

## NEOTROPICAL MALLOPHAGA (INSECTA) MISCELLANY, N.º 13<sup>1</sup>

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(With 32 text-figures)

In the present paper there are described a new genus of Philopteridae parasitic on the Hirundinidae (Swallows); new species and subspecies of *Colpocephalum*, *Actornithophilus*, *Hohorstiella*, *Campanulates* and the *Brüelia* of the neotropical Corvidae, a *Philopterus* and notes on the genus *Osborniella*.

All drawings were prepared by the author and all measurements are in millimetres. In the measurements of the Menoponidae the term frons signifies the widest portion of the head preocular slit. Nomenclature of HELLMAYR & CONOVER has been followed, where published, otherwise, PETERS.

### *Actornithophilus hoplopteri* (Mjoberg, 1910)

*Ark. Zool.*, 6 (13): 40, fig. 24, pl. 5, fig. 3. (Host: *Hoplopterus spinosus*).

In her recent review of the genus *Actornithophilus* CLAY has classified the forms of this genus found on *Charadrius vociferus* as *A. hoplopteri sens. lat.*, with the observation that "They are the smallest in size of the known populations of *hoplopteri*". The term "population" apparently has here been used *au lieu de* subspecies. At least that seems to be the idea, since the form found on *Charadrius vociferus* is certainly subspecifically different from *hoplopteri*.

In my collection are 4 ♂♂ and 1 ♀ of *A. hoplopteri* (Mjoberg) from the type host (*Hoplopterus spinosus*). There are also two fine males of this genus from *Charadrius vociferus*, one from the nominate race of that host and the other from *C.v.peruvianus*, the latter collected at Vegeta, Peru.

These two males are unquestionably conspecific with *A. hoplopteri* (Mjoberg), but are not only subspecifically distinct from that species, but differ in the same degree, one from the other, and are described and figured below.

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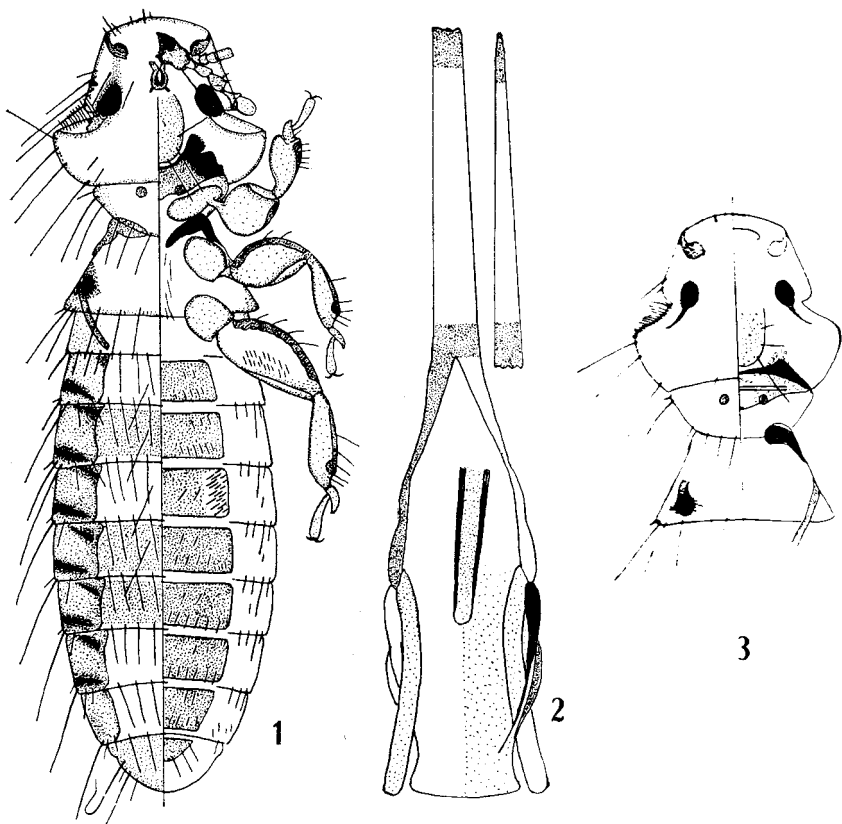
<sup>1</sup> Received for publication March 14, 1963.

*Actornithophilus hoplopteri maculosus* subsp. n.

(Figs. 1 and 2)

Holotype, ♂ adult, and only specimen, from *Charadrius v. vociferus* L., collected by the author at Unguía, Dept. Chocó, Colombia, Feb. 28, 1950 (Type No. 761 in author's Coll.).

*Diagnosis* — A very strikingly marked subspecies, and may be recognized by the prominent black, ocular and occipital blotches, and the two diagonal black bars across the pleurites, the anterior one shorter and across the inner, anterior corner of the sclerite, with the larger one across the outer, posterior portion, not quite reaching to the inner margin of pleurite.



*Actornithophilus hoplopteri maculosus* subsp. n., male — Fig. 1: Body; fig. 2: genitalia. *Actornithophilus hoplopteri peruvianus* subsp. n., male — Fig. 3: Head and thorax.

The genitalia are typical, generally speaking, of many of the Menoponidae and present no strikingly distinct characters. Note the movable sclerite within the basal plate, which is characteristic of the subspecies. Measurements follow the next subspecies.

***Actornithophilus hoplopteri peruvianus* subsp. n**  
(Fig. 3)

Holotype, ♂ adult, and only specimen, from *Charadrius vociferus peruvianus* (Chapman), collected by the author at Vegeta, Peru, Feb. 4, 1932 (Type No. 762 in Carriker coll.). [Note — The nominate form of the host reaches no further south in migration than Ecuador].

*Diagnosis* — Very similar to *maculosus* in genal aspect, differing in size and proportions of most of the body segments, and in the shape of the black markings of the thorax. Slightly smaller than *maculosus*, but much smaller than *hoplopteri* (see table of measurements). Body, 1.54 x 0.38 against 1.60 x 0.456; head with frons the same width, but length of head at temples greater and width less (0.358 x 0.434 against 0.347 x 0.445); prothorax shorter and wider; pterothorax shorter and narrower; anterior portion of head (ocular notch to frons) is slightly shorter; the black ocular blotches are smaller and of different shape; anterior margin of prothorax much less concave and with lateral black blotches smaller and very differently shaped (see figs.); as well as the black markings of the pterothorax. Abdomen practically the same, but shorter, and genitalia almost identical.

Apparently the separation of *Charadrius v. peruvianus* from the parent stock occurred a very long time ago, or else there would be no differences in their Mallophagan parasites. The race probably originated from a pair of migrants remaining and breeding in Peru, possibly one bird being unable to make the return flight.

Measurements of the males of *A. h. hoplopteri*, *A. h. maculosus* and *A. h. peruvianus*:

	♂		♂		♂	
	Length	Width	Length	Width	Length	Width
Body.....	1.95	—	1.60	—	1.54	—
Head { frons.....	—	0.326	—	0.217	—	0.217
{ temples.....	0.37	0.48	0.347	0.445	0.358	0.434
Prothorax.....	0.163	0.326	0.19	0.28	0.152	0.303
Pterothorax.....	0.293	0.434	0.20	0.415	0.217	0.38
Abdomen.....	1.06	0.542	1.00	0.456	0.91	0.456
Basal plate.....	0.61	0.077	0.52	0.071	0.54	0.068
Paramer.....	0.128	0.013	0.107	0.01	0.097	0.01
Endomerical sac.....	0.097	0.08	0.09	0.076	0.102	0.077

***Colpocephalum burhinoides* sp. n.**

(Fig. 4)

Holotype, ♀ adult, from *Burhinus bistrriatus vocifer* (L'Herminier), collected by the author at Casacará, Dept. Magdalena, Colombia, May 18, 1942 (Type No. 760 in author's coll.).

*Diagnosis* — Rather small for the genus, with circular frons and rounded temples; rather small, oval, black, ocular blotches, and circular, black, occipital

blotches of almost equal size. Pterothorax rather long (0.30 x 0.61), with straight, strongly divergent sides; abdomen rather slender, widest at IV, and with narrowly rounded tip; pleurites narrow, decreasing in width progressively from II to VIII; tergites faintly pigmented, continuous across abdomen and separated by narrow hyaline bands; sternites broadly divided medially (see fig.) in segments II-VI, undivided in VII-IX. Numerous short spines on lateral margins of abdomen; a closely set row of rather long setae on posterior margin of tergites, much more dense on VII-IX; short, scattered setae on sternal surface and a sparse row of short setae along posterior margin of segments. Represented by the ♀ holotype and 4 ♀ ♀ paratypes; ♂ unknown.

