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Systematic Notes on the Bird Family Cracidae. No. 8 The Genera *Aburria*, *Chamaepetes*, and *Penelopina*

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ABURRIA

The genus *Aburria* is monotypic, and the single species, *Aburria aburri*, ranges in the upper tropical and the subtropical zone of western South America from the northeastern lower slopes of the Santa Marta Massif, the Sierra de Perija in Colombia and Venezuela, and the Cordillera de Merida in the western Andes of Venezuela, south through the Eastern Andes (including the Cordillera de la Macarena), Central Andes, and Western Andes of Colombia, eastern Ecuador, and Peru to the upper Urubamba Valley and the region of Marcapata. The altitudinal range of the specimens that I have seen extended from 1400 to 8100 feet, but, with one or two exceptions, the birds had not been taken below 2500 feet, which suggests that the normal range is from about 2460 to 8200 feet (about 750 to 2500 meters). I have seen also an old specimen labeled Santa Fé de Bogota, which is situated at 2620 meters, but it is probable that it had been collected somewhere below Bogota itself.

This species varies geographically to a greater extent than has been suspected. Hellmayr and Conover (1942, p. 196) remarked that the birds

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of Peru average smaller than those of Colombia and Venezuela, which is true, but they did not mention that the gloss of the upper parts is Prussian blue in the birds of Peru, as against bronzy olive-green in those of Colombia and Venezuela. Chubb (1919, p. 21), who seems to have been the only author to notice a difference in coloration, remarked that the birds of Colombia and Venezuela "show a good deal of oil-green colour in the plumage, while those from Ecuador and Peru have an inclination to steel-blue," but he was not certain that the difference was geographical, because he added, "This character may denote sexual difference . . ."

I find that the difference is geographical and is not sexual or affected by wear, although it is more evident in specimens in fresh plumage which

TABLE 1
MEASUREMENTS OF ADULTS OF *Aburria aburri*

Population	N	Wing	Tail	Tarsus
Venezuela				
Males	2	375, 378	272, 290	63, 67
Colombia				
Males	28	350-400 (371)	255-300 (278)	57-72 (64)
Females	20	336-377 (351)	260-292 (273)	57-75 (62)
Ecuador				
Males	11	346-400 (373)	250-285 (272)	59-67 (63)
Females	4	340-360 (352)	253-272 (265)	63-67 (65)
Peru				
Males	9	343-370 (358)	260-285 (274)	63-75 (65)
Females	7	305-350 (331)	256-283 (268)	55-63 (59)

are more glossy. It is well marked, and the variation appears to be clinal in the specimens that I have seen. Those from Venezuela and the greater part of Colombia are green and identical, but in southern Colombia they are slightly tinged with blue, although specimens from this last region are much more similar to those from the rest of Colombia than they are to birds from Ecuador. The latter are all blue, but, in series, average slightly less blue than birds from Peru.

This variation in coloration does not accord with the variation in size, because the birds of Ecuador, though blue, are large and about similar in size to those of Venezuela and Colombia (table 1). The wing length averages distinctly shorter in birds from Peru, but the variation is not clinal and is well shown by the mean only, the individual measurements of the large majority of the specimens from Peru matching those of the

smaller individuals from Colombia. The overlap involves no fewer than eight of the nine males, and four of the seven females from Peru.

It would be misleading, therefore, to divide *Aburria aburri* into subspecies, although it is quite evident that it does vary geographically.

CHAMAEPETES

Chamaepetes unicolor inhabits the mountains of Costa Rica and western Panama east to eastern Veraguas and probably neighboring Coclé, as I have examined a specimen from Chitra, Veraguas, which is only about 3 kilometers west of the border of Coclé.

It varies very slightly geographically, the birds of Costa Rica averaging apparently slightly larger than those of Panama, but the difference is not of taxonomic importance. In the specimens that I have examined, the wing length of eight males from Costa Rica measured 293–324 (309.70), and that of six females 280–308 (293.66), as against 280–315 (300.10) in 13 males, and 280–301 (288.60) in five females, from Panama.

