

CATALOGUE OF A COLLECTION OF HUMMINGBIRDS FROM ECUADOR AND COLOMBIA.

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The collection of hummingbirds gathered by Messrs. Claud Hamilton and Walter Goodfellow during their trip to Ecuador and Colombia, in 1898 and 1899, came finally, by purchase, into possession of the United States National Museum. With the possible exception of that brought together by Baron,¹ it is probably the finest single collection ever made, comprising, as it does, 1,136 specimens, almost all in fine condition of plumage, and accompanied by proper data. Although some of them came from Colombia, by far the greater number were collected in Ecuador. One hundred and nine species and subspecies are represented, including, besides several hitherto undescribed, such rare and otherwise interesting forms as *Topaza pyra*, *Phaiolaina cervinigularis*, *Colibri buckleyi*, *Helianthea lutetiae hamiltoni*, and *Eutoaeres baroni*.

Under many species of the subjoined list there are added in smaller type the field notes of the collectors, which Mr. Goodfellow has kindly furnished for this purpose. As he has recently published an account of the expedition's itinerary and a description of the region traversed,² these need not be inserted here. Additional information regarding the altitude of some of the places at which the humming-birds were taken has been supplied by Mr. Goodfellow, and is given below as of possible interest:

Western Ecuador:	Feet.	Western Ecuador—Continued.	Feet.
Aloag.....	7,800	Intag.....	5,000
Guallabamba.....	6,500	Central Tableland:	
Ibarra.....	6,800	Puembo, Chillo Valley.....	7,500
Mindo.....	7,000	Pifo, Chillo Valley.....	7,800
Chota Valley.....	4,250	Guápalo, Chillo Valley.....	8,080
Canzacota.....	6,100	Quito.....	10,000
Milligalli.....	6,600	Eastern Ecuador:	
Santo Domingo.....	600	Papallaeta.....	11,500
Nanegal.....	1,000	Baeza.....	5,900
Gualea.....	6,000		

¹ Hartert, *Novitates Zoologicae*, I. 1894, pp. 43-64.

² *Ibis*, April, 1901, pp. 300-309.

The writer here takes occasion to thank the authorities of the American Museum of Natural History for the loan of material necessary for comparison in the preparation of this paper. He is, as well, under great obligation to Mr. Robert Ridgway and Dr. Charles W. Richmond for various courtesies.

The systematic sequence of the following list is that of Mr. Hartert, in the *Tierreich*, which seems to be by far the best arrangement yet proposed. All measurements in this paper are in millimeters.

DORYFERA JOHANNÆ (Bourcier).

Trochilus johannæ BOURCIER, Proc. Zool. Soc. Lond., 1847, p. 45.

Dorifera johannæ BONAPARTE, Consp. Avium, I, 1850, p. 68.

Two specimens—male and female—from Archidona, east Ecuador, April, 1899. They appear not to differ from Colombian specimens.

A pair shot in the depths of the forests on our way down to the Napo, a day's walk above the village of Archidona. They had a very loud, sharp call note.

DORYFERA LUDOVICIAE RECTIROSTRIS (Gould).

Doryfera rectirostris GOULD, Introd. Troch., 1861, p. 71.

Doryfera ludoviciae rectirostris HARTERT, *Tierreich*, IX, 1900, p. 11.

Nine specimens, all but one from Milligalli, west Ecuador. A single male from Baeza, east Ecuador, does not differ from the others. The females closely resemble the males, but lack the glittering green forehead. Aside from the greater length of bill this form differs from true *ludoviciae* in its much longer wing and tail, characters not commonly mentioned.

I was told that at one time these birds used to be met with regularly at Milligalli, but now they are only occasionally seen there. Local name, "Viudas"—widows.

THRENETES CERVINICAUDUS Gould.

Threnetes cervinicauda GOULD, Proc. Zool. Soc. Lond., 1854, p. 109.

Two adult males from Napo village, east Ecuador, are apparently not different from Colombian specimens.

THRENETES FRASERI (Gould).*

Glaucis fraseri GOULD, Mon. Troch., I, 1861, pl. XII.

Threnetes fraseri BOCCARD, Humming Bird, I, 1892, p. 17.

Four specimens, from Santo Domingo, west Ecuador. Although most closely allied to *Threnetes ruckeri*, the present species is yet quite distinct, and in any plumage can be readily identified. An additional character separating it from *T. ruckeri* is the darker, less golden shade of the upper parts. Immature birds have the feathers of the upper surface narrowly margined with buffy or grayish white. There seems to be no difference between the sexes.

They frequent the depths of the forests around Santo Domingo, where they feed on the red flowers of a parasitical plant growing high up on the tree trunks. Consequently it was always necessary to use a gun to shoot these birds.

GLAUCIS HIRSUTA AFFINIS (Lawrence).

Glaucis affinis LAWRENCE, Ann. N. Y. Lyc. Nat. Hist., VI, 1858, p. 261.

One adult male, from Napo village, east Ecuador.

Although in color *Glaucis hirsuta* varies so much individually that it seems impossible to make out any geographical forms, there is yet such a great difference in size between specimens from eastern Brazil and those from Costa Rica that at least two subspecies may easily be recognized. Birds from eastern Brazil, Trinidad, Tobago, and Grenada agree in being of very large size; while those from Nicaragua and Costa Rica are the smallest. A single individual from Peru, and the above-mentioned one from Ecuador are practically identical with those from Costa Rica. A series of specimens from central and northern Colombia seems to show intermediate tendencies, though much nearer this than to the typical form from eastern Brazil.

The original description of *Glaucis hirsuta*¹ was based undoubtedly upon the Brazilian bird, so that the form ranging from Grenada to southeastern Brazil must be called *Glaucis hirsuta hirsuta*. For the western race, occurring from Nicaragua to Peru, the earliest available name appears to be *Glaucis affinis* Lawrence,² based on the bird from Ecuador, and it should therefore now stand as *Glaucis hirsuta affinis*. The bird described by Boucard as *Glaucis columbiana*,³ from the Rio Dagua, Colombia, is undoubtedly the same, as may easily be seen by reference to his original description. No importance can be attached to the uniform rich cinnamon color of the lower surface in his specimens, for such a condition of plumage occurs by no means infrequently throughout the range of *Glaucis hirsuta*.

The difference between the two races is sufficiently emphasized by the following measurements:

Name.	Sex.	Locality.	Wing.	Tail.	Expos- ed culmen.
<i>Glaucis hirsuta hirsuta</i>	Male ?	Bahia, Brazil.....	66	41.0	30.5
Do.....	Male ?	do.....	65	41.0	30.0
<i>Glaucis hirsuta affinis</i>	Male	Escondido River, Nicaragua.....	53	33.0	28.0
Do.....	Male	Napo village, Ecuador.....	53	32.5	30.0

The sole specimen of this species was shot under the eaves of an Indian hut at a village near the headwaters of the Napo, where it was searching for insects.

¹ *Trochilus hirsutus* Gmelin, Syst. Nat., I, 1788, p. 490.

² Ann. N. Y. Lyc. Nat. Hist., VI, 1858, p. 261.

³ Genera Hummingbirds, 1895, p. 402.

PHOETHORNIS YARUQUI (Bourcier).

Trochilus yaruqui BOURCIER, Compt. Rend. Ac. Sci., XXXII, 1851, p. 187.

Phœthornis yaruqui GOULD, Mon. Troch., I, 1852, pl. xxvii.

Four specimens, from Santo Domingo, west Ecuador. The female of this species is somewhat smaller than the male, though apparently almost identical in color. According to the collector's notes upon the labels of these examples the mandible in both sexes is *crimson* in life.

PHOETHORNIS LONGIROSTRIS BARONI (Hartert).

Phœthornis baroni HARTERT, Ibis, 1897, p. 426.

A single specimen from Santo Domingo, west Ecuador, belongs apparently to this form. It is similar to *Phœthornis longirostris longirostris*, but much smaller; the upper surface is green, with very much less of bronzy tinge; the ochraceous of rump and upper tail-coverts much paler; the lower parts much less ochraceous, the crissum almost white; the tips of rectrices grayish white instead of ochraceous. It may be described as follows:

Top of head dull brown; cervix the same, with greenish gloss, the feathers margined with ochraceous; back and rump metallic grass green, the feathers of the former narrowly, of the latter broadly edged with buffy and ochraceous; upper tail-coverts ochraceous buff, more or less barred with dusky green; wings sepia, with a purplish sheen. the superior coverts green like the back; tail greenish on basal portion, terminally brownish black, broadly tipped with white, this last on the long central feathers amounting to much more than a third of their total length; superciliary and loreal stripes deep buff; auriculars brownish black; throat and breast dull grayish, with a wash of ochraceous; a central gular and the rictal stripes buffy white; abdomen and crissum buffy white.

Phœthornis longirostris baroni is very different from typical *longirostris*, taking birds from Honduras as such, and, in fact, is nearer to *Phœthornis longirostris mexicanus* (Hartert). From the latter it may be distinguished by its decidedly smaller size (*mexicanus* is somewhat larger than the true *longirostris*), less bronzy upper parts, and the very much less ochraceous lower surface. Specimens from Panama are, in size and color, somewhat intermediate between *longirostris* and *baroni*, though certainly referable to the former.

The following measurements exhibit the differences of size between *Phœthornis longirostris longirostris* and *P. longirostris baroni*:

Name.	Sex.	Locality.	Wing.	Tail.	Exposed culmen.
<i>Phœthornis l. longirostris</i> . . .	Male . . .	Santa Ana, Honduras	63	67	39
Do.	Male	do	64	72	42
<i>Phœthornis l. baroni</i>	Male	Santo Domingo, Ecuador	58	63	41

There are apparently five recognizable races of this species, namely:

- Phoethornis longirostris longirostris* (DELATTRE).—Guatemala to Colombia.
Phoethornis longirostris mexicanus (HARTERT).—Southern Mexico.
Phoethornis longirostris susurrus BANGS. —Santa Marta, Colombia.
Phoethornis longirostris baroni (HARTERT).—Western Ecuador.
Phoethornis longirostris bolivianus (GOULD).—Bolivia and Peru.

PHOETHORNIS HISPIDUS (Gould).

- Trochilus* (—?) *hispidus* GOULD, Proc. Zool. Soc. Lond., 1846, p. 90.
Phaethornis hispidus BONAPARTE, Consp. Avium, I, 1850, p. 68.

The one adult male from Archidona, east Ecuador, apparently does not differ materially from Colombian specimens.

All the specimens we procured of these three species (*Phoethornis yaruqui*, *P. longirostris*, and *P. hispidus*) were shot in the gloomier parts of the forests among the undergrowth, and all had the same peculiar way of hovering at times in front of one's face or close to the barrel of the gun, a peculiarity which I never once observed in any of the hummingbirds found out in the open. *P. longirostris* and *P. yaruqui* are confined solely to the western forests, and *P. hispidus* to the eastern side.

PHOETHORNIS SYRMATOPHORUS BERLEPSCHI (Hartert).