Measurements of the type (♀):

	Length	Width
Body.....	1.98	—
Head {		
frons.....	—	0.33
temples.....	0.38	0.455
occiput.....	0.35	—
Prothorax.....	0.217	0.37
Pterothorax.....	0.25	0.467
Abdomen.....	1.24	0.586

**Hohorstiella corpulenta** sp. n

(Figs. 5 and 6)

Holotype, ♂ adult, and only specimen, from *Oreopeleia m. montana* (Linné), collected by the author at San Alberto, Dept. Magdalena, Colombia, Apr. 14, 1961 (Type No. 763 in author's coll.).

*Diagnosis* — This is the third species of the genus recorded from the Western Hemisphere, although five have been described from the Old World (2 from domestic pigeons). It is, apparently, one of the very rare genera of the Menoponidae, almost on a par with *Microtenia*. The first two species described by the author were from single females, the present one from a single ♂.

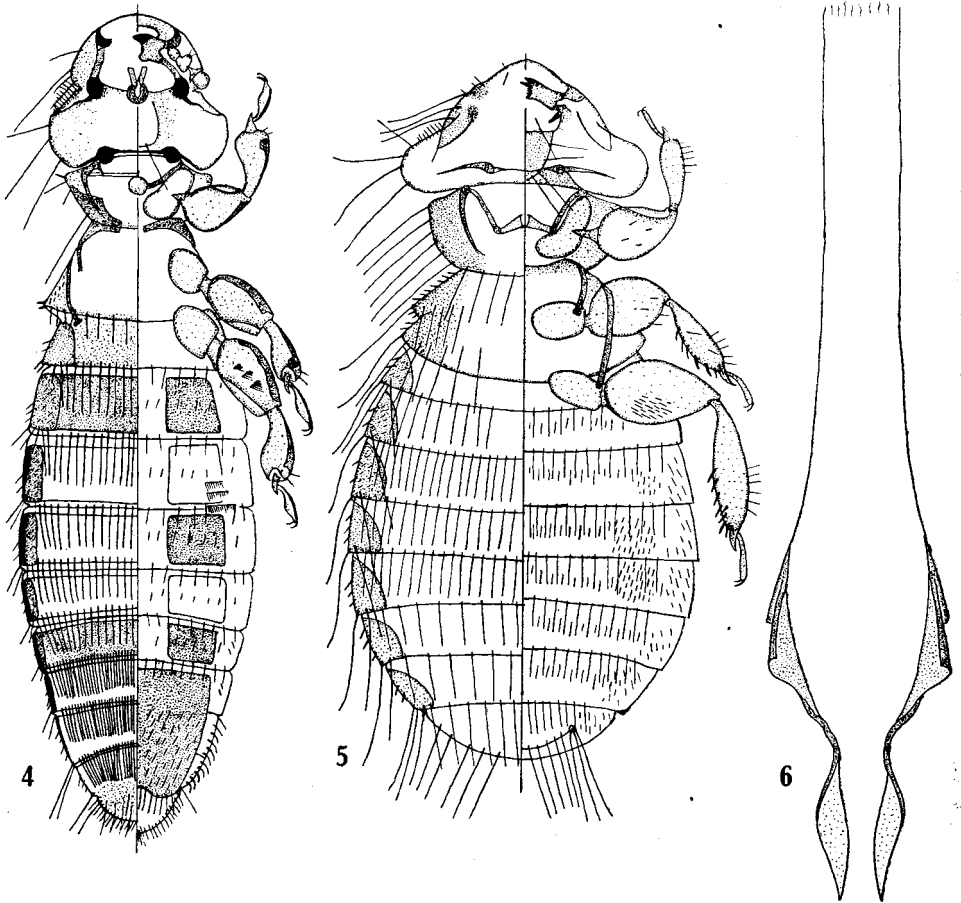
The present species is distinguished by the very short, wide head, with narrow temples; large thoracic segments and almost circular abdomen. Pleurites small and almost uncolored; tergites and sternites indistinguishable.

Chaetotaxy very abundant and long, especially on abdomen; also many small spines on pleurites and tibiae; large patches of fine, short setae on each side of sternites IV and V, with a small one on III.

Male genitalia almost unique and very unusual. Am not positive that the figure given is entirely correct in the distal portion, visibility being badly obscured by the more or less entangled long setae and lack of pigmentation in the genitalia. The present species is very different from *H. andinae* and *frontalis* Carriker, 1949 (*Rev. Brasil. Biol.*, 9 (3): 300-303).

The ventral spines at base of mandibles are small and narrow, and easily overlooked; there is not trace of the prominent hooks on inner, posterior corner

of pleurites present in the two species cited above. The general abdominal chaetotaxy is similar to that of *H. frontalis*, but not the same. The present



*Colpocephalum burhinoides* sp. n., female — Fig. 4: Body. *Hoorstiella corpulenta* sp. n., male — Fig. 5: Body; fig. 6: genitalia.

species resembles *H. lata* (Piaget) in shape of head and that portion of the genitalia illustrated by him. The other species described by PIAGET (*menadensis*) is very different, and I doubt very much if it belongs in this genus.

Measurements of the ♂ holotype:

	Length	Width
Body.....	1.71	—
Head { frons.....	—	0.434
{ temples.....	0.33	0.63
Prothorax.....	0.27	0.49
Pterothorax.....	0.303	0.61
Abdomen.....	0.99	0.87
Basal plate.....	0.39	0.11
Parameres.....	0.133	0.051

**Campanulotes Keler, 1939**

*Nova Acta Leopold.-Carol* (n. F.), 8: 137. Type species: *Goniocotes compar* "Nit."

A very rare genus, found only on the Columbidae, and seems to be more abundant on the neotropical genus *Oreopeleia* than other New World genera. The species are closely related and the subspecies difficult to separate.

I find that in the males the last abdominal segment and the sclerites which support the genitalia, together with their chaetotaxy, form very good characters for their separation. Also, the mandibles seem to differ considerably in closely related subspecies, as will be shown below.

Four species have been described from European species of *Columba*, including the domestic pigeons. In the 1952 *Checklist* appear one species from a neotropical pigeon (*Oreopeleia*) and one from *Phaps*, an Australian genus. In 1956 two new species were described by the author, *C. delicatus* from *Columba plumbea bogotensis*, and *C. rhynchortyx*, from *Rhynchortyx cinctus australis*, but the last species later proved to be a *Goniodes*, not a *Campanulotes*. In the author's collection is a large series of *C. bisetosus* (Piaget), also specimens of *bidentatus* (Scopoli) and *C. compar* (Burmeister).

Material collected later from *Oreopeleia linearis chiriquensis* and *O. frenatus bourcierii*, while apparently conspecific with *bisetosus* (Piaget) both differ sufficiently from that form to be given subspecific rank, and are described below.

***Campanulotes bisetosus costaricensis* subsp. n.**

(Figs. 7 and 9a-b)

Types, ♂ and ♀ adults, from *Oreopeleia linearis chiriquensis* (Sclater), collected by the author at Ujurrás, Costa Rica, Sept. 16, 1907 (Type No. 764 in author's coll.).