The difference in size is probably correlated with altitude, as the mountains of western Panama average lower than those of Costa Rica. In the latter, *C. unicolor* is found from timber line down to subtropical elevations, according to Slud (1964, p. 77), and the specimens I saw from Costa Rica were collected at a mean elevation of 2278 meters, as against 1577 for Panama. The birds from Costa Rica were collected between 4000 to 10,000 feet (1219 to 3048 meters) with the exception of one taken at 3000 feet (914 meters) on the Cerro Santa Maria in the Cordillera de Guanacaste. In Panama, my specimens were collected between 3600 and 6600 feet (1097 to 2011 meters), but the species occurs even lower, because Wetmore (1965, p. 303) wrote that it has been reported down to 450 meters (1476 feet) on the Boquete Trail in Bocas del Toro.

The other species of the genus, *Chamaepetes goudotii*, inhabits western South America and varies geographically. It can be divided into five subspecies: *sanctaemarthae*¹ Chapman, 1912, type locality, El Libano, Santa Marta, Colombia; nominate *goudotii* Lesson, 1828, type locality, Quindio region, Central Andes, Colombia; *fagani* Chubb, 1917, type locality, Mindo, western Ecuador; *tschudii* Taczanowski, 1886, type locality, Tamiapampa, Amazonas, Peru; and *rufiventris* Tschudi, 1843, type locality, Chilpes, Junin, Peru.

Chamaepetes g. sanctaemarthae is restricted to the Santa Marta Massif.

¹ The stipulations of the International Code have been imposed, over the strong objections of the author.—EDITOR.

Nominate *goudotii* inhabits the Eastern, Central, and Western Andes of Colombia from the departments of Antioquia and Cundinamarca south to Nariño. In southern Nariño it is replaced by *fagani* on the western slopes of the Andes, and by *tschudii* on the eastern slopes, *fagani* ranging south through western Ecuador, and *tschudii* south through eastern Ecuador to northern Peru to about the eighth parallel in the departments of La Libertad and San Martín. South of there it grades into *rufiventris* between about the eighth and tenth parallels, *rufiventris* ranging south to about latitude 11°30' S. in the Department of Junín.

The five subspecies vary in coloration, size, and proportions. *Sanctamarthae* is brownish olive above and reddish chestnut below; its throat is dusker than the breast and usually more brownish, less reddish, but not really "brown" as Chapman stated (1912, p. 141). Nominate *goudotii* is darker above than *sanctamarthae*, more olive, but is paler and brighter rufous below; its throat is brown and contrasts with the rufous breast, and its feathers have faint grayish edges. *Fagani* is considerably darker above than nominate *goudotii*, bronzy dull green, rather than olive-green, and is also darker, dusker rufous below; its throat is dusky brown, the brown area being more extensive than in nominate *goudotii* and invading the upper breast, and its feathers have also pale grayish margins. *Tschudii* resembles *fagani* above, but is somewhat paler, more olive-green, less bluish, and is paler, brighter, more ferruginous below, and has the brown area of the throat more restricted and more sharply defined against the rufous breast. *Rufiventris* is paler above than *tschudii*, and is brighter and more reddish below. In this race, the pale gray margins of the feathers of the throat are best defined, and these pale margins are present also on all the feathers of the head, nape, and sides of the neck.

These variations in the degree of color saturation are presumably correlated with prevailing humidity, but, unfortunately, I could not find information on the amount of the annual rainfall for all the regions concerned. It is known, however, that the Andean slopes of western Ecuador are very humid, because Chapman (1926, p. 27) stated that these slopes "are nightly bathed with heavy fog or mist." This humidity probably accounts for the very dark coloration of *fagani*, although the eastern slopes may receive quite as much or more rain, but on a more seasonal basis.

The five subspecies vary in size, and some vary in proportions (table 2), but it is difficult to account for the variation. This variation is probably adaptive, but the wing length of the birds that I have examined is not correlated with altitude as we might expect. The wing length is longest in *tschudii* and *rufiventris* which were collected at the lowest altitudes, and

TABLE 2
MEAN LENGTHS OF THE WING AND TAIL (IN ROUND NUMBERS), AND TAIL/WING RATIO
IN *Chamaepetes goudotii*, WITH THE AVERAGE ALTITUDE (IN METERS) AT WHICH THE
SPECIMENS EXAMINED WERE TAKEN

Subspecies	Wing	Tail	Ratio	Altitude ^a
<i>C. g. sanctaemarthae</i>				
Males	252	256	1.01	2229
Females	244	246	1.01	
<i>C. g. goudotii</i>				
Males	261	243	0.93	1954
Females	251	236	0.94	
<i>C. g. fagani</i>				
Males	241	205	0.85	1901
Females	230	195	0.85	
<i>C. g. tschudii</i>				
Males	264	251	0.95	1566
Females	251	242	0.96	
<i>C. g. rufiventris</i>				
Males	269	255	0.95	1546
Females	247	243	0.99	

