion of Mr. Sclater's first section and part of the second; we remove from *Elainea* altogether the small bright-crested species forming sections *b* and *c* of his key.

This leaves only the *E. pagana* section to deal with, of which three species occur within our limits, none of them being peculiar, but also found in South America or the Antilles.

In the structure of the bill *Elainea* (*E. pagana*) is similar to that of the preceding genera, but is rather wider in comparison with its length and not so compressed; the nostrils are surrounded by membrane, the rictal bristles moderately developed; the wings offer no peculiarity, being comparatively short and rounded as in most non-migratory Tyrannidæ, the outermost primary = 7th; the tail is nearly square, a little < wing, = 4 tarsus.

#### 1. *Elainea pagana*.

*Muscicapa pagana*, Licht. Verz. Doubl. p. 54<sup>1</sup>.

*Platyrhynchus paganus*, Spix, Av. Bras. ii. p. 13, t. 16. f. 1<sup>2</sup>.

*Elainea pagana*, Scl. Cat. Birds Brit. Mus. xiv. p. 137<sup>3</sup>.

*Elainea subpagana*, Scl. & Salv. Ibis, 1860, p. 36<sup>4</sup>; P. Z. S. 1864, p. 359<sup>5</sup>, 1870, p. 837<sup>6</sup>; Cab. J. f. Orn. 1861, p. 244<sup>7</sup>; Scl. P. Z. S. 1862, p. 369<sup>8</sup>; Lawr. Ann. Lyc. N. Y. vii. p. 328<sup>9</sup>,

viii. p. 176<sup>10</sup>, ix. p. 112<sup>11</sup>; Pr. U. S. Nat. Mus. i. p. 59<sup>12</sup>; Salv. P. Z. S. 1867, p. 147<sup>13</sup>; Ridgw. Pr. U. S. Nat. Mus. v. p. 500<sup>14</sup>.

*Elainea chiriquensis*, Lawr. Ann. Lyc. N. Y. viii. p. 176<sup>15</sup>; Salv. P. Z. S. 1867, p. 147<sup>16</sup>.

Fusco-olivacea, pileo obscuriore; crista mediana celata alba; alis caudaque nigricanti-fuscis, tectricibus alarum albido terminatis, secundariis pallide olivaceo stricte limbatis: subtus pallide flava, pectore et hypochondriis cinereis; gutture albicantiore: rostro nigricante corneo, mandibula ad basin carnea; pedibus nigricantibus. Long. tota 6.3, alæ 3.3, caudæ 3.1, tarsi 0.8, rostri a rictu 0.65. (Descr. exempl. ex Sakluk, Guatemala. Mus. nostr.)

♀ mari similis.

*Hab.* MEXICO<sup>3 8 12</sup>, Teapa in Tabasco (*H. H. Smith*), Peto in Yucatan (*G. F. Gaumer*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, Sakluk near Peten (*O. S.*), Dueñas (*O. S.*<sup>4</sup>); HONDURAS, San Pedro (*G. M. Whitely*<sup>6</sup>); COSTA RICA, San José (*Hoffmann*<sup>7</sup>, *Carmirol*<sup>11</sup>, *Nutting*<sup>14</sup>), Irazu (*Rogers*); PANAMA, Volcan de Chiriqui, Chitra, Calovevora, Santa Fé<sup>13 16</sup> (*Arcé*), David (*Hicks*<sup>10</sup>), Lion Hill (*M. Leannan*<sup>5 9</sup>), Paraiso Station (*Hughes*), line of Railway (*Arcé*).—SOUTH AMERICA<sup>3</sup>, from Colombia to South Brazil (Bahia<sup>1</sup>, Rio<sup>2</sup>) and Guiana.

Lichtenstein's description of this species was founded on a bird from Bahia<sup>1</sup>, and specimens from that place agree fairly with others from nearly every part of continental Tropical America. We note, however, that they are of rather a paler colour than the majority of specimens from other parts.

At one time it was thought that the Central-American birds were separable from those of the South, and they passed under the name of *E. subpagana*. With a much larger series available for comparison than formerly, it now appears that no distinction can be maintained. The Chiriqui bird has also been separated, but this too has been merged in the southern form.