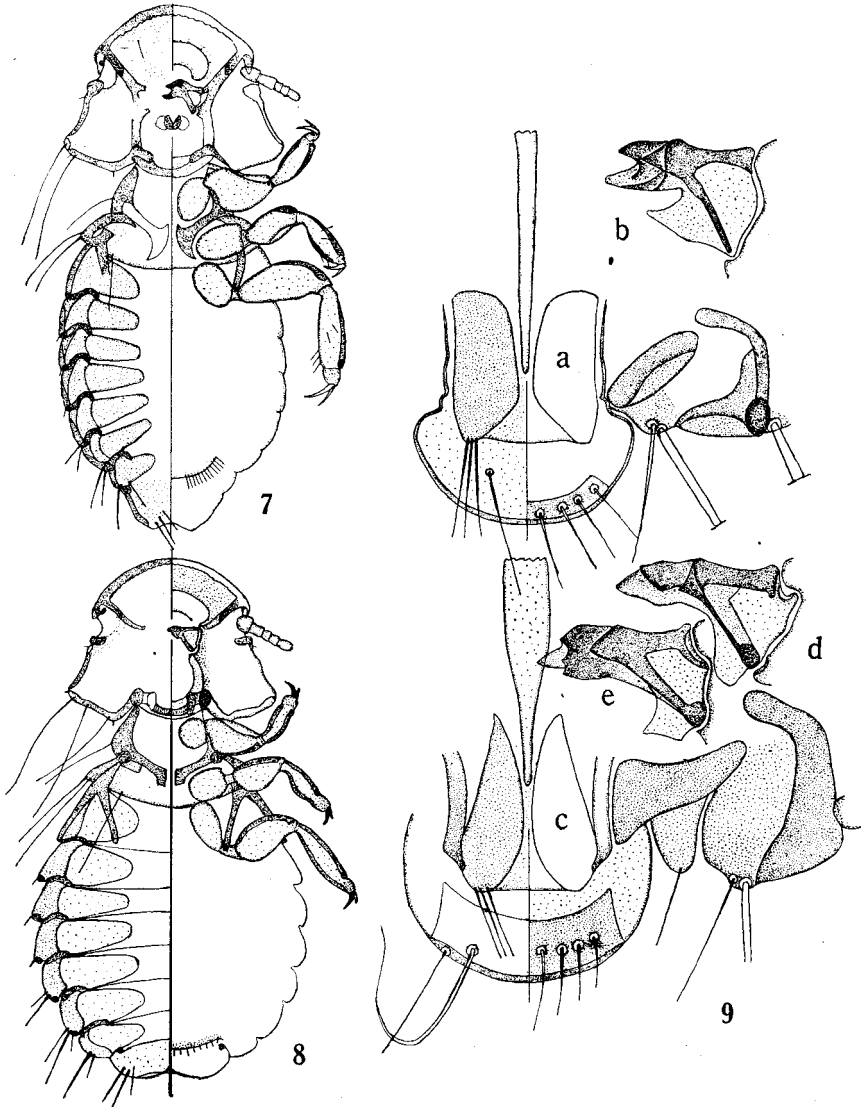
*Diagnosis* — The female is very close to *bisetosus* in its measurements, but is smaller in most. In the ♂ the head is slightly larger, but the frons is narrower (0.37 x 0.46 against 0.35 x 0.456; frons: 0.332 against 0.337). The thoracic segments are about equal in size, but the abdomen is much shorter, being considerably wider than long, while the reverse is true of *bisetosus* (0.477 x 0.524 against 0.586 x 0.51). The apical abdominal segment and the sclerites which support the genitalia differ considerably (see fig.), which, taken with the difference in the mandibles, is sufficient grounds for separating the subspecies. The figures of the mandible show the dorsal surface of the right mandible. The left mandible differs slightly in structure, especially the hyaline projection on the posterior margin, which in the left mandible is always longer and of quite different shape.

Represented by the ♀ holotype, ♂ allotype and 1 ♂ and 7 ♀ ♀ paratypes. Measurements follow the next species.

**Campanulotes bisetosus frenatus** subsp. n.

(Figs. 8 and 9e)

Holotype, ♀ adult, from *Oreopeleia frenata bourcierii* (Bonaparte), collected by the author at Ricaurte, Dept. of Nariño, Colombia, July 18, 1959 (Type No. 765 in author's coll.).



*Campanulotes bisetosus costaricensis* subsp. n. — Fig. 7: Body of female; fig. 9a: male genitalia and supporting sclerites; fig. 9b: right mandible, dorsal view. *Campanulotes bisetosus frenatus* subsp. n. — Fig. 8: Body of female; fig. 9e: right mandible, dorsal view. *Campanulotes bisetosus bisetosus* (Piaget), male — Fig. 9c: Genitalia and supporting sclerites; fig. 9d: right mandible, dorsal view.

This form also resembles closely the nominate race, the differences being the larger size and the differences in mandibular structure. All measurements

are greater except length of prothorax, which is the same (?). The length of both pro and pterothorax is open to question, since the posterior margin of those segments is practically invisible. The thoracic carinae are wide and heavily pigmented and there are rather wide, brown carinae on both sides of all tibiae and on outer margins of all femora.

Chaetotaxy sparse, but that of head very long; there are 2 much thickened setae in the postero-lateral angles of pleurites V-VIII, one longer than the other. The 3rd pair of coccyx are attached to the posterior margin of the pterothorax, but are additionally supported by a strongly chitinized carina branching off from the carinae of the pterothorax and abdominal segment I (see fig.) The male in *bisetosus* differs little from the female except in smaller size, rounder abdomen and last abdominal segment, together with the genital sclerites; the genitalia, proper, is very rudimentary, consisting merely of a long, slender, hyaline tube, tapering to a slender point between the two supporting sclerites in segment VIII, very similar to that of *Physconelloides*.

Note: Figures are presented of the ♂ genitalia and its sclerites, and of the right mandible of *C. b. bisetosus* (Piaget).

Measurements of *C. b. bisetosus* (Piag.), *C. b. costaricensis* and *C. b. frenatus*:

	♂		♀		♂		♀		♀	
	Length	Width	Length	Width	Length	Width	Length	Width	Length	Width
Body.....	1.096	—	1.38	—	0.976	—	1.32	—	1.24	—
Head {frons.....	—	0.337	—	0.412	—	0.332	—	0.412	—	0.37
{temples.....	0.35	0.456	0.412	0.545	0.37	0.46	0.41	0.542	0.39	0.51
Prothorax.....	0.12	0.282	0.108	0.303	0.14	0.28	0.163	0.314	0.108	0.285
Pterothorax.....	0.123	0.40	0.10	0.445	0.12	0.40	0.152	0.436	0.07	0.423
Abdomen.....	0.586	0.51	0.815	0.70	0.477	0.524	0.71	0.64	0.73	0.65
Genitalia.....	0.477	0.054			0.32	—				

### Brüelia Keler, 1936

*Arb. morph-tax. Ent. Berlin-Dahlem*, 3: 257. Type species: *B. rossittensis* Keler.

### Brüelia nitzschi Keler, 1938

*Arb. morph-tax. Ent. Berlin-Dahlem*, 5: 232, fig. 2. Host: *Cyanocorax cyanomelas* (Vieillot).

This species is one of a group of very closely related forms parasitic on the Neotropical Corvidae of several genera. KELER's description, incomplete measurements and figure of the female are ample for the recognition of the species, although the male genitalia, not shown, is one of the best characters for separating the different species and subspecies of this group (The genitalia of the single ♂ seen by KELER, was not in a condition to be figured). I have specimens of this group from five species of *Cyanocorax*, but unfortunately

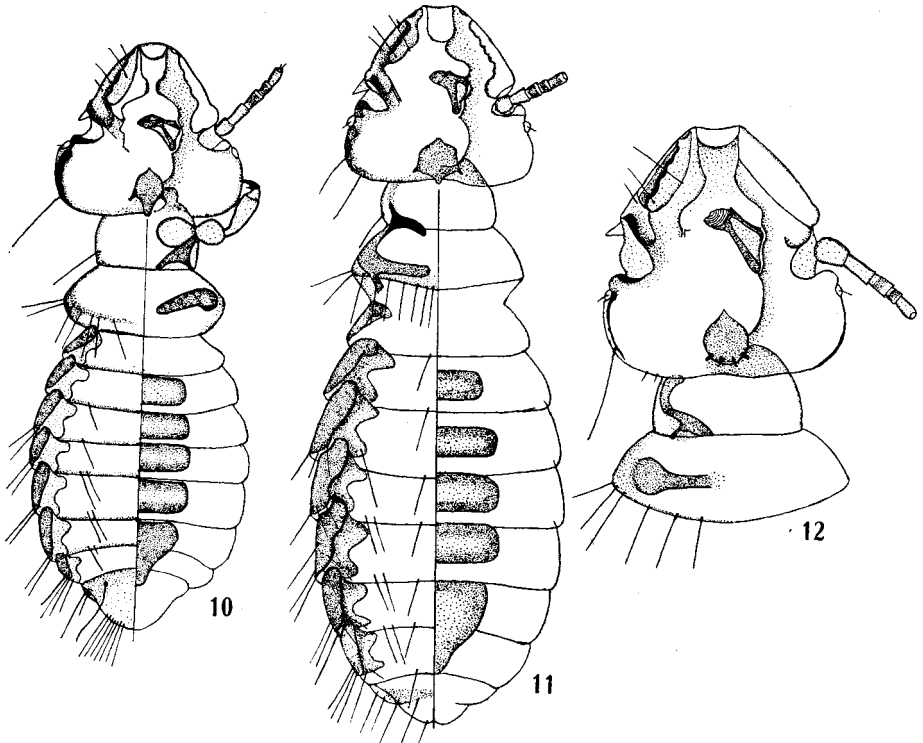


do not have any from the type host of *B. nitzschi*. All are apparently undescribed, two being conspecific with *nitzschi* and the others distinct species.

In 1956 (*Florida Ent.*, 39 (2): 83) I wrongly identified my specimens from *Cyanocorax chrysops* as *B. nitzschi* and compared the new form, *B. n. moriona* (from *Psilorhinus morio*), with them. Regardless of this error, *B. n. moriona* is a good, recognizable subspecies of *nitzschi*.

KELER's measurements of *nitzschi* show clearly that the head in both sexes is wider than long, and this character is not found in any of the five forms described on the following pages, although one of them, and *moriona* have the length and breadth equal, while in another the head of the ♀ is slightly wider than long, that of the ♂ is longer than wide.

