

NEOTROPICAL MALLOPHAGA MISCELLANY.  
V. New genera and species<sup>1</sup>

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(With 24 text-figures)

SUBORDER AMBLYCERA

FAMILY MENOPONIDAE

Genus *Machaerilaemus* Harrison

*Machaerilaemus tityrus* (Carriker)

*Menopon tityrum* Carriker. *Univ. Nebr. Stud.*, 3(2) : 60, pl. VII, fig. 4

Host: *Tityra semifasciata costaricensis* Ridgway.

Being doubtful of the proper generic allocation of this species I recently sent a specimen of it to Dr. HOPKINS for examination. He reported that he considered it to be a *Machaerilaemus*.

Having had considerable experience with this genus, I was at first inclined to doubt the correctness of this allocation, but a careful study of *M. tityrus*, together with a closely allied form described below (*M. cotingae*), has led me to accept provisionally the decision of Dr. HOPKINS, although by including these two species in *Machaerilaemus* we must modify somewhat the generic characterization as outlined by CLAY & MAINERTZHAGEN (*Ann. Mag. Nat. Hist.*, April, 1941, p. 330), and further modified by the author in 1944 (*Bol. Ent. Venezol.*, 3:2.66).

In *M. tityrus* and *M. cotingae* the paratergal plates possess a prominent, heavily chitinized and deeply pigmented incassation, while CLAY & MEINERTZHAGEN specifically state that the paratergals are without internal thickening. Also, in both of these species the gular plate has been reduced to a horseshoe-shaped sclerite with the open end pointing backward, and the basal portion fused on each side with the chitinous framework of the head, but *not* that portion which supports the mandibular condyles. In *M. cotingae* the sides of

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the forehead are not swollen and angulated, as in practically all species of the genus, but the whole front of the head is nearly circular, with only a very slight angulation at each side (see fig.).

The genital armature of the two males of *M. cotingae* are unusual, and quite different from that of *M. laticorpus* (Carriker), both being decidedly *asymmetrical*, with both paramers bent to the right. Unfortunately I do not possess a male of *M. tityrus* for comparison, the male type having been lost when the types were demounted for clearing. However, the original description of the genitalia of *Menopon tityrum* says: "genitalia long, very slender, and widely separated, with tips curving inward slightly." This description was made from an uncleaned specimen, and it is possible that the genitalia were not clearly visible, and that the tips of *both* paramers were curved to the right (as in *M. cotingae*), since at least one was visibly turned *inward*.

It is very probable that in *M. tityrus* and *M. cotingae* we have representatives of a type of Menoponidae found only on the Cotingidae (as in the case of the genus *Pseudocophorus*), and additional material may warrant the erection of a special genus for their reception. There are three, possibly four, characters which separate these two species from all others of the genus *Machaerilaemus* which I have seen, viz: The type of gular plate; the heavy incassations of the paratergals; the abdominal chaetotaxy, and *possibly* the male genital armature. In all other important characters they are typically *Machaerilaemus*.

*Machaerilaemus cotingae* n.sp.

(Figs. 1 and 2)

Types, male and female adults, from *Cephalopterus o. ornatus* Geoffroy Saint-Hilaire, collected by the author at Rio Jelashte, Peru, August 20, 1932 (in coll. of author).

*Diagnosis:* This species is very close to *M. tityrus* (Carriker) described from *Tityrus semifasciatus costaricensis*, and later taken on *T. s. colombianus* (3 females).

In size it is considerably larger than *tityrus* in all measurements, but the proportions are about the same. The temples are more uniformly circular and the pitchy lines at inner side of antennary fossae are narrower. The occipital plate is much smaller, both in width and length, that of *tityrus*, extending backward to the occipital margin and bearing five long hairs on each side instead of three as in *cotingae* (see figs.).

The dorsal aspect of the pleurites is much narrower, extending inward only to the edge of the sternal incassations, while in *tityrus* they cover almost the entire incassation in segment II, and decreasing to half the incassation in VII. The abdominal chaetotaxy is much the same in both species, except that the row of setae across the anterior portion of the sternites are longer in *tityrus*.

The type series consist of 2 males and 3 females.

Measurements of the types:

	♂		♀		
	Length	Width	Length	Width	
Body .....	1.26	—	1.50	—	
Head {	forehead .....	.467	—	.488	
	temples .....	.30	.553	.326	.586
	occiput .....	.27	—	.293	—
Prothorax .....	.16	.337	.174	.37	
Pterothorax .....	.174	.395	.195	.44	
Abdomen .....	.73	.63	.966	.694	
Basal plate .....	.25	.135	—	—	
Paramers .....	.13	.14	—	—	
Endomera .....	.076	.108	—	—	

*Machaerilaemus gigas* n.sp.

