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NEOTROPICAL MALLOPHAGA MISCELLANY N° 1

New Species of *Struthiolipeurus*, *Multicola*, *Microtenia* and *Pseudocophorus*

by

M. A. Carriker, Jr.

Introduction

This is the first of a series of short papers which will contain descriptions of new species and subspecies, new genera, notes on nomenclature and other matters of interest to workers on Mallophaga, and will appear in various American scientific journals from time to time. "Studies in Neotropical Mallophaga" will also be continued, and as heretofore will be in the nature of monographs covering the Mallophaga of families or super-families of birds.

Struthiolipeurus chocayoensis new species.

Type.—Female, adult, from *Pterocnemia pennata garleppi*, collected by the author at Cerdas (near Chocayo), Bolivia, Feb. 23, 1938 (in coll. of author).

Diagnosis: The species is close to *S. latus* (Piaget), taken on *Rhea americana*, but differs radically in many details. Compared with Piaget's measurements for *latus* we find that

the length is the same, as well as the length of the head (at occiput), but the width at temples is much more in *chocayoensis* (1.17 against 1.02). The length of the combined thoracic segments also seems to be the same, but according to Piaget's figure, the pterothorax is shorter in *chocayoensis*, and considerably wider (.93 against .75).

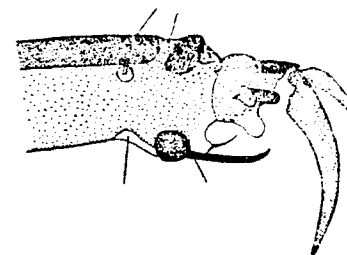
The head, while of the general shape of *latus*, is much more rounded, being wider at the base of the antennae; the temples are more circular, and the occiput very much more deeply concave (see fig.). The abdominal tergites are wider (longitudinally) and of different shape, with their posterior margins crenulated to received the pustulated hairs.

The dark blotches at the tip of segment VIII are lacking, also the dark anterior border on that segment, but the tergite is continous, forming a rather deeply pigmented band across the anterior portion of the segment, leaving the tip clear.

It is very evident that in both *latus* and the present species the only strongly chitinized and pigmented sclerites present on the abdomen are the tergites. The remainder of the abdominal integument is apparently almost colorless, and poorly chitinized, in as much as it became completely softened in the clearing solution in a very short time, so much so that the abdomen was badly distorted, in mounting and cannot be correctly figured, nor a clear diagnosis given of the chaetotaxy.

The tergites are, however, deeply pigmented and strongly chitinized. Tergites I and VI are figured, and with the exception of I and VII, all are shaped like N° VI, and all, except N° I have the longish, pustulated hair set in the inner, median portion, as shown in N° VI. Apparently the abdomen is very hirsute, both dorsally and ventrally, but the hairs are usually not longer than the width of the segment, except on N° VIII, where they are longer.

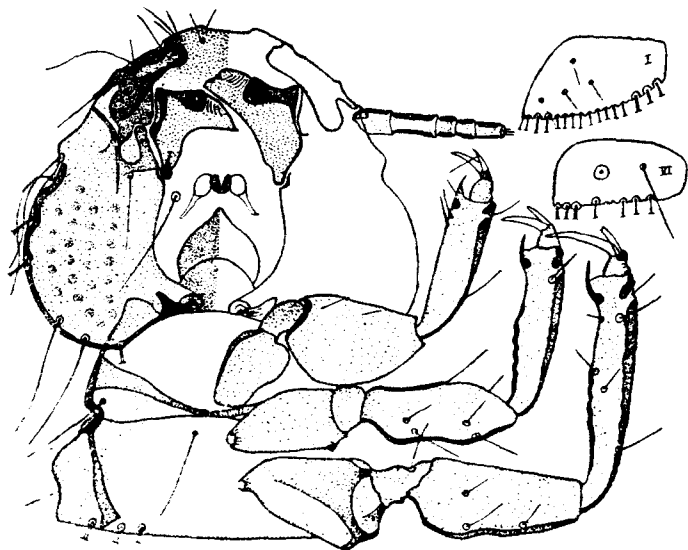
The legs of *chocayoensis*, alone, would serve to distinguish the species from *latus*. The 2nd. and 3rd. femora are more slender, and with anterior edge sinuate, while the marginal band is continous (not broken to receive pustulated hairs as in *latus*); the tibiae are shorter and somewhat thicker, and lack completely the series of short spines along their inner



Tip of tibia, tarsi and claw of 3rd.
leg of *Struthiolipeurus chocayoensis*.

edge (found in *latus*). The transparent protuberances at the tip of tibiae and tarsi, as described and figured by Piaget for *latus*, are entirely absent, but are replaced by a long, deeply pigmented, spine-like filament at the tip of tibiae, at inner side, and a small, deeply pigmented protuberance on tarsi at base of claw, while both claws are deeply pigmented (see enlarged fig.). On the 2nd. and 3rd. tibiae there is a deeply pigmented, serrated, marginal band along the basal two thirds of inner side, absent in *latus*.