Having the male genitalia for comparison, this group of *Brüelia* from the Corvidae are easily separated, but without the genitalia often are difficult. Unfortunately the male genitalia of two of the new forms is not known, but the other three are very distinct.



*Brüelia nitzschi cyanea* subsp. n. — Fig. 10: Body of male; fig. 11: body of female. *Brüelia nitzschi affinis* subsp. n., male — Fig. 12: Head and thorax.

***Brüelia nitzschi cyanea* subsp. n.**

(Figs. 10 and 11)

Types, ♂ and ♀ adults, from *Cyanocorax cyanus* (Linné), collected by the author at Peru Mine, Estado Bolivar, Venezuela, May 19, 1910 (Type No. 766, author's coll.).

*Diagnosis* — Although both sexes are represented in this race, the genitalia of the single male is missing, probably having been extruded and lost in the clearing. This race has a decided sexual dimorphism of the head (see figs). The head of the ♀ is very similar to that of *nitzschi*, but differs in shape, being wider in the preantennary portion in the ♀ and narrower in the ♂, and with the sides more convex.

The tergites and pleurites are definitely different from *nitzschi*, and the pre-antennary carinae are wider. Represented by the ♂ holotype and ♀ allotype only. Measurements follow the next species.

***Brüelia nitzschi affinis* subsp. n.**

(Fig. 12)

Holotype, ♂ adult, from *Cyanocorax a. affinis* (Pelzeln), collected by the author at Sabana Mendoza, Venezuela, May 2, 1922 (Type no. 767 in coll. of author).

*Diagnosis* — Body same length as *nitzschi*; head definitely longer than wide (0.43 x 0.415 against 0.405 x 0.417). The lateral margins of the pre-antennary portion of the head are nearly straight, as in *nitzschi* but the shape of the thoracic segments and their carinae seem to be different. The genitalia of the holotype is very badly distorted and a complete drawing of it is impossible, but the basal plate is closest to that of *B. violacea* sp. n. (which follows) but differs in the shape of the basal plate and all visible details.

Measurements of *B. nitzschi cyanea* and *B. nitzschi affinis*:

	♂		♀		♂	
	Length	Width	Length	Width	Length	Width
Body.....	1.47	—	1.94	—	1.465	—
Head.....	0.434	0.434	0.43	0.495	0.43	0.415
Prothorax.....	0.135	0.28	0.185	0.314	0.195	0.26
Pterothorax.....	0.165	0.423	0.217	0.477	0.163	0.412
Abdomen.....	0.805	0.586	1.16	0.71	0.836	0.54
Basal plate.....	—	—	—	—	0.24	0.115
Parameres (base).....	—	—	—	—	—	0.097
Endomera (?).....	—	—	—	—	0.08	0.05

***Brüelia violacea* sp. n.**

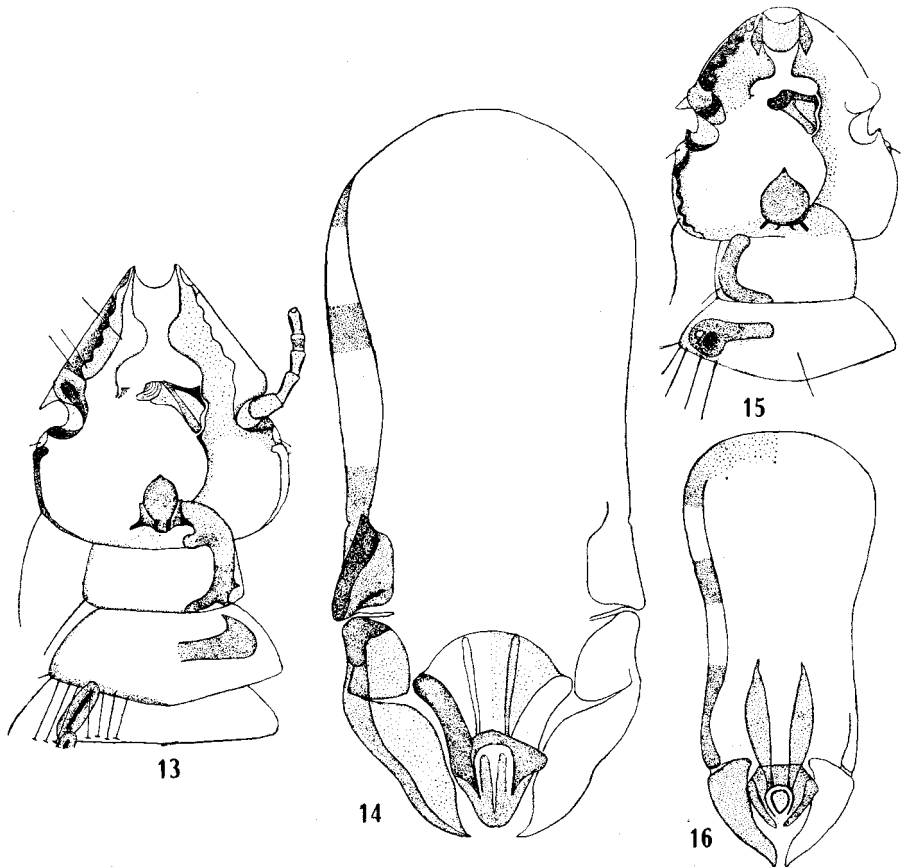
(Figs. 13 and 14)

Holotype ♂ from *Cyanocorax v. violaceus* Du Bus, collected by the author at Rio Mocho (affluent of Rio Caura), Venezuela, Nov. 24, 1909 (in coll. of author, type No. 768).

*Diagnosis* — Smallest of the species here described except *yncas*. It may be recognized at a glance by the shape of the pre-antennary portion of the head, which is a perfect truncated cone, with sides straight and widely divergent. The carinae of the thorax are also characteristic; pleurites faintly pigmented

but with a pitchy-black median stripe; sternites similar to the other species of this complex.

The genitalia are also characteristic in the structure of the endomera. Represented by the ♂ holotype only. Measurements after next species.



*Brüelia violacea* sp. n., male — Fig. 13: Head and thorax; fig. 14: genitalia. *Brüelia yncas* sp. n. — Fig. 15: Head and thorax of female; fig. 16: male genitalia.

### *Brüelia yncas* sp. n.

(Figs. 15 and 16)

Types ♂ and ♀ adults, from *Cyanocorax yncas guatemalensis*<sup>2</sup> Bonaparte, collected by the author at San Esteban, Venezuela, Oct. 24, 1910 (Type No. 769 in author's coll.).

<sup>2</sup> The name given for this bird in the "Birds of the Americas" is *Xanthoura yncas cyanodorsalis* (Dubois). In the "Birds of Venezuela" (Phelps and Phelps) the name *Cyanocorax yncas guatemalensis* is used. According to Van Rossem, the type of *guatemalensis* came from Caracas and not Guatemala. I fail to understand the reasons for placing the old genus *Xanthoura* under the synonymy of *Cyanocorax*. The birds are totally different in color and their *Brüelia* parasites are also quite different from other species of *Cyanocorax* (auct.)

*Diagnosis* — Much the smallest of the species found on the genus *Cyanocorax* (see footnote). The head is similar in shape and markings to those of the *nitzschi* group, but the genitalia are very much smaller, less than half the size of those of *B. keleri* sp. n. (from *C. chrysops*, the only other yellow breasted species in the genus). The pleurites are well developed and deeply pigmented, but the tergites, while similar in shape to those of *nitzschi*, are narrower (transversely) and entirely hyaline, while the sternites, which are also deeply colored and well developed in the *nitzschi* complex are here quite invisible. Possibly in specimens very slightly cleared they would be visible. The figures presented give a clear picture of the species. Known only from the ♂ holotype and ♀ allotype.

Measurements of *B. violacea* and *B. yncas*:

	♂		♂		♀	
	Length	Width	Length	Width	Length	Width
Body.....	1.50	—	1.35	—	1.74	—
Head.....	0.475	0.448	0.37	0.35	0.41	0.41
Prothorax.....	0.175	0.28	0.14	0.23	0.16	0.26
Pterothorax.....	0.165	0.40	0.14	0.33	0.153	0.38
Abdomen.....	0.80	0.542	0.783	0.456	1.14	(folded)
Basal plate.....	0.20	0.125	0.143	0.08		
Parameres.....	0.092	0.12	0.036	0.054		
Endomera.....	0.12	0.065	0.068	0.028		

*Brüelia keleri* sp. n.

(Figs. 17 and 18)

Types, ♂ and ♀ adults, from *Cyanocorax c. chrysops* (Vieillot), collected by the author at Rio Lipeo, Bolivia (Argentina-Bolivan boundry), Aug. 20, 1936 (in coll. of author, type No. 770).