(Fig. 3)

*Type*, female adult, from *Fluvicola p. pica* (Boddaert), collected by the author at Norosi, Colombia, March 4, 1947 (In U. S. Nat. Mus.).

*Diagnosis:* This is the largest known species of the genus, but the shape of the head, general body structure and abdominal chaetotaxy are typical of other species of the genus taken on Tyrannidae, such as *insignis*, *bolivianus*, and *robertsi*, but the gular plate differs decidedly from all other known species, in that it is almost entirely colorless, there being merely a narrow colored band around the margin, widest along the posterior portion and gradually narrowing to a point before the center of the anterior side is reached (see fig.).

The pro-, meso- and metasternal plates, with their chaetotaxy, are also distinctive. The dorsal chaetotaxy of the abdomen consists of merely 8 to 10 longish hairs across the posterior margin of the tergites (set submarginally), while on the sternal face of pleurites I to VI are 6 to 8 short, heavy spines on posterior margin, as well as 5 to 7 similar spines on margin of sternites just inside of pleurites.

The pleurites are large and quadrilateral, narrowing slightly posteriorly; the tergites are closely fused with the pleurites and extend unbroken across the abdomen, but are widely separated from each other by hyaline bands. The sternites are separated from pleurites by a narrow space, which increases in width posteriorly.

The species is known only from the female holotype.

## Measurements of the type:

	Length	Width
Body .....	1.98	—
Head { forehead .....	—	.694
{ occiput .....	.347	.846
Prothorax .....	.228	.63
Mesothorax .....	.205	.684
Metathorax .....	.13	.78
Abdomen .....	1.17	1.02

Genus *Hohorstiella* Eichler

The new species described below were sent to Miss. CLAY for generic determination, and were pronounced by her to belong to *Hohorstiella*. I have not seen EICHLER's paper describing this genus and since it is very close to *Menacanthus*, I asked Miss. CLAY to kindly give me her conception of just what were its generic characteristics, which she has done, and which are as follows:

1. General characters of the head as in *Menacanthus*:
  - a. Narrow pre-ocular slit.
  - b. Ventral sclerotized processes ("oral spines").
2. Antennae with 2nd segment as shown in drawings of new species described below.
3. Some of the abdominal pleurites in both sexes prolonged posteriorly (this may or may not be diagnostic).
4. 3rd femora and sternites IV-V or III-VI with scattered or thick brushes of stout setae.

The genotype of *Hohorstiella* is *Menopon latus* Piaget (a synonym of *M. giganteum* Denny), parasitic on the domestic pigeon. The important generic characters of this species are not mentioned or illustrated by either DENNY or PIAGET, viz: The head spines; the style of antennae, type of pleurites and patches of setae. The prolongation of the pleurites into a long, strong spine is the same thing that we have in the species of *Amyrsidea* infesting certain of the Cracidae.

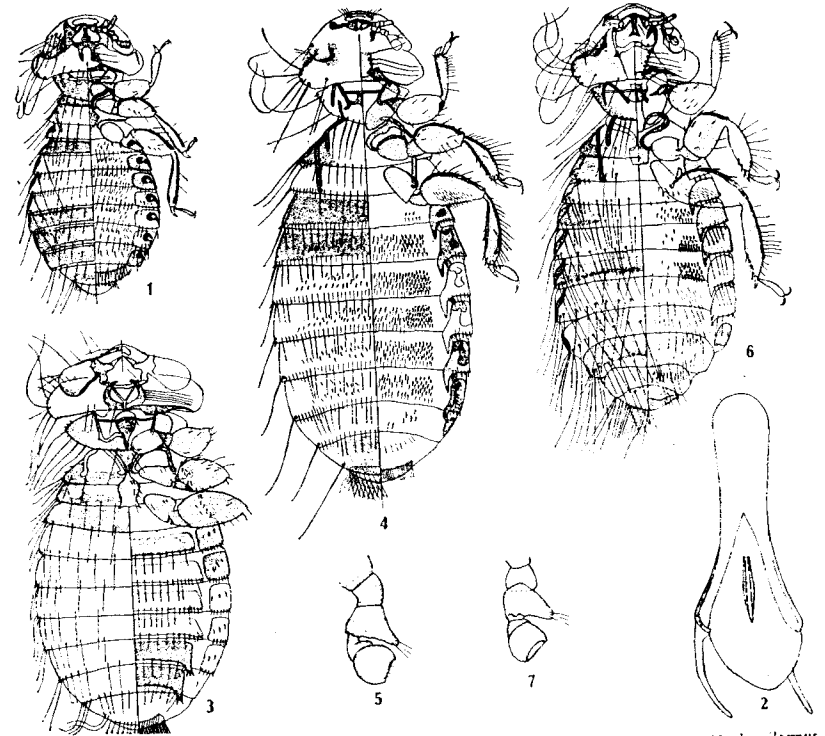
Miss. CLAY places particular importance on the shape of segment 2 of the antennae, which, in connection with the head spines and patches of setae form the distinguishing characters of the genus. As far as I can tell from the literature, the two species described below are quite different from the other four known species of the genus, and are also quite different from each other.