MEASUREMENTS:	FEMALE TYPE	
	length	width
Body	3.58	—
Head { occiput .....	.825	—
{ temples .....	.955	1.17
Prothorax .....	.347	.76
Pterothorax .....	.28	.93
Abdomen	2.15	—
Antennae .....	.434	—



Struthiolipeurus chocayoensis ?
(*Pterocnemia pennata garleppi*).

Struthiolipeurus andinus new species.

Types.—Male and female, adults, from *Pterocnemia pennata garleppi*, collected by the author at Cerdas (near Chocayo), Bolivia, Feb 23, 1938 (in coll. of the author).

Diagnosis: The present species is closely related to *S. rheae* Harrison (equals: *Lipeurus asymmetricus* Piaget). It has more or less the same shape of head, the same type of thorax, abdomen and male genitalia, and the same style of asymmetry of the head, but there are many outstanding differences which separate it specifically from *rheae*.

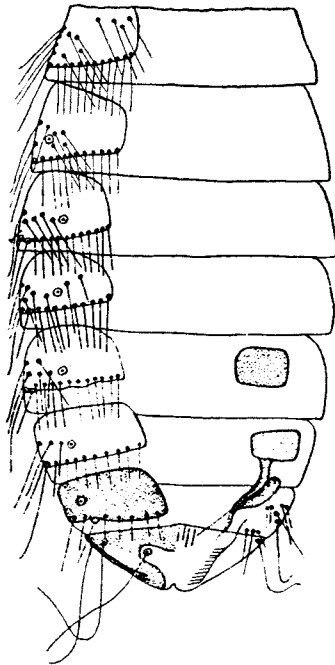
In *rheae* the antennae are strongly dimorphic, with segment 1 much enlarged and the 3rd. with a hook, while in *andinus* they are almost the same, the only difference being in the 1st. joint, which is longer and more slender than in the female (see figs.). The head in *andinus* is narrower at the

trabeculae and with outline of pre-antennal area somewhat sinuate and the front slightly protruding; the temples are more angulated posteriorly, all of which changes the shape of the head materially from that of *rheae*. In the figure, as well as in description of *rheae*, well marked bands are shown connecting the occipital bands with the posterior mandibular condyle and the eye, but in *andinus* these bands are obsolete and interrupted. Piaget's description of the various bands and deeply-pigmented spots of the pre-antennal area agrees very closely with *andinus*, but these bands are not shown correctly in his figure, at least not according to his description. No mention is made by Piaget of the mandibles being asymmetrical in *rheae*, but in *andinus* they are exceedingly unlike (see fig.).

The pterothorax lacks the projecting, pointed posterior angles of *rheae*, while the posterior portion of the segment is distinctly wider than the anterior, with the angle slightly rounded, and with three submarginal hairs (not four as in *rheae*).

Piaget makes no mention of the heavy spines along the anterior margin of the femora, merely saying that they possess "3 poils", but he mentions the spines on the tibiae.

The abdominal sclerites in the female seem to be of same type in both *rheae* and *andinus*, viz: well developed, heavily pigmented tergites in segments I to VII, with a row of rather short, pustulated hairs along the posterior margin and some scattered, pustulated hairs in the postero-lateral portion. However, in the male the arrangement of the abdominal sclerites is not so clear. Piaget says: "le 1er. avec une large tache transverse, les 2-7 avec une tache transverse rétrécie au milieu et à peine indiquée sur les 6e. à 8e." In *andinus* we have quite a different situation in the male (see fig.). I am not positive that I have interpreted correctly the arrangement of these abdominal sclerites, but it seems that we have on segments II to VII a well developed pleurite, with a wider tergite inside the pleurite and separated from it, and with the tergites not

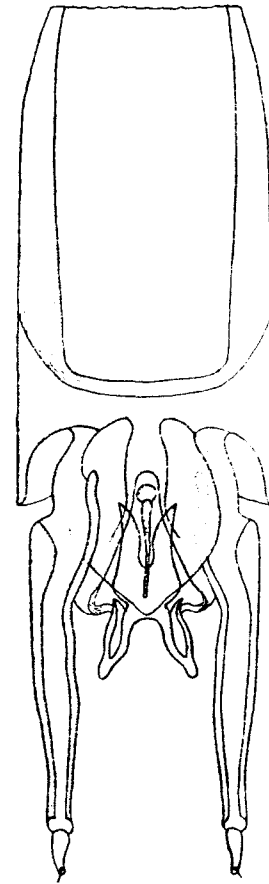


Struthiolipeurus andinus
? abdomen
(*Pterocnemis pennata garleppi*).

reaching to the middle line of the abdomen. In addition there seems to be a continuous sternite, much less heavily pigmented. The abdominal chaetotaxy is also different in the male of *andinus*, there being a single row of closely set hairs along the posterior margin of the pleurites and tergites, and continuous across the abdomen, which are slightly shorter than the width of the segments. In *rheae* there is, in addition to the above described series of hairs, a second much shorter row of dorsal hairs set between the longer series, entirely absent in *andinus*. On the ventral surface we have a continuous row of pustulated hairs along the posterior margin of the sternites, and in addition, on segments II to V, hairs across the median portion of the sternites which vary in number (see fig.). There are,

in addition, on segments VII and VIII a series of long, slender hairs, on the margin of VII and irregularly placed in the lateral portion of VIII.