- Phaethornis berlepschi* HARTERT, Nov. Zool., I, 1894, p. 56.

A single example from Milligalli, west Ecuador, seems to be typical of *berlepschi*, which evidently represents true *syrmatophorus* on the west side of the Andes. Apparently typical specimens of *berlepschi* from Quito are in the collection of the National Museum.

The single specimen was shot whilst hovering over a bush on the river bank. I was told that these birds used to be very plentiful in this locality, but of recent years they have almost entirely disappeared.

PHOETHORNIS GRISEOGULARIS Gould.

- Phaethornis griseogularis* GOULD, Proc. Zool. Soc. Lond., 1851, p. 115.

Three specimens, from Archidona, east Ecuador. While the best character separating this species from *P. striigularis* seems to be the color of the tail, yet the deep, almost uniform rufous of the lower surface will almost, if not quite, always serve to distinguish the present bird.

Confined to the eastern forests, and we did not once see them in the open. They have much the habits of *Phoethornis*.

PHOETHORNIS STRIIGULARIS ATRIMENTALIS (Lawrence).

- Phaethornis atrimentalis* LAWRENCE, Ann. N. Y. Lyc. Nat. Hist., VI, 1858, p. 260.

Two specimens, from Milligalli, west Ecuador. These differ from Colombian birds in being brighter, more rufescent below, and in having the chin together with the upper throat less conspicuously streaked with dusky. These differences appear to be sufficient for the recognition of the Ecuador bird as a geographical race. The type of

strigularis came from Bogota,¹ as did also the type of *amaura*,² leaving *atrimentalis*,³ based on a specimen from between Quito and the headwaters of the Rio Napo, as the proper name for the present form.

Was met with only on the western side, but at a much higher altitude (6,000 feet) than *P. griseogularis* on the eastern side, and, unlike the latter bird, frequented the clearings. Both species continually uttered a sharp call note, remarkably loud for the size of the bird.

EUTOXERES CONDAMINI (Bourcier).

Trochilus condamini BOURCIER, Compt. Rend. Ac. Sci., XXXII, 1851, p. 187.

Eutoxeres condamini GOULD, Mon. Troch., I, 1851, pl. iv.

Two specimens, from Archidona, east Ecuador.

This very distinct species is confined solely to the forests at the foot of the eastern side of the eastern Andes, but seemed to be rare, as we saw only the two specimens procured. Its habits resemble those of the following species [*Eutoxeres aquila heterura* and *Eutoxeres baroni*] and, like them, feeds on the wild plantain flowers.

EUTOXERES AQUILA HETERURA (Gould).

Eutoxeres heterura GOULD, Ann. and Mag. Nat. Hist., I, 1868, p. 456.

Eutoxeres aquila heterurus TACZANOWSKI and BERLEPSCH, Proc. Zool. Soc. Lond., 1885, p. 102.

Sixteen specimens, all from Santo Domingo, west Ecuador. These exhibit, with comparatively little variation, the characters of *heterura*. The females, though in color practically identical with the males, are in size somewhat less. In immature birds the feathers of the upper surface have narrow dull buffy edgings.

At Santo Domingo, on the western side of the western Andes, we found these birds plentiful during the month of October. They live among the thick undergrowth of the hot forests, are never seen out in the open, and feed on the flowers of the wild plantain, their curved bills exactly fitting the shape of the flowers. Their stomachs always contained many small insects. In their dark haunts, where little light penetrated, they were difficult birds to see, as they have a rapid, jerky flight. It was often only the loud humming noise made by their wings that betrayed their presence. Sometimes they would hover for some seconds within two feet of one's face or an inch or two from the end of the gun or blowpipe, and then suddenly dart off again. Once I caught in a butterfly net one hovering thus.

The localities Quito and Sarayacu, on the labels of the British Museum catalogue, are quite erroneous. The base of the lower mandible is very yellow in life. Local name, "Pico curvo."

EUTOXERES BARONI E and Cl. Hartert.

Eutoxeres baroni ERNST and CL. HARTERT, Nov. Zool., I, 1894, p. 54.

A single specimen, from Santo Domingo, west Ecuador, is referred to this species. Though closely allied to *Eutoxeres a. heterura*, *E. baroni* is apparently distinct. This example exhibits the characters

¹ Gould, Mon. Troch., I, 1854, pl. xxxvii.

² Bourcier, Rev. et Mag. Zool., 1856, p. 552.

³ Lawrence, Ann. N. Y. Lyc. Nat. Hist., VI, 1858, p. 260.

assigned by Hartert in his original description, the small white tips to the tail feathers readily distinguishing it from allied forms. Judging by the present specimen, *E. baroni* is decidedly larger than *E. a. heterura*.

CAMPYLOPTERUS OBSCURUS Gould.

Campylopterus obscurus GOULD, Proc. Zool. Soc. Lond., 1848, p. 13.

Two specimens, from Baeza and Archidona village, east Ecuador, respectively. The female is like the male in color, but has a shorter wing and tail, with a *longer* bill. Both of these are apparently identical with an example from Peru.

This is a forest haunting species, and the pair obtained were shot whilst feeding on the flowers of an orchid.

CAMPYLOPTERUS LAZULUS (Vieillot).

Trochilus lazulus VIEILLOT, Tabl. Encyc. Méth., II, 1822, p. 557.

Campylopterus lazulus BONAPARTE, Consp. Avium., I, 1850, p. 71.

Nine specimens, from Baeza and Archidona, east Ecuador. These apparently do not differ from Colombian birds. The color of the throat varies considerably, ranging from violet to almost pure blue.

Found on only the eastern side of the eastern Andes, and most of our specimens were shot while feeding on the flowers of the tobacco plants growing around the huts at Baeza. The iris was distinctly dark red in the males, but a young male and a female shot above Archidona both had the irises black. Local name, "Ala hueso"—bone wing.

CAMPYLOPTERUS VILLAVISCENSIO (Bourcier).

Trochilus villaviscensio BOURCIER, Compt. Rend. Ac. Sci., XXXII, 1851, p. 187.

Campylopterus villaviscensio GOULD, Mon. Troch., II, 1859, pl. XLVII.

One adult male, from Baeza, east Ecuador.

The single specimen of this species was shot around the tobacco plants at Baeza.

FLORISUGA MELLIVORA (Linnæus.)

Trochilus mellivorus LINNÆUS, Syst. Nat., I, 1758, p. 121.

Florisuga mellivorus BONAPARTE, Consp. Avium., I, 1850, p. 73.

Two specimens, from the vicinity of Baeza, east Ecuador. One of these is an immature male with the center of the throat blue. This species is very constant throughout its range, for there seems to be scarcely any difference between birds from Guatemala, Ecuador, and Trinidad.

PATAGONA GIGAS (Vieillot).

Trochilus gigas VIEILLOT, Gal. Ois., I, 1825, p. 296, pl. CLXXX.

Patagona gigas BONAPARTE, Consp. Avium, I, 1850, p. 75.

Six specimens from Guapalo and elsewhere in the valley of Chillo, near Quito, and from the road between there and Papallacta, Ecuador. This extends the range of the species to northern Ecuador, as Riobamba seems to be the northernmost previous record.

There seems to be considerable variation in the color of *Patagona gigas* that is not satisfactorily ascribable to sex or age. The lower surface in the present examples ranges from a dull mottled brown to an almost uniform chestnut-rufous.

They feed on the flowers of the giant aloes. Local name, "Quinde golondrina"—the swallow humming bird. They are occasionally seen in the gardens of Quito.

AGYRTRIA VIRIDICEPS (Gould).

Thaumatias viridiceps GOULD, Proc. Zool. Soc. Lond., 1860, p. 307.

Agyrtria viridiceps HEINE, Journ. f. Orn., 1863, p. 185.

Seven specimens from Santo Domingo, west Ecuador. The females appear to have the crown and forehead noticeably duller than the males, and possess, furthermore, a distinct blackish subterminal bar on the tail-feathers. This latter is, however, sometimes indicated in the males.

AGYRTRIA FLUVIATILIS (Gould).

Thaumatias fluvialis GOULD, Introd. Troch., 1861, p. 154.

Agyrtria fluvialis HEINE, Journ. f. Orn., 1863, p. 184.

One apparently typical adult male, from Archidona village, east Ecuador.

AGYRTRIA AMABILIS (Gould).

Trochilus (—?) *amabilis* GOULD, Proc. Zool. Soc. Lond., 1851, p. 115.

Agyrtria amabilis HARTERT, Tierreich, IX, 1900, p. 48.

Five specimens from near Guayaquil, Ecuador. Careful comparison with a series from Central America and Colombia fails to reveal any essential difference. It seems impossible to find any structural characters to separate *Polyerata* from *Agyrtria*.

LEPIDOPYGA GOUDOTI (Bourcier).

Trochilus goudoti BOURCIER, Rev. Zool., 1843, p. 100.

Lepidopyga goudoti SIMON, Cat. Troch., 1897, p. 12.

The one specimen of this species in the collection was taken by Mr. Goodfellow from an Indian necklace at Santo Domingo, Ecuador; but the make of the skin strongly suggests the probability that it originally came from the neighborhood of Bogotá, Colombia. The fact that the species has never been recorded from Ecuador serves to strengthen this opinion.

Personally we never recognized any of these birds alive, and this single specimen I found a Colorado Indian woman wearing on her necklace at Santo Domingo. I was told it had been shot in that neighborhood.

SAUCEROTTIA EDWARD (Delattre and Bourcier).

Trochilus edward DELATTRE and BOURCIER, Rev. Zool., 1846, p. 308.

Saucerottia edwardi SCLATER and SALVIN, Proc. Zool. Soc. Lond., 1864, p. 365.

Two specimens from Santo Domingo, west Ecuador, add the species

to the fauna of Ecuador, thus extending its range more than 500 miles. A careful comparison of these Ecuador birds with a series from Panama fails to reveal any tangible difference.

AMIZILIS TZACATL JUCUNDA (Heine).

Eranna jucunda HEINE, Journ. für Orn., 1863, p. 188.

Amazilia tzacatl jucunda HARTERT, Tierreich, IX, 1900, p. 229.

Three specimens from Santo Domingo, west Ecuador, apparently typical of this race.

Generally seen feeding with *A. dumerilii*.

AMIZILIS DUMERILII (Lesson).

Ornismya dumerilii LESSON, Hist. Nat. Colibris, suppl., p. 172, pl. xxxvi.

Amizilis dumerili OBERHOLSER, Proc. Acad. Nat. Sci. Phila., 1899, p. 207.

Fourteen specimens from Santo Domingo, west Ecuador. These seem to be identical with examples from Puna Island and Guayaquil. There is considerable variation, aside from that ascribable to sex, in the extent and shade of the rufous on the lower parts.

Found feeding in the small clearing of Santo Domingo, western Ecuador, on the low bushes and plants.

HYLOCHARIS GRAYI (Delattre and Bourcier).

Trochilus grayi DELATTRE and BOURCIER, Rev. Zool., 1846, p. 307.