In addition to the genotype the following species are included in *Hohorstiella*: *Menopon menadense* Piaget (*Turacoena manadensis*); *M. quinqueguttatum* Rudow (*Ducula pacifica microcera* (Bonaparte)); and *Gallicolumba stairi samoënsis* (Finsch).

*Hohorstiella andina* n. sp.

(Figs. 4 and 5)

*Type*, female adult, from *Leptophaps aymará* (Knip & Prévost), collected by the author at Sta. Lucía, Peru, April 25, 1931 (in coll. of author).



*Machaerilaemus cotingae* n. sp. — Fig. 1: Female; fig. 2: male genitalia. Fig. 3 — *Machaerilaemus gigas* n. sp., female. *Hohorstiella andina* n. sp. — Fig. 4: Female; fig. 5: female, antenna. *Hohorstiella frontalis* n. sp. — Fig. 6: Female; fig. 7: female, antenna.

*Diagnosis*: A large species with relatively small head and sharply marked thoracic bands, and with 2nd and 3rd femora and tibiae broadly margined with brown.

The most distinguishing characters are: The large pleurites (sternal aspect) on segments II to VII, each with a long, heavy, sharp-pointed spine extending backward from the inner, posterior corner (similar to species of *Amyrsidea* from Cracidae), and the abdominal chaetotaxy. The sternites on III to VII are thickly set with short bristles across the median portion, while between these bristles and the pleurites are large patches of short spines (replacing the patch of setae of other forms).

Tergites I to VIII have a series of longish hairs along posterior margin, interspersed irregularly with short hairs, while their median portion (inside the pleurites) is rather thickly set with short spines in irregular fashion. The pleurites, on dorsal aspect, are very narrow and closely fused with the strongly pigmented tergites, the latter extending unbroken across the abdomen, but are rather widely separated from each other by hyaline bands. The sternites are apparently absent, there being merely the thin body integument on ventral side of abdomen.

The ventral head spines are short, deeply colored, with curving tip; the mandibles are small, without teeth and located near anterior margin of head; the temporal fringe of setae is (except for two longish hairs) short and sparse, and its line of attachment, lies inside the margin of the temple (see fig.). The species is known from the female holotype, and another adult female taken on the same host at Chocaya, Bolivia, June 14, 1936, together with a female nymph. The Chocaya female is less strongly chitinized and may be immature, but in all other respects is identical with the type.

Measurements of the type:

	Length	Width
Body .....	2.50	—
Head (temples) .....	.40	.67
Prothorax .....	.24	.49
Pterothorax .....	.26	.71
Abdomen .....	1.70	1.05

*Hohorstiella frontalis* n.sp.

(Figs. 6 and 7)

*Type*, adult female, from *Columba fasciata albilinea* Bonaparte, collected by the author at Sandillani, Bolivia, Dec. 10, 1934 (In coll. of author).

*Diagnosis*: Smaller than *H. andina*, but with head proportionately larger, especially longer. The forehead is not circular, there being a slight angle medially on sides, while the frons itself is flatly pointed, with straight sides. The mandibles are very small, the left with bipartite tip, the right pointed.

The gular plate is absent, that area being clear, with the six hairs set along each side at edge of the darker lateral areas. The pro- and pterothorax are of normal shape, but of different proportions than in *andina*, while the thoracic bands are sharply defined and similar, as well as the sternal plates. The legs are large, especially the 3rd pair, which is larger than in *andina*, but the chaetotaxy is similar.

The abdomen is elongate oval. The pleurites consist of a narrow, deeply colored band on the dorsal aspect (see fig.), but on ventral side are large, more or less quadrilateral in shape, but with the same elongated spine at inner, posterior corner as in *andina*, but without incassations, the whole sclerite being uniformly colored. The tergites are narrow and not sharply defined, and separated by wide hyaline bands. In segments I to III they are broken medially, at least they are uncolored in median portion, but in the remaining segments they extend unbroken across the abdomen. Sternites are apparently absent. The chaetotaxy of the abdomen differs decidedly from that of *andina*, the dorsal hairs being fewer and much longer and without short, spiny bristles on dorsal surface. On the ventral face the patches of short, heavy spines are confined to segments III to V, and the short hairs covering surface across abdomen between the patches of spines are wanting, except a few on segments VI and VII, while there are some longish hairs along posterior margin of segments VI to VIII. Genital plate absent.