^a Range and number of records (in parentheses): *sanctaemarthae*, 1829–2804 (15); nominate *goudotii*, 701–3200 (36); *fagani*, 1097–2590 (10); *tschudii*, 1100–2225 (12); *rufiventris*, 1219–1820 (3).

fagani is very considerably smaller than nominate *goudotii*, although the specimens of these two races were collected at about the same altitude. The reason for the sharp drop in the tail/wing ratio in *fagani* is also not at all clear to me.

PENELOPINA

The genus *Penelopina* is monotypic. *Penelopina nigra* ranges from the Sierra Madre in southeastern Oaxaca, where it has been reported north of Niltpec, and from the mountains of northern Chiapas, east through the mountains of Guatemala, El Salvador, and Honduras to the region of Matagalpa in Nicaragua. In El Salvador, *P. nigra* is probably found only in the mountains near the Guatemalan border and in those of the northwest, but, before it was extirpated or its habitat was destroyed, it was found in the coastal range east to the Volcan de San Miguel. It inhabits wet or cloud forests and has been collected between 1049 and 2624 meters (3200 to 8000 feet), but occasionally descends much lower, as it has been reported at 450 meters in Oaxaca, and very probably ascends higher to the limit of suitable habitat, which reaches 9000 feet

in northwestern El Salvador and well exceeds 10,000 feet in the Cuchumatanes Range of interior Guatemala.

Penelopina nigra does not appear to vary geographically, but van Rossem (1934) divided it, nevertheless, into three subspecies and stated that another can probably be described from Guatemala. The three subspecies are *nigra* Fraser, 1850, and *dickeyi* and *rufescens* named by van Rossem (1934). The type locality of *dickeyi* is Los Esesmiles, Chalatenango, northwestern El Salvador; that of *rufescens* is Ocotal, Nicaragua; *nigra* was based on an aviary bird of unknown origin, and van Rossem has suggested Guatemala as its type locality. The ranges of the three subspecies are, as defined by van Rossem, the interior mountains of El Salvador and probably those of Honduras for *dickeyi*; Nicaragua, for *rufescens*; and Chiapas, Guatemala, and extreme southwestern El Salvador, for *nigra*. The extension of the range to Oaxaca was made known after 1934. Van Rossem's review was based on insufficient material. The material that I examined, though more abundant, is also deficient in some respects, but, as it shows that *dickeyi* is clearly invalid, and *rufescens* is most probably so, I synonymize these names with *nigra* Fraser. I also found no evidence whatever for dividing the population of Guatemala into two subspecies.

It is difficult to discuss the validity of *dickeyi* and *rufescens* briefly, because their diagnoses and discussion are involved and complicated by statements concerning the color of the gloss of adult males, which seem irrelevant to me. If, however, we ignore the gloss for the moment, *dickeyi* was separated from *nigra* by van Rossem only on the color of the bare skin of the orbital region in adult males, and *rufescens* from *dickeyi* and *nigra* only by the coloration of the plumage of the adult females. The eye ring, which van Rossem misleadingly referred to as the "semi-nude area about the eye," was said by him to be "dull brownish red in life" in *dickeyi*, as against "purplish or bluish purple in life" in *nigra*. As regards the coloration of the females, *rufescens* was said to differ from *nigra* and *dickeyi* by being "lighter and more reddish (less sandy) brown . . . particularly on the upper parts, wings, and tail; light bars everywhere wider and dark bars correspondingly narrower."

The difference in the coloration of the bare skin of the eye ring, brownish versus purplish, is not necessarily of taxonomic importance, because it is only one of degree (of hue) and is probably affected by physiological changes in *Penelopina* as in all other Cracidae. If we grant that it is of taxonomic importance, however, and that van Rossem's information concerning the color in *nigra* was correct, the difference should be constant. Such is not the case, however, as shown by an adult male col-

lected recently in Chiapas. In this bird, taken on March 16, 1965, at El Triunfo, above Mapastepec, in the Pacific cordillera, the eye ring was reddish brown, not purplish. The collecting party was headed by Alvarez del Toro and included the artist A. E. Gilbert, who took notes and made a color sketch of the soft parts immediately after the bird was shot.