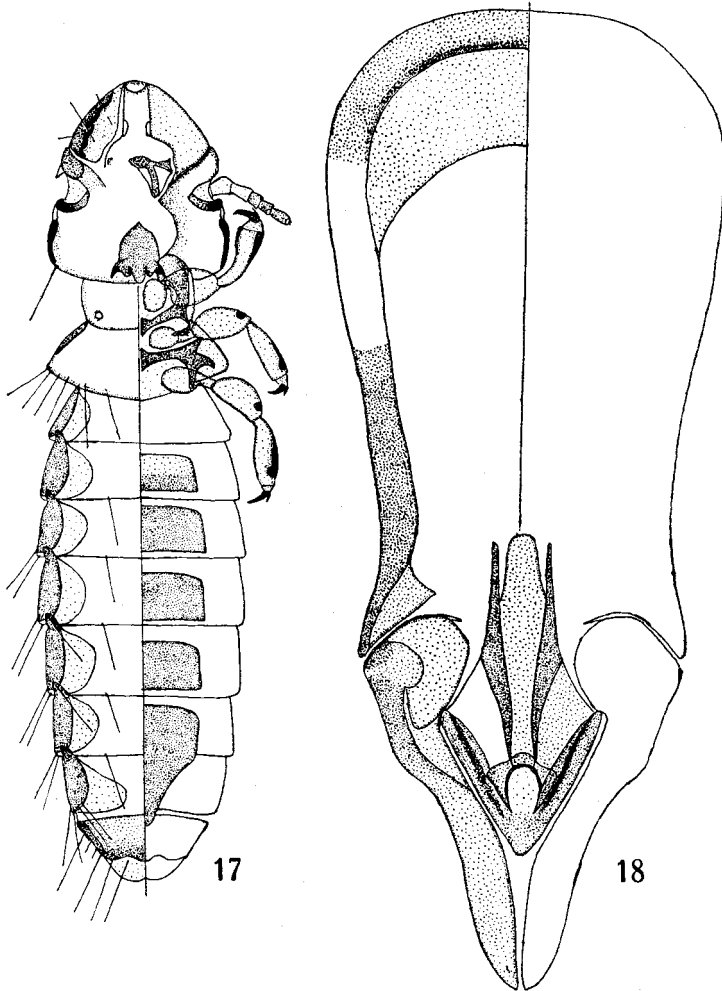
*Diagnosis* — This species was wrongly identified as *B. nitzschi* Keler in my 1956 paper (see reference under the genus *Brüelia*).

It does resemble *nitzschi*, as do most of the *Brüelia* from the neotropical genus *Cyanocorax*, but this group is very homogeneous and great care must be taken in evaluating their systematic status.

The present species cannot be *nitzschi*, since the head is longer than wide, and there are differences in abdominal structure. The genitalia alone are sufficient to separate it from all of the species of this group from which the genitalia are known. It is gigantic in size in comparison with some of the others, and in this respect it is closer to those of *B. n. moriona* Carriker.

Measurements of *B. keleri* sp. n. and *B. n. moriona* Carriker:

	♂		♀		♂		♀	
	Length	Width	Length	Width	Length	Width	Length	Width
Body.....	1.49	—	1.67	—	1.50	—	1.91	—
Head.....	0.412	0.376	0.412	0.395	0.445	0.445	0.48	0.495
Prothorax.....	0.174	0.24	0.14	0.25	0.16	0.27	0.16	0.29
Pterothorax.....	0.195	0.395	0.165	0.395	0.17	0.445	0.195	0.477
Abdomen.....	0.90	0.52	1.05	0.434	0.85	0.59	1.20	0.54
Basal plate.....	0.21	0.13			0.18	0.13		
Parameres.....	0.112	0.10			0.095	0.105		
Endomera.....	0.10	0.055			0.10	0.06		



*Brüelia keleri* sp. n. — Fig. 17: Body of female; fig. 18: male genitalia.

The following species of *Brüelia* are very different from the *B. nitzschi* group and need no comparison with them.

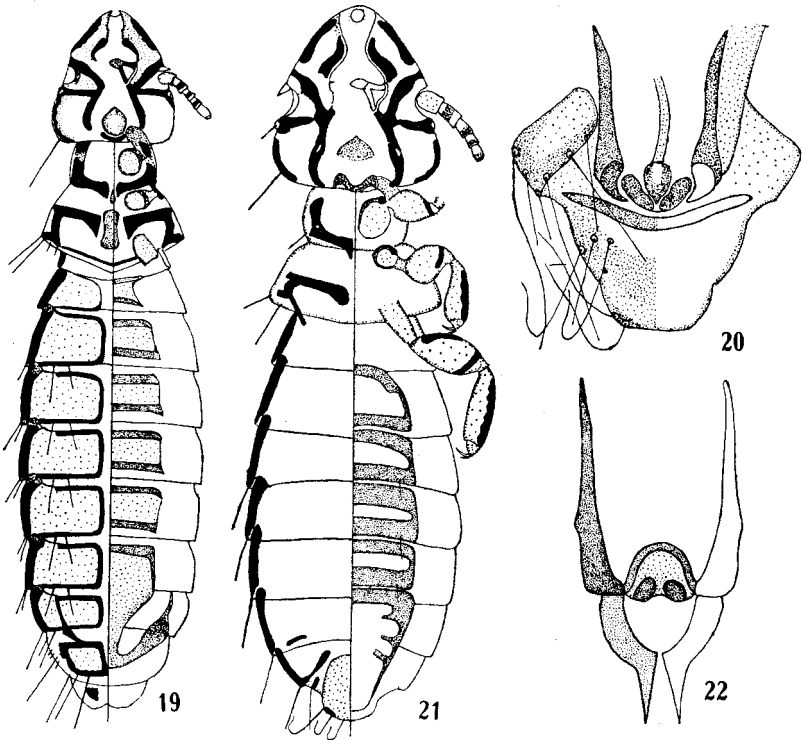
**Brüelia mirabile** sp. n

(Figs. 19 and 20)

Types, ♂ and ♀ adults, from *Psomocholax o. oryzoborus* (Gmelin), collected by the author at Nuquí Dept. Chocó, Colombia. Feb. 17, 1951 (in author's coll., type No. 771).

*Diagnosis* — This new form belongs in the small group of beautifully marked species of *Brüelia* found on some of the Icteridae, of which *B. ornatissimus* (Giebel) is a good example, and to which the new species is most closely related.

Differs from *ornatissimus* as follows: Larger in all measurements; preantennary portion of head with sides more convex; the blackish carinae of head very



*Brüelia mirabile* sp. n. — Fig. 19: Body of female; fig. 20: male genitalia and tip of abdomen. *Brüelia sillei* sp. n., male — Fig. 21: Body; fig. 22: genitalia.

similar in general pattern but differ in detail; the black margins of tergites are much wider in *mirabilis* but the anterior and posterior brown portions of the sternites are much narrower, especially the anterior one, which in *ornatissimus* is twice as wide as the posterior.

The male is similar in color pattern, smaller and with the two apical abdominal segments quite different. In the ♀ the actual first abdominal segment is clearly visible, though narrow (see fig.), but in the ♂ it is entirely absent.

The genitalia seem to be characteristic and are very different from many others of the genus. The parameres and endomera are exceedingly minute, and the former may not be correctly drawn in the figure given, not being clearly visible in the 2 ♂♂ examined. Represented by the ♀ holotype, ♂ allotype and 4 ♀♀ paratypes, also 1 ♂ and 1 ♀ from the type host collected at Chatarona, Bolivia; 4 ♀♀ from El Tingo, Peru, and 1 ♀ from el Cuyuni, Venezuela. Measurements follow the next species.

***Brüelia sallei* sp. n.**

(Figs. 21 and 22)

Holotype ♂ from *Icterus n. nigrogularis* (Hahn), collected by the author at Tocuyo, Estado Lara, Venezuela, Jan. 19, 1911 (in Carriker coll., type No. 772).

*Diagnosis* — Closely related to *B. mirabilis* sp. n. and to the others of the same type found on the Icteridae.

Smaller than *mirabilis* in over-all length and length and width of abdomen; head slightly shorter and wider, being almost an equilateral triangle; the preantennary margins flattened (not convex); the black carinae of head differ slightly in detail, as well as those of the thorax, especially on pterothorax.

Abdomen proportionally wider, more oval in shape; pleurites smaller and without the faintly pigmented "heads"; tergites quite invisible, but I suspect that they are of similar shape as in *mirabilis*, but they lack all trace of the black margins.

The sternites are of similar type and brown in color, but differ in having the transverse median hyaline portion much narrower (dark anterior and posterior portions much wider); also a single wide sternite of distinct shape corresponds to segments I-II, while in *mirabilis* segment I possesses a small sternite, with that of II similar to those of III-V.