Type series consists of female holotype and three female paratypes, two of which seem to be slightly immature. Measurements of type:

	Length	Width
Body .....	2.10	—
Head { forehead .....	.412	.54
{ temples .....		.67
Prothorax .....	.25	.49
Pterothorax .....	.25	.63
Abdomen .....	1.34	.965

Genus *Dicteisia* Bedford

*Dicteisia triste* (Giebel) and *D. pilosa* (Piaget)

When KÉLER erected the genus *Dicteisia* in 1938 he failed to designate a genotype, thus invalidating the genus. In 1939 BEDFORD (independently of KÉLER) described the genus and designated *Colpocephalum tristis* Giebel as the genotype.

In KÉLER's paper (*Arb. morph. taxon. Ent. Berl.-Dahlem*, 5(3):234) he described and figured the two known species of the genus, viz: *D. triste* (Giebel)

and *D. pilosa* (Piaget), but in some unaccountable manner he described and figured *D. pilosa* (Piag.) as *D. triste* (Giebel), and *triste* as *pilosa*. I have numerous specimens of both species in my collection, and a careful comparison of the specimens with PIAGET's description and figure leaves no doubt of the error by KÉLER. Two characters alone are ample to separate the two species, and both are clearly described and figured by PIAGET in *pilosa*; viz: the shape of the abdomen and the last segment of the antennae, both being very different in *triste*. In *pilosa* the abdomen in the female is elongated oval, widest at segment III, and the last segment of the antennae is also elongated oval, while in *triste* the female has the abdomen abruptly narrowed at segment VI, and the last segment of the antennae is long, nearly parallell-sided and with the tip obliquely truncate. The shape of the head is also very different.

A specimen of *Chauna chavaria* near the Rio Cesar (Dept. Magdalena) yielded specimens of both *triste* and *pilosa*, and in addition 11 females of another species of *Dicteis* which is apparently new, and is described below.

*Dicteis gracile* n. sp.

(Fig. 8)

*Type*, female adult, from *Chauna chavaria* (Linné), collected by the author at Codazzi, Dept. Magdalena, Colombia, July 27, 1942 (In coll. U. S. Nat. Mus.).

*Diagnosis*: A small species, about the length of *D. pilosa*, but with the abdomen slender, almost parallell-sided, and with the head resembling that of *D. triste*, but smaller.

A narrow, Y-shaped, hyaline band, beginning near the base of the antennae, running backward and inward and joining on a line with posterior margin of ocular blotches, from where it runs straight backward to middle of occiput, crosses both segments of the thorax and ends in anterior portion of abdominal segment IV. In *D. triste* there are two similar hyaline lines beginning in tergite V and running backward to the tip of the abdomen, where they are joined across segment IX. In *D. pilosa* there are no hyaline lines.

The abdominal chaetotaxy is quite different from both *triste* and *pilosa*, consisting of a series of spiny bristles across posterior margin of the tergites which reach to middle of succeeding tergite; a series of shorter, more slender bristles across posterior margin of sternites III to VIII, and a few short bristles scattered over their entire surface. In addition to the spines at the outer, posterior angles of pleurites and along their sides, there is a long, strong, submarginal hair in posterior portion of pleurites II and III and VI to IX (not present in other species), but is replaced in IV and V by a heavy bristle similar to those on margin of tergites, but somewhat longer.

There are two long and one short combs of setae on 3rd femora and one strong comb at each side of posterior margin of sternites III and IV. The pleurites are longer than wide and lie almost wholly on ventral side of abdomen.

Measurements of the type:

	Length	Width
Body .....	2.31	—
Head { forehead .....	—	.38
{ temples .....	.467	.585
{ occiput .....	.43	—
Prothorax .....	.27	.51
Pterothorax .....	.315	.55
Abdomen .....	1.50	.54
Antennae .....	.217	.045

Genus *Ramphasticola* n. g.

*Genotype*: *Ramphasticola hirsuta* n. sp.

*Diagnosis*: Most nearly related to *Myrsidea*, with which it agrees in general structure of the head, and with patches of strong setae on hind femora. It differs from *Myrsidea* in complete absence of asters of spines on first sternal plate of abdomen, and in having the meso- and metathorax completely separated, resembling very much the thoracic structure in the genus *Lamprocorpus*. There is a slight sexual dimorphism in the thoracic structure, and a decided dimorphism in the abdominal chaetotaxy, but very little in the structure of tergites and sternites. In the male the chaetotaxy resembles that of *Myrsidea* (without the spines), while in the female it is quite different (see fig.). The pleurites are apparently obsolete in the male but are represented in the female by very narrow, deeply colored sclerites closely fused with the tergites, the latter extending unbroken across the segments in both sexes. Legs unusually large and with all femora and tibiae set with numerous strong, spine-like hairs. The male genitalia are similar to those of *Myrsidea*. There are no patches of setae on sides of abdominal sternites, but a single row of long, spine-like hairs on III to VI.