Van Rossem's evidence that the eye ring is purplish in life in *nigra* is indirect and dubious. It consists only of the color plate published by Fraser (1850), and of a statement made by Godman (1902, p. 278) in describing a specimen in his collection that had been collected in Chiapas. The label of this specimen, which I have examined, and labels of other specimens of *Penelopina* sent to Godman by the same collector, give no information on the color of the soft parts, and the notes and correspondence of Godman in the archives of the British Museum throw no light on this question. The plate supplied by Fraser was colored by hand, which introduces a margin of error, and, moreover, is obviously inaccurate. It illustrates a bird with the whole of the face bare, whereas the area of bare skin in *Penelopina* consists only of a rather narrow eye ring expanding behind the eye to form a small triangular patch, a fact that must have been known to van Rossem who had himself collected several specimens of *Penelopina* in El Salvador, making a notation of the color of their orbital region. His experience should have made him question the reliability of Fraser's plate. In the specimen collected recently at El Triunfo, which was well prepared, the eye ring is about 3 mm. in width, and the triangular patch measures about 8 mm. at its largest diameter. The area of bare skin around the orbit is therefore quite restricted in *Penelopina*.

The females from Nicaragua examined by van Rossem and on which *rufescens* is based, consist of only three specimens: one in the collection of the American Museum of Natural History, which Van Rossem selected for the type, one in the British Museum, and one in the Muséum National d'Histoire Naturelle in Paris. I have not seen the last-named specimen. The specimen in the British Museum is not available to me now, but, at the time that I examined it, it did not seem to differ from two adult females of *nigra* from Guatemala. The only two females that I have seen that correspond to the diagnosis of *rufescens* given by van Rossem are the type and one bird which had not been collected in Nicaragua, but at Nebaj, Guatemala. These two specimens are not fully adult, and the difference in color and pattern between them and adults may be correlated with immaturity. Van Rossem apparently failed to notice that the type was not adult, but the fact is shown by its

plumage and very small measurements, its wing length measuring only 215 mm., as against a mean of 247 in adults. The other subadult from Nebaj has a somewhat longer wing; it measures 222 mm. In other words, similar birds are found in both Nicaragua and Guatemala, which suggests very strongly that *rufescens* is not valid.

The difference in the color of the gloss of adult males discussed by van Rossem, bluish versus greenish, is bridged by a complete range of intermediates and does not appear to be geographical, as Hellmayr and Conover (1942, p. 184) have remarked. Van Rossem believed that the birds of the Pacific cordillera of Chiapas and Guatemala were greenish, whereas those from the interior of Guatemala, the interior of El Salvador, Honduras, and Nicaragua were bluish, but my specimens show that the coloration is not constant in any one region and that the birds of Guatemala cannot be divided into two subspecies, i.e., a greenish one on the Pacific coast and a bluish one in the interior. For instance, of two males from the Volcan de Tajumulco in the Pacific cordillera, one is greenish, but the other is very blue. Of three males from San Rafael del Norte in Nicaragua, one is green, and the other two are blue. Of two males from Honduras, one is more bluish than the other, and the male collected recently in the Pacific cordillera of Chiapas is bluish green, rather than greenish, and matches another male collected at Nebaj in the interior of Guatemala.

The measurements discussed by van Rossem are misleading and require comment. He combined the measurements of the two sexes on the ground that "there seems to be little or no size difference between males and females. . . . For instance, both the largest and the smallest *rufescens* examined chance to be females and three of the seven males of *rufescens* are smaller than the two largest females. Immature birds are not included." But he did include the type of *rufescens* which is not adult and is very small, as stated above, and this seems to account for his statement concerning the females of this form. He failed also to appreciate that it is normal for the females to be considerably larger than males in this genus.

The sexual dimorphism in size is actually most interesting, because the females average smaller than the males in all other genera of the Cracidae that I have studied so far (*Ortalis*, *Penelope*, *Pipile*, *Aburria*, and *Chamaepetes*). This difference in size, taken in consideration with the absolute dimorphism in coloration, and the fact that *Penelopina* nests regularly on the ground, as well as in trees, may imply that the females of *Penelopina* are less arboreal than the males. The female has a very concealing, brownish, and strongly disruptive plumage, whereas the

males are all black and highly glossed. In the adult specimens that I have measured, 15 females had a wing length of 236–270 (247) mm., as against 220–250 (236) in 29 males.