Hylocharis grayi BONAPARTE, Consp. Avium, I, 1850, p. 74.

Twenty specimens, from Chota Valley; La Juna, above Chota Valley, north Ecuador; and Patia Valley, southern Colombia.

The Chota Valley, where we obtained most of our specimens, is a hot, sandy, burnt-up valley in the north of Ecuador, with precipitous sides covered in parts with thorny bushes and acacias which during our visit were devoid of all trace of green; and it was a wonder what these birds could possibly find to feed on there. In life the bill is almost wholly pale flesh color, and on two occasions when I saw them copulating the bill of the male became a diffused blood color. In Quito they are called "Chotas," but they are not found nearer to that city than the Chota Valley.

Mr. Hartert is apparently right in uniting *Eucephala* and *Hylocharis*, for structurally they can not be distinguished.

CHRYSURONIA OENONE OENONE (Lesson).

Ornismya oenone LESSON, Hist. Nat. Colibris, suppl., 1832, p. 157, pl. xxx.

Chrysuronia oenone BONAPARTE, Consp. Avium, I, 1850, p. 75.

Ten specimens, from Archidona, Baeza, and Rio Napo, east Ecuador. These are typical of true *oenone*, as is shown by comparison with birds from Trinidad and Colombia.

DAMOPHILA JULIE FELICIANA (Lesson).

Ornismya feliciana LESSON, Rev. Zool., 1844, p. 433.

Damophila julie feliciana HARTERT, Novit. Zool., V, 1898, p. 494.

Fifteen specimens, from Santo Domingo, and near Guayaquil, west Ecuador. The only difference between the present form and true *Damophila julie* seems to be the longer bill of the former.

CHLOROSTILBON MELANORHYNCHUS Gould.

Chlorostilbon melanorhynchus GOULD, Proc. Zool. Soc. Lond., 1860, p. 308.

Twenty-four specimens, all males, from Jombaco and Chillo Valley, Ecuador. They seem to be identical with birds from Colombia, and in color exhibit a comparatively small amount of individual variation.

A large series of males from the Chillo Valley, near Quito, where a great influx of them took place about January. We were unable to secure even one female. They feed on the guava flowers, and also on flowering acacias. Local name, "Verdes."

CHLOROSTILBON PUMILUS Gould.

Chlorostilbon pumilus GOULD, Ann. and Mag. Nat. Hist., IX, 1872, p. 195.

A single female from near Guayaquil, Ecuador, is apparently referable to this species. It differs from the same sex of *Chlorostilbon melanorhynchus* in its decidedly smaller size, but is practically indistinguishable in color.

CHLOROSTILBON PRASINUS DAPHNE (Gould).

Chlorostilbon daphne GOULD, Introd. Troch., 1861, p. 177.

Chlorostilbon prasinus daphne HARTERT, Tierreich, IX, 1900, p. 77.

Seven adult males from Archidona, east Ecuador. All are in perfect plumage and bear out the subspecific characters assigned by Hartert.¹

From Archidona, at the foot of the eastern Andes, near the headwaters of the Napo. Seen only in the evenings around the orange trees.

CHLOROSTILBON STENURUS (Cabanis and Heine).

Panychlora stenura CABANIS and HEINE, Mus. Hein., III, 1860, p. 50.

Chlorostilbon stenura MULSANT and VERREAUX, Mém. Soc. Imp. Sci. Nat. Cherbourg, XII, 1866, p. 186.

Two adult females from Baeza, east Ecuador, belong apparently to this species.

THALURANIA HYPOCHLORA Gould.

Thalurania hypochlora GOULD, Proc. Zool. Soc. Lond., 1870, pp. 803, 804.

Five specimens, all males, from Gualea, west Ecuador. In some of these the green of the sides of the body has a noticeable bluish tinge.

¹Tierreich, IX, 1900, p. 77.

THALURANIA FANNYI (Delattre and Bourcier).

Trochilus fannyi DELATTRE and BOURCIER, Rev. Zool., 1846, p. 310.

Thaluranía fannyi BONAPARTE, Rev. Zool., 1854, p. 254.

Eleven specimens, from Nanegal, Gualea, and Milligalli, west Ecuador. There is considerable difference in the shade of the abdomen in the different adult males, this ranging from a rich violet purple to deep blue with but a slight tinge of violet. The four adult females are of unusual interest, for they prove beyond much doubt that the female of this species is, as supposed by Salvin,¹ quite different from the same sex of *Thaluranía eriphile* in having the abdomen dull brownish-slate color glossed with metallic green, instead of being like the rest of the under surface, dull grayish white. Mr. Hartert's opinion² that this represents the plumage of only the young male seems not to be correct, as a young male in the present collection is apparently not distinguishable from the adult females.

THALURANIA NIGROFASCIATA (Gould).

Trochilus (—?) *nigrofasciata* GOULD, Proc. Zool. Soc. Lond., 1846, p. 89.

Thaluranía nigrofasciata GOULD, Proc. Zool. Soc. Lond., 1852, p. 8.

Three specimens, from Archidona, east Ecuador, April, 1899, seem not separable from Colombian examples.

COLIBRI DELPHINAE (Lesson).

Ornismya delphinac LESSON, Rev. Zool., 1839, p. 44.

Colibri delphinac BONAPARTE, Consp. Avium, I, 1850, p. 69.

Five specimens, from Mindo and Gualea, west Ecuador. These apparently differ in no essential respect from either Guatemala or Guiana examples.

COLIBRI CYANOTUS (Bourcier and Mulsant).

Trochilus cyanotus BOURCIER and MULSANT, Ann. Sc. Phys. et Nat. Lyon, VI, 1843, p. 41.

Colibri cyanotis BONAPARTE, Consp. Avium, I, 1850, p. 69.

Three examples, from Baeza, east Ecuador. Seemingly identical with birds from Venezuela, the type locality; but evidently not fully adult, as there are traces of ochraceous edging to some of the feathers, and the lower tail-coverts are largely ochraceous. The kinship of this species to *Colibri thalassinus* of Mexico and Guatemala is evidenced by the strongly bluish tinge of the central abdomen in the Costa Rican race, *Colibri cyanotus cabanildis* (Heine), but this does not appear to bridge the gap between *thalassinus* and *cyanotus* sufficiently to render a trinomial necessary for the latter.

¹Cat. Birds Brit. Mus., XVI, 1892, p. 82.

²Tierreich, IX, 1900, p. 85.

COLIBRI IOLATUS (Gould).

Petasophora iolata GOULD, Proc. Zool. Soc. Lond., 1847, p. 9.

Colibri iolata BONAPARTE, Consp. Avium, I, 1850, p. 69.

Colibri iolatus HARTERT, Tierreich, IX, 1900, p. 94.

Forty-eight specimens, from Chillo Valley, Jambillo, Aloag, Quito, Papallacta, Valle de Vieiosa, and Jablon, Ecuador; Pasto, United States of Colombia. Birds of this series from the eastern side of the mountains average more golden green both above and below than those from the western slope, but as this character does not appear to be at all coincident with geographical distribution, it can not be used as the basis for subspecific separation. Examples of both styles of coloration occur in the same localities in Ecuador, Bolivia, and Colombia; and, furthermore, neither is confined to one side of the Andes.

This is another hummingbird very common in Quito and its environs and indeed all over Ecuador, at altitudes of from about 8,500 to 11,500 feet. We found it particularly plentiful in the Chillo Valley when the guava flowers were out. It does not range to so high an altitude on the western Andes as it does on the eastern ranges. I had these birds constantly under observation during our stay at the British consulate in Quito, and they appeared to nest in the courtyards there nearly all the year round. When the nest was destroyed by mice, another one was immediately started elsewhere. They were placed in all sorts of positions, in the creepers by the sides of the doors and windows, and in low trees. One nest was built in a loquat tree and much exposed to the rain. After a few days I noticed the female bird drawing together a fan of the large leaves overhead, and securing them in position with cobwebs, which canopy afterwards quite protected her from the rain. These birds would never tolerate the presence of others of even the same species in the garden when nesting, and chased away other birds much larger than themselves. On one occasion they pulled to pieces the nest of a *Diglossa aterrima* and drove its owners away. They feed largely on small insects, darting into the air and taking them on the wing. The young put their bills right down the throats of the females when feeding. On many occasions the parent birds have flown into the room where I have been skinning birds and seized small pieces of cotton wool from my work table with which to build their nests. They also searched all the corners of the ceiling for spiders. When the first egg is laid, the male bird entirely disappears from the garden and never once comes near it again until the young have flown. On several occasions I saw them copulating in the air, when the male spreads out the blue feathers on the sides of the neck, the only time at which I have seen him do it. The local name is "Quinde real"—royal hummingbird.

COLIBRI BUCKLEYI (Gould).

Paurolaima buckleyi GOULD, Ann. and Mag. Nat. Hist., V, 1880, p. 489.

Colibri buckleyi HARTERT, Tierreich, IX, 1900, p. 95.

A single specimen from Puenbo, Chillo Valley, near Quito, Ecuador, taken in December, 1898. The type of this very interesting species was collected by Buckley at Misqui, Bolivia, and up to the present has remained unique. The example here recorded thus considerably extends the bird's range. This specimen is a male in perfect plumage and is apparently adult. Details of coloration evident in this individual, but not mentioned in descriptions of the type, are the pale

brown terminal band on the tail and the metallic green auriculars; but in other respects it seems to agree with the type.

This bird exactly resembles the only other specimen known, which is in the British Museum collection, and which Gould considered a distinct species and named after its collector. Our specimen was shot in the Chillo Valley near Quito, and was feeding on the aloe flowers in company with *Patagona gigas*.

There appear to be absolutely no structural differences to separate this species generically, and Mr. Hartert has very properly placed it in the genus *Colibri* (= *Petasophora*)¹. Indeed, there are not lacking indications that it may prove eventually to be but a peculiar color phase of *Colibri iolatus* (= *Petasophora iolata*), corresponding to that of the specimen of *Oreocatus melanotus* described hereafter.

ANTHRACOTHORAX VIOLICAUDUS IRIDESCENS (Gould).

Lampornis iridescens GOULD, Introd. Troch., 1861, p. 65.

Six specimens from the vicinity of Nanegal, Ecuador. These are subspecifically distinguishable from true *violicaudus* of northeastern South America, and should bear the name above given. They differ from the typical form by reason of a decided bluish tinge on throat and breast, and also in the usually longer bill.

Confined to the western side, and I believe we obtained all our specimens in the banana plantations at Nanegal, where I frequently saw them hovering among the ragged leaves hanging down the trunks of the banana trees. Local name, "Plataneros negros."

TOPAZA PELLA PAMPREPTA, new subspecies.

