NEW SPECIES OF *PHYSCONELLOIDES* (*MALLOPHAGA*) FROM COLOMBIAN HOSTS NEOTROPICAL MISCELLANY N° 13

By

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Genus Physconelloides Ewing, 1927.

Philopteroid genus found only on the avian family *Columbidae,* and presently containing but nine species; 1 from the Gallapagos Islands, 4 from North America and 4 Neotropical. All of the known species, excepting *galapagensis,* are represented in the author's collection.

Col. Emerson has recently published a review of the 4 North American species, and listed the remaining 5 (Journ. Kansas Ent. Soc., vol. 33, July 1960, p. 122). In the present paper 4 species and 2 subspecies are described as being new to science.

The species, especially from one genus of hosts, are very homogeneous in their general appearance, but there are quite a number of characters which may be used for their separation. The principal characters which are reliable for the specific separation are as follows: the shape and length of the two pairs of pre-antennal spine-like processes (median pair ventral); the shape of the abdominal tergites and the shape and chaetotaxy of the last abdominal segment and the male and female genital plates.

There are also notable differences in size; the proportionate size of the two sexes, and the shape of the abdomen, the latter being very elongated oval in some and a much shorter oval in others, where that of the male is almost circular. There is also a strong resemblance between the species of Mallophaga from the hosts of a single genus of birds, such as *Geotrygon* and *Claravis,* which are treated in the present paper.

I have examined parasites from seven species of *Geotrygon* and all have the same long, heavy, sharp-pointed pre-antennal spinous processes; all have more or less the same style of pitchy-black markings of the head and thorax, but the genital plates of both sexes and the abdominal tergites show marked differences.

The new species here described were all collected personally by the author from freshly killed hosts. All measurements are in millimeters and all drawings were prepared by the author.

Physconelloides chocoensis new species.

Pl. I, fig. 1; Pl. II, fig. 3; Pl. III, fig. 3.

Types, ♂ and ♀ adults, from *Geotrygon veraguensis* Lawrence, collected by the author at Rio Jurubidá, Chocó, Colombia, March 17, 1951 (Carriker coll. type No. 655).

The present species may be recognized by the following characters: A circular clear area in the basal portion of the median, ventral spinous processes; by the shape of the abdominal tergites; the structure and chaetotaxy of the vulva plate in the female and the genital plate in the male (see figs.).

In this species the abdomen is long (1.01), the longest of the species here treated, while that of the male is very small and almost circular (.56 x .53).

Genitalia of male: In all of the species here treated, where males are present, the genital apparatus was found to be very similiar and very rudimentary. However in some species the basal portion (of the basal plate), where parameres are joined, is very narrow and paralell-sided (.027 wide), while in other species the basal portion is swollen laterally, with a width of more or less .055, the same as the apical portion of the basal plate.

The parameres are short, never more than .06 and the endomera small and rudimentary. The entire organ is without pigment, excepting a narrow slightly darker margin on the basal plate. It is not feasible to use them as a differentiating character.

Ewing says: "Genital armature of male very long, slender and delicate; basal plate arising from the chitinized base of first abdominal segment and extending through almost the entire length of the abdomen as two slender rods; parameres outwardly directed, almost straight processes thickened at their bases; endomeres free and similiar to parameres".

There are several errors in the above description. The basal plate is not composed of two slender rods, but a narrow plate, slightly thickened along the sides and with central portion hyaline, giving the impression of two rods. The parameres are not outwardly directed, but posteriorly, and are almost paralell. The endomera is not clearly visible on any of the males examined, but appears to be merely a small elongated oval body.

Emerson merely says of the male genitalia: "The male genitalia do not appear to be distinctive". The males from *Leptotila verreauxi* (type host of the genotype) have the basal portion of the basal plate swollen latterly, not paralell-sided.

The species is represented by the ♀ holotype, ♂ allotype; 2 ♀ ♀ paratypes in the type series, and 1 ♀ from Tarazá, Antioquia, Colombia.

The measurements will follow the next species.

Physconelloides perijae new species.

Pl. I, fig. 4; Pl. II, figs. 1 and 7; Pl. III, fig. 2

Types, ♂ and ♀ adults, from *Geotrygon l. linearis* (Prevost), collected by the author at Monte Elias, Sierra Perijá, Dept. Magdalena, Colombia, on July 30, 1941 (Carriker coll. type No. 656).