The four populations measured show no appreciable difference in size, the mean wing length (in round numbers) being as follows: 234 in six males and 249 in six females from Mexico, 234 in nine males and 243 in five females from Guatemala, 244 in two males and 249 in one female from Honduras, and 237 in 12 males and 245 in one female from Nicaragua. The two males from Honduras chance to be large, but additional measurements would probably reduce the mean.

Van Rossem's birds from Nicaragua were apparently smaller than his birds from the rest of the range of the species, the mean wing length of the two combined sexes given by van Rossem being 217 in birds from Nicaragua, 224 in those from El Salvador, and 229 in those from Guatemala and Mexico. He warned that the small size of the birds of Nicaragua might not "hold good in a larger series," but I believe that his measurements of this population were affected by the fact that seven of his 10 measurements were those of males and that he included in the measurements of the three females those of the type of *rufescens*, which is not adult and very small.

This study was based on the material in the collection of the American Museum of Natural History, and the collections of the Academy of Natural Sciences of Philadelphia, the British Museum (Natural History), the Carnegie Museum, the Field Museum of Natural History, Chicago, and the United States National Museum of the Smithsonian Institution. I am indebted to the authorities of these institutions for their cooperation and the help given me during my visits, and also for loans of selected specimens for further study received from the Academy of Natural Sciences of Philadelphia and the Field Museum of Natural History. I am also very grateful to Dr. Ian C. J. Galbraith of the British Museum for measuring for me again specimens I had seen and for searching for information in the correspondence of F. D. Godman in the archives of the British Museum; and to Mr. A. E. Gilbert for discussing *Penelopina* with me and for furnishing me with his notes on the color of its soft parts in life.

SPECIMENS EXAMINED

Aburria aburri

VENEZUELA: *Merida*: Montañas de Capas, 1 unsexed [♂]; near Merida, 1 immature ♂ ; La Azulita, 1 ♂ ; Limones, 2 ♀ .

COLOMBIA: *Magdalena*: Los Gorros, above Loma Larga, 1 ♂, 2 ♀; Tierra Nueva, Sierra Negra, southeast of Fonseca, 1 ♀; Hiroca, Sierra de Perija, 1 ♂, 1 ♀. *Norte de Santander*: Bella Vista pumping station, 100 kilometers [south?] of Petrolea, 1 ♂; Palo Gordo, 10 miles southeast of Villa Felisa, Tachira Valley, 1 immature ♀. *Antioquia*: Valdivia, 1 ♂; no locality, 1 unsexed [♂]. *Caldas*: Hacienda Sofid, Río Samana, 1 ♀. *Cundinamarca*: Santa Fé de Bogota, 1 nestling. *Meta*: Ridge Camp, southwest of Entrada, Macarena, 1 ♂; La Macarena, 2 ♀; Plateau of the Macarena, 1 ♂, 1 ♀; Las Pavas, 3 ♂. *Huila*: La Plata, 4 ♂, 2 ♀; La Candela, 1 ♂, 1 ♀; Andalucia, 1 ♂, 1 ♀; El Isno, 1 ♀; near San Agustín, 2 ♂; Aguas Claras near San Adolfo, Acevedo, Río Suaza, 1 immature ♂, 2 ♀. *Cauca*: Munchique, 1 ♀; Río Munchique, 1 ♂; Río Mechengue, 1 ♂, 1 ♀; La Costa, 2 ♂, 1 ♀; Gallera, west of Popayan, 1 ♂. Colombia, no locality, 1 ♂, 3 unsexed.

ECUADOR: Baeza, 4 ♂, 1 ♀; Chiguiuda, 2 unsexed; Mirador, Baños, 1 “♀” [= ♂], Sabanilla, Río Zamora, 1 ♂, 1 ♀; Río Napo, 1 ♂; Río Sardinas, 1 ♂; Río Oyacachi, 4 ♂; Tamia Urco, 1 immature ♂; Cerro Tutapisco, 3 days east of Quito 1 ♀; Cerro Chimiplayas, 1 ♀; Río Vermejo, 1 ♂; Macas region, 2 unsexed young.