The genitalia is entirely different, although basal plate is similar. There may be slight errors in the figure of the endomera, since it is badly distorted. Represented by ♂ holotype only.

Measurements of *B. mirabilis* and *B. sallei*:

	♂		♀		♂	
	Length	Width	Length	Width	Length	Width
Body.....	1.34	—	1.69		1.25	—
Head.....	0.326	0.29	0.37	0.345	0.315	0.303
Prothorax.....	0.13	0.22	0.13	0.25	0.16	0.20
Pterothorax.....	0.16	0.326	0.185	0.38	0.14	0.314
Abdomen.....	0.80	0.41	1.08	0.46	0.716	0.586
Basal plate.....	0.082	0.08			0.083	0.06
Parameres.....	—	—			0.043	0.05
Endomera.....	0.022	0.03			0.028	0.032

***Brüelia niquitaoi* sp. n.**

(Figs. 23 and 24)

Types, ♂ and ♀ adults, from *Mecocerculus stictopterus albocaudatus* Gilliard & Phelps, collected by the author at La Teta de Niquitao, Estado de Trujillo, Venezuela (In Carriker coll., type No. 773).

*Diagnosis* — There are not many known species of *Brüelia* of exactly this type, which have the head an almost exact equilateral triangle, with the three sides convex (see fig.). The ♂ genitalia are also characteristic, with unusually large, thick parameres, and a very wide, bluntly pointed penis.

The abdominal tergites are separated medially and have both anterior and posterior "heads" in segments II-VI; the sternites are as wide as the tergites, and continuous across median portion of abdomen; genital sternite large, covering segments VI, VII and half of VIII; transverse carinae of pterothorax of unusual shape (see fig.). Represented by ♀ holotype, ♂ allotype and 4 ♂ ♂ and 11 ♀ ♀ paratypes. Measurements follow the next species.

***Philopterus raptori* sp. n.**

(Fig. 25)

Holotype ♀ adult, from *Ictinia plumbea* (Gmelin), collected by the author at La Bomba, Estado Bolivar, Venezuela, Apr. 19, 1910 (In author's coll., type No. 774).

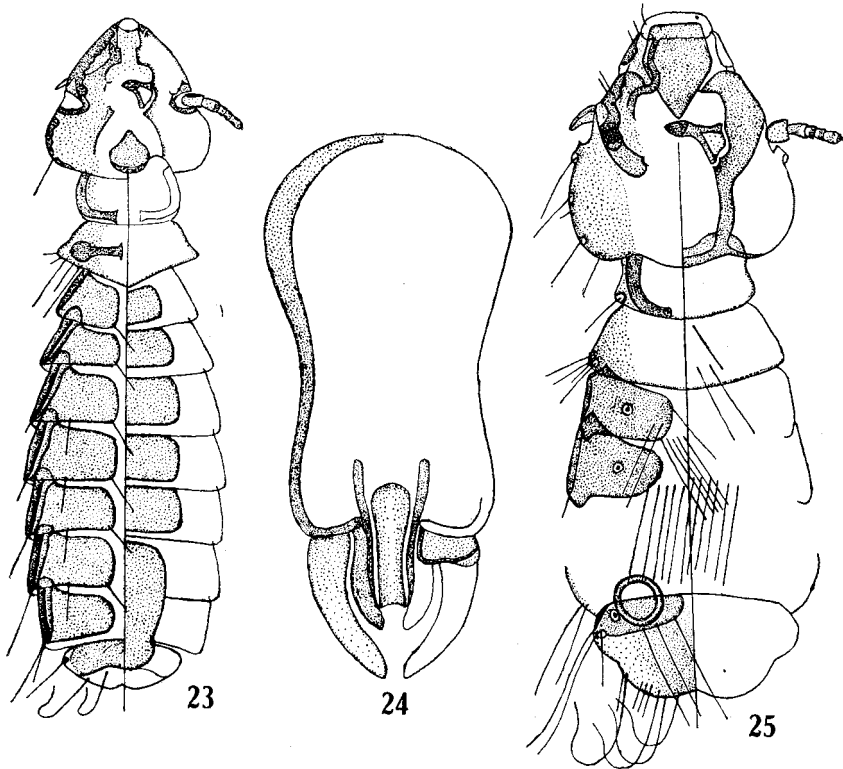
This species is closely related to *P. transversifrons* (Carriker, 1903), (*Docophorus*), *Univ. Nebr. Stud.* 3: 127, pl. I, fig. I (Host: *Micraster ruficollis interstes* of Costa Rica).

While the MS. for the 1952 *Checklist of Mallophaga* was being prepared I was asked to what genus *P. transversifrons* belonged, and I replied that it was a *Philopterus*. Nevertheless it was placed in the *Checklist* as a *Craspedorhynchus*. Later Miss CLAY informed me that she had specimens of *Philopterus* of this type from Raptores, and now, with still another species added to the above, there can be no further doubt but that the genus *Philopterus* does occasionally parasitize some of the Raptores, though a very uncommon one. The ♂ genitalia are typical of *Philopterus* and not at all similar to those of *Craspedorhynchus*.

*Diagnosis of P. raptori* — The shape of the head is very different from that of *transversifrons*, the pre-antennary portion being very much shorter and with the lateral margins strongly divergent instead of parallel-sided as in *transversifrons*; the anterior plate is correspondingly much shorter and of different shape. The post-antennary portion of the head, the thoracic segments, abdomen, abdominal sclerites and chaetotaxy are all similar to those of *transversifrons*. The chaetotaxy of the head is fine and short, of the abdomen also fine, but very long



and profuse in the median area and is *without pustules*. Unfortunately the ♂ is unknown, the species being represented by the ♀ holotype only.



*Brüelia niqitai* sp. n. — Fig. 23: Body of female; fig. 24: male genitalia. *Philopterus raptori* sp. n. — Fig. 25: Head, thorax and abdominal segments I, II and VIII.

Measurements of: *Brüelia niqitai* and *Philopterus raptori*:

	♂		♀		♀	
	Length	Width	Length	Width	Length	Width
Body.....	1.40	—	1.64	—	1.88	—
Head { frons.....	—	—	—	—	—	0.195
temples.....	0.36	0.365	0.38	0.395	0.56	0.52
Prothorax.....	0.146	0.22	0.16	0.24	0.19	0.31
Pterothorax.....	0.152	0.325	0.15	0.35	0.195	0.475
Abdomen.....	0.825	0.445	1.03	0.49	1.11	0.655
Basal plate.....	0.143	0.09				
Parameres.....	0.046	0.058				
Endomera.....	0.058	0.06				

*Osborniella* Thompson, 1948

*Ann. Mag. Nat. Hist.*, (12) 1: 53. Type species: *Colpocephalum crotophagae* Stafford.

**Osborniella crotophagae** (Stafford, 1943)

*Colpocephalum crotophagae* Stafford, *Bull. Ent. Venezuel.*, 2 (1): 47, figs. 29-36  
(Host: *Crotophaga ani* Linné).

I have 1 ♂ and 4 ♀♀ paratypes of this species, also 3 ♀♀ from the type host collected at Fundacion, Magdalena, Colombia.

In addition, I have 1 ♂ and 2 ♀♀ of the genus from *Crotophaga sulcirostris*, a pair taken at Ciudad Bolivar, Venezuela, Sept. 17, 1901, and 1 ♀ from Colombia (Dept. Magdalena). Also, I have 1 ♀ adult and 7 juveniles from *Crotophaga major*, collected at Sabana Mendoza, Venezuela, May 1, 1922.

Careful measurements and comparisons of this material have been made and I have been unable to find a single character upon which a separation of the specimens from the three hosts could be based, even subspecifically.

There is a very slight difference between the genitalia of the two males from *C. sulcirostris* and *C. ani*, in the shape of the parameres and the lateral carinae of the endomera. The tips of the parameres of the ♂ from *ani* are straight and slender, while those from *sulcirostris* are thicker and slightly curved outward. With only a single ♂ from each host it is not possible to determine whether or not these characters are of any value, since they may be more apparent than real. Even if these differences were found to be stable, without additional corroborative characters in shape of head or thorax or abdomen, they are not of sufficient value to warrant a subspecific separation. The two hosts are also very closely related, with practically no differences except the corrugations in the maxilla of *sulcirostris*. *C. major* is a much larger bird and of a different color, so that it might be expected to harbor a distinct parasite but apparently not, at least the ♀ is inseparable, although there may be differences in the ♂ genitalia when taken. The only actual discrepancies in the measurements are in those of the head of ♀♀ from *ani* and *sulcirostris*, but they do not appear to be of importance. Length of abdomen is often unreliable, and should not be used without corroborative characters.