Diagnosis: Differs from *chocoensis* as fallows: The male is longer and the female much shorter (see table of measurements); head longer and wider in male, slightly shorter and same width in female; prothorax more divergent posteriorly; pterothorax shorter and with posterior margin differently shaped; tergites quite different (see figs.); male genital plate of similiar type, but differs in detail; vulva plate in female also of similiar type, but differs in detail. In *chocoensis* there are 3 setae on each side of posterior margin of the vulva plate, with 5 in *perijae*; the lateral supports of the plate also differ, as well as the chaetotaxy of abdominal segment VIII.

Species represented by female holotype, male allotype and 2 ♂ ♂ and 1 ♀ paratypes, from the same individual host; 1 ♂ from Botero, Antioquia.

Measurements of *P. chocoensis* and *P. perijae*:

	♂		♀		♂		♀	
	length	width	length	width	length	width	length	width
Body	1.13	——	1.73	——	1.22	——	1.56	——
Head	.38	.477	.50	.63	.40	.55	.465	.63
Prothorax	.13	.308	.185	.40	.14	.326	.12	.375
Pterothorax	.12	.42	.15	.51	.10	.43	.114	.50
Abdomen	.56	.53	1.01	.63	.63	.61	.91	.675
Male genitalia	.45	.065			.54	——		

Physconelloides perijae magdalenae new subsp.

Pl. II, figs. 2 and 6.

Types, ♂ and ♀ adults, from *Geotrygon linearis infusca* Bangs, collected by the author at Cerro San Lorenzo, Dept. Magdalena, Sept. 8, 1945 (Carriker coll. type No. 657)

Diagnosis: Considerably smaller than *perijae* in all measurements; the rounded clear patch at base of ventral spine-like processes is smaller and less clear; the genital plate of the male is much smaller and of a different shape and chaetotaxy (see figs. 1 and 2, Pl. II).

The vulva plate of the female is also much smaller than in *perijae* and of a different shape, although the chaetotaxy is similiar (figs. 6 and 7, Pl. II). The race is represented by a very large series of both sexes, from various localities in the Sierra Nevada and Mt. San Lorenzo, there being 26 ♂ ♂ and 39 ♀ ♀ paratypes in addition to the ♂ holotype and ♀ allotype. The measurements follow the next species.

A single ♂ from *G. frenata bourcieri,* collected at Munchique, and a ♀ from *G. f. frenata,* taken at La Pampa, Peru, are not separable from *P. p. perijae.* They are slightly smaller in most measurements and with a shorter abdomen, but the vulva plate the same in all respects.

Physconelloides montana new species.

(Pl. I, fig. 3; Pl. III, fig. 4)

Type, ♀ adult, from *Geotrygon m. montana* (Linn.), collected by the author at Rio Nuquí, Dept. Chocó, Colombia, Feb. 13, 1951. (type No. 658, Carriker coll.).

Diagnosis: A small species, slightly smaller than *perijae*, but with a much smaller head (see table of measurements); the preantennary head spines are much smaller than in *perijae*, but the median ventral processes are the same length, but lack the hyaline circle at base; the pitchy black markings of head and thorax are differently shaped (see figs.)

The vulva plate is not clearly defined and the figure may not be correct; the temples are more angulated, with lateral and posterior margins almost straight, as are the sides of the prothorax; the abdominal tergites resemble those of *chocoensis* very much, but are not the same.

The species is represented by a single female, the holotype.

Measurements of *P. perijae magdalenae* and *P. montana*:

	♂		♀		♀	
	length	width	length	width	length	width
Body	1.18	——	1.46	——	1.54	——
Head	.41	.50	.45	.59	.42	.575
Prothorax	.13	.30	.16	.34	.16	.37
Pterothorax	.11	.41	.21	.44	.206	.477
Abdomen	.61	.61	.81	.69	.93	.673
Basal Plate	.41	.055				

Physconelloides anolaimae new species.

Pl. I, fig. 2; Pl. II, fig. 4; Pl. III, fig. 5.