The male genitalia of *rheae* have been figured by Cummings (P.Z.S., 1916, p. 680), and a comparison of his figure with that of *andinus*, here presented, shows at a glance the striking differences between the two. Both the upper and lower endomeres are much shorter in *andinus* and of quite



Struthiolipeurus andinus
♂ genitalia
(*Pterocnemis pennata garleppi*).



Struthiolipeurus andinus ♂
(*Pterocnemis pennata garleppi*).

different shape. The paramers are straight (not curved) and have a heavy incassation along the inner border as well as along the outer margin; the basal plate is paralell-sided and has wide, heavily chitinized lateral margins in the anterior portion.

Piaget apparently overlooked the asymmetric mandibles in his description of *rhae*, since Cummings has included this character in his generic characterization of *Struthiolipeurus*, of which *Lipeurus asymmetricus* Piaget is the genotype. Cummings description of this character agrees exactly with the mandibles of *andinus*.

Apparently Piaget correctly described and figured the abdominal sclerites and chaetotaxy of the male of *rhae* (*asymmetricus*), since Cummings (who had fresh specimens collected by himself) states: "Abdomen with thinly chitinized transverse tergites. Two transverse rows of fairly long silky hairs on each tergite". As stated above, these two characters are very different from *S. andinus*.

The taking of two new species of *Struthiolipeurus* on the genus *Pterocnemia*, both closely related to those found on *Rhea*, is of more than passing interest. I am inclined to agree with Cummings when he says that when more is known of the Mallophaga of the Struthious birds there will have to be a regrouping of them generically, but to do this intelligently, fresh well prepared material must be brought together representing all of the known species.

MEASUREMENTS OF THE TYPES:	MALE		FEMALE	
	length	width	length	width
Body	2.50	—	2.82	—
Head {	occiput .....	.673	.78	—
	temples716	.66	.836	.77
Prothorax .....	.24	.525	.27	.597
Pterothorax .....	.27	.63	.282	.78
Abdomen	1.42	.63	1.65	.955
Antennae .....	.34	—	.347	—
Basal plate .....	.39	.174		
Paramers .....	.27	.15		
Endomera .....	.195	.10		

Multicola Clay

Multicola, Clay, The Entomologist, Vol. LXXI, Dec., 1938, p. 5
(Genotype: *Nirmus hypoleucus* Denny).

The characterization of this genus was based entirely on the characters of the genotype, since no other species were included in it by the author, who says: "This genus, as far as is known to us, is confined to the avian genus *Caprimulgus*".

Apparently no other species of the genus has been described up to the present time, while it has never been recorded from the New World. In a series of Mallophaga taken on *Podager n. nacunda* of Bolivia, and *P. nacunda minor* of Northern Colombia, I was surprised to find not only one, but three undescribed species of this genus, one on the Bolivian bird and two on the Colombian.

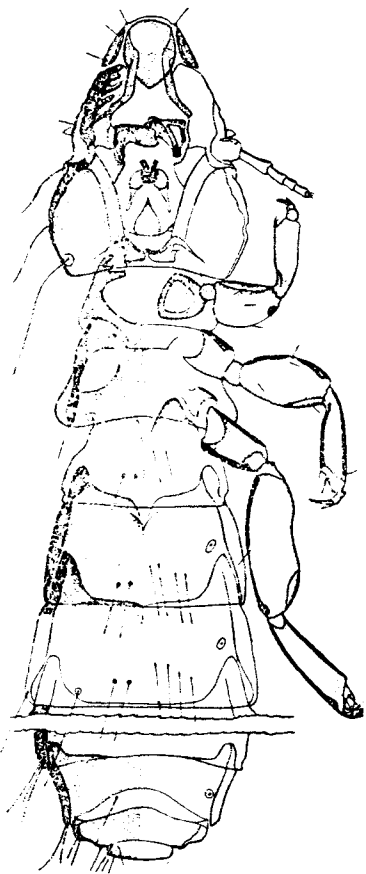
The bolivian species and one of the colombian are both closely related to the genotype, *hypoleucus*, and present almost no characters at variance with those given by miss Clay in her characterization of the genus. However, the third species, from the colombian bird, differs decidedly in the shape of the pterothorax and the abdomen in both sexes, having the former with strongly divergent sides and angulated posterior margin, and the latter much shorter and wider, and oval in shape in both sexes. The tip of the abdomen and the shape of tergites VI to VIII in the male are also quite different. The male genitalia, however, are of the same type as the other two species, although the paramers are rather curiously shaped.

Nevertheless I see no reason why this species cannot be included in the genus *Multicola*, at least for the time being. If further research on american *Caprimulgidae* should disclose other species representing both of these types, it may be necessary to erect a new genus for the one with the short, oval abdomen (*M. acuticeps*).