Three adult males, all from Suno, on the Rio Napo, east Ecuador. These extend the range of the species a long distance to the westward, and add it to the fauna of Ecuador. They differ from typical *Topaza pella* from British Guiana in the very much greater length of the long tail feathers and in the somewhat shorter wing. There appears to be absolutely no constant difference in color, but the discrepancy in size is so marked that it seems advisable to recognize the Ecuador bird in nomenclature. It may be described as follows:

Type.—Male, adult, No. 174294. U. S. N. M.; Suno, Rio Napo, Ecuador, May, 1899; Goodfellow and Hamilton. Top and sides of head velvety purplish black; cervix and sides of neck rich metallic maroon purple; back shining reddish orange, shading posteriorly into the bright metallic green of the upper tail-coverts; wings fuscus with a purplish gloss, the innermost secondaries chestnut, the superior coverts like the back; tail chestnut, the two middle pairs metallic green, the succeeding pair much elongated, purplish black; throat glittering greenish yellow; jugular band purplish black, continuous

¹ Tierreich, IX, 1900, p. 95.

with that of sides of neck; breast maroon like the cervix, and shading posteriorly into a more reddish shade; erissum shining green; lining of wing chestnut.

The following table of measurements expresses best the difference between the two races of this species:

Name.	Sex.	Locality.	Wing.	Tail (chord of longest feather).	Exposed culmen.
<i>Topaza pella pella</i>	Male	British Guiana	84	92	25
Do	do	do	82	88	24.5
<i>Topaza pella pamprepata</i> ¹	do	Sumo, Ecuador	77	122	24.5
Do	do	do	78	108	23

¹Type.

Frequent in the edges of the forests around the small Indian clearings, and was also observed a few of them along the forest-covered banks of the smaller rivers running into the Napo, but they were by no means common anywhere. Local name, "Urcu-Quinde."

TOPAZA PYRA (Gould).

Trochilus (Topaza) pyra GOULD, Proc. Zool. Soc. Lond., 1846, p. 85.

Topaza pyra GRAY, Genera Birds I, 1848, p. 110.

One adult male of this magnificent and decidedly uncommon species, from Coca, on the Rio Napo, east Ecuador.

This single specimen was shot at the mouth of the Curarai, the largest tributary of the Napo. They are probably even rarer than *T. pella*, and are, I believe, not found on the upper waters of the Napo.

OREOTROCHILUS CHIMBORAZO (Delattre and Bourcier).

Trochilus chimborazo DELATTRE and BOURCIER, Rev. Zool., 1846, p. 305.

Oreotrochilus chimborazo GOULD, Proc. Zool. Soc. Lond., 1847, p. 10.

Three adult males from the volcano of Chimborazo, west Ecuador.

This species, I believe, is never met with north of Chimborazo. It occurs at altitudes of from 12,000 to 15,000 feet, though according to Hartert, to 17,000 feet, but this must be a mistake, as 16,000 feet is the snow line at the equator in Ecuador, and it is not likely to be found above that. Its local name is "Estrella de Chimborazo."

OREOTROCHILUS JAMESONII Jardine.

Oreotrochilus jamesonii JARDINE, Contr. Orn., 1849, p. 67.

Oreotrochilus chimborazo jamesonii HARTERT, Tierreich IX, 1900, p. 109.

Thirty specimens, from Pichincha, Antisana, and Cotopaxi, Ecuador. There is no apparent difference between the birds from Antisana and Cotopaxi and those from Pichincha. There is in all this splendid series not the slightest indication of intergradation with *O. chimborazo*; therefore we do not follow Hartert¹ in using a trinomial.

Now very much rarer on Pichincha than formerly. They are in fine plumage in December, and during that month in 1898 we found them plentiful near the snow

¹ Tierreich IX, 1900, p. 109.

on the western side of Antisana in the eastern Cordillera, but not on the eastern side of that mountain. They do not remain here all the year round, and some years very few come. Females were remarkably in the minority, this possibly to be accounted for by later arrival or the use of other feeding grounds. Local name, "Pecho blanco"—white chest.

UROCHROA BOUGUERI (Bourcier).

Trochilus bougueri BOURCIER, Compt. Rend. Ac. Sci., XXXII, 1851, p. 186.

Urochroa bougueri GOULD, Mon. Troch., II, 1856, pl. LVII.

Two adult males from near Quito, Ecuador. They were taken in the Guallabamba, which the collectors describe as "a deep, hot ravine north of Quito."

From the rocky ravine of the Guallabamba at about 7,000 feet. They appeared swifter on the wing than any other hummingbird I can remember, and were consequently difficult to shoot, so that a gun had to be used, it being impossible to aim at them with a blowpipe.

CLYTOLAEMA AURESCENS (Gould).

Trochilus (Lampornis) aurescens GOULD, Proc. Zool. Soc. Lond., 1846, p. 88.

Clytolaema aurescens GOULD, Mon. Troch., IV, 1861, pl. CCL.

Two adult males from Napo village, east Ecuador. These are identical with a specimen from Pebas, Peru.

PHAIOLAIMA AEQUATORIALIS Gould.

Phaiolaima aequatorialis GOULD, Mon. Troch., IV, 1860, pl. CCLXIX.

Six specimens from Canzacota, west Ecuador. The female differs from the male in lacking the glittering throat spot, in having the green of the chin much mixed with buffy, and the bend of the wing less reddish. From the female of *Phaiolaima rubinoides*, which the female of the present species closely resembles, it may be separated by the longer bill, usually darker head, and paler under parts. This species is confined apparently to the western side of the Andes. Though closely allied to *rubinoides*, it seems to be a distinct species.

All our specimens were obtained at Canzacota, at 6,500 feet elevation. They are not common, appearing here only periodically, and are called locally "Canzacotas."

PHAIOLAIMA CERVINIGULARIS Salvin.

Phaeolaema cervinigularis SALVIN, Cat. Birds Brit. Mus., XVI, 1892, p. 325.

Seven males, from Baeza, and from Cosanga, below Baeza on the road to Archidona—both localities in east Ecuador. These examples are exceedingly interesting, since they determine for the first time the exact habitat of the species. The two type specimens which are now in the British Museum, and which seem to be the only ones hitherto recorded, were without definite locality data, but were supposed by Mr. Salvin to have come from Ecuador. *Phaiolaima cervinigularis* apparently replaces *Phaiolaima aequatorialis* on the eastern side of the

mountains, and, though closely allied to the latter, is apparently distinct. The immature male of *cervinigularis* does not materially differ from the adult, except in the absence of the glittering gular patch. The female is probably like the young male. The present species may be distinguished from *rubinoïdes* by its somewhat larger size, this most evident in the bill; by the lack of green on the chin and sides of the throat; and by the usually paler under surface. The gular spot has generally a more coppery tinge, but this is not diagnostic. From *aequatorialis*, *cervinigularis* differs in the less extent of the glittering green of the crown, the lack of green on the chin and sides of the throat, and in the almost entire absence of reddish tinge in the color of the bend of the wing.

This is the eastern variety of the western *P. aequatorialis*. Their stomachs contained chiefly insects, but they also feed on the flowers of a tall tree.

HELIODOXA LEADBEATERI (Bourcier and Mulsant.)

Trochilus leadbeateri BOURCIER and MULSANT, ANN. SC. PHYS. ET NAT. LYON, VI, 43, p. 43.

Heliodora leadbeateri GOULD MON. TROCH., II, 1860, pl. xcvi.

Two males, one each from Archidona and Baeza, east Ecuador. The status of the Ecuador bird can not be determined by our material. In one of the specimens in this collection the bill is unusually long even for true *leadbeateri*, while in the other it is as short as in *Heliodora l. parvula*.

HELIODOXA JACULA JAMERSONI (Bourcier).

Trochilus jamersoni BOURCIER, COMPT. REND. AC. SCI., XXXII, 1851, p. 187.

Heliodora jacula jamersoni HARTERT, NOVIT. ZOO., V, 1898, p. 494.

Nine specimens, from Santo Domingo, west Ecuador. The female of *jamerisoni* is distinguishable from that of true *jacula* by its longer bill and by the lack of buffy suffusion on the abdomen, in this latter character resembling *Heliodora jacula henryi* of Costa Rica.

In fine plumage at Santo Domingo in October, and were found about the clearings. I took from a guava tree a nest containing 2 eggs belonging to these birds. It was very neat, covered on the outside with flat, pale-gray moss, and lined inside with soft, brown vegetable down resembling vicuña.

IONOLAIMA SCHREIBERSII (Bourcier).

Trochilus schreibersii BOURCIER, PROC. ZOO. SOC. LOND., 1847, p. 43 (Loddiges manuscript).

Ionolaima schreibersi GOULD, MON. TROCH., II, 1857, pl. xciii.

Three specimens from Baeza, east Ecuador. One of these, apparently an immature female, has no black on the lower surface, has green instead of blue lower tail-coverts, and green middle tail-feathers.

EUGENIA IMPERATRIX Gould.

Eugenia imperatrix GOULD, Proc. Zool. Soc. Lond., 1855, p. 192.

Ten specimens, from Gualea, west Ecuador. The females are appreciably smaller than the males, and lack the attenuation of the tail.

HELIANTHEA LUTETIAE LUTETIAE (Delattre and Bourcier).

Trochilus lutetiae DELATTRE and BOURCIER, Rev. Zool., 1846, p. 307.

Helianthea lutetiae BONAPARTE, Consp. Avium, I, 1850, p. 74.

Twenty-seven specimens, from Atcatzo, Quito, and Pichincha, Ecuador—chiefly from the last-mentioned locality. Judging from this series, the immature females lack the glittering green forehead, though in other respects they are similar to the adults.

We found these birds exceedingly common on Pichincha in November, December, and January, between 9,000 and 12,000 feet. We never met with them on the eastern Andes. Local name, "Ala blanca"—white wings.

HELIANTHEA LUTETIAE HAMILTONI (Goodfellow).

Helianthea hamiltoni GOODFELLOW, Bull. Brit. Orn. Club, X, 1900, No. LXIX, p. xlviii.

Fifteen specimens, all from Papallaeta, east Ecuador.

The males differ from *Helianthea lutetiae lutetiae* chiefly in the more golden shade of the green portions of the plumage, and indicate by their individual variation that *hamiltoni* is but a subspecies of *lutetiae*, which latter it represents on the eastern side of the Andes. The same difference in the hue of the green exists in the females, and an additional character in this sex of *hamiltoni* is the decidedly deeper ochraceous of the throat.

In a communication addressed to the authorities of the United States National Museum, Mr. Goodfellow assured them that the type of *Helianthea hamiltoni* was among the examples of this form transmitted with the rest of the collection. As he failed in the original description to designate the specimen, there has been selected as type the one which corresponds to the measurements given. This is No. 173708, U. S. N. M., and was taken at Papallaeta, east Ecuador, in February, 1899.

We met with this species only on the eastern side of the Andes.

HELIANTHEA TORQUATA (Boissonneau).

Ornismia torquata BOISSONNEAU, Rev. Zool., 1840, p. 6.

Bourcieria torquatus BONAPARTE, Consp. Avium, I, 1850, p. 73.

Helianthea torquata HARTERT, Tierreich, IX, 1900, p. 130.