Types, ♂ and ♀, adults, from *Columba subvinacea anolaimae* Chubb, collected by the author at Pavarondocito, Antioquia, Colombia, June 2, 1950. (type No. 659 Carriker coll.).

Diagnosis: Preantennal spine-like processes short and thickened; ventral processes very short and with the blunt tips pointing inward; lateral temporal angles flattened and wide, with 2 setae; anterior and posterior margins of temples concave; most all head and thoracic markings differ from the other species of this paper (see fig. 2, Pl. I).

Prothorax with widely divergent sides and pterothorax with circular sides and posterior margin; abdominal tergites decidedly different, with pitchy markings. The vulva plate of female very different, resembling somewhat that of *P. passerinae* Emerson, but with shorter setae.

The genital plate of the male seems to be of the same type as that of *P. perijae magdalenae,* but the plate itself is of slightly different shape, as well as the lateral supporting arms, while the chaetotaxy is decidedly different (see figs.)

The species is represented by the ♀ holotype, ♂ allotype and 2 ♂ ♂ paratypes. The measurements follow the next species.

Physconelloides eurysema pretiosa new subsp.

Pl. III, figs. 1 and 6.

Types, ♂ and ♀ adults, from *Claravis pretiosa* (Ferrari-Perez), collected by the author at Unguía, Chocó, Colombia, February 22, 1950 (type No. 660 Carriker coll.).

Diagnosis: Very closely related to *P. eurysema* (Carriker) from *Claravis mondetoura,* but there are distinctive subspecific differences. Unfortunately the specimens of *eurysema* were not cleared before mounting, so that some characters of the genital plates are not absolutely clear.

P. e. pretiosa is very much larger, in *all* measurements, than *eurysema.* In both *eurysema* and the present race we find a very unusual condition as to the measurements of the two sexes. In both forms *all* of the measurements of the head and thorax are exactly the same in the two sexes. I know of no other species of this genus where this occurs. The only difference in size is in the abdomen, which is longer in the female, but scarcely wider than in the male.

There are noticable differences, however, in the vulva plate of the female and the genital plate of the male. The general structure is the same in *pretiosa* as in *eurysema,* but they differ in small details and in the chaetotaxy. The present subspecies is represented by the ♂ holotype, the ♀ allotype and 1 ♂ and 1 ♀ paratypes; also 2 ♂ ♂ and 2 ♀ ♀ from Andagoya, Colombia and 3 ♂ ♂ and 1 ♀ from Perené, Peru.

Measurements of *P. anolainae* and *P. eurysema pretiosa*:

	♂		♀		♂		♀	
	length	width	length	width	length	width	length	width
Body	1.37	——	1.92	——	1.48	——	1.65	——
Head	.48	.69	.53	.78	.456	.69	.46	.694
Prothorax	.15	.39	.18	.50	.20	.43	.205	.43
Pterothorax	.13	.55	.14	.62	.195	.50	.195	.50
Abdomen	.685	.74	.976	.80	.79	.70	.976	.73
Basal plate	.43	.065			.45	.055		