PERU: Chira, Cajamarca, 1 ♂; Chaupe, Cajamarca, 1 ♂; Huayabamba, 1 ♀; Cushilibertad, 3 ♂, 1 ♀; Río Cosireni, 1 ♀; Uscho, about 50 miles east of Chachapoyas, 1 unsexed; Fundo Cinchona, Huanuco, 3 ♂, 1 ♀; Divisoria, road from Pucallpa to Tingo Maria, 2 ♂; Chanchamayo, 1 ♀; Hacienda Cadena, Marcapata, Cuzco, 1 ♂, 1 ♀.

Chamaepetes goudotii sanctaemarthae

COLOMBIA: *Magdalena*: El Libano, 8 ♂ (including type of *sanctaemarthae*), 3 ♀, 1 unsexed, 2 chicks; Vista Nieve, 4 ♂; Vista Nieve, La Cumbre, 1 ♀; Chinchicua, 1 ♂; Cerro Aguacil, Chinchicua, 2 ♂; Chirua, 2 ♂; Macotama, 1 ♂; San Miguel, 1 ♂; Las Taguas, 1 ♀; Las Vegas, 1 ♂, 1 ♀; Cincinnati, 2 ♂, 2 ♀; San Lorenzo, 6 ♂, 5 ♀, 1 immature ♂, 1 immature; San José, Río Guatapuri, 1 ♀; Cerro de Caracas, Sierra Nevada, 1 ♀; Sierra Nevada, no locality, 3 ♂.

Chamaepetes goudotii goudotii

COLOMBIA: *Antioquia*: Retiro, 1 ♂; Valdivia, 1 unsexed [♂] (type of *antioquiana*): Ventanas, Valdivia, 2 ♂; Hacienda Potreros, 15 miles southwest of Frontino, 2 ♀; Hacienda la Ilusion, Río Urrao, 1 ♀; Santa Barbara, Urrao, 1 ♀; Guapantal, Urrao, 1 ♀; La Bodega, south bank of the Río Negrito between Sonson and Nariño, 1 ♀; no locality, 1 ♂, 1 ♀. *Caldas*: Laguneta, 6 ♂, 8 ♀; Salento, 1 ♀; Andes above Salento, 1 ♀; La Selva, 2 ♀. *Cundinamarca*: Bogota, 2 unsexed [♂]; vicinity of Bogota, 1 unsexed; Mambita, 1 ♂; Río Balcones, Guasca, 1 ♀, 1 unsexed. *Tolima*: Toche, 2 ♂, 2 immature ♀. *Valle del Cauca*: Los Tambos, 2 ♂, 1 ♀, 1 immature ♀; Silencio, 1 ♀; San Antonio, 2 ♂. *Cauca*: Cerro Munchique, 7 ♂, 7 ♀; Río Munchique, 1 ♀; La Costa, 1 ♀; Aguas Blancas, Puracé, 1 ♂; Savaneta, 1 ♀; Almaguer, 1 ♀. *Huila*: La Palma, 1 ♂; 1 immature ♂; La Plata, 3 ♀, 1 ♀; Río Ovejeras, San Agustín, 1 ♀; Río Magdalena, San Agustín, 1 ♂; San Antonio, San Agustín, 1 ♀; Las Tijeras, Moscopan, 1 ♂. “Interior of New Granada,” 1 unsexed.

Chamaepetes goudotii fagani

COLOMBIA: *Nariño*: Ricaurte, 2 ♂; Mayasquer, 1 ♂.

ECUADOR: Mindo, 3 ♂; 2 ♀ (including type of *fagani*); Piganta, 4 ♂, 1 ♀; Zaruma, El Oro, 5 ♂, 3 ♀; Salvias, El Oro, 3 ♂; El Tambo, Loja, 1 ♂, 1 immature ♀; Montes de Paramba, 1 ♂; Guala, 1 ♂; Saloya, 2 ♀; Montes de Santa Lucia, 1 ♀; Tandipi, Pichincha, 1 ♂; Nanegal Chico, Pichincha, 1 ♀; Cayandeledi, 1 ♂; Chanchacoto, Pichincha, 1 ♂; vicinity of Quito, 1 unsexed; Guayupe, Imbabura, 1 immature ♀.

Chamaepetes goudotii tschudi

COLOMBIA OR ECUADOR: Cordillera Pax, 1 ♀.

