

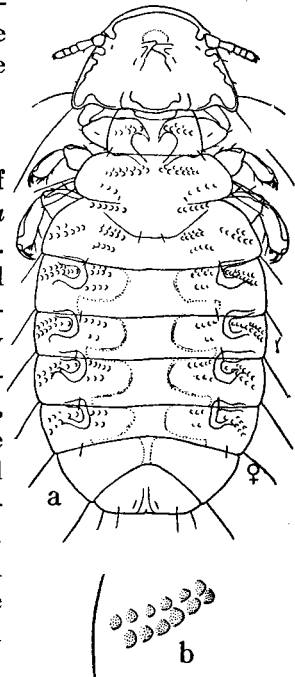
MALLOPHAGA FROM BRAZILIAN BIRDS.¹

BY JOHN H. PAINE AND WILLIAM M. MANN.

We have recently received from Dr. E. Snethlage, director of the Division of Zoölogy at the Museu Goeldi at Pará, the small, but very interesting collection of Brazilian Mallophaga listed herewith. The specimens were taken by Dr. Snethlage from birds collected by her. The identifications of the birds are from the same source.

Goniocotes verrucosus Taschenberg. (Fig. 1).

Two specimens, male and female, of this curious form from *Crypturus tataupa* Temm. (Marajo, Brazil. Nov. 1911). So far as we know, this is the first record of the female of this species. It is considerably larger than the male, especially as regards the length of abdomen. Peculiar to this species are the curious, dark, semi-circular scales, attached to the dorsal surface of the insect by their lateral edges, and arranged in double and single rows on the thorax and abdomen. (Fig. 1b). We figure the female, in outline, Taschenberg's figure of the male being rather indefinite and lacking in detail.



Measurements.

Length: ♀, 1.34	Width:
Head .29	.42
Thorax .24	.42
Abdomen .86	.62

Goniodes complanatus Piaget.

Nine specimens, male and female, from *Crypturus tataupa* Temm. (Marajo, Brazil, Nov. 1911). The head of this species

¹ Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University. No. 64.

bears a close resemblance to certain members of the genus *Nirmus*. The lobes of the last segment of the abdomen in the female do not appear so prominent as in Piaget's figure.¹

Goniodes coniceps Taschenberg. (Fig. 2).

Two male and seven females from *Crypturus tataupa* Temm. (Marajo, Brazil, Nov. 1911). This is apparently the first record of the female of this species. It is larger than the male, which however, is considerably smaller than the type of the species. The first segment of the antenna of the female is somewhat shorter than that of the male (Fig. 2, c-d); the abdomen is also much broader. We also figure the last segments of the male (Fig. 2b).

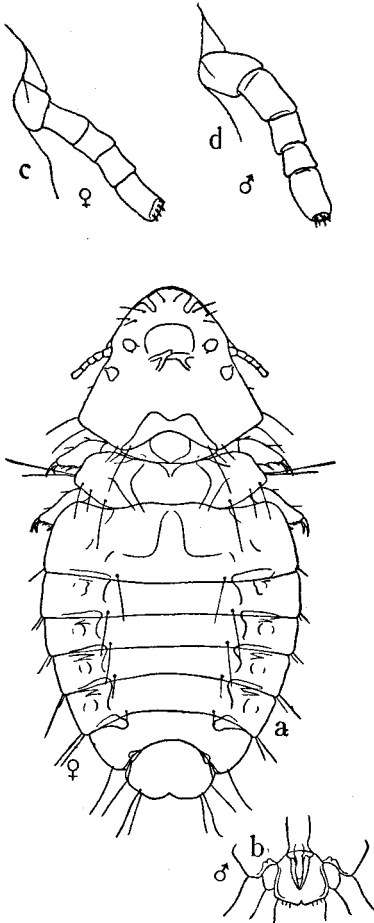


Fig. 2. *Goniodes coniceps* Piaget.

Measurements.

♀, length: 1.56		Width:
Head	.46	.60
Thorax	.28	.60
Abdomen	.90	.80
♂, length: 1.40		Width:
Head	.42	.58
Thorax	.27	.57
Abdomen	.80	.72

Goniodes pennaticeps sp. nov. (Fig. 3).