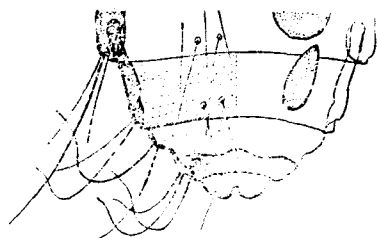
Multicola nacunda nacunda, new species.

Types.—Male and female, adults, from *Podager nacunda minor*, collected by the author at Maicao, La Goajira, Colombia, April 15, 1941 (in coll. of U.S. Nat. Museum).

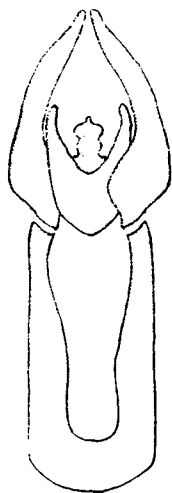
Diagnosis: This species strongly resembles *M. hypoleuca* in general shape of head and body, and there is very little difference in shape or size between the sexes, but the head of the female is *smaller* in all its measurements than the male.



Multicola nacunda ♂
(*Podager nacunda minor*).



Multicola n. nacunda ♀
segments VI-IX
(*Podager nacunda minor*).



Multicola n. nacunda
(*Podager nacunda minor*).

Multicola nacunda peruviana new subsp.

Type.—Male, adult, from (*Buteo magnirostris occidua*, clearly a straggler), collected at San Juan, Chanchamayo, Peru, Jan. 4, 1930, by the author (in coll. of author).

Diagnosis: Very close to *nacunda* in size and general structure, but differs in slightly shorter abdomen (1.78 x .72 against 1.90 x .725); shorter antennae; longer and wider basal plate, and with paramers and endomera of different shape. The head differs strongly in shape, being narrower both at temples and at trabeculae, but with exactly the same length at temples and occiput. The frons is wider and the clypeal signature of different shape in apical portion, being constricted subapically and with anterior margin slightly concave, while the hyaline margin is much wider. The clypeal bands, posterior to the clypeal suture, are practically the same as those in *tenuiceps* (very different from *nacunda*), while the temporal bands are also narrow and of uniform width as in *tenuiceps*.

The thoracic segments are very close to those of *tenuiceps*, both in size and shape, while segment I of the abdomen is precisely like that of *nacunda* in its shape and absence of pleurites (see figs.). The genitalia present a mixture of the characters of both *nacunda* and *tenuiceps*, having the shape of paramers nearer to *nacunda* and the endomera closer to that of *tenuiceps*. The race is represented by a single male, the type.



Multicola nacunda peruviana ♂
(*Buteo magnirostris occidua*)
a straggler from a *Caprimulgidae*.



Multicola nacunda peruviana.

MEASUREMENTS:

	length	width
Body	2.78	—
Head {	trabeculae .....	.434
	occiput .....	.694
	temples .....	.738
Prothorax .....	.21	.39
Pterothorax .....	.27	.52
Abdomen	1.78	.72
Antennae .....	.25	—
Basal plate .....	.19	.10
Paramers .....	.135	.10
Endomera .....	.08	.05

Note.—At the time of sending this paper to press I have not been able to determine whether or not a species of *Caprimulgidae* was taken by me at San Juan on January 5, 1930. If there was such a bird taken on that date, the present species of *Multicola* certainly belongs to it. If no such bird was taken, then the only explanation possible would be that the hawk (*Buteo magnirostris occidua*) had caught and eaten the Goat-sucker, and during this operation the parasite managed to pass to the body of the hawk. This explanation is not at all impossible and may happen much more frequently than we suspect.

Piaget has published a very good figure of *hypoleuca* (Les Pedicul. Suppl., 1885, p.66, pl. VII, fig. 3), and by using this figure and his description for comparison, we find the following differences between *hypoleuca* and *nacunda*

In the new form the female (at least) is much smaller in all of its measurements. The head is less slender, and is lightly convex at the trabeculae, instead of concave, while the clypeal signature and clypeal bands are apparently of a different shape. The occipital bands (absent in *hypoleuca*) are strongly developed and deeply pigmented and extend unbroken from the antennal bands to the occipital margin of the head.

The abdomen (except for size) is very similar in the two species, except for segment I, which, according to Piaget is as wide as the pterothorax in *hypoleuca*, while in *nacunda* it is much narrower, and with sides strongly divergent (see fig.). Piaget had only the female, but Miss Clay's description of

the male genitalia agrees closely, as far as it goes, with that of *nacunda*. The species is represented by 2♂♂ and 2♀♀, one ♀ being slightly immature.

MEASUREMENTS OF THE TYPES:

	MALE		FEMALE	
	length	width	length	width
Body	2.93	—	3.03	—
Head {	at trabeculae .....	.455	—	.434
	at temples .....	.738	.694	.584
	occiput .....	.69	—	.673
Prothorax .....	.22	.415	.22	.412
Pterothorax .....	.304	.54	.326	.52
Abdomen	1.90	.725	1.855	.675
Antennae .....	.28	.065	.303	.066
Basal plate .....	.175	.08	—	—
Paramers .....	.152	.11	—	—
Endomera .....	.09	.061	—	—

Multicola tenuiceps new species.