*Ramphasticola hirsuta* n. sp.

(Figs. 9-11)

*Types*, male and female adults, from *Ramphastos swainsonii* Gould, collected by the author at Bella Vista, Santander N., Colombia, July 8, 1943 (In coll. U. S. Nat. Mus.).

*Diagnosis:* The generic characterization given above, together with the figures presented are ample for the recognition of this curious species, the figures giving a clearer picture than a long detailed description.

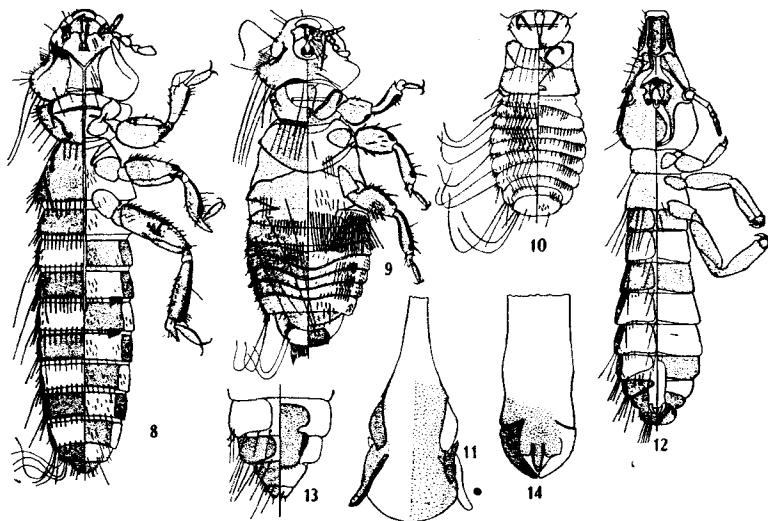


Fig. 8: — *Dactesia gracile* n. sp., female. *Ramphasticola hirsuta* n. sp. — Fig. 9: Female; fig. 10: male; fig. 11: male genitalia. *Ardeiphagus cochlearius* n. sp. — Fig. 12: Male; fig. 13: female, tip of abdomen; fig. 14: male genitalia.

The mesothorax is longer than the metathorax, has the posterior margin circular, and is joined to the metathorax only in the median portion, leaving a large lateral area between the two segments which is joined together by merely a thin, hyaline membrane. The metathorax is apparently fused with the 1st abdominal segment, no suture being visible, but on each side there is a considerable open space, also covered by a hyaline membrane. There is no trace of the fusion of abdominal sternites I and II forming an apron-like plate, at the posterior corners of which are found the asters of spines, such as presented by the females of many of the *Myrsidea*. Abdominal segments I and II in the female are almost transverse, but III to VI are curved backward medially after the manner of some of the females of *Myrsidea* where they have been forced backward by the greatly extended plate formed by sternites I and II, but there is no apparent reason for this backward curving in the present species.

The species is represented by the two type specimens and a male paratype, together with another male taken by the autor on *Ramphastos monilis cuvieri*, at Sapasoa, Peru, Nov. 1, 1933.

Measurements of the types:

	♂		♀	
	Length	Width	Length	Width
Body .....	1.36	—	1.65	—
Head { frons .....	—	.185	—	.22
{ temples .....	.35	.467	.40	.542
Prothorax .....	.195	.314	.228	.395
Mesothorax .....	.15	.347	.293	.52
Metathorax .....	.14	.412	.205	.65
Abdomen .....	.62	.495	.65	.655
Basal plate .....	.174	.105		
Paramers .....	.087	.155 (tips)		
Endomera .....	.087	.12		

Suborder ISCHNOCERA

Family PHILOPTERIDAE

Genus *Ardeiphagus* n. g.

*Genotype:* *Ardeiphagus cochlearius* n. sp.

*Diagnosis:* Resembles some types of *Pectinopygus* and *Ardeicola* but differs radically from both of these genera in the structure of the preantennary portion of the head, as well as non-dimorphic antennae and type of male genitalia.

Head is long and narrow, with rounded temples and tapering to a narrow, truncate frons; with pre-antennary portion of head much longer than post-antennary; clypeal bands broken by a sharply defined suture which extends across the head along the posterior margin of the clypeal signature; portion of clypeal bands anterior to the suture long and heavy, enclosing the very large, entire, and unmarked clypeal signature.