One male specimen from *Anthus lutescens* Puch. (Marajo, Brazil, Nov. 1911). This species belongs to the group of *G. laticeps* Piaget and of *G. aliceps* Nitzsch, closely resembling the latter, but differing strikingly in size, the present species being less than

¹ Piaget, E. Les Pédiculines, II, Pl. XXI, fig. 8. (1880).

half as long. Carriker¹ lists and figures a form under the name of *G. laticeps* Piaget which, from his figure, is apparently *G. aliceps* Nitzsch.

Description of male: Head broadly conical, broader than long, with rounded front; three minute hairs on the clypeus on each side and two more prominent pustulated ones on the dorsal surface near the center. Notch for the reception of the antennæ distinct but not deep; antennæ situated well forward, with first segment longest and broadest; second segment longer than those following, fourth shortest and third and last of about equal length; last segment truncate. Antennal bands prominent, extending from margin before the antennæ into the mandibles; dark chestnut in color except midway between margin and mandibles where they are blackish. A large, oval space, light in color, before the mandibles, with a small crescent shaped signature near the center. Eye large, slightly protruding, with a small hair at its posterior margin; a rounded ocular blotch in front of the eye; also a similar one behind the eye formed by the termination of the broad marginal band of the temple; a prominent pustulated hair on the dorsal surface near the anterior ocular blotch. Temples highly divergent with margin straight,

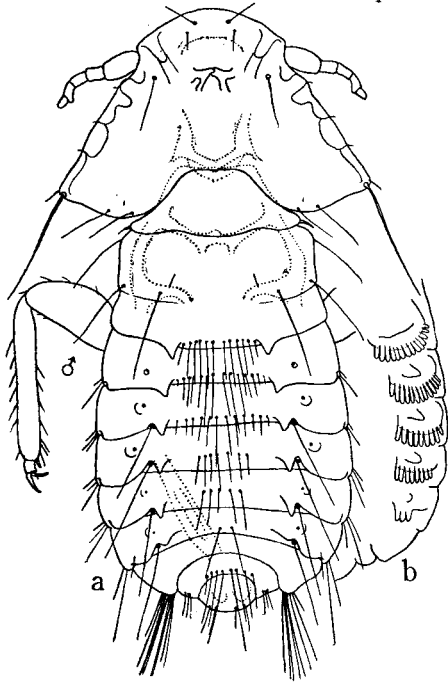


Fig. 3. *Goniodes pennaticeps* Paine and Mann.

bearing two short hairs; posterior angle acute, with one very long hair and a small one; the broad temples are characteristic to this group of *Goniodes*. Posterior margin long and sinuous with central concavity very deep; margin on either side of the central concavity broadly rounded with two long hairs reaching well back on the metathorax; occipital bands prominent, dark in color with black occipital blotches; bands divergent, extending forward and fading out opposite the posterior projections of the mandibles; a prominent postulated hair on the dorsal surface, close to the inner edge of each occipital blotch.

¹ Carriker, M. A. Mallophaga from birds of Costa Rica, Central America. Univ. Studies, Univ. of Neb., Vol. III, No. 2 p. 35. (April, 1903).

Thorax shorter than head. Prothorax trapezoidal, with divergent sides and blackish submarginal bands; these bands turn inward and downward before they reach the prominent, acutely projecting posterior lateral angles, forming the first intercoxal bands; a short, heavy spine on these posterior lateral angles and another smaller one a short distance above on the lateral margin; posterior margin slightly sinuous.

Metathorax wider than prothorax, quadrilateral, with rounded angles; two long, prominent, submarginal hairs a little below the anterior angles, and another in each posterior angle. Dark chestnut to blackish submarginal bands, connecting with those of the prothorax and turning in along the posterior margin of the metathorax to form the second intercoxal bands. Posterior margin straight for about one-third its length on each side, at which point, where a long, pustulated hair arises, it becomes faint, turning downward at an angle of about thirty degrees and fading out completely before it reaches the meson. There are two small, pustulated hairs on the dorsal surface above, and a little inward from those on the posterior margin. Posterior legs with peculiarly long, straight tibiae bearing numerous spines; the mesothoracic legs have been broken off; the anterior ones are short, being carried concealed under the broad temples.