Types.—Male and female, adults, from *Podager n. nacunda*, collected by the author at Todos Santos, Rio Chaparé, Bolivia, August 2, 1937 (in coll. of the author).

Diagnosis: Of the same general type as *M. nacunda*, which it resembles closely in many ways, but from which it differs as follows: The male sex is considerably smaller in all of its measurements, but the female (unlike *nacunda*) is larger than the male, agreeing more or less in its measurements with the male of *nacunda*, although the proportions are not the same, the head being longer and narrower (see table of measurements).

The pre-antennary area is triangular in shape, with the frons narrow and pointed, with the clypeal signature and clypeal bands much narrower; the temples are more crenulated, and their marginal band narrower (not wider anteriorly).

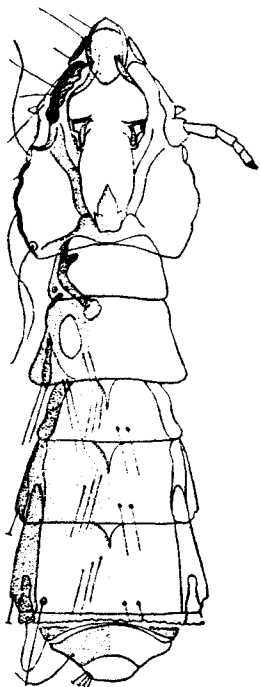
The abdomen is long, slender, and more or less parallel-sided in both sexes, as in *nacunda*, but structure of the pleurites and tergites is somewhat different, the pleurites having the long, re-entering heads lying under the pleurite of the succeeding segment, not inside of it as in *nacunda*, while the tergites do not curve forward to join the head of the pleurite (see figures).

The tip of the abdomen is practically the same as in *nacunda*, in both sexes. The sternites (not shown in figure) in

th sexes of both *nacunda* and *tenuiceps* seem to be continuous across the abdomen, but are separated from the pleures by a space of approximately the width of that sclerite. In the male of *nacunda* the tergites are very heavily pigmented, and little can be discerned of the structure of the sternites, but they are clearly visible in the female.

The structure of the legs in both *nacunda* and *tenuiceps* is exactly the same as in *hypoleuca*, with the coxae and trochanters of the 1st. pair of legs entirely beneath the prothorax and fused to it, while both the 2nd. and 3rd. pair of coxae project far beyond the lateral margin of the pterothorax, and are of quite different shape, with the 3rd. (at least) movable.

The male genitalia are similar to those of *nacunda* in general structure, but differs in having shorter paramers and narrower endomerical plate, the latter being of an entirely different shape apically (see figure). Species represented by 2♂♂ and 10♀♀.



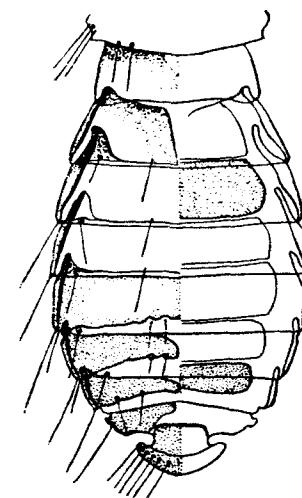
Multicola tenuiceps ♀
(*Podager n. nacunda*).



Multicola tenuiceps
♂ genitalia
(*Podager n. nacunda*).



Multicola acuticeps ♀
(*Podager nacunda minor*).



Multicola acuticeps ♂
(abdomen)
(*Podager nacunda minor*).

MEASUREMENTS OF THE TYPES:	MALE		FEMALE		
	length	width	length	width	
Body	2.60	—	2.93	—	
Head {	at trabeculae	—	.40	.43	
	at temples695	.53	.74	.597
	occiput66	—	.705	—
Prothorax .....	.185	.37	.206	.423
Pterothorax .....	.25	.48	.27	.542
Abdomen	1.69	.61	1.88	.673	
Antennae .....	.26	—	.29	—
Basal plate .....	.174	.09		
Paramers .....	.141	.105		
Endomera .....	.087	.05		

Multicola acuticeps new species

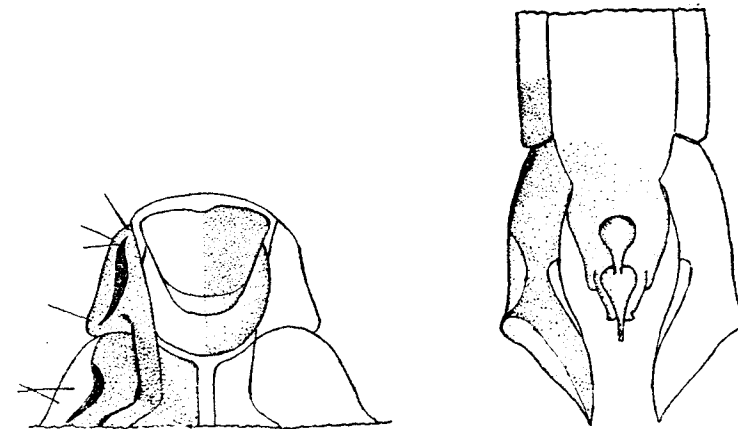
Types.—Male and female, adults, from *Podager nacunda minor*, collected by the author at Maicao, La Goajira, Colombia, April 15, 1941 (in coll. U. S. Nat. Museum).