Trabeculae very small, pointed and hyaline; mandibles large and heavy; pharyngeal sclerite small; occipital signature large; temporal and antennal bands narrow and occipital bands faintly colored. Antennae slender, rather short, and similar in the sexes. Prothorax short, small, and with rounded sides. Pterothorax short, sides nearly straight and posterior margin truncate. Abdomen of similar shape in the two sexes, short and widest at segments V and VI. Segment IX very small in female, with bipartite tip; in male larger and with posterior margin circular. Male genitalia small, basal plate short and thick; paramers very short and sharply curving inward. Chaetotaxy very sparse, with most hairs short. The pleurites are narrow, tergites broken medially in segments I to VII and separated more widely in female than in male; sternites entire.

*Ardeiphagus cochlearius* n. sp.

(Figs. 12-14)

*Types*, male and female adults, from *Cochlearius c. cochlearius* (Linné), collected by the author at Lorica, Colombia, February 18, 1916 (In coll. of the author).

*Diagnosis*: The generic description and figures clearly characterize this species. There are about 9 hairs scattered over each clypeal band, mostly ventral; eye scarcely visible, with a very short bristle; one longish and two short hairs on temples; one long hair at angle of prothorax; one at posterior lateral angle of pterothorax, and three long hairs on posterior margin, just within the angle; one to four long hairs on each side of posterior margin of the tergites I to VII, and three shorter ones on sternites; one to four hairs at lateral angles of abdomen from segments I to VIII. Legs strong, third pair long, with long coxae. Segment IX of male has about six hairs of medium length on each side of posterior margin and about five shorter, dorsal hairs in lateral portion. The tip of the genitalia is apparently enclosed within a heavily chitinized collar through which it passes when extruded. The endomeral plate is small and rudimentary but the penis is large (see fig.). Type series consists of 1 male and 6 females. There are, in addition, 1 male and 3 females taken from the type host at Simiti, Dept. Bolivar, Colombia, and 1 male and 2 females from *C. c. zeledoni* (Ridgway), collected at Tres Zapotes, Vera Cruz, Mexico. There are no appreciable differences between the Colombian and Mexican parasites.

*Docophorus sulcatus* Piaget, 1888, from *Ardea minuta* (= *Ixobrychus m. minuta* (Linn)) is quite close to this new form and must be placed in the new genus *Ardeiphagus*. Dr. HOPKINS was doubtful about the validity of PIAGET'S host record for this species, but after seeing specimens of the present form from *Cochlearius*, he concedes that the host for *D. sulcatus* Piaget is probably correct, and together with the new species here described belong in a new genus which will probably be found to infest only Herons.

## Measurements of the types:

	♂		♀	
	Length	Width	Length	Width
Body	2.04	—	2.50	—
Head { frons	.673	.11	.74	.12
{ temples		.42		.49
Prothorax	.15	.29	.174	.32
Pterothorax	.195	.34	.25	.40
Abdomen	1.09	.46	1.43	.565
Antennae	.27	.043	.285	.043
Basal plate	.20	.087		
Paramers	.065	.092		
Endomera	.043	.055		

Genus *Epipicus* n. g.*Genotype*: *Epipicus scapanoides* n. sp.

*Diagnosis*: Medium sized species with large triangular-shaped head, having rounded temples and truncate frons; short, wide prothorax; short pterothorax with widely divergent sides and angulated posterior margin; elongated oval abdomen.

Mandibles large; pharyngeal sclerite and occipital signature small. Clypeal bands wide, double, and with the two portions fused posteriorly and anteriorly, at each side of the truncate frons. Clypeal suture entirely absent, as well as clypeal signature, a hyaline area occupying the space between the inner clypeal bands. Trabeculae clear, of medium size. Antennae heavy and slightly dimorphic, the male having the 1st segment much longer and thicker than 2nd, the latter with a slight hook at distal end. In the female segments 1 and 2 are about equal.

Antennal bands heavy, extending from rounded base of clypeal bands backward and inward to posterior mandibular condyle, and with faintly colored occipital bands not reaching occipital margin. Temporal bands narrow and deeply colored. Legs short and thick, with pitchy anterior margins. Abdominal pleurites narrow dorsally and closely fused with the tergites which extend unbroken across all segments; the sternites are less deeply colored than the tergites and lie between the spiracles, which are large and surrounded by a clear space. Male genitalia heavy, with short basal plate, with rather long, strongly chitinized and nearly straight paramers; endomera consists of merely a large plate, without working parts.