In Mexico *E. pagana* is apparently a scarce bird; until recently only two specimens had reached us from that country, but Mr. Herbert Smith has now sent us an example from Teapa in Tabasco, and Mr. Gaumer one from Peto in Yucatan. Mr. Lawrence records it from the valley of Mexico<sup>12</sup>.

In the highlands of Guatemala we only met with it on one occasion, when two birds were shot at the end of July at Dueñas, nearly 5000 feet above the level of the sea.

In the southern portion of Central America this bird would appear to be much more numerous, and we have many specimens from various points as far south as the Isthmus of Panama.

It is usually found in open situations; one killed at Sakluk near Peten was in an open savanna, those near Dueñas in a willow-tree in a hedgerow. Mr. Nutting says it is common in the hedgerows near San José, Costa Rica. Salmon found both its nest and eggs at Medellin in Colombia. The nest he describes as being built of coarse grass mixed with bark or lichen, and lined with fine grass and feathers. The eggs, two in number, are white, spotted at the larger end with brown, generally placed in a ring.

## 2. *Elainea martinica*.

*Muscicapa martinica*, Linn. Syst. Nat. i. p. 325<sup>1</sup>.

*Tyrannula martinica*, Cass. Pr. Ac. Phil. 1860, p. 375<sup>2</sup>.

*Elainia martinica*, Cory, Auk, 1886, p. 230<sup>3</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 141<sup>4</sup>.

*Elainea martinica*?, Ridgw. Pr. U. S. Nat. Mus. viii. p. 571<sup>5</sup>.

*Elainea subpagana*, Salv. Ibis, 1864, p. 380<sup>6</sup>.

*Elainea cinerescens*, Ridgw. Pr. U. S. Nat. Mus. vii. p. 180<sup>7</sup>.

Præcedenti similis, sed supra unicolor, pileo dorso concolore; subtus magis grisea, abdomine medio albido vix flavo tincto. (Descr. exempl. ex insl. Cozumel. Mus. nostr.)

*Hab.* MEXICO, Mugerres I., Meco I., Cozumel I. (*Benedict*<sup>5</sup>, *G. F. Gaumer*); BRITISH HONDURAS, Half Moon Cay (*O. S.*<sup>6</sup>).—ANTILLES<sup>3</sup>, from St. Thomas<sup>2</sup> to Barbados<sup>4</sup>, Grand Cayman I.<sup>3</sup>, Old Providence I.<sup>7</sup>.

The Cozumel birds agree closely with specimens from the West Indies typical of *Elainea martinica*; but some of those from the islands further to the north (Mugerres &c.) have the under surface tinged with yellow, and in this respect conform to *E. pagana*, and in fact are intermediate between these closely allied birds. With these, however, we find examples not separable from the more typical *E. martinica*, and it seems probable, considering the short distance the islands lie from the mainland, an occasional individual crosses over and pairs with the island form.

The distribution of *E. martinica* is singular, for though it is found in all the small West Indian islands from St. Thomas to Barbados, it is absent from the larger islands; but it appears again in Grand Cayman and the island of Old Providence, for, with a specimen from the latter island before us, we do not see how *E. cinerescens* of Mr. Ridgway can be distinguished from the true *E. martinica*.

## 3. *Elainea frantzii*.

*Elainea frantzii*, Lawr. Ann. Lyc. N. Y. viii. p. 172<sup>1</sup>, ix. p. 112<sup>2</sup>; v. Frantz. J. f. Orn. 1869, p. 307<sup>3</sup>; Salv. P. Z. S. 1870, p. 197<sup>4</sup>; Scl. & Salv. P. Z. S. 1879, p. 513<sup>5</sup>; Ridgw. Pr. U. S. Nat. Mus. v. p. 496<sup>6</sup>; Nutt. & Ridgw. Pr. U. S. Nat. Mus. vi. p. 393<sup>7</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 145<sup>8</sup>.