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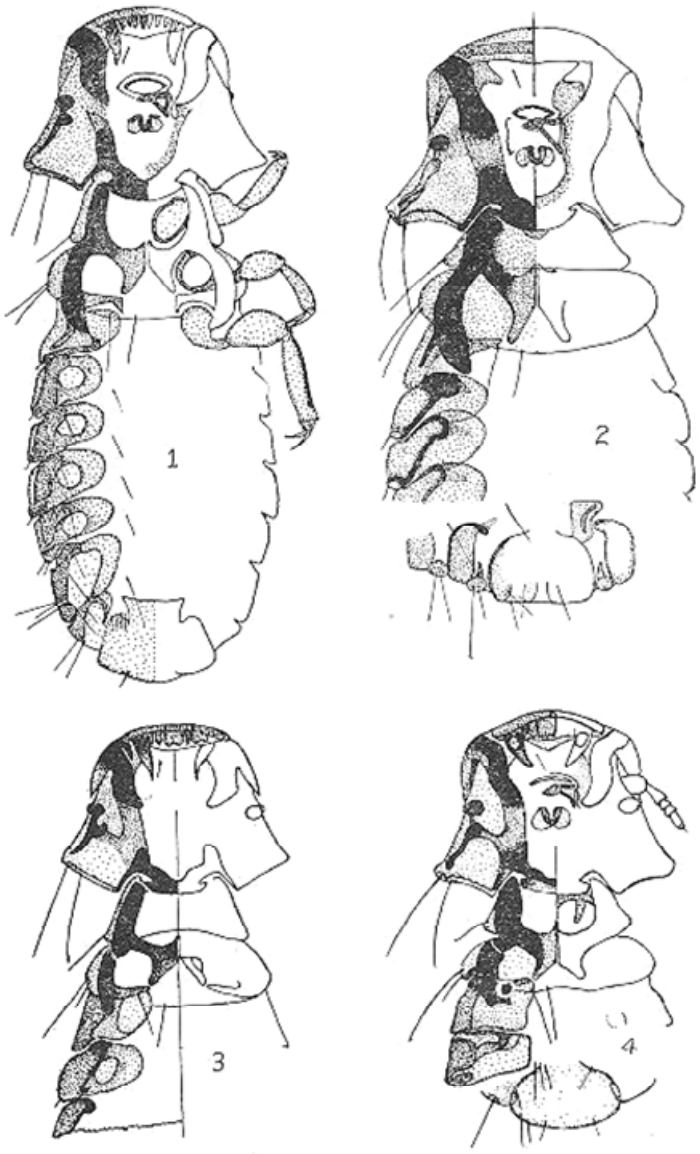


Plate I.
Physconelloides: fig. 1. *chocoensis* ♀; fig. 2. *anolaimae* ♀; fig. 3. *montana* ♀; fig. 4, *perijae* ♀

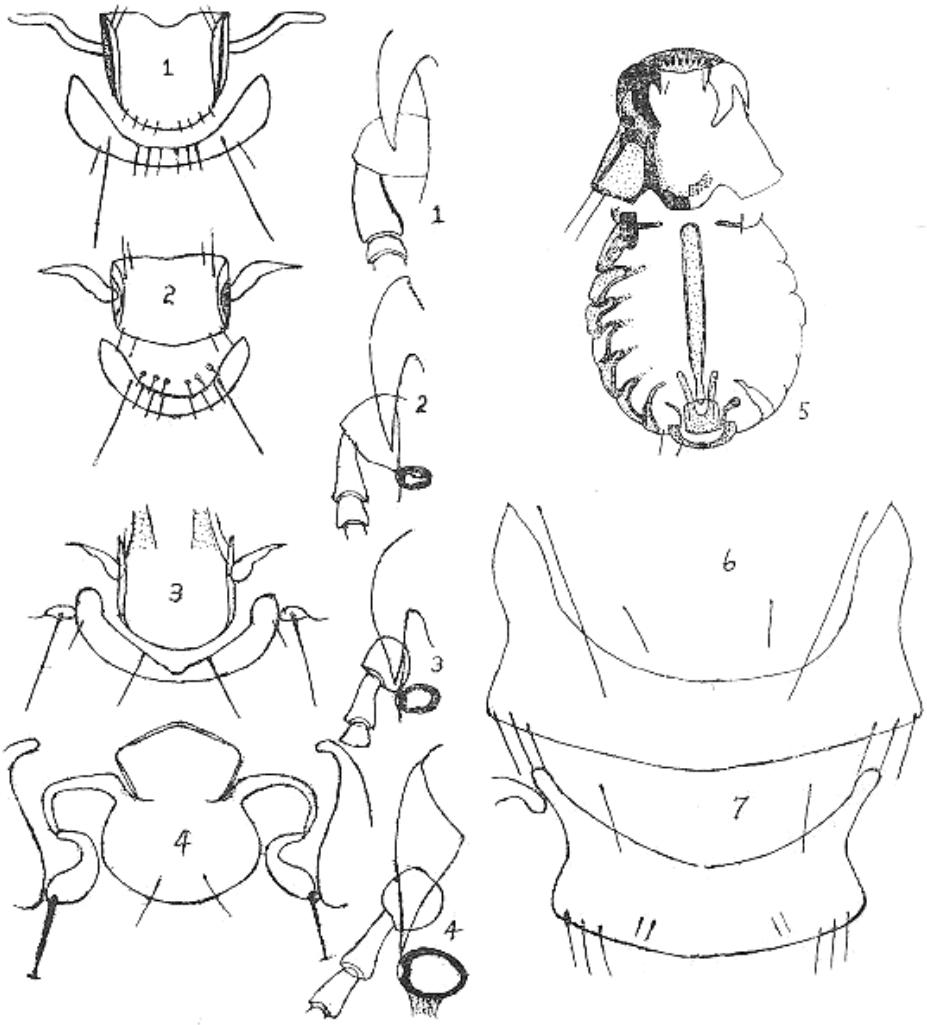


Plate II.