ECUADOR: Baeza, 7 ♂, 1 ♀; above Baeza, 1 ♂, 5 ♀; Chaco, lower Rio Oyacachi, 1 ♂; Sumaco, 1 ♂; above Sumaco, 1 ♂; below Sumaco, 1 ♂, 1 ♀; Zamora, 1 ♀; Chiguaza, between Santiago and Zamora, 1 ♂; Chiguinda, 3 unsexed; Guama Yacu, 1 ♂; Mera, Rio Pastaza, 1 ♂, 1 ♀.

PERU: Chaupe, Cajamarca, 1 ♂, 2 ♀; Tamborapa, Cajamarca, 1 ♂; Uscho, San Martin, 1 ♂; Chachapoyas, 1 unsexed; Utcubamba, San Martin, 1 ♀; Rio Jelaste [?Jelache], San Martin, 1 ♀; Cueva Seca, San Martin, 2 unsexed; San Lorenzo, San Martin, 1 unsexed; "near Loreto," [= near Tayabamba, Libertad], 3 unsexed; Pozuzo, Huanuco, 1 ♀; Fundo Cinchona, on the road between Tingo Maria and Pucallpa, Loreto, 1 ♀. (The specimens from Cueva Seca, San Lorenzo, near Loreto, Pozuzo, and Fundo Cinchona are intermediate between *tschudii* and *rufiventris*, but more similar to *tschudii*.)

Chamaepetes goudotii rufiventris

PERU: Cushilibertad, Huanuco, 2 ♂, 3 ♀; Peñablanca, Chanchamayo, 15 kilometers west of La Merced, Junin, 1 ♀; Auquimarca, Junin, 1 unsexed [♀].

Chamaepetes unicolor

COSTA RICA: Rancho Redondo, 1 ♀; La Palma, 1 ♂; Cachi, 1 ♂; San José, 1 unsexed; Irazu, 1 ♀, 1 unsexed; Navarro, 2 ♀; Volcan de Turrialba, 5 ♂, 2 ♀, 2 immature ♀; Escazu, 1 ♂; Savanna de F. [?] Diaz, 1 ♀; Guiras de Terraba, 1 ♀; Cerro Santa Maria, Cordillera de Guanacaste, 1 ♂; no locality, 2 unsexed.

PANAMA: *Chiriqui*: Boquete, 1 unsexed, 1 immature ♀; Lerida, Boquete, 2 ♂; Rio Caldera, Boquete, 4 ♂, 1 ♀; Quiel, Boquete, 2 ♂, 1 ♀; Bajo Mono, Boquete, 1 ♂; Bajo Boquete, 1 unsexed; Cordillera, Boquete, 1 ♀; Cerro Flores, 2 ♂; Santa Clara, 1 ♀; Volcan de Chiriqui, 1 ♀; Boqueron, 1 ♂. *Veraguas*: Calovevora, 1 ♂ (type of *C. unicolor*), 1 unsexed; Cordillera de Tole, 1 ♂; Chitra, 3 ♂, 1 ♀.

Penelopina nigra

MEXICO: *Chiapas*: Tumbala, 1 ♂; Cerro Saxchamal, Sierra Madre, 2 ♀; Cerro Madre Vieja, near Escuintla, 1 ♀; Rio Chicol, near Escuintla, 1 ♀; Santa Rosa, Escuintla, 1 ♂, 1 ♀; Cerro Ovando, Escuintla, 1 immature ♂; El Triunfo, above Mapastepec, 1 ♂; Santa Rita, 1 ♂; Siltepec, 1 ♀; Moriscal, Siltepec, 1 immature ♀; Catharinas, Comitán, 1 immature ♂, 1 ♀; El Triunfo, Comitán, 2 ♂.

GUATEMALA: Volcan de Tajumulco, 2 ♂, 1 ♀; El Rincon, San Marcos, 1 immature ♂; Volcan de Agua, 1 immature ♂, 1 ♀; Volcan de Fuego, 3 ♂, 3 immature ♂, 2 ♀; Nebaj, 2 ♂, 1 ♀; Cobán, 2 immature ♂; Chimoján, 1 immature ♂; Alta Vera Paz, 1 ♂; no locality, 3 ♂, 2 ♀, 1 immature ♀.

HONDURAS: Cantoral, 2 ♂, 1 immature ♂, 2 ♀; Alto Cantoral, 1 ♀.

NICARAGUA: Ocotal, 2 ♂, 1 subadult ♀ (type of *rufescens*), 1 downy young; Jinotega, 3 ♂; San Rafael del Norte, 6 ♂, 1 immature ♂; Matagalpa, 1 ♀.

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