Diagnosis: This species differs radically from the other three known species of the genus. The head, however, has almost the same shape as that of *tenuiceps*, but the frons is wider and more flattened (except for the hyaline point), the clypeal signature more rounded, the temples more circular and not crenulated, with the pigmented portion of the clypeal bands narrower and lacking the tessellated inner border, and with the gular sclerite much wider (more rounded).

The prothorax has the sides more convex. The pterothorax differs radically, having the sides nearly straight and widely divergent, while the posterior margin is flatly angulated medially.

The abdomen in both sexes is an almost perfect oval (omitting segment I), with segment I well developed, without pleurites, with sides slightly convex, and posterior margin concave, being quite different from this segment in both *nacunda* and *tenuiceps*. In segments II to VII the pleurites are well developed, with deeply re-entering heads, similar to those of *nacunda*, but are deeply pigmented only in the anterior portion and along the median line. The tergites are similar to the pattern of *nacunda* (see fig.), with the sternites lying across the median portion of the abdomen and more widely separated from the pleurites than in *nacunda* and *tenuiceps*, especially in the female, where they also fall short of the posterior margin of the segments. Segment IX of the female is the same as in *nacunda*. In the male the tergites of segments VI to VIII (and slightly on V) are of quite a different shape from the remainder, while segment IX is of an entirely different shape from that of *nacunda* and *tenuiceps*. The abdominal chaetotaxy differs somewhat in all three of the species here described (see figs.).

The male genitalia also differ considerably. The basal plate is longer, while the paramers are about the same length, but a very different shape, as well as the endomera (see fig.). No less than 34 specimens of this species were taken on the type host, with males strongly predominating.



Multicola acuticeps ♂
(clypeal area)
(*Podager nacunda minor*).

Multicola acuticeps
♂ genitalia
(*Podager nacunda minor*).

MEASUREMENTS OF THE TYPES:

	MALE		FEMALE		
	length	width	length	width	
Body	1.74	—	2.04	—	
Head {	at trabeculae .....	.37	—	.112
	at temples60	.48	.673	.51
	occiput586	—	.65	—
Prothorax .....	.174	.293	.195	.303
Pterothorax .....	.217	.40	.228	.445
Abdomen .....	.945	.586	1.18	.66
Antennae .....	.27	.052	.228	.045
Basal plate .....	.217	.10		
Paramers .....	.152	.11		
Endomera .....	.076	.055		

Microtenia Kéler

Arb. morph. taxon. Ent. Berlin-Dahlen, Band 6, N° 3, p. 251
(Genotype: *M. tibialis* Kéler).

This genus was described by Kéler in 1939 from specimens taken on *Tinamus solitarius*, which he named *Microtenia tibialis*.

The paper in which they were described failed to reach me due to war conditions, and I was unaware of its existence until Dr. Hopkins called my attention to it in 1944. Having seen so many erroneous host records published by Kéler, I was inclined to doubt the authenticity of this one, and considered it as a straggler from some other bird.

However in June, 1944 Dr. Guimarães published a paper (Papéis Avulsos, N° 37, Vol. IV, N° 8, pp. 111 to 116) in which he not only confirmed the authenticity of Kéler's host record, but described another species of the genus collected on *Crypturellus n. noctivagus*. He also states that he secured several specimens of both sexes of a *Microtenia* from skins of *Tinamus t. tao*, which he identified as *M. tibialis* Kéler, although admitting that the male genitalia were slightly different from Kéler's figure of the genitalia of that species.

This paper revived my interest in the matter and a search through my own collection revealed five females of a typical *Microtenia* three from *Tinamus s. serratus*, Bolivia; one from *T. m. major*, British Guiana; and one from *Crypturellus obsoletus crucis*, Bolivia.

All of these five specimens are conspecific, but subspecifically distinct from each other (representing the three hosts), and represent a species quite distinct from both *tibialis* Kéler and *soaresi* Guimarães. I have not seen the description of *tibialis*, but Guimarães, when comparing his *soaresi* with it, mentions characters of *tibialis* which are not present in my specimens.

After a careful study of these five females, together with Guimarães *soaresi* and his comparison of it with *tibialis* Kéler, the following conclusions have been reached. I suspect that we have in *Microtenia* the same situation as in some other genera of the Amblycera, a genus peculiar to a single family of hosts and probably present on many species of that family,

which in this case will prove to be the forest-inhabiting genera of the *Tinamiidae* (*Tinamus*, *Crypturellus* and probably *Nothocercus*, although not yet reported from the last). Very likely it will be found that the genus contains few species (and these not strikingly distinct) and these species split up into numerous subspecies, which will be difficult to differentiate, except with well prepared specimens of both sexes, on which the chaetotaxy is fairly complete, since I believe that this character will be of much assistance in separating subspecies.