Ten specimens from Baeza, east Ecuador. These apparently do not differ from Bogota examples. Young males, almost like the adults in other respects, still lack the violet crown patch.

Found only on the eastern side of the eastern Andes.

HELIANTHEA FULGIDIGULA (Gould).

Bourcieria fulgidigula GOULD, Mon. Troch., IV, 1854, p. 252.

Helianthea fulgidigula HARTERT, Tierreich, IX, 1900, p. 131.

Twenty-one specimens, from the following localities in western Ecuador: Canzacota; lower west side of Pichincha; lower west side of Corazón; Mindo, west side of Pichincha; and above Milligalli. There is considerable individual variation in the green of the throat, and as well in the metallic crown patch, this latter ranging from violet purple to greenish blue.

Confined to the western side of the western Andes, and were common and in good plumage at Canzacota in September. They frequent the more open parts of the mountain sides, and in the morning were generally seen sitting about sunning themselves. Local name, "Cravata blanca."

HELIANTHEA COELIGENA COLUMBIANA (Elliot).

Lampropygia columbiana ELLIOT, Ibis, 1876, p. 57.

Helianthea coeligena columbiana HARTERT, Tierreich, IX, 1900, p. 132.

Seventeen specimens, all from Baeza, east Ecuador. They seem to be identical with birds from Colombia.

Confined to the eastern side of the eastern Andes, and were common at Baeza in March.

HELIANTHEA WILSONI (Delattre and Bourcier).

Trochilus wilsoni DELATTRE and BOURCIER, Rev. Zool., 1846, p. 305.

Helianthea wilsoni HARTERT, Tierreich, IX, 1900, p. 133.

Seven specimens from Milligalli, west Ecuador. The one immature female is noticeably darker throughout than the adult of the same sex.

Confined to the western Andes.

DIPHOGENA¹ IRIS (Gould).

Helianthea iris GOULD, Proc. Zool. Soc. Lond., 1853, p. 61.

Diphogena iris GOULD, Mon. Troch., IV, 1854, pl. CCXLVII.

This magnificent species is represented in the collection by a single adult male, from the west side of Pichincha, Ecuador.

Lower west side of Pichincha, at about 7,500 feet. They are very rapid flyers and difficult to shoot as they dart in and out among the rocks of the narrow torrents and ravines.

DIPHOGENA HESPERUS Gould.

Diphlogena hesperus GOULD, Ann. and Mag. Nat. Hist., XV, 1865, p. 129.

Two specimens, from Mindo, west Ecuador. One of these is an immature male and differs from the adult of the same sex in the following particulars, indicating a condition almost adult: The lower parts are duller, owing principally to buffy and rufous edgings, par-

¹ *Diphogena* is the original spelling.

ticularly on the posterior portions; the violet throat spot is wanting; the green of the upper surface is more bronzy; remainder of upper parts much duller, the violet blue of the center of the crown barely indicated, the metallic coppery red of the sides of the crown extending backward over the nape.

LAFRESNAYA SAUL (Delattre and Bourcier).

Trochilus saul DELATTRE and BOURCIER, Rev. Zool., 1846, p. 309.

Lafresnaya saulæ BONAPARTE, Consp. Avium, I, 1850, p. 68.

Twenty-four specimens, from Pichincha, Lloa, west side of Corazón, and above Milligalli, west Ecuador; Papallacta, east Ecuador; and Pasto, Colombia. Birds from the east and west sides of the mountains seem to be alike. The single example, an immature female, from Pasto, Colombia, differs from the others in being much more ochraceous below, particularly on the anterior parts, this being fully as conspicuous as in many specimens of *L. lafresnayi*.

We met with them in both ranges of the Andes at elevations of from 10,000 to 12,500 feet, but the greater number of those we obtained were in immature plumage, especially those from the eastern Andes shot in February. At times they are fairly plentiful around the village of Lloa, on Pichincha; and in Quito they are called "Pico curvo de Lloa."

ENSIFERA ENSIFERA SCHLIEPHACKEI (Heine).

Docimastes schliephackei HEINE, Journ. f. Orn., 1863, p. 215.

Docimastes ensiferus schliephackei BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc., Lond., 1884, p. 304.

Thirty-seven specimens, from Papallacta, on the east side of the Andes, and Pichincha, west Ecuador. There seems to be no difference between the birds from the two sides of the mountains, but, judging from the present series, the Ecuador form of *E. ensifera* is worthy of subspecific recognition. The distinction lies apparently in the bill alone, which in the Ecuador form averages much longer than in true *ensifera*. With regard to the constancy of this character, it may be said that out of the present series there are but ten having the bill not longer than the *longest billed* example from a series of Colombian specimens. Thus, though this difference can not be regarded as absolute, it is so decided and obtains in so large a majority of the specimens that it is fully as worthy of recognition as similar differences in other cases which pass unchallenged.

Feed on the flowers of the long *Datura*. The bills of the females average longer than those of the males. They frequent both ranges of the Andes, but personally we met with them only on the eastern sides of the two ranges, at altitudes between 9,000 and 11,500 feet. Local name, "Pico largo."

PTEROPHANES TEMMINCKII (Boissonneau).

Ornismya temminckii BOISSONNEAU, Rev. Zool., 1839, p. 354.

Pterophanes temmincki GOULD, Mon. Troch., III, 1849, pl. CLXXVIII.

Seventeen specimens, from Pichincha and Corazón, Ecuador. This fine series has been carefully compared with birds from Colombia, but they seem not to differ. Two immature males are like the adults save for a rather more golden cast to the plumage, together with the lack of steel blue on the primaries and the presence of rufous edgings on the feathers of throat and abdomen.

At elevations of from 11,500 to 13,000 feet on Corazón and Pichincha, west Ecuador. Local name, "Gruesos."

AGLAEACTIS CUPRIPENNIS AEQUATORIALIS (Cabanis and Heine).

Aglæactis æquatorialis CABANIS and HEINE, Mus. Hein., III, 1860, p. 70.

Aglæactis cupripennis var. *æquatorialis* Mulsant and Verreaux, Mém. Soc. Imp. Sci. Nat. de Cherbourg, XII, 1866, p. 210.

Twenty-six specimens, from the following localities in Ecuador: Papallacta, Padregal, Corazón, Pichincha, and Mojanda. The separation of *æquatorialis* from true *cupripennis* is based on very slight characters, and if the former stands at all it must be on *average* slightly greater size, more blackish chin, and darker under surface. Birds from the eastern side of the mountains in Ecuador are paler below than those from the west side, and in this respect scarcely distinguishable from true *cupripennis*, but altogether they seem to be nearer *æquatorialis*.

Met with in all parts of Ecuador at high altitudes, generally seen singly and perched on the summit of bushes uttering a mournful and monotonous note. Local name, "Quinde café"—coffee-colored humming bird.

BOISSONNEAUA MATTHEWSII (Bourcier).

Trochilus matthewsii BOURCIER, Proc. Zool. Soc. Lond., 1847, p. 43 (Loddiges manuscript).

Boissonneaua matthewsii REICHENBACH, Troch. Enum., 1855, p. 8, pl. DCLXXXVII.

Fifteen specimens, from Baeza, east Ecuador. Immature birds of both sexes have the middle of the lower surface chestnut, this color apparently spreading irregularly as the individual advances toward maturity.

Met with only at Baeza, on the eastern side, where they were fairly plentiful in March, but not in very good plumage. Local name, "Pecho café."

BOISSONNEAUA JARDINI (Bourcier).

Trochilus jardini BOURCIER, Compt. Rend. Ac. Sci., XXXII, 1851, p. 187.

Boissonneauaria jardini SIMON, Cat. Troch., 1897, p. 29.

Boissonneaua jardini HARTERT, Tierreich, IX, 1900, p. 141.

Eleven specimens, from Nanegal, west Ecuador. The females have

the feathers of the posterior abdomen very broadly tipped with dull ochraceous.

In fine plumage in July and August. These birds are very local, and, unlike many species, they are not found all along the western Andes of Ecuador. Nanegal was the only place where we met with them, though we visited other places at the same altitude and with similar surroundings. Local name, "Vicente."

BOISSONNEAU FLAVESCENS TINOCHLORA, new subspecies.

Fifteen specimens, from Corazón, Pichincha, and Canzacota, west Ecuador. This series, when compared with an equally good series of *Boissonneaua flavescens* from Bogota, makes evident certain differences which surely justify the subspecific separation of the former. The type of *B. flavescens*¹ came from Popayán, Colombia, and though intermediate, is probably nearest like the Bogota bird. The only other synonym is *Ornismia paradisaca*,² described from Bogota; and the Ecuador form thus being without a name, may be described as follows:

Type.—Adult male, No. 174520, U.S.N.M.; west side of Corazón, Ecuador, September, 1898; Goodfellow and Hamilton. Rich metallic green, the crown and breast glittering green; tail darker and duller than the back, the basal three-fourths of all but the middle pair of feathers buffy ochraceous; wing-quills purplish brown, the coverts like the back; abdomen feathers with buffy or whitish margins; lower tail-coverts buffy ochraceous, obsoletely spotted with dusky; tibial tufts white; axillars rufous; lining of wing metallic green.

This race differs from true *flavescens* in the very much broader green tips of the tail-feathers, particularly on the inner webs of the two outer pairs, where they occupy fully a quarter of the total length of the feathers; the wing quills are darker, more purplish; the middle tail-feathers are usually darker; the crissum and the buffy portions of the tail are darker. There is no essential difference in size.

The statement by Hartert³ that in the young the buffy of the outermost tail-feathers reaches to the tips does not hold in this form. Except for rusty edgings to some of the feathers, the immature male is in all respects very similar to the adult female.

A good series collected on Corazón, west Ecuador, at elevations of from 11,000 to 13,000 feet. It was somewhat strange that we never once saw one of these birds on the neighboring mountain of Pichincha, which almost joins Corazón.

VESTIPEDES LUCIANI (Bourcier).

Trochilus luciani BOURCIER, Ann. Sc. Phys. et Nat. Lyon, X, 1847, p. 624.

Eriocnemis luciani GOULD, Mon. Troch., IV, 1853, pl. cclxxiii.

Forty-six specimens, from the following localities in Ecuador:

¹ Loddiges, Proc. Zool. Soc. Lond., 1832, p. 7.

² Boissonneau, Rev. Zool., 1840, p. 6.

³ Tierreich, IX, 1900, p. 142.

Mojanda; Padregal; Corazón; Aloag, Corazón; Lloa, Pichincha; Pichincha. In this large series there is a surprisingly small amount of individual variation.

Noted on the western Andes at elevations of from 9,000 to 12,000 feet. We found them exceedingly common on Pichincha during the months of November, December, and January, when great numbers of them seemed to arrive suddenly. Local name, "Palo blanco."

VESTIPEDES VESTITUS SMARAGDINIPECTUS (Gould).

Eriocnemis smaragdinipetus GOULD, Ann. and Mag. Nat. Hist., I, 1868, p. 322.