Abdomen considerably narrower than the head, obovate, with sides straight and slightly divergent until the widest point is reached at the fourth segment, whereupon they round off gradually to the eighth; eighth segment short, not reaching as far posteriorly as the seventh or ninth; ninth segment rounded and protruding. Prominent, bipartite, lamelliform plates or appendages on the dorsal surface of each segment from the first to the sixth, extending inward from the lateral margin; inner portion a narrow, pointed appendage, separated from the lateral, linear portion by a deep sinus, embracing a long pustulated hair; in Taschenberg's¹ figure of *G. aliceps* Nitzsch, these plates are lacking on segment one; this, however, may be due to a mistake by the artist. Corresponding to these plates, in position, on the ventral surface of segments two to six are the characteristic series of dark colored, blunt, comb-like spines (Fig. 3b); the number of spines on each segment agrees with *G. laticeps* Piaget, diminishing from fifteen on each side of the second segment to three on each side of the sixth; the number, however, as noted by Taschenberg, is slightly variable; broad, darkish, lateral bands cover the region of the combs and lateral section of the dorsal plates. In length segment one is the shortest, with slightly diverging sides, not appearing as a part of the thorax as in the case of *G. laticeps* Piaget; segment two the longest, the following segments diminishing in length to the fifth, and then increasing slightly to the seventh; a series of pustulated hairs across the middle of each segment, stopping before the lateral appendages are reached; also hairs in the posterior lateral angles of each segment, and segment seven bearing a group of about ten very long ones on the ventral surface. Genitalia similar to *G. aliceps*, being composed for the most part of two long, narrow, chitinous rods.

¹ Taschenberg, O. Die Mallophagen. Nov. Act. Kais. Leop. Carol.-Deutschen Akad. Naturforsch. Bd. XLIV, Nr. 1. Tab. 1, fig. 5. (1882).

Measurements.

	Length: ♂, 2.34	Width
Head	.76	1.24
Prothorax	.30	.70
Metathorax	.33	.80
Abdomen	1.24	1.04

It is indeed strange to find *Goniodes* as a parasite of *Anthus*, a member of the family *Motacillidæ*, the Wagtails and Pipits, when it properly belongs with the *Gallinæ* and the *Phasiani* and such fowl-like birds. *G. aliceps* Nitzsch was taken from *Crypturus macrurus* and *C. tao*, and *G. laticeps* Piaget, from *Tinamus julius* and *T. robustus*. These facts cause one to be somewhat skeptical as to the validity of the present record.

Menopon exsanguis sp. nov. (Fig. 4.)

Six specimens, including two males, from a woodpecker, *Campophilis melanoleucus* Gm. (Rio Nhamunda, Brazil. Jan. 1912). Two species of *Menopon* have previously been described from woodpeckers, *M. pici* Denny¹ from *Picus viridis* (Great Britain), and *M. praecursor* Kellogg² from *Melanerpes uropygialis* (Baja California). The present species quite closely resembles *M. pici* Denny, as described by Piaget,³ but differs in a number of characters, being much smaller in size, with palpi projecting by but one segment or less. Also, in *M. exsanguis*, the eye is very large and somewhat irregular, extending from the inner termination of the ocular emargination, back on the dorsal surface of the temple half way to the posterior margin and not reaching the lateral margin of the head at any point. General color pale, with darker, indefinite markings on the head and thorax.

Description of female: Head much broader than long, with front flatly rounded or slightly angled, outline of head appearing triangular. A short hair on each side, on the clypeus, a short distance from the center; another, of about the same size, at the point where the palpi pass the margin and two more very minute ones between the two above mentioned; three long hairs at short, regular intervals, before the ocular emarginations; also a long hair on the dorsal surface, on each side, on a line between the ocular emarginations and the mandibles. Emarginations narrow, not deep, with a fringe of about ten short hairs. Eyes as described above, with a

¹ Denny, Monograph, Anoplur. Brit. p. 219, pl. XX, fig. 5. 1842.

² Kellogg, V. L. New Mallophaga III. Occ. Papers California Acad. Sci. VI. p. 46, pl. IV, fig. 8. 1899.