There is even a possibility that when considerably more material of the genus is available for study, that all of the forms will prove to be conspecific, and subspecies of *tibialis*, but as yet I am not prepared to admit this.

From the material now available, the specimens taken on *Tinamus s. serratus* are apparently specifically distinct from both *tibialis* and *soaresi*, and are described below, while the other two females are made subspecies of it.

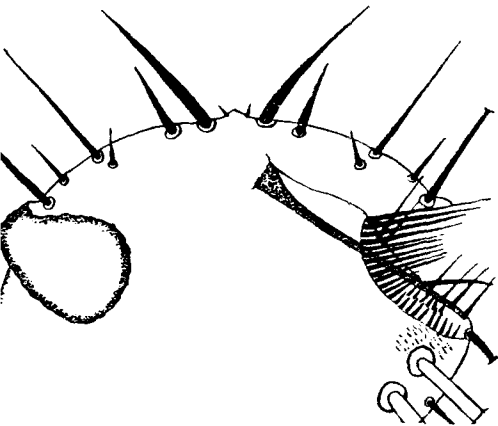
Microtenia guimaraesi new species.

Type.—Female, adult, from *Tinamus s. serratus*, collected by the author at Chiniñiri, Rio Kaka, Bolivia, Sept. 6, 1934 (in coll. of author).

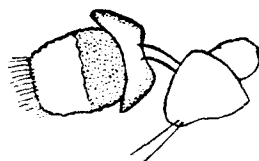
Diagnosis.—Very much smaller in all respects than either *tibialis* or *soaresi*, with cephalic index slightly less (.644 against .70), with temple expansion slightly wider and considerably longer, and with the pre-antennary portion of the head shorter and much more rounded. The shape of the thorax seems to be very much the same, except that the meso-thorax is much more conspicuous (see fig.) Guimarães makes no mention of this character in his description of *soaresi*, nor is it shown in his figure.



Microtenia g. guimaraesi ♀
(*Tinamus s. serratus*).



Microtenia g. guimaraesi
Frons and right temple
(*Tinamus s. serratus*).



Microtenia g. guimaraesi
♀ antennae
(*Tinamus s. serratus*)

The abdomen, which clearly contains *ten* segments, is shaped much as in *soaresi*, although it seems to be slightly more oval, while the chaetotaxy is about the same. The abdominal pleurites, present on segments III to VIII are much wider than in *soaresi*, and apparently more clearly outlined. The pleurites seem to be ventral, and Guimarães has also shown them in that position. The tergites are continuous across the abdomen, completely covering segments VII to X, but diminishing progressively in width toward the thorax, being very narrow in II to V and broken medially in I. Apparently there are no sternites. There are but two hairs on each side of posterior margin of the pterothorax instead of three, as in *soaresi*.

The legs are similar to those of *soaresi*, but with femora and tibiae less thickened. There are, however, some radical differences in leg structure. The tuft of fine setae on distal portion of 1st. tibiae is present, apparently the same, but the denticulate surface of the third femur in *soaresi* is entirely wanting, all three femora having smooth integument, but Nº 3 is more *deeply pigmented* than the other two. Guimarães also mentions a denticulation of the abdominal sternites, which is entirely absent in the present species. (My opinion is that there are no sternites in this species, that the sclerites seen crossing the abdomen are the tergites).

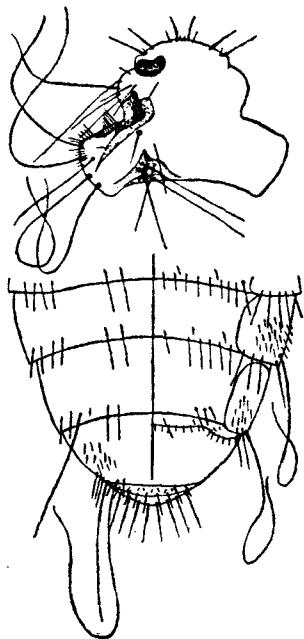
The tibiae all have the outer face deeply channeled in an irregular manner, with this channeled portion deeply pigmented and of uneven surface, on which are set from 4 to 8 long, slender spines (see fig.) The first femur bears but few short spines, but the 2nd. has about four on both front and rear margins, set in roughened bands or channels. Nº 3 femur, as well as Nº 2, has a heavy pigmented band along the anterior margin, in which are set 7 stout spines, while the posterior face is channelled (in Nº 3), but not pigmented, and bears numerous very short, stout hairs (not spines) set within this groove.

MEASUREMENTS:	TYPE	
	length	width
Body	1.86	—
Head {	frons	—
	temples .....	.41
	occiput .....	.38
Prothorax .....	.195	.39
Pterothorax .....	.205	.553
Abdomen	1.21	.805

Microtenia guimaraesi crucis new subsp.