Eriocnemis vestitu smaragdinipetus HARTERT, Tierreich, IX, 1900, p. 145.

Three adult males, from Papallacta, east Ecuador. This form is very close to true *vestitus*, but is probably retainable as a subspecies.

From Papallacta, eastern Andes, 11,500 feet, in company with *Laticauda primolina*. Local name, "Calzones blancos."

VESTIPEDES MOSQUERA MOSQUERA (Delattre and Bourcier).

Trochilus mosquera DELATTRE and BOURCIER, Rev. Zool., 1846, p. 306.

Eriocnemis mosquera GOULD, Mon. Troch., IV, 1853, pl. CCLXXIV.

Nine specimens, from Pichincha, Ecuador. So far as these examples indicate, the white bases of the feathers of the chin and upper throat are the mark of the *male*, as the five individuals so sexed have this marking, while the four females lack it entirely. This is exactly opposite to the opinion of Mr. Hartert,¹ who supposed it to be distinctive of the *female*.

Now rare on the mountains in the vicinity of Quito, where they occur at long intervals. We shot them sometimes feeding in the company of *V. luciani*. Local name, "Dorado."

VESTIPEDES LUGENS (Gould).

Eriopus lugens GOULD, Contr. Orn., 1851, p. 140.

Eriocnemis *γ*. *Threptia lugens* REICHENBACH, Aufz. d. Col., 1854, p. 9.

Six specimens (three males and three females), from Papallacta, east Ecuador. One of the males lacks almost entirely the squamate white feather margins of the under surface, but is otherwise not different. According to the evidence of the present series, Mr. Hartert is mistaken in the statement that it is the *male* which has a portion of the tibial tufts dull rufous,² for in all the specimens marked females this coloring is present, while in those sexed as males the tufts are pure white. He is, however, undoubtedly correct in considering *V. squamata* and *V. lugens* merely different sexes of the same species.

From the eastern Andes, at 11,500 feet. Local names, "Quinde feó" and "Oscuros."

¹Tierreich, IX, 1900, p. 147.

²Tierreich, IX, 1900, p. 148.

VESTIPEDES NIGRIVESTIS (Bourcier).

Trochilus nigrivestis BOURCIER, Ann. Sc. Phys. et Nat. Lyon, IV, 1852, p. 144.

Eriocnemis nigrivestis BONAPARTE, Rev. et Mag. Zool., 1854, p. 252.

Twenty-three specimens, from Atacazo and from Pichincha (12,000 feet to summit), Ecuador.

These little hummingbirds probably range to a higher altitude than any others in Ecuador. When camping on Pichincha at 14,500 feet elevation, we often saw them flying past our tents in a blinding snowstorm, uttering their rather harsh note, and taking shelter for the night under the cliffs above us, where we found their deserted nests under the ledges. I also saw them on several occasions at 15,500 feet, near the edge of the crater, but this was at times when there was little snow on the mountain. They hover close to the ground, feeding on the small obscure flowers which manage to flourish among the cinders and ash. The males are locally called "Quinde negro" or black humming bird, but the females are known by the name of "Pichinchanos." We never saw the two sexes together, and all the females we procured were shot, at from 9,000 to 10,000 feet, on the west and north sides of the mountain, but we saw no males at such a low elevation.

VESTIPEDES ALINAE (Bourcier).

Ornismya alinae BOURCIER, Ann. Sc. Phys. et Nat. Lyon, V, 1842, p. 344, pl. XIX.

Eriocnemis *α*. *Engyete alinae* REICHENBACH, Aufz. d. Col., 1854, p. 9.

Two adult males from Pasto, southern Colombia. These are rather larger than two specimens from Bogota, and have considerably more of a reddish gold tinge in the malar region, but the available material is too limited to determine the significance of these differences.

From near Pasto, south Colombia, at about 9,000 feet elevation. Local name, "Esmeraldas."

VESTIPEDES DERBYI DERBYI (Delattre and Bourcier).

Trochilus derbyi DELATTRE and BOURCIER, Rev. Zool., 1846, p. 306.

Eriocnemis *γ*. *Thrypatria derbyi* REICHENBACH, Aufz. d. Col., 1854, p. 9.

Three specimens from Pasto, southern Colombia. The difference in the color of the upper tail-coverts, assigned by Mr. Hartert to separate the present form from *V. derbyi longirostris*,¹ is apparently of no value; but the length of the bill is probably sufficient for the recognition of the latter.

Shot along the hedgerows on the south road above the town of Pasto. Local name, "Calzones negros."

OCREATUS MELANANTHERUS (Jardine).

Trochilus (Spathura) melananthera JARDINE, Cont. Orn., 1851, p. 111, pl. LXXX.

Ocreatus melanantherus HARTERT, Tierreich, IX, 1900, p. 151.

Eighteen specimens, from Milligalli, Mindo, and Gualea, west Ecuador. Immature males are practically identical with adult females. One of the adult males in this series exhibits an interesting abnor-

¹Tierreich, IX, 1900, p. 149.

mality, evidently tending toward albinism. The upper parts and posterior lower surface are almost uniform pale brown, though somewhat lighter on the lower back; the wings, tail and auriculars are of a darker shade of the same color; the tibial tufts are white, as usual; while the throat is dull metallic brown, slightly darker and more rufescent than the color of the upper surface.

These hummingbirds have a pretty habit of suddenly rising from the tops of the bushes for some yards into the air, where they remain poised for a few seconds, uttering some very sweet notes, then suddenly descend. Often two would meet thus in the air, but only the males do this. Local name, "Tijerettas"—scissortail.

OCREATUS CISSIURUS (Gould).

Spathura cissira GOULD, Proc. Zool. Soc. Lond., 1853, p. 109.

Ocreatus cissurus HARTERT, Tierreich, IX, 1900, p. 151.

One adult male from Baeza, east Ecuador.

Confined to the eastern side and rare at Baeza. The single specimen we obtained was feeding on the flowers of a small ground plant close to our hut.

UROSTICTE BENJAMINI (Bourcier).

Trochilus benjamini BOURCIER, Compt. Rend. Ac. Sci., XXXII, 1851, p. 187.

Urosticte benjamini GOULD, Mon. Troch., III, 1853, pl. cxc.

Twelve specimens, from Gualea and Santo Domingo, west Ecuador. One of these is an immature male and differs from that of *Urosticte ruficrissa*, as do the females of these two species—in the color of the crissum.

Local name, "Cinco reales"—five reals; but why they are called by such a curious name I was unable to find out.

ADELOMYIA MELANOGENYS MELANOGENYS (Fraser).

Trochilus melanogenys FRASER, Proc. Zool. Soc. Lond., 1840, p. 18.

Adelomyia melanogenys SCLATER, Proc. Zool. Soc. Lond., 1859, p. 145.

Fourteen specimens, from Papallacta and Baeza, east Ecuador.

ADELOMYIA MELANOGENYS MACULATA (Gould).

Adelomyia maculata GOULD, Mon. Troch., III, 1861, pl. cxcix.

Adelomyia melanogenys maculata HARTERT, Tierreich, IX, 1900, p. 155.

Thirteen specimens, from above Milligalli; Canzacota; and the west side of Pichincha, west Ecuador. These bear out the differences mentioned by Hartert¹ as separating this form from true *melanogenys* of the east side of the mountains.

Very silent birds, which seem to spend most of their time sitting about on the bushes and branches near the ground, a trait that has earned for them the native name of "Muertes."

¹Tierreich, IX, 1900, pp. 154, 155.

HELIANGELUS STROPHIANUS (Gould).

Trochilus (—?) *strophianus* GOULD, Proc. Zool. Soc. Lond., 1846, p. 45.

Helianthus strophianus BONAPARTE, Consp. Avium I, 1850, p. 76.

Thirty-five specimens, from the following localities: San Gabriel; Gualea; Canzacota; lower west side of Pichincha, Ecuador; Popayán, Colombia. The birds from San Gabriel have the rump only a little more bronzy than the back, but as this is also the case in some of the specimens from other localities, no importance attaches thereto. The single bird from Popayan adds the species to the fauna of Columbia. The throat in this individual is rather more violet purple than in any of the others, in this respect apparently approaching *Helianthus violicollis*, but it otherwise does not differ from typical specimens of *strophianus*. Whether or not *Helianthus violicollis* is a good species can of course not be determined by the present material, but too much importance must not be attached to the precise shade of metallic feathers in separating species of hummingbirds. In the present series there is an unbroken range of shades in the metallic throat patch of various individuals, from the violet purple of this Popayan specimen to a pure solferino, and this variation is not at all correlated with locality, but is undoubtedly individual, induced doubtless in part at least by the difference in age of the feathers and the amount of wear to which they have been subjected.

One shot in the patio of a house near Popayán, southern Colombia, at 5,600 feet, where it was hunting for spiders under the veranda. Local name, "Cravata malva."

HELIANGELUS AMETHYSTICOLLIS (d'Orbigny and Lafresnaye).

Orthorhynchus amethysticollis D'ORBIGNY and LAFRESNAYE, Mag. Zool., VIII, 1838, p. 31.

Helianthus amethysticollis BONAPARTE, Consp. Avium, I, 1850, p. 76.

One adult male from below Baeza, on the road to Archidona, east Ecuador.

I believe this species has not been recorded before from Ecuador. The single specimen was obtained on a river bank a little below Baeza, on the eastern side of the eastern Andes, where we noticed it darting out into the air from a branch to catch the small gnats hovering over the water.

HELIANGELUS EXORTIS EXORTIS (Fraser).

Trochilus exortis FRASER, Proc. Zool. Soc. Lond., 1840, p. 14.

Helianthus exortis HARTERT, Tierreich, IX, 1900, p. 160.

Five specimens from Papallaeta, east Ecuador. They have been compared with a good series from the vicinity of Bogota, Colombia, the type locality, and seem to be identical.

HELIANGELUS EXORTIS SODERSTROMI, new subspecies.

A single specimen from the lower side of Corazón, Ecuador, is the only one in the collection, but it differs so much from birds taken on the eastern Andes that in all probability it represents the form of this species occurring on the west side of the mountains. It differs from true *exortis* in its very much smaller size and in the decidedly more golden tint of the green portions of the plumage, this particularly evident on the upper surface. It may be described as follows:

Type.—No. 174008, U.S.N.M., male adult; lower west side of Corazón, Ecuador, September, 1898; Goodfellow and Hamilton. Body plumage golden bronze green, least golden on back and sides; a glittering green frontal patch; middle of chin violet blue, shading into solferino on the center of the throat; wing quills fuscous, with a gloss of purplish or bluish; tail bluish black, the two middle feathers green like the rump; feathers of central abdomen edged with buffy grayish; under tail-coverts white. The following measurements show the difference in size between the two forms:

Name.	Sex.	Locality.	Wing.	Tail.	Exposed culmen.
<i>Heliangelus exortis exortis</i>	Male adult.	Papallacta, east Ecuador.....	67	48	17
<i>Heliangelus exortis soderstromi</i>do	Corazón, west Ecuador	62	42	15

At the request of Mr. Goodfellow this race is named for Mr. Soderstrom, the English consul-general at Quito, who manifested much interest in the gathering of the present collection.