*Elainea pudica*, Scl. P. Z. S. 1870, p. 833<sup>9</sup>.

*Elainea*, sp.?, Salv. Ibis, 1866, p. 194<sup>10</sup>.

Supra saturate olivacea; crista verticali celata albida; alis et cauda nigricantibus, alarum tectricibus flavido terminatis fasciis duabus formantibus, secundariis intimis extrorsum flavido late limbatis: subtus flavido-olivacea; abdomine medio flavicanti-albido: rostro corneo, mandibula carnea; pedibus obscure corylinis. Long. tota 6·0, alæ 3·2, caudæ 2·7, tarsi 0·7, rostri a rictu 0·55. (Descr. maris ex San Pedro Martyr, Guatemala. Mus. nostr.)

♀ mari similis.

*Hab.* GUATEMALA, Dueñas (*O. S. & F. D. G.*<sup>10</sup>), Volcan de Agua, Barranco Hondo, Medio Monte, S. Pedro Martyr (*O. S.*); NICARAGUA, Omotepe I. (*Nutting*<sup>7</sup>); COSTA RICA, San José (*v. Frantzius*<sup>1 2</sup>), Barranca, Dota Mts. (*Carmirol*<sup>2</sup>), Irazu (*Rogers, Nutting*<sup>6</sup>); PANAMA, Chiriqui (*Arcé*<sup>4</sup>).—COLOMBIA<sup>5 9</sup>; VENEZUELA<sup>8</sup>.

*Elainea frantzii* was first described by Mr. Lawrence from specimens obtained by Dr. von Frantzius in Costa Rica<sup>1</sup>, and soon afterwards the same species was named *E. pudica* by Mr. Sclater, whose description was based upon examples from Colombia, Venezuela, and Chiriqui<sup>9</sup>. In 1879<sup>5</sup> it was recognized that both descriptions referred to the same species.

In Guatemala *E. frantzii* is a local bird, as our specimens were all obtained on the slope of the mountains between the volcanos of Agua and Fuego at elevations varying between 5000 and 1500 feet above the sea-level. Here it frequented the forests which so densely clothe these mountains.

On the island of Omotepe in the lake of Nicaragua Mr. Nutting found this species rather common, usually in the dense woods<sup>6</sup>: this would be at an elevation of a few hundred feet above the sea.

In Costa Rica this species is common, according to Mr. Nutting, who says it frequents hedgerows in the neighbourhood of San José<sup>7</sup>; though found on the slopes of the Volcan de Chiriqui<sup>4</sup> it seems absent from the rest of the State of Panama. In Colombia and Venezuela it reappears, and was found breeding near Medellin, in the Cauca valley, by Salmon<sup>5</sup>, who describes its eggs as white with a few small spots near the larger end. The nest is placed on a low branch of a tree.

### SUBLEGATUS.

*Sublegatus*, Sclater and Salvin, P. Z. S. 1868, p. 172 (type *S. glaber*, Scl. & Salv.); Scl. Cat. Birds Brit. Mus. xiv. p. 157.

*Sublegatus* is like *Elainea* in general appearance, but has a much wider bill, nearly round nostrils at the end of the nasal fossa, with no membrane along the anterior and lower edges; the bill itself is wide and the edges slightly convex, the width at the gape being more than half the length of the tomia; the rictal bristles are moderately developed, the tarsi and toes much as in *Elainea*; the 3rd, 4th, and 5th quills are nearly equal and longest; 6th < 2nd, 1st = 8th; the tail is moderate and slightly emarginate, < wing, = 4 tarsus.

This genus was founded on *S. glaber* of Venezuela, a species we now find inseparable from *Elainea arenarum* of Costa Rica, the latter being the older specific title.

Three species are included in *Sublegatus*, spread over a wide area, extending from Costa Rica to the Argentine Republic.

#### 1. *Sublegatus arenarum*. (*Elainea arenarum*, Tab. XXXVI. fig. 3.)

*Elainea arenarum*, Salv. P. Z. S. 1863, p. 190<sup>1</sup>; Lawr. Ann. Lyc. N. Y. ix. p. 112<sup>2</sup>; v. Frantz. J. f. Orn. 1869, p. 307<sup>3</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 153<sup>4</sup>.