Male genital plates, three segments of antenna and lateral spinous process: fig. 1, *perijae*; fig. 2, *perijae magdalenae;* fig. 3, *chocoensis;* fig. 4, *anolaimae;* fig. 5, *chocoensis* (body)

fig. 2, *perijae magdalenae;* fig. 3, *chocoensis;* fig. 4, *anolaimae;* fig. 5, *chocoensis* (body) ♂

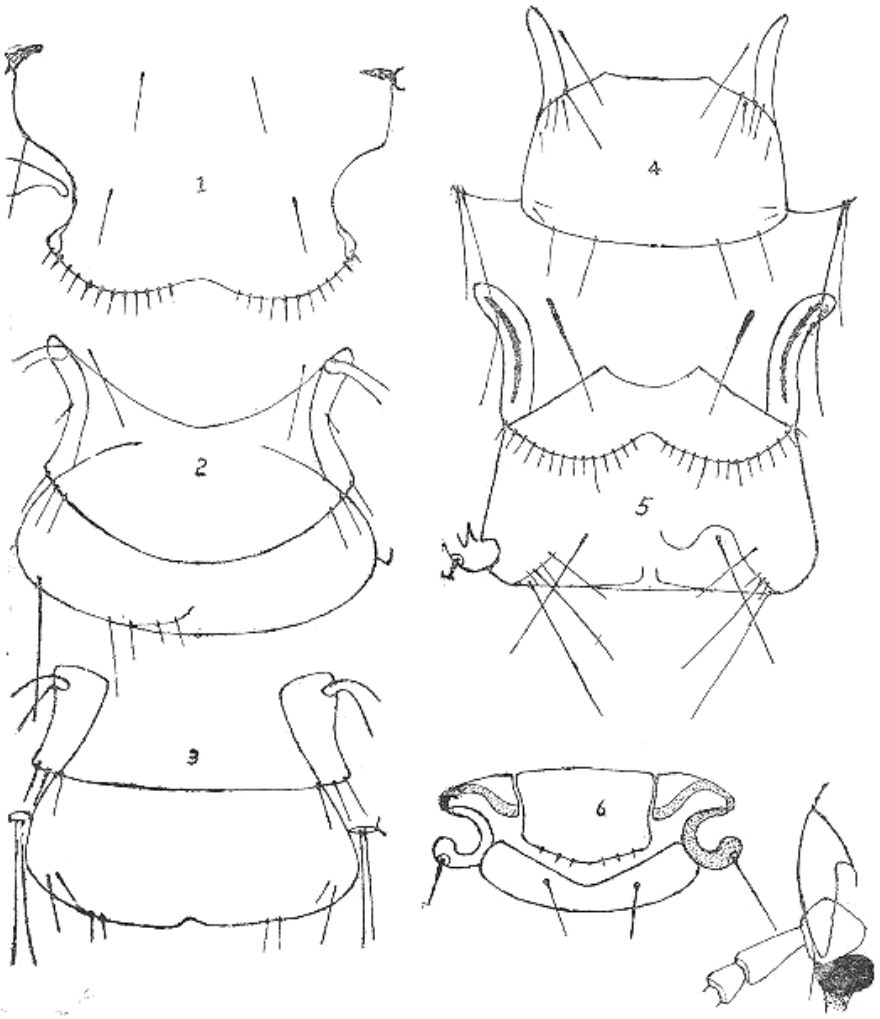


Plate III.
Vulva plates of ♀ : fig. 1, *eurysema pretiosa*; fig. 2, *perijae* (from *Geotrygon frenata bourcieri*; fig. 3, *chocoensis*; fig. 4, *montana*; fig. 5, *anolaimae*; fig. 6, male genital plate of *eurysema pretiosa*.

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