HELIANGELUS VIOLA Gould.

Heliangelus viola GOULD, Proc. Zool. Soc. Lond., 1853, p. 61.

Four specimens, from Papallacta, east Ecuador, and the west side of Pichincha, west Ecuador.

LATICAUDA PRIMOLINA (Bourcier).

Metallura primolinus BOURCIER, Rev. et. Mag. Zool., 1853, p. 295.

Seventeen specimens, from the following localities in Ecuador: Papallacta; road to Baeza; Curiurcu (above Baeza).

Generally in the company of *Adelomyia melanogenys*, feeding on the wild fuchsias.

LATICAUDA TYRIANTHINA TYRIANTHINA (Loddiges).

Trochilus tyrianthinus LODDIGES, Proc. Zool. Soc. Lond., 1832, p. 6.

Metallura tyrianthinus BONAPARTE, Consp. Avium, I, 1850, p. 75.

Sixteen specimens, from Papallacta, east Ecuador. These agree closely with a series of true *tyrianthina* from Colombia, differing only in averaging slightly paler below, verging thus a little toward

L. tyrianthina quitensis. From specimens collected at various localities on the west slopes of the mountains, and which represent *quitensis*, the present birds differ very materially, being decidedly smaller, rather darker, less brownish below, and with a more purplish gloss to the tail.

LATICAUDA TYRIANTHINA QUITENSIS (Gould).

Metallura quitensis GOULD, Introd. Troch., 1861, p. 112.

Metallura tyrianthina quitensis E. and CL. HARTERT, Novit. Zool., I, 1894, p. 48.

Twenty-eight specimens, from the following localities in Ecuador: Pichincha; Atacazo; Jambillo; Jablon; Corazón. This is a readily recognizable race, and replaces true *tyrianthina* on the west side of the mountains. An adult male from Atacazo exhibits a very pretty case of partial albinism, the whole forehead being pure white, and a few white feathers intermingled with the plumage of the breast. Albinism seems to be of rather rare occurrence among the Trochilidæ, thus making this case worthy of record.

A very common bird in western Ecuador at altitudes between 9,000 and 12,000 feet, and, like all the other members of this genus we came across, were chiefly found feeding very early in the morning; often at no other part of the day could we find them. Local name, "Ubellus comun."

CHALCOSTIGMA HERRANI (Delattre and Bourcier).

Trochilus herrani DELATTRE and BOURCIER, Rev. Zool., 1846, p. 309.

Chalcostigma herrani SIMON, Cat. Troch., 1897, p. 33.

Six specimens from Pichincha, west Ecuador.

These birds appear on Pichincha about January and remain until May, when they entirely disappear, no one knows whither. During their stay they seem to frequent only the west and north sides of the mountain, at about 12,000 feet elevation. I was told that some years very few come, and that they sometimes stay away for two years together. Local name, "Ubellus finos."

CHALCOSTIGMA STANLEYI (Bourcier).

Trochilus stanleyi BOURCIER, Compt. Rend. Ac. Sci., XXXII, 1851, p. 187.

Chalcostigma stanleyi SIMON, Cat. Troch., 1897, p. 33.

Four specimens, from Papallacta and Pichincha, Ecuador.

RAMPHOMICRON MICRORHYNCHUM (Boissonneau).

Ornismya microrhyncha BOISSONNEAU, Rev. Zool., 1839, p. 354.

Ramphomicron microrhyncha BONAPARTE Consp. Avium, I, 1850, p. 79.

Thirty-five specimens, from Papallacta (11,500 feet) and Pichincha, Ecuador. There seems to be absolutely no appreciable difference between birds from these two localities which represent respectively the east and west sides of the mountains. Examples from Colombia have often a somewhat shorter wing, and in the males there is frequently a deeper ochraceous suffusion on the posterior lower parts, but these characters are apparently too inconstant to warrant recognition in nomenclature. Several of the young males in the present

series are in process of change from the green-backed to the purple-backed plumage, and exhibit various stages in this transition, from the presence of a few purple feathers sprinkled among the green to an almost solidly purple upper surface with a few scattered green feathers. So far as these examples indicate, the sides of the neck and back are the last portions to change.

From both sides of the Andes at elevations of from 10,000 to 12,000 feet. Local name, "Obispos"—bishops.

OPISTHOPRORA EURYPTERA (Loddiges).

Trochilus eurypterus LODDIGES, Proc. Zool. Soc. Lond., 1832, p. 7.

Opisthoprora euryptera CABANIS AND HEINE, Mus. Hein., III, 1860, p. 76.

Four specimens from Papallacta, east Ecuador. This is apparently the first time the species has been taken in Ecuador, but these examples are exactly like a specimen from Colombia. The female is colored like the male, but is appreciably smaller.

From Papallacta, east Ecuador, 11,500 feet. Four shot on the same tree—one on each of four successive mornings. They feed on the flowers of the red datura and pierce them with their bills at the base.

CYANOLESBIA KINGII MOCOIA (Delattre and Bourcier).

Trochilus mocoia DELATTRE AND BOURCIER, Rev. Zool., 1846, p. 311.

Cyanolesbia kingi mocoia SIMON, Cat. Troch., 1897, p. 34.

Thirty-three specimens, all from Bacza, east Ecuador.

The typical form of this species is the *Cyanolesbia cyanura* of Hartert,¹ which is the *Cyanolesbia gorgo* of Salvin² and Sharpe.³ Neither of these names is, however, the proper one for the species, since the first is preoccupied by *Trochilus cyanurus* Gmelin⁴ and Vieillot,⁵ and the second is antedated by *Ornismyia kingii* Lesson,⁶ which last name, though based on a bird from erroneous locality, must become the proper name for the species. The various races, according to Hartert's catalogue,⁷ will thus stand as follows:

Cyanolesbia kingii kingii (LESSON).

Cyanolesbia kingii emmae (BERLEPSCH).

Cyanolesbia kingii mocoia (DELATTRE AND BOURCIER).

Cyanolesbia kingii smaragdina (GOULD).

Cyanolesbia kingii margarethae (HEINE).

Cyanolesbia kingii caudata (BERLEPSCH).

¹Tierreich, IX, 1900, p. 175.

²Cat. Birds Brit. Mus., XVI, 1892, p. 137.

³Hand List Gen. and Spec. Birds, II, 1900, p. 135.

⁴Syst. Nat., I, 1788, p. 485.

⁵Nouv. Dict. d'Hist. Nat., VII, 1817, p. 369.

⁶Hist. Nat. Troch., 1832, p. 107, pl. xxxviii.

⁷Tierreich, IX, 1900, pp. 175-177.

Confined to the eastern side of the eastern Andes, and we secured a large series at Baeza in March, most of them then being in beautiful plumage. They feed on the flowers of a high tree, so that we had to use a gun to secure them, which is a pity as it often spoils their long tails. Local name, "Cola verde"—green tail.

CYANOLESBIA COELESTIS (Gould).

Cyananthus celestis GOULD, *Introd. Troch.*, 1861, p. 102.

Cyanolesbia celestis SALVIN, *Catbirds Brit. Mus.*, XVI, 1892, p. 139.

Twenty-one specimens, from Gualea and Milligalli, west Ecuador.

Confined to the western side, and in beautiful plumage in August and September. Their favorite flowers seem to be those of the papaya tree, but in some localities we found them feeding only on the coffee flowers. Their stomachs also contained insects, which I have seen them fly into the air and take on the wing. Local name, "Cola azul"—blue tail.

PSALIDOPRYMNA VICTORIAE AEQUATORIALIS (Boucard).

Lesbia aequatorialis BOUCARD, *Humming Bird*, III, 1893, p. 6.

Psalidoprymna victoriae aequatorialis HARTERT, *Novit. Zool.*, VI, 1899, p. 74.

Fifty-six specimens, from the following localities in Ecuador: Quito; north of Quito; Chillo Valley; Aloag; Mojanda; Jambillo; road to Papallacta; near Julian; Padregal. Even with this fine series it is not very easy to distinguish *aequatorialis* from true *victoriae*, but its average characters are probably sufficient to entitle it to recognition.

Very common in the gardens of Quito and its neighborhood, but not observed by us at elevations above 10,000 feet nor below 8,000. They are very tame, and appear to breed nearly all the year round, December and January being the only months when we did not find their nests. The nest is loosely constructed and rather slipper-shaped, and we found them in all sorts of positions, chiefly among the creepers on old walls, but also one in a fuchsia bush, as well as many others suspended from the ends of the branches of large eucalyptus trees, but always well concealed. The female sits in the nest with the tail turned up over the back. Although these birds feed indiscriminately from all the flowers in the gardens, they certainly prefer the fuchsia, and one can see all the unopened buds pierced in many places at the base of the calyx by these birds' bills. At the close of the day, especially after rain, numbers of the birds fly about in the gardens, and it is curious to observe the way in which they turn up their long tails often nearly parallel with the body, while the usual position when feeding is to hold it at right angles to the body. I did not once observe them spread the tail-feathers out when flying. When courting, the males fly straight up into the air, almost out of sight, like an arrow shot from a bow, singing a remarkably melodious song, and then return again to chase the females about the garden. So tame are these birds in the towns that I have often secured them by pinching the base of the flower together when one had its bill inside, but I always gave birds so obtained their freedom again. Local name, "Cola larga"—long tails. One specimen we shot I think must have had a record tail for length.

PSALIDOPRYMNA GOULDI GRACILIS (Gould).

Trochilus (Lesbia) gracilis GOULD, *Proc. Zool. Soc. Lond.*, 1846, p. 86.

Psalidoprymna gouldi gracilis HARTERT, *Novit. Zool.*, VI, 1899, p. 75.

Twenty-four specimens, from Papallacta, Pichincha, and the west side of Corazón, Ecuador. This form differs from true *P. gouldi* of

Colombia in its smaller size, this most appreciable in the tail (of males), though the bill averages decidedly shorter.

We never observed them in Quito, but in November and December we found them fairly numerous on the slopes of Pichincha above Quito. Local name, "Finos."

ZODALIA THAUMASTA, new species.

Chars. sp..—Similar to *Zodalia glyceria* (Gould), but with no whitish on any of the tail feathers; the glittering throat patch grass green instead of olive; bill of greater length; wings and tail slightly shorter.

Description..—Type, adult male, No. 173911, U.S.N.M.; Illalo, Valley of Chillo, Ecuador, November, 1898; Goodfellow and Hamilton. Upper surface shining bluish green; wings dark brown with a purplish gloss, the superior wing-coverts like the upper parts; tail rich purple, the middle rectrices tipped with bluish green, the outermost pair with the outer webs and margins of inner webs deep brown washed with purplish; sides of head and neck like the back; chin and throat glittering grass green; breast and abdomen shining bluish green, the feathers with ochraceous margins, these most extensive posteriorly; lower tail-coverts ochraceous buff spotted with purplish; lining of wing bluish green with rusty edgings. Length of wing, 62 mm.; tail, 77 mm.; exposed culmen, 15 mm.