Type.—Female, adult, from *Crypturellus obsoletus crucis*, collected by the author at Samaipata, Bolivia, Nov. 12, 1937 (in coll. of author).

Diagnosis.—Compared with *guimaraesi* we have, the temples of practically the same width, but front of head (anterior to lateral constriction) considerably wider and longer, while the entire posterior half of head is the same. There are two long, strong, dorsal hairs set on inner side of occipital blotch which are absent in *soaresi* and *guimaraesi*.



Microtenia guimaraesi crucis ♀
(*Crypturellus obsoletus crucis*).

The ocular fringe is decidedly different, not having rows of setae pointing in different directions (as in *soaresi* and *guimaraesi*), but a continuous fringe of setae of varying length (see fig.)

The legs seem to be identical in every way with those of *guimaraesi*, both as to size, shape, incrassations and chaetotaxy. The abdomen is of the same shape and chaetotaxy, with the following exceptions: The three long dorsal hairs in median portion of abdomen on segments I to IV are continued backward in *crucis* to segment VIII, but are reduced to 2 on each side in segments VI to VIII; the series of short dorsal hairs on segments V to VII in *guimaraesi* are replaced by four slightly longer hairs near lateral margins of abdomen on segments V to VIII; the fine setae on the pleurites seem to be much more abundant on *crucis*, while the pleurites are wider; there are more setae on dorsal surface of segment IX, thus answering more to the description of *tibialis*, in this respect.

MEASUREMENTS OF TYPE:

	length	width
Body	2.16	—
Head {	frons	—
	occiput .....	.39
	temples .....	.43
Prothorax .....	.206	.405
Pterothorax .....	.28	.61
Abdomen	1.41	.91

Microtenia guimaraesi major new subsp.

Type.—Female, adult, from *Tinamus m. major*, collected in British Guiana (in coll. of author).

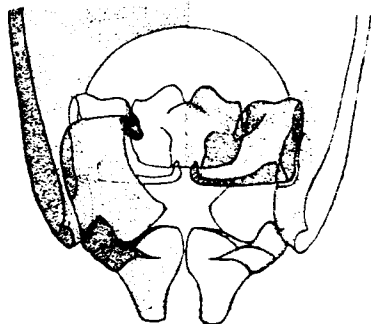
Diagnosis.—In size this race is nearer to *guimaraesi* than to *crucis*. It has a wider, shorter abdomen, much larger pigmented blotches on the head, but of more or less same type as in *guimaraesi* (different from *crucis*), and much wider pigmented bands on the thicker femora and tibiae. There are a few minor differences in chaetotaxy, but on the whole it is close to *guimaraesi* in this respect. It is worthy of note that this form is much closer to *guimaraesi* than to *crucis*, which

is logical, since the two hosts are very close, while that of *crucis* belongs to a different genus, and with more material available for study, may prove to be a distinct species.

Pseudocophorus perijanus new species.

Types.—Male and female, adults, from *Ampeloides tschudii* (Gray), collected by the author on the Cerro Pintado, Sierra Perijá, Colombia, June 29, 1942 (in U.S. Nat. Mus.)

Diagnosis.—This species resembles, superficially, the other known species of the genus¹ which likewise differ little among themselves. The present form has no outstanding characters (except the ♂ genitalia), although the prothorax is very short in both sexes, and the pterothorax unusually wide; the temples are more expanded and rounded posteriorly; the trabeculae more slender and shorter in the male, while in the female they are minute, pointed, and extend backward under the 1st. segment of the antennae; the preantennary area of the head is more constricted at the clypeal suture. The male



Pseudocophorus ampeloides
♂ genitalia
(*Ampeloides perijanus*).

genitalia differ in detail from all of the other known species of the genus, but resemble most those of *P. chasmorynchus*, although differing strongly in the shape of the various, complicated component parts (see figs. in paper cited in footnote 1).

Footnote 1.—Carriker, Lloydia, Vol. III, N° 4, Dec. 1940, pp. 281-287. A description of the genus and the three known species.

In the female, segment IX is somewhat larger than in *antennatus*, but the chaetotaxy is the same. In the original description of the female of *antennatus* it says that "the tergal plates are continuous across all of the segments". This is an error. Fresh material from the type host shows clearly that they are separated medially in segments I to V, but the *sternites in all segments are continuous*. The same is true of the male, where tergites I to VI are separated medially, but the sternites are continuous. The type series consists of 6 ♂♂ and 8 ♀♀.

MEASUREMENTS OF THE TYPES:	MALE		FEMALE	
	length	width	length	width
Body	1.39	—	1.76	—
Head {	at trabeculae	—	.337	.402
	at temples .....	.467	.485	.52
Prothorax .....	.14	.31	.162	.328
Pterothorax .....	.185	.456	.23	.608
Abdomen .....	.70	.635	.96	.67
Antennae .....	.326	—	.19	—
" (1st. segment) ...	.133	.095	.055	.05
Basal plate .....	.293	.163		