In female, segment VIII is large and evenly rounded posteriorly, and with 3 heavy ventral spines in anterior corner (as in *Rallicola* and *Furnaricola*). The chaetotaxy is not abundant but most hairs are long and stout, with pterothorax and segments I to VII with numerous closely set, long hairs in median portion of posterior margin on both dorsal and ventral surfaces.

*Epipicus scapanoides* n. sp.

(Figs. 15-17)

*Types*, male and female adults, from *Scapanus malherbii* (Gray), collected by the author at Monte Elias, Sierra Perija, Colombia, August 5, 1941 (In coll. U.S.Nat.Mus.).

*Diagnosis*: The generic description and figures, with a few additional details will suffice to characterize this species. One strong dorsal hair at anterior end of clypeal band and five others scattered over their ventral surfaces; a

short spine on the small eye; one long hair at middle of temples; occiput straight, without hairs; one hair in rounded lateral angle of prothorax; four long hairs along posterior side of lateral angle of pterothorax and six others in median portion of each side of posterior margin; one to three hairs in lateral angles of abdominal segments II to VII; one at anterior angle of VIII, and three submarginal hairs on each side further back.

In the female the genital plate is large, covering more than anterior half of VIII and all of VII, with posterior margin circular and sparsely set with short, stout bristles. The type series consists of 1 male and 3 females. Another female was taken from the type host collected at Taraza, Antioquia, Colombia, which agrees exactly with the type series.

Measurements of the types:

	♂		♀	
	Length	Width	Length	Width
Body .....	1.95	—	2.04	—
Head { frons .....	—	.174	—	.174
temples .....	.575	.564	.597	.59
Prothorax .....	.21	.37	.195	.38
Pterothorax .....	.303	.62	.325	.63
Abdomen .....	1.11	.76	1.19	.815
Antennae .....	.314	.05	.27	.046
Basal plate .....	.29	.13		
Paramers .....	.195	.195 (tips)		
Endomera .....	.13	.12		

*Quadriceps titicacae* n. sp.

(Figs. 18-20)

*Types*, male and female adults, from *Thinocorus orbignianus ingae* Tschudi, collected by the author at Desaguadero, Peru, May 4, 1931. (In coll. of author).

*Diagnosis*: Closely related to *Q. crassipedalis* (Harrison), from *Thinocorus rumicivorus* (equals *Nirnus crassipes* Piaget, 1885, nec Denny, 1842), from which it differs chiefly in the shape of the head, which is much more slender (longer and narrower), (male: .43 x .30 against .35 x .36 mm. for *crassipes*).

The thoracic and abdominal structure is the same, also the deeply colored pleurites. PIAGET says of *crassipes*: "La tete subconique, tronquée en avant." However, in *titicacae* the frontal margin is elliptical, with a rather wide, hyaline border. The total length is practically the same as in *crassipes*, as well as the dimensions of the abdomen. According to PIAGET's figure the whole genital armature is considerably larger in *titicacae* than in *crassipes*.

Measurements of the types:

	♂		♀	
	Length	Width	Length	Width
Body .....	1.43	—	1.65	—
Head .....	.434	.303	.456	.343
Prothorax .....	.098	.206	.108	.22
Pterothorax .....	.16	.295	.18	.314
Abdomen .....	.80	.41	.975	.477
Antennae .....	.15	.032	.155	.035
Basal plate .....	.174	.087		
Paramers .....	.16	.076		
Endomera .....	.14	.054		

*Quadriceps punensis* n. sp.

(Figs. 21 and 22)

*Types*, male and female adults, from *Thinocorus orbignianus ingae* Tschudi, collected by the author at Llallagua, Bolivia, May 24, 1936 (in coll. of author).

*Diagnosis*: Very different from *Q. titicacae*, taken on the same host, and totally unlike *Lipeurus fulvus* Piaget (= *Capriella*), taken on *Thinocorus rumicivorus*.