Measurements of specimens from the three species of *Crotophaga*:

	<i>ani</i>				<i>sulcirostris</i>			
	♂		♀		♂		♀	
	Length	Width	Length	Width	Length	Width	Length	Width
Body.....	1.69	—	2.06	—	1.76	—	1.95	—
Head {	—	0.37	—	0.425	—	0.367	—	0.396
frons.....								
temples.....	0.347	0.553	0.39	0.64	0.347	0.542	0.365	0.59
occiput.....	0.293	—	0.345	—	0.326	—	0.34	—
Prothorax.....	0.185	0.40	0.228	0.456	0.217	0.40	0.228	0.434
Pterothorax.....	0.205	0.52	0.26	0.63	0.25	0.434	0.27	0.597
Abdomen.....	1.07	0.695	1.34	0.88	1.10	0.735	1.16	0.846

Measurements of the ♀ of *Osborniella* from *Crotophaga major*:

	Length	Width
Body.....	2.01	
Head { frons.....	—	0.415
temples.....	0.39	0.63
occiput.....	0.347	—
Prothorax.....	0.24	0.456
Pterothorax.....	0.27	0.62
Abdomen.....	1.28	0.868

## ON SOME PHILOPTERIDAE (MALLOPHAGA) OF THE SWALLOWS (HIRUNDINIDAE)

In 1938 BURMEISTER described *Nirmus gracilis* from *Hirundo urbana* (= *Delichon u. urbana*) and *N. tenuis* from *Hirundo riparia* (= *Riparia riparia*), the former ranging over much of Europe and the latter over Europe and North America.

In 1880 PIAGET described *Nirmus brevipes*, supposedly from *Tringa subarctica*, but its host was most certainly some species of Swallow.

In 1896 KELLOGG described *Nirmus longus* from *Petrochelidon albifrons* and in 1899, *N. longus domesticus* Kellogg & Chapman, from *Hirundo rustica erythrogaster*. I have examined the types of *longus* and *domesticus* and published (1957) my findings regarding them (*Microentomology*, 22 (5): 99 and 101), which, in brief, shows that the specimen marked as the type of *domesticus* is not the specimen described, and the name must be disregarded.

In 1953 EICHLER described *buttikeri*, under the generic name of *Acronirmus* of Keler, which generic name is a *nomen nudum*, no description of it ever having been published (KELER, 1939: *Z. Parasitenk.*, 2: 50). As far as I am aware no other species of this group has been described since.

In the 1952 *Checklist of Mallophaga* the above species from the Swallows were placed in the genus *Brüelia* Keler, the type species of which is *B. nitzschi* Keler, parasitic on *Cyanocorax cyanomelas*, a neotropical Corvidae. The *Brüelia* from five species of neotropical Corvidae are described in this paper, and all are very closely related to *B. nitzschi*.

This type of *Brüelia* is fairly common on many Passeriformes. They have a short, wide head, more or less as wide as long at the temples, and with convex to straight preantennary margins (usually convex), converging to a narrow, open frons. The preantennary carinae are entire, from the antennae almost to the hyaline frons, where a very slight break is visible. The inner (sternal) preantennary carinae enclose the bucal canal and their anterior tips are fused with those of the dorsal carinae. There is a minute hyaline sclerite in the bucal canal at the point where the marginal carinae are broken, which is possibly an obsolete anterior plate.

The abdomen is oval in shape, with slightly flattened sides, wider at the distal portion in the female than in the male. The male genitalia are usually well developed, often with strong, heavy parameres, and well developed endomera.

The species from the Swallows (Hirundinidae), originally described under *Nirmus*, are an extremely homogenous group, so much so that when sufficient material is available for study, several of them may prove to be conspecific, at least the characters which separate them are not strongly specific.

*Brüelia* is a very large genus, with many unknown and undescribed species, of which there are many in my own collection, but I know of no group of closely related species, all from one family of hosts, which have the combined characters of this group from the Swallows.

KELER consider them to be generically distinct when he called the group *Acronirmus*, which was also the opinion of EICHLER, but unfortunately the genus was not properly characterized.

In this group the whole insect is long and slender, the head very long, with temples slightly expanded laterally and transverse occipital margin, with the preantennary portion tapering to a narrow frons enclosing the narrow hyaline, bucal opening. The dorsal preantennary carinae are not continuous, but widely broken posterior to the frons. The inner (sternal) preantennary carinae, enclosing the bucal cavity and canal, are fused at their anterior ends with the isolated fragment of the dorsal carinae. The anterior plate is well developed, fairly heavily chitinized, but not large, and lies in the anterior portion of the bucal canal and does not extend to its distal extremity (see figs.).

Thoracic segments small, the pterothorax considerably wider at posterior margin than abdominal segment I. Pleurites well developed, with long "heads" and with dorsal portion about half as wide as the ventral; tergites divided medially but inner ends almost, if not quite, in contact, and ranging in shape from quadrangular sclerites, almost filling the segments, to others with rounded, inner margins. Sternites entire, but widely separated from pleurites. Legs very small, with thickened femora and tibiae. Male genitalia minute, so small that the working parts are not always discernible with any degree of clarity.

I have not been able to examine sufficient material of the group to form a clear-cut opinion as to its generic status, but it seems to me that taking into consideration the combination of characters which have been outlined above, and their differences from the typical forms of *Brüelia*, that this group of Philopteridae, infesting the Swallows, should not remain in the genus *Brüelia*, and I have, as a consequence erected a new genus for their reception, as follows.

### **Hirundiniella g. n.**

*Acronirmus* Keler, 1939 (*nomen nudum*)

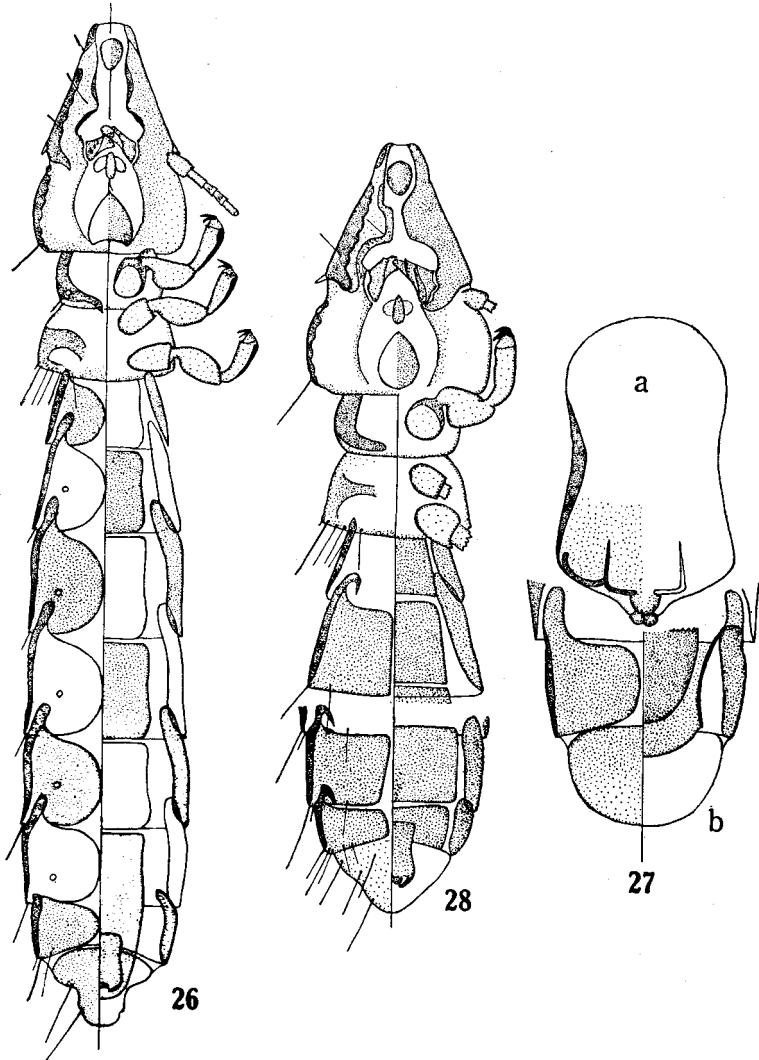
Type species: *Hirundiniella cruscula* sp. n.

Found only on the avian family Hirundinidae (Swallows), and with characters as given above.

**Hirundiniella cruscula** sp. n.

(Figs. 26 and 27a-b)

Holotype, ♂ adult and allotype, ♀ adult, from *Tachineta albilinea* (Lawrence), collected by the author at Tlacotalpan, Veracruz, Mexico, Feb. 4, 1940 (Type No. 775 in coll. of author).



*Hirundiniella cruscula* sp. n. — Fig. 26: Body of male; fig. 27a: male genitalia; fig. 27b: tip of abdomen of female. *Hirundiniella albiventris* sp. n. — Fig. 28: Head, thorax and abdominal segments I, II, VI-VIII.