*Sublegatus glaber*, Scl. & Salv. P. Z. S. 1868, p. 171, t. 13. f. 2<sup>5</sup>; Wyatt, Ibis, 1871, p. 333<sup>6</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 157<sup>7</sup>.

*Empidonax atrirostris*, Lawr. Pr. Ac. Phil. 1871, p. 234<sup>8</sup>; cf. Salv. Ibis, 1874, p. 316<sup>9</sup>.

*Muscicapa griseicollis*, Licht. Mus. Ber. (apud Sclater)<sup>10</sup>.

Supra fuscus; dorso olivaceo vix tincto; pileo, alis et cauda nigricantibus, tectricibus alarum (ad apices), secundariis extrorsum et caudæ apice pallide fuscis: subtus ad medium pectus cinereus; abdomine et subalaribus pallide flavis: rostro et pedibus nigricantibus. Long. tota 5.5, alæ 2.75, caudæ 2.6, tarsi 0.7, rostri a rictu 0.55. (Descr. maris ex Punta Arenas, Costa Rica. Mus. nostr.)

*Hab.* COSTA RICA, Punta Arenas (*O. S.*<sup>1</sup>).—COLOMBIA<sup>6 7</sup>; VENEZUELA<sup>5</sup>.

A single male specimen shot by Salvin when in company with Captain J. M. Dow in the outskirts of the town of Punta Arenas in March 1863 is the only example that has yet been obtained of this species within our limits. On comparing the types of *E. arenarum* and *Sublegatus glaber* we find them not specifically different, so that this bird must be removed from *Elainea* and transferred to *Sublegatus*, its short stout bill and moderately developed bristles rendering it an abnormal member of *Elainea*.

The identification of these birds extends the range of *Sublegatus arenarum* to Colombia and Venezuela, Mr. Wyatt having found it in the former country<sup>6</sup>, and Mr. Göring in the latter<sup>5</sup>, and skins of it also occur in the trade collections of Bogota.

## LEGATUS.

*Legatus*, Sclater, P. Z. S. 1859, p. 46; Cat. Birds Brit. Mus. xiv. p. 155 (type *Tyrannus albicollis*, Vieill.).

This genus contains but one species, which is spread over nearly the whole of tropical America from the eastern slopes of the Cordillera of Southern Mexico to Paraguay and South Brazil.

The character of the coloration of *L. albicollis* differs in many respects from that of the genera near which it is placed, and, though resembling *Myiozetetes* so far as the head is concerned, differs in having a striped breast and flanks.

The bill is wide, the width at the gape being rather more than three quarters the length of the tomia; the culmen is gradually curved from the forehead; the nostrils are at the lower anterior edge of the nasal fossa, which is large and covered with membrane, the rictal and frontal bristles are short, leaving the nostril completely exposed; the tarsi are short and covered with scutellæ; the toes rather short, the outer and inner toes being nearly equal; the 2nd and 3rd quills are the longest, 3rd > 1st, 1st = 5th; tail moderate and slightly marginate, =  $\frac{3}{4}$  wing, = 4 tarsus.

### 1. *Legatus albicollis*.

*Tyrannus albicollis*, Vieill. N. Dict. d'Hist. Nat. xxxv. p. 89<sup>1</sup>.

*Legatus albicollis*, Lawr. Ann. Lyc. N. Y. vii. p. 472<sup>2</sup>, viii. p. 177<sup>3</sup>, ix. p. 112<sup>4</sup>; Scl. & Salv.

P. Z. S. 1864, p. 359<sup>5</sup>; Salv. P. Z. S. 1870, p. 197<sup>6</sup>; Scl. Cat. Birds Brit. Mus. xiv. p. 155<sup>7</sup>.

*Elema variegata*, Scl. P. Z. S. 1856, p. 297<sup>8</sup>.

