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**The *Brueelia* (Mallophaga: Ischnocera) of the Picidae  
(Aves: Piciformes)**

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**Abstract:** Three species of *Brueelia* from the Picidae are recognized and discussed; two of which are newly described: *B. goertae* from *Mesopicos goertae*; and *B. guatemalensis* from *Phloeocastes guatemalensis*. *Nirmus superciliosus* Nitzsch, is placed in *Picicola* not *Brueelia*, in which it was included by Hopkins and Clay (1952:62). Specimens from 8 genera and 15 species of Picidae were examined. A key is given and all species are illustrated.

Key to the species of *Brueelia* from the Picidae.

1. Marginal temporal setate 3 and 4 elongate; head wider than long ..... **guatemalensis**  
Marginal temporal seta 3 elongate, 4 short; head longer than wide ..... 2
2. Anterior depression of head deeper than wide; head shape diagnostic ..... **goertae**  
Anterior depression of head wider than deep; head shape diagnostic, forehead rounded  
in outline ..... *straminea*

*Brueelia* Keler, 1936

*Brueelia* Keler, 1936, Arb. morph.-tax. Ent. Berlin-Dahlem, **3**: 257. Type-species: *B. ros-sittensis* Keler.

*Corvonirmus* Eichler, 1944, Stettin, ent. Ztg. **105**: 81. Type-species *Nirmus uncinus* "Nitzsch in Burmeister."

*Meropsiella* Conci, 1941, Boll. Soc. ent. Ital., **73**: 104. Type-species: *Nirmus apiastri* Denny.  
*Painjunirmus* Ansari, 1947, Proc. nat. Inst. Sci. India, **13**: 285. Type-species: *P. pengya* Ansari.

*Traihoriella* Ansari, 1947, l.c.: 290. Type-species: *T. punjabensis* Ansari.

*Guimaraesiella* Eichler, 1949, Boll. Soc. ent. Ital., **79**: 11. Type-species: *Docophorus subalbicans* Piaget.

*Xobugirado* Eichler, 1949, Boll. Soc. ent. Ital., **79**: 13. Type-species: *Nirmus submarginellus* "Nitzsch sensu Piaget."

*Brueelia* is known from the Passeriformes, Piciformes and Trogoniformes. It includes a large number of species which have been split into many genera by some authors. Of the 143 species included in their checklist, Hopkins and Clay (1952:52-63) recognize only 119 as being valid. Ansari (1956, 1957),

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has revised the species from the Corvidae (Passeriformes), however there has been no comprehensive revision of the genus nor of the species found on the Picidae. The genus appears to infest all Picidae, though it is not collected as frequently as other genera known to infest this family. The species from the Picidae are, in general, only slightly sclerotized and are subject to considerable distortion during mounting.

Ansari (1956:23) recognized two major groups among those species known from the Corvidae. The first he characterized as being feebly sclerotized and with sparse abdominal chaetotaxy. To this description, I would add that the male genitalia are of the type figured for *B. straminea* (Fig. 6). In this group Ansari (1.c) included *B. deficiens* (Piaget) from *Cyanopicta cyanus cooki*, *Aphelocoma c. californica* and *Cyanocitta stelleri frontalis*; *B. zavattariornis* from *Zavattariornis stressemanni*; and *B. zohrae* from *Philostomus afer*. To the DEFICIENS GROUP I add *B. straminea* (Denny) and *B. goertae* described herein. The remaining species from corvids considered by Ansari are characterized as being robust and more heavily sclerotized. *Bruellia guatemalensis* n. sp. belongs in this second group, though it is clear from an inspection of Ansari's figures that this group is much more polymorphic than the first.

All specimens examined were mounted on slides. Descriptions, illustrations and measurements are based on specimens macerated in hydroxide, cleared and mounted in Canada Balsam. The host nomenclature follows that of Peters (1946).

*Bruellia guatemalensis* n. sp.