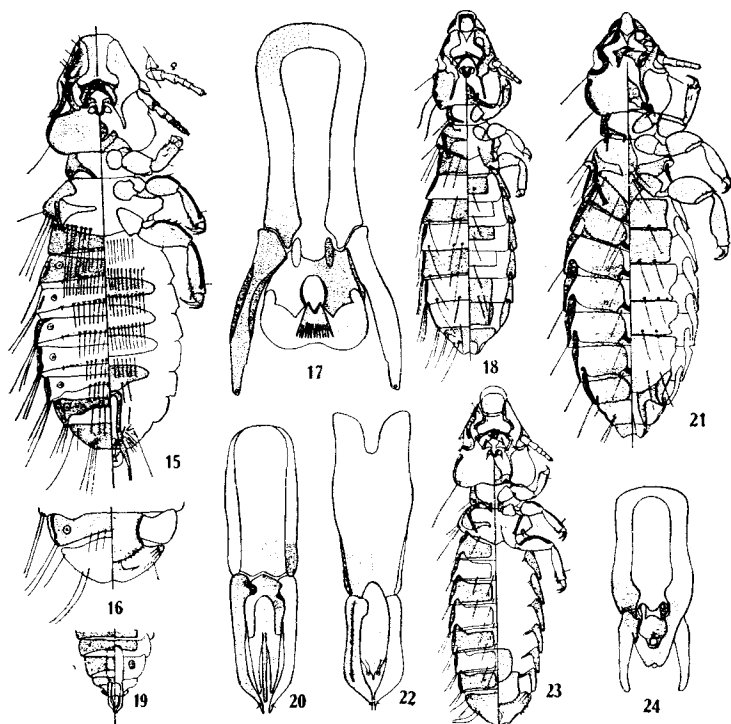
The species is strikingly marked on a clear background and easily recognized by the structure of tergites I to VI, which are separated medially except for a deeply chitinized circular band at the posterior margin, while all tergites and sternites are widely separated from the narrow, heavily chitinized and deeply reentering pleurites by a wide hyaline area. The clypeal structure strongly resembles that of *Cummingsiella*, but the structure of the abdominal tergites and sternites is totally unlike those of that genus. The antennal bands are pitchy in color, semi-circular in shape, and joined to the clypeal and occipital bands, but separated from the temporal bands. The occipital bands extend to anterior margin of prothorax. Trabeculae extremely small, pointed and colorless. The chaetotaxy of the whole body is rather sparse, consisting chiefly of a long hair on eye, one long hair on temples, two at lateral angle of pterothorax, two at posterior angle of pleurites III to VIII, and two longer hairs on inner portion of posterior margin of tergites. Except for larger size and different structure of abdominal segments VIII and IX, the female differs little from the male.

The male genitalia is rather large, with heavy paramers, long endomeral plate and small penis, all typical of the genus. Other details of structure may be clearly seen from the figures. The type series consists of 2 males and 11 females.



## Measurements of the types:

	♂		♀	
	Length	Width	Length	Width
Body .....	1.63	—	1.97	—
Head (occiput).....	.39	.345	.477	.40
Prothorax .....	.174	.228	.195	.264
Pterothorax .....	.26	.34	.347	.41
Abdomen.....	1.03	.566	1.29	.63
Antennae.....	.163	.036	.19	.065
Basal plate.....	.15	.097		
Paramers.....	.13	.077		
Endomera.....	.097	.04		



*Epipicus scapanoides* n.sp. — Fig. 15: Male; fig. 16: female, tip of abdomen; fig. 17: male genitalia.  
*Quadraceps titicaca* n.sp. — Fig. 18: Female; fig. 19: male, tip of abdomen; fig. 20: male genitalia.  
*Quadraceps punensis* n.sp. — Fig. 21: Female; fig. 22: male genitalia. *Rallicola andina* n.sp. — Fig. 23:  
 Female; fig. 24: male genitalia.

*Rallicola andina* n.sp.

(Figs. 23 and 24)

*Types*, male and female adults, from *Ortygonax rytirhynchus tshudii* (Chubb), collected by the author on Lake Junin, Peru, April 24, 1930 (In coll. of the author).

*Diagnosis*: Typical of the genus in every way and closely resembling several known species taken on Rails. The structure of the head, abdominal sclerites and male genitalia closely resembling those of the genotype. There is a slight sexual dimorphism of the antennae, that of male having 1st segment thickest and longest, with 2nd but slightly shorter and thinner, while in the female the 2nd segment is considerably longer than the 1st. The female has the typically shaped genital plate with fringe of setae on curved posterior margin, and with the two long, heavy spines at each side of anterior margin of segment VIII. The clypeal signature has flatly rounded, nearly equilateral margins, extends beyond ends of clypeal bands, and is bordered anteriorly by a wide hyaline margin.

All tergites are separated medially in the female, but *entire* in the male; the chaetotaxy is sparse, consisting principally of but a few long hairs on temples, angles of thorax and abdominal segments, and on posterior margin of tergites.

Type series consists of 5 males and 6 females.

## Measurements of types:

	♂		♀	
	Length	Width	Length	Width
Body .....	1.44	—	1.63	—
Head (occiput).....	.445	.37	.488	.40
Prothorax .....	.14	.24	.145	.24
Pterothorax.....	.19	.336	.206	.37
Abdomen.....	.815	.44	.95	.467
Antennae.....	.185	.036	.195	.04
Basal plate.....	.17	.09		
Paramers.....	.097	.087		
Endomera.....	.043	.036		