*Legatus variegatus*, Scl. P. Z. S. 1859, p. 366<sup>9</sup>, 1864, p. 175<sup>10</sup>; Scl. & Salv. Ibis, 1859, p. 123<sup>11</sup>; Cab. J. f. Orn. 1861, p. 245<sup>12</sup>; Lawr. Ann. Lyc. N. Y. vii. p. 328<sup>13</sup>, ix. p. 112<sup>14</sup>; v. Frantz. J. f. Orn. 1869, p. 307<sup>15</sup>; Sumichrast, Mem. Bost. Soc. N. H. i. p. 557<sup>16</sup>.

Supra brunneus; capite summo saturatiore, crista celata flava ornato et linea alba undique circumcincto; loris et regione parotica nigricanti-brunneis; alis et cauda nigricantibus, illarum secundariis et tectricibus stricte albido limbatis: subtus pallide flavis; pectore et hypochondriis fusco maculatis; gutture albo; stria utrinque rictali fusca: rostro et pedibus nigris. Long. tota 6·2, alæ 3·7, caudæ 2·55, tarsi 0·75, rostri a rictu 0·6. (Descr. maris ex Cordova, Mexico. Mus. Brit.)

*Hab.* MEXICO, State of Vera Cruz (*Sumichrast*<sup>16</sup>), Jalapa (*de Oca*<sup>9</sup>), Cuesta de Misantla (*M. Trujillo*), Cordova (*Sallé*<sup>8</sup>), Atoyac and Teapa (*H. H. Smith*); GUATEMALA (*Skinner*<sup>11</sup>), Las Salinas, Cahabon (*O. S. & F. D. G.*); COSTA RICA<sup>12 14 15</sup>, San José<sup>4</sup> (*v. Frantzius*, *Carmioli*), Tucurriqui, La Barranca (*Arcé*), Guaitil<sup>4</sup>, Turrialba<sup>4</sup> (*Carmioli*); PANAMA, Bugaba<sup>6</sup>, Chitra<sup>6</sup> (*Arcé*), Lion Hill (*M'Leannan*<sup>2 5 13</sup>), Paraiso Station (*Hughes*).—SOUTH AMERICA<sup>7</sup>, from Colombia to Guiana and South Brazil<sup>1</sup>.

A tropical species of very wide range. *Legatus albicollis* occurs throughout our region as far north as the mountain-slopes of the State of Vera Cruz; it thence spreads over Eastern Guatemala and crosses to the western side of Central America in Nicaragua, and in Costa Rica and the State of Panama is doubtless found on both sides of the mountain-range. We have no record of it in Western Mexico, the isthmus of Tehuantepec, or any portion of the Pacific coast-region of Guatemala.

In South America *L. albicollis* is found everywhere in the hotter districts as far south as Southern Brazil. It is the Paraguayan "Suiriri choreado siu roxo" of Azara, upon whose description Vieillot founded his name<sup>1</sup>.

The Mexican bird was at one time separated under the name of *L. variegatus*, Sclater<sup>8</sup>, on its supposed larger size and brighter colours. It has now been proved that some southern examples are fully as large as Mexican. The smallest of our series are from the State of Panama and Costa Rica. The Mexican birds are a little brighter yellow on the under plumage, but the difference is very slight and moreover variable.

This species is essentially an inhabitant of the hotter forest-region. Sumichrast says that it is confined to such districts in the State of Vera Cruz<sup>16</sup>, and the specimens we have received from there confirm this statement. In Guatemala we met with it in similar places; one shot at Cahabon was in a tree in the outskirts of the village.

The nest and eggs are, we believe, unknown.

## MYIOZETETES.

*Myiozeta*, Bonaparte, Consp. Syst. Orn. p. 30 (1854).

*Myiozetetes*, Sclater, P. Z. S. 1859, p. 46; Cat. Birds Brit. Mus. xiv. p. 159.

*Myiozetetes* is a well-marked genus, but contains several species the limits of which are not readily defined. Mr. Sclater recognizes seven species, but as we are unable to



Salvin, Osbert and Godman, Frederick Du Cane. 1888. "Aves." *Biologia Centrali-Americana :zoology, botany and archaeology* 2(LXXII), 1–40.

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