Adult female..—Upper parts, tail, and wings similar to the male but duller; lower surface deep buff, spotted with bluish green, these markings largest on breast and sides; crissum almost immaculate. Length of wing, 56 mm.; tail, 49 mm.; exposed culmen, 14 mm.

The two specimens above described are both from the same locality and are the only ones of this very interesting new species of a rare and little-known group. The black shafts and uniform deep brown of the exterior webs of the outer tail-feathers distinguish at sight the male of this species from that of *Zodalia glyceria*, and other differences not apparent from descriptions might be found were specimens of the two compared. If the female of *Zodalia ortoni*, described by Salvin¹ and by Hartert,² belong really to that species, and be not simply the immature of *Z. thaumasta*, the female of the latter may be distinguished from the same sex of the former by the entire lack of whitish tips to the tail-feathers.

Perhaps this is the rarest of all the Ecuadorian humming birds, and is probably now almost extinct. I was told by an old resident in Quito, and one who knows all the birds well, that in the parts they once frequented they had not been seen for years, in fact, not since the last eruption of Cotopaxi. He said they built their nests on the maize stalks, in the vicinity of that volcano, and were nesting at the time of the last great eruption, when the country for many miles around was covered deep in ashes, and darkness reigned for two days. Numbers of birds of all sorts perished at this time, and probably the young and nests of *Z. thaumasta* also, which inhabited

¹Cat. Birds Brit. Mus., XVI, 1892, p. 142.

²Tierreich, IX, 1900, p. 184.

only the end of the Chillo Valley nearest to the volcano. That they are exceedingly rare is quite certain, for though we were constantly out there for two months, and had shooters out besides, we saw none but the one pair secured.

SCHISTES ALBOGULARIS Gould.

Schistes albugularis GOULD, Contr. Orn., 1851, p. 140.

Fourteen specimens, all from Milligalli, west Ecuador, September, 1898. Among them are four white-throated birds, one of which is evidently an immature male, the others adult females, thus leaving little doubt of the correctness of Mr. Salvin's opinion.¹

They evidently occur only periodically at Milligalli, for during the month of September we shot 14 there in fine plumage; while a few weeks later we failed to find one in their old haunts, although the flowers they fed on were still in bloom. This was the only place we met with them. Local name, "Orejas de fuego"—fire ears.

HELIOTHRIX AURITUS (Gmelin).

Trochilus auritus GMELIN, Syst. Nat., I, 1788, p. 493.

Heliothrix auritus BOIE, Isis, 1831, p. 547.

Two adult males from Archidona, Rio Napo, April, 1899. One of these has a decided coppery tinge on the nape.

HELIOTHRIX BARROTI (Bourcier).

Trochilus barroti BOURCIER, Rev. Zool., 1843, p. 72.

Heliothrix barroti GRAY, Genera Birds, I, 1848, p. 115.

Fourteen specimens, eight of them males, all from Santo Domingo, west Ecuador; September and October, 1898.

No specimens from the type locality of this species, Cartagena, United States of Colombia, have been available, but these Ecuador examples seem to be indistinguishable from Panama and Veragua specimens, with which true *Heliothrix barroti* is undoubtedly identical. Birds from Guatemala, Honduras, and Costa Rica, however, have much longer wings and tails, slightly longer bills, and more restricted bluish purple crown patches, differences sufficient to entitle them to subspecific separation. There is no name available for this form since *Heliothrix purpureiceps* Gould,² from Papayán, Colombia, and *Heliothrix violifrons* Gould,³ from Veragua, belong both to true *Heliothrix barroti*. The Central American race may therefore be called *Heliothrix barroti alincius*.⁴

¹ Cat. Birds Brit. Mus., XVI, 1892, p. 35.

² Proc. Zool. Soc. Lond., 1855, p. 87.

³ Introd. Troch., 1861, p. 122.

⁴ New subspecies; type, No. 33649, U.S.N.M., Choctun, Vera Paz, Guatemala, 1862; O. Salvin. Crown and post-auricular patch metallic bluish purple; rest of upper surface brilliant grass green with a golden tinge in places; wings blackish slate, the coverts like the back; middle tail-feathers dark steel blue, the three outer pairs white; lores, cheeks, and auriculars, black; sides of chin and throat glittering green; remainder of lower parts white. Length of wing (type), 66 mm.; tail, 50 mm.; exposed culmen, 17 mm.

Immature specimens of *Heliothrix barroti* resemble in color the adult females, but the feathers of the upper surface are more or less margined with rusty, this persisting longest on the head.

Confined to the western side. These birds fly very rapidly and are somewhat difficult to shoot. Local name, "Angel quinde."

FLORICOLA ALBICRISSA (Gould).

Helimaster albicrissa GOULD, Proc. Zool. Soc. Lond., 1871, p. 504.

Floricola albicrissa ELLIOT, Classif. Synop. Troch., 1879, p. 83.

Four specimens from Nanegal, west Ecuador. There is considerable individual variation in the color of the crown and throat, in some cases these parts being exactly like the same in *Floricola superba*, thus obliterating the specific differences based thereon. The plain grayish white crissum will, however, always serve to distinguish the present species.

MYRTIS FANNY (Lesson).

Ornismya fanny LESSON, Ann. Sci. Nat., 2d ser., IX, 1838, p. 170.

Myrtis fanny CABANIS and HEINE, Mus. Hein., III, 1860, p. 59.

Thirty specimens, from Chillo and Chota valleys, Ecuador. There is considerable variation in the amount of rufous on the lower surface in different examples, but this is apparently not to be correlated with locality. Immature males resemble the females. Contrary to the statement of Hartert,¹ birds from Ecuador seem to average slightly larger than those from Peru, but there is no other observable difference.

Common in parts of the Chillo Valley in January. They feed chiefly on the flowers of the giant aloes, but we occasionally shot them about the guava flowers. Only one female was obtained out of a series of 30. Local name, "Prelado"—prelate.

MYRMIA MICRURA (Gould).

Calothorax micrurus GOULD, Proc. Zool. Soc. Lond., 1853, p. 109.

Myrmia micrura Mulsant and Verreaux, Hist. Nat. Ois.-Mouches, IV, 1877, p. 113.

A single adult male from Santo Domingo, west Ecuador, taken in October, 1898, is the only specimen in the collection. This adds the species to the fauna of Ecuador, extending its range at least 300 miles, but this specimen seems to be typical, at least in so far as it is possible to judge from descriptions.

A single specimen killed at Santo Domingo at dusk. Our attention was attracted to it by seeing it drive all other hummingbirds, large or small, away from the orange tree on which it was feeding. Being so small they are very difficult to shoot, as they seldom settle for an instant. Local name, "Quinde mosca"—fly hummingbird.

¹Tierreich, IX, 1900, p. 195.

CALLIPHLOX MITCHELLII (Bourcier).

Trochilus mitchellii BOURCIER, Proc. Zool. Soc. Lond., 1847, p. 47.

Calliphlox mitchelli GOULD, Mon. Troch., III, 1860, pl. CLX.

Seven specimens, from Milligalli and Gualea, west Ecuador, and Baeza, east Ecuador. The single male from the east side of the mountains is considerably smaller than corresponding individuals from the west side; but as no eastern adults are available, proper comparisons can not be made. Four immature males differ from an adult female in being less uniformly rufous-chestnut below the anterior portions being much lighter, even whitish.

CHAETOCERCUS MULSANTI (Bourcier).

Ornismya mulsanti BOURCIER, Ann. Sc. Phys. et Nat. Lyon, V, 1842, p. 344, pl. xx.

Chaetocercus mulsanti CABANIS and HEINE, Mus. Hein., III, 1860, p. 60.

Twenty-four specimens, from the following localities: Corazón, Pichincha, Jombaco (valley of Chillo, near Quito), west Ecuador; and Papallaeta, east Ecuador. There seems to be no constant difference between these and Colombian specimens. Birds from both sides of the mountains appear to be identical. The immature male differs from the adult female in the lack of rufescent tinge on the anterior lower parts, in the less extent of rusty on the abdomen, and in the buffy or ochraceous instead of rufous or chestnut shade of the crissum and tips to the tail-feathers. One of the young males appears to be abnormal in having the throat of a brownish gray shade instead of white, though this condition is indicated in one or two other specimens.

Found feeding chiefly on the flowers of the guava tree and in rather dry, sandy localities. Adult males always seemed very scarce, but immature males and females were fairly numerous in certain parts of the Chillo Valley in December and January. Local name, "Soldado."

POLYXEMUS BOMBUS (Gould).

Chaetocercus bombus GOULD, Proc. Zool. Soc. Lond., 1870, pp. 803, 804.

Polyxemus bombus MULSANT and VERREAUX, Hist. Nat. Ois.-Mouches, IV, 1877, p. 123, pl. cxi.

Four specimens, from Guayaquil and Santo Domingo, west Ecuador. An immature male is practically identical in plumage with the adult female.

Mr. Hartert is undoubtedly right in merging *Chaetocercus* with *Acestrura*, for *C. jourdani*, the type of the former, is undoubtedly congeneric with *C. mulsanti*, the type of the latter. The present species is, however, by reason of its very short wings and narrow, lengthened tail feathers, generically distinct from the species with which it has commonly been associated.

Found feeding just before dusk on the orange flowers at Santo Domingo. They so exactly resemble the hawk moths also seen around the flowers at the same time that

it was impossible on the wing to distinguish one from the other, and on one or two occasions Mr. Hamilton actually killed moths with a pellet from the blowpipe, mistaking them for the hummingbirds.

POPELAIRIA POPELAIRII (Du Bus).

Trochilus popelairii Du Bus, Esq. Orn., 1846, pl. vi.

Popelairia popelairi SIMON, Cat. Troch., 1897, p. 41.

One adult male from Archidona, east Ecuador.

POPELAIRIA LANGSDORFFI (Temminck).

Trochilus langsdorffi TEMMINCK, Planch. Color., 1821, pl. LXVI, fig. 1.

Popelairia langsdorffi RIDGWAY, Proc. U. S. Nat. Mus., III, 1880, p. 315.

One specimen from Coea, Rio Napo, east Ecuador. This is an immature male, differing from the adult of the same sex in the lack of the long tail-feathers and in the slight indication of the reddish bronze breast patch.

POPELAIRIA CONVERSII AEQUATORIALIS (Berlepsch and Taczanowski).

Gouldia conversi aequatorialis BERLEPSCH and TACZANOWSKI, Proc. Zool. Soc. Lond., 1883, p. 567.

Popelairia conversi aequatorialis HARTERT, Novit. Zool., V, 1898, p. 494.

Five specimens from Santo Domingo and Nanegal, west Ecuador. Among the females there is considerable difference in the amount of white on the posterior lower surface. The female of this species may be distinguished from that of *Popelairia langsdorffi* by its shorter bill and more solidly black throat.