³ Piaget, E. Les Pédicelines, Supplément, p. 93, p. X, fig. 3. 1885.

large, black ocular fleck. Ocular blotches present, but pale and indefinite. Temples protruding, narrowly but regularly rounded, with six long hairs, one of which arises submarginally; also several short ones. Occiput broadly concave, with six long, submarginal hairs; Margin thickened, but little colored. Entire head rather pale yellow, with the exception of the mandibles, an area surrounding them, and the indefinite ocular blotches. Antennæ differing from those in *M. pici* Denny, the third segment being larger and goblet-shaped, receiving the last. (Fig. 4b).

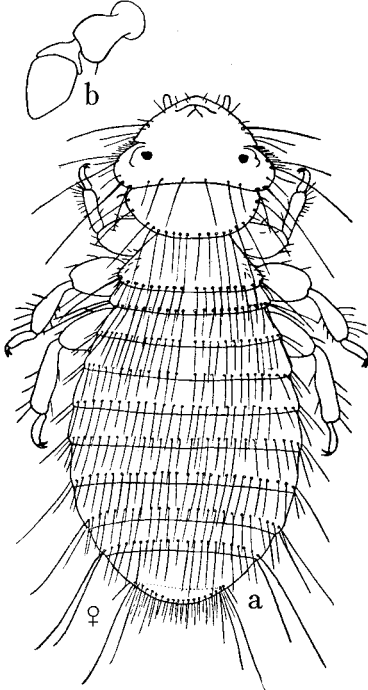


Fig. 4. *Menopon eszanguis* Paine and Mann.

Thorax slightly longer and narrower than head, with more, darker coloring. Prothorax with rounded sides merging into the flattened, almost straight, posterior margin; anterior angles rounded. A series of eighteen long hairs, with several short ones, extends around the sides and posterior margin. Lateral bands present, their inner margin indefinite. Metathorax about the same length as the prothorax, but wider, trapezoidal, with indefinite posterior margin. A number of short marginal and submarginal spines on the divergent sides, toward the acute posterior angles; two long hairs on this angle and a transverse series of about fourteen long hairs indicating the position of the posterior margin. Legs rather short, with broad, stout femora.

Abdomen elliptical, truncate where it joins broadly with the thorax, widest at the fifth segment; pale in color, with almost transparent margins. Segments of nearly equal length, with a transverse row of from twenty to thirty strong hairs. Last segment rounded, but somewhat triangular in shape, with about twenty hairs around the margin, the anterior ones of which are quite long; on the ventral surface are two fringes of fine hairs. Male varying in size, the largest one being but little smaller than the female. Last segment similar in shape to that of the female, but with fewer hairs and lacking the ventral fringes. Genitalia prominent, consisting of a broad anterior portion and long, slender lateral appendages.

Measurements.

♀, Length: 2.50	Width:	♂, Length: 2.36.	Width:
Head .46	.84	.46	.82
Prothorax .32	.65	.30	.64
Metathorax .24	.76	.24	.73
Abdomen 1.60	1.14	1.42	1.12

Physostomum sucinaceum Kellogg.

Two specimens, one immature, from *Elænia flavogaster* Thunb. (Marajo, Brazil, Nov. 1911).

Trochilæcetes gen. nov.

In general habit resembling *Physostomum*, except that the sides of the head are deeply emarginate. These lateral emarginations give the head a constricted appearance, the anterior portion forming the somewhat rectangular clypeus and the posterior portion comprising the temples and occiput; temples not produced backward; palettes present. Prothorax more rounded than in *Physostomum*, with the posterior margin convex. Metathorax showing no sign of a mesothoracic suture, broad, appearing as the first abdominal segment. Abdomen elliptical, with two pale, submarginal bands, as in *Physostomum*; last segment rounded. The members of this genus are peculiar to humming-birds, the three known species, which are closely related, having been taken from these hosts. The type of the genus is *Physostomum prominens* Kellogg and Chapman.

*Included Species.**Trochilæcetes prominens* Kellogg and Chapman.

Physostomum prominens Kellogg and Chapman, New Mallophaga. III. Occ. Papers California Acad. Sci. VI. p. 137. (1899).

From *Calypte costæ*, Costa's Humming-bird (Ontario, California).