**Diagnosis** — Distinguished from the other species described below by the very narrow head; smaller prothorax and legs and by the more rounded inner margins of the tergites. The inner (ventral) preantennary carinae are much narrower than in the other species; the pleurites have long “heads”, but without

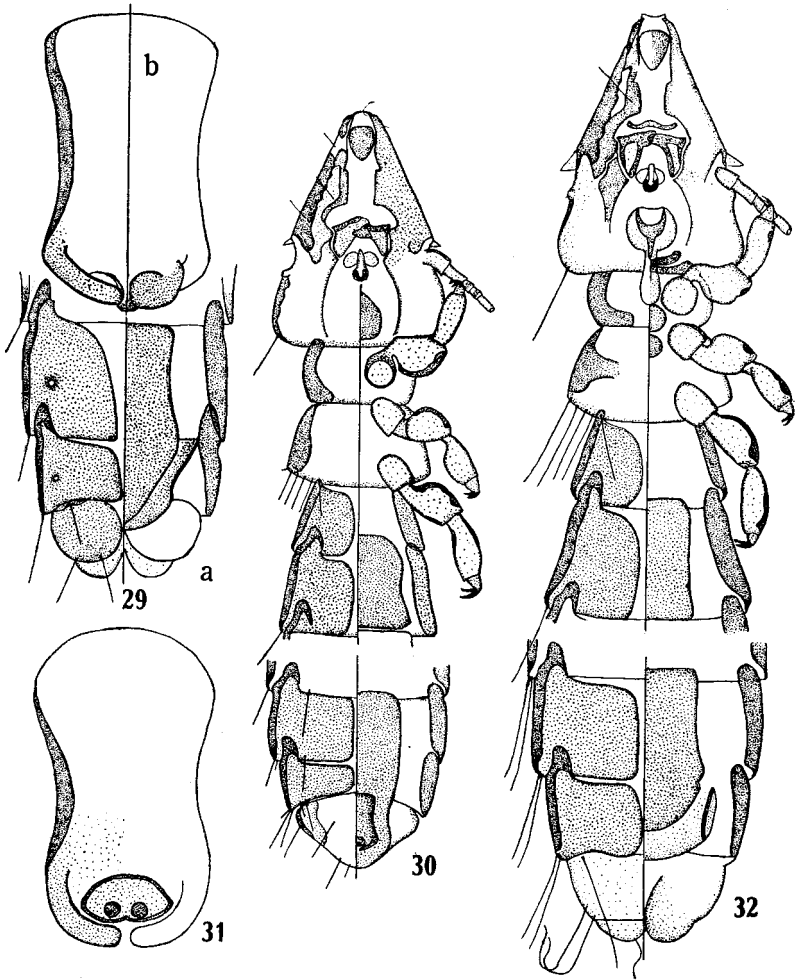
the inner, reverse, hook found in the three other species; the ventral portion of the pleurites narrower; the distal segments of the abdomen in both sexes are distinct (see figs.).

The male genitalia are probably as depicted, although some of the parts are somewhat distorted and their shape uncertain. Measurements follow next species.

*Hirundiniella albiventris* sp. n.

(Figs. 28 and 29a-b)

Holotype, ♂ adult, from *Tachycineta albiventris* (Boddaert), collected by the author at San Felix, Estado Bolivar, Venezuela, Feb. 10, 1910; ♀ allotype



*Hirundiniella albiventris* sp. n. — Fig. 29a: Tip of abdomen of female; fig. 29b: male genitalia. *Hirundiniella neotropicalis* sp. n. — Fig. 30: Head, thorax and abdominal segments I, II, VI-VIII; fig. 31: male genitalia. *Hirundiniella subis* sp. n. — Fig. 32: Head, thorax and abdominal segments I, II, VI-VIII.

from same host, collected at Lorica, Dept. Cordoba, Colombia, Feb. 14, 1916 (Type No. 776 in author's coll.).

*Diagnosis* — Head much wider at temples than in *cruscula*, that of the male being the same length as in *neotropicalis* sp. n., but narrower ( $0.377 \times 0.275$  against  $0.377 \times 0.30$ ). The tergites in the male are quadrilateral, with inner ends straight, and almost fill the segments; pleurites narrow dorsally, the long "heads" furnished with a strong, reverse hook on inner side; dorsal preantennary carinae wide and deeply pigmented; inner (sternal) carinae wider than in *cruscula* but narrower than in *subis*, being very different from that of *cruscula* (see figs.); apical segments of female resemble those of *neotropicalis*, with genital sternite resembling that of *cruscula*.

Male genitalia with basal plate similar in all species here described, but parameres and endomera seem to be all distinct. Parameres short, parallelsided, slightly curving and hyaline, being bent inward around endomera, with tips touching. Represented by the types only.

Measurements of types of *H. cruscula* and *H. albiventris*:

	♂		♀		♂		♀	
	Length	Width	Length	Width	Length	Width	Length	Width
Body.....	1.51	—	1.93	—	1.52	—	1.90	—
Head { frons.....	—	0.055	—	0.065	—	0.034	—	0.04
temples.....	0.34	0.233	0.377	0.26	0.377	0.275	0.384	0.264
Prothorax.....	0.09	0.16	0.10	0.164	0.103	0.192	0.096	0.192
Pterothorax.....	0.112	0.208	0.14	0.247	0.13	0.226	0.145	0.247
Abdomen.....	0.986	0.254	1.33	0.336	0.945	0.295	1.31	0.336

### *Hirundiniella neotropicalis* sp. n.

(Figs. 30 and 31)

Holotype, ♂ adult, from *Progne t. tapera* (Linné), collected by the author at El Hacha, Estado Yaracuy, Venezuela, Nov. 25, 1910 (Type No. 777 in author's coll.).

*Diagnosis* — Head very similar to that of *albiventris* (♂), but wider at temples ( $0.377 \times 0.30$  against  $0.377 \times 0.275$ ); temples less rounded; sides almost straight and with postero-lateral angles more bluntly rounded; pterothorax without lateral carinae between coxae; tergites and sternites differently shaped.

Male genitalia with parameres strongly developed, but hyaline, not jointed to basal plate and curving around endomera; endomers differs from that of other two males described (see figs.). Holotype ♂ only. Measurements follow next species.

### *Hirundiniella subis* sp. n.

(Fig. 32)

Holotype, ♀ adult, and only specimen, from *Progne s. subis* (Linné), collected by K. C. Emerson at Stillwater, Oklahoma, U.S., April 6, 1947 (Type No. 778, author's coll.).

*Diagnosis* — Largest of the four species here described; dorsal preantennary carinae not broken near frons, as in the other species; inner, sternal carinae very wide and extending backward beyond ends of dorsal carinae, and forward to anterior end of anterior plate, where they are fused with the dorsal carinae; mandible much larger than in the other species, and differing in structure; gular sclerite of a most unusual type, entirely different from the other three species. Abdominal sclerites much as in *neotropicalis*, but general chaetotaxy much longer; the two apical abdominal segments and genital sternite also differ from the other females here described.

Measurements of *H. neotropicalis* and *H. subis*:

	♂		♀	
	Length	Width	Length	Width
Body.....	1.52	—	1.99	—
Head { frons.....	—	0.041	—	0.04
{ temples.....	0.377	0.30	0.41	0.30
Prothorax.....	0.11	0.185	0.125	0.199
Pterothorax.....	0.14	0.24	0.151	0.27
Abdomen.....	0.945	0.30	1.34	0.39
Basal plate.....	0.082	0.062		
Parameres.....	0.03	0.01		

Note — KELLOGG's measurements of *Nirmus longus* ♀:

	Length	Width
Body	2.03	—
Head	0.37	0.28
Abdomen	—	0.38

He says that *N. gracilis* Burmeister is only half as long as *N. longus*, which statement I am unable to corroborate, not having a copy of BURMEISTER.

KELLOGG lists as males of *longus* two specimens from *Petrochelidon lunifrons*, but after a careful study of the four forms described above, I do not hesitate to affirm that the 2 ♂♂ from *P. lunifrons* are not conspecific with *N. longus*. I am also of the opinion that all species of *Hirundiniella* have 5 slender setae on each side of posterior margin of the pterothorax. Some of these setae are often missing and their point of attachment is not always visible.

As may be seen from the table of measurements above, the females of all the species are shorter in body length than KELLOGG's *N. longus* and all except *H. subis* have head narrower at temples. *H. subis*, while shorter in body length, has a longer and wider head than *H. longa* (Kellogg) and the ♀♀ of *H. cruscula* and *albiventris*, while the width of abdomen in *subis* is about the same as in *longa*, but the other two species are much narrower.