(Figs. 1, 2, 7)

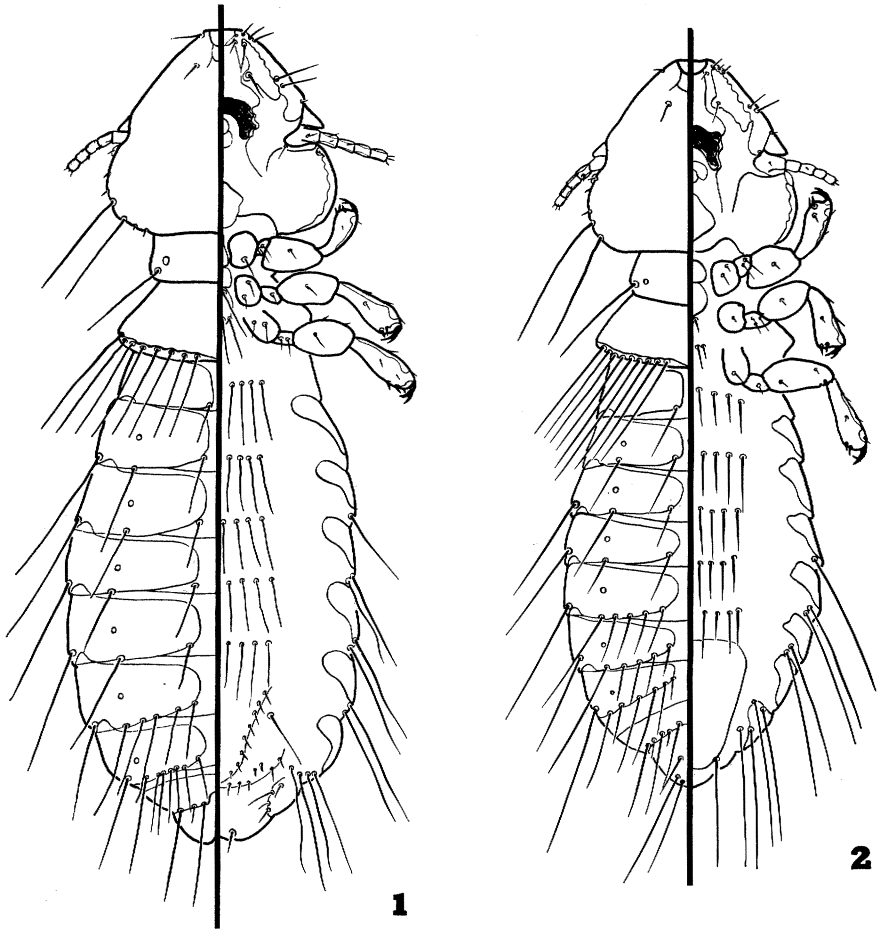
Type host: *Phloeocastes guatemalensis* (Hartlaub)

This species is readily distinguished from all others known from the Picidae by the 2 pairs of elongate marginal temporal setae.

Head wider than long, median anterior hyaline depression wider than deep. Dorsal anterior plate of forehead poorly defined. Marginal temporal setae 3 and 4 elongate, ocular setae and marginal temporal setae 1, 2, 5 and 6 short and inconspicuous. Dorsal posterior margin of pterothorax with 8 elongate and 1 short seta each side. Tergites II–VIII divided, IX entire and notched posteriorly. Pleural thickenings conspicuous. Pleural setae present on segments IV–IX. Tergites III–VIII each with postspiracular setae, II–V each with a seta at the posterior median angle, VI–VII each with 4 and VIII with 5 centroposterior setae, IX with 3 long and 2 short posterior setae. Thoracic sternites poorly defined. Meso- and metasternal plates each with two pairs of setae. Abdominal sternites poorly defined, II–VI each with 4 pairs of setae.

Male genitalia (Fig. 7) with lateral margins of parameres convex and stout, mesosomal complex lacking sensilla and with stout lobes with smooth distal margins.

Dimensions (in mm.). Male, holotype: total length, 1.92; head length, 0.52; head width, 0.56; prothorax width, 0.33; pterothorax width, 0.52; abdominal width, 0.67. Female: total length, 2.21; head length, 0.55; head width, 0.59; prothorax width, 0.33; pterothorax width, 0.52; abdominal width, 0.79.



Figs. 1, 2. *Brueelia guatemalensis* n. sp., dorsal and ventral views of (1) female and (2) male. Drawn to the same scale.