Trochilæcetes doratophorum Carriker.

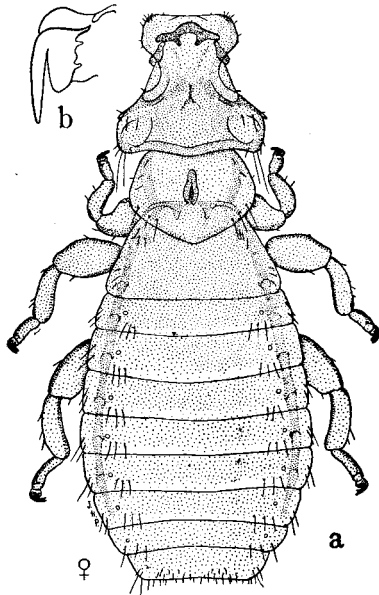
Physostomum doratophorum Carriker, Univ. Studies, Nebraska, Vol. III., No. 2, p. 43. (1903).

From *Selasphorus flammula* (Volcano Irazu, Costa Rica).

Trochilæcetes emeliæ sp. nov. (Fig. 5).

A single female specimen from *Thalurania furcatoides* Gould (Obidos, Brazil, Feb. 1912). This species closely resembles *T. doratophorum* Carriker, but is much smaller in size, measuring 2.10 mm. long and .86 mm. wide, while the latter species measures 2.41 mm. in length by 1.10 mm. in width. The present species also differs in the shape of the head, having larger temples.

Description of female: Head slightly broader than long, being greatest in width across the temples; front broad, shovel shaped, with clypeus but little concave; pale in color across the anterior margin; anterior angles rounded, and sides of front slightly convex with narrow marginal band a little darker than general color of



front, which is pale; also a narrow darker band across the front, a little back from the clypeal margin, with a pair of backward converging projections, one on each side of the meson. Two extremely minute hairs on the margin of the clypeus; two longer ones on the dorsal surface in the anterior lateral angles and two more on the margin at this point, also several on the ventral surface; another short hair on the lateral frontal margin, a little behind those mentioned and two more on the angle just before the deep lateral emargination; a chitinous band, but little darker than the ground color of the insect, extends around the emarginations. A small well-defined triangular projection, directed outward and backward, on the margin at the beginning of the temples, and in front of this a small hair; temples rather prominent with the anterior angle weaker than the posterior, the latter bearing two rather long hairs

and several short spines. Occiput sinuous, bare, with a marginal band. The palettes, in the specimen in hand, have been partially torn away or are quite small though we are inclined to believe that the former is true; the portion present rather darkly colored. Palpi small, not projecting beyond the sides of the head.

Prothorax subpentagonal, rounded; posterior margin strongly convex, with a rounded median angle, three strong hairs and one spine toward the lateral angles; above these angles, one marginal and three submarginal spines; a light colored submarginal band, continuous with that of the abdomen. Metathorax appearing as the first abdominal segment, with submarginal bands, continuous with those of the abdomen and prothorax and giving off a short branch, running inward along the posterior margin of the prothorax, stopping short of the meson. The metathorax extends under the prothorax for a considerable distance and gives rise to a median, chitinous, spear-shaped thickening which shows plainly through the prothorax. There are several submarginal spines, both in the anterior and posterior lateral angles; posterior margin straight. Legs stout, light in color, with narrow, marginal bands and curious, heavy, staple shaped claws. (Fig. 5b).

Abdomen, including metathorax, elliptical, narrower than in *T. doratophorum* Carriker, with the submarginal bands nearer the margins, the bands disappearing

in the sixth segment; faint, transverse bands, leaving the sutures indefinitely lighter. There are no median hairs, but several long ones on each side near the sub-marginal bands; last segment entire, truncate or very slightly concave, with sides rounded; a row of short hairs across the posterior margin of the last segment, and a group of strong, close-set hairs on each side on the ventral surface.

Measurements.

	Length: ♀, 2.10	Width:
Head	.52	.56
Prothorax	.32	.42
Metathorax	.32	.64
Abdomen	1.06	.84

Named in honor of the collector, Dr. Emelia Snethlage of the Museu Goeldi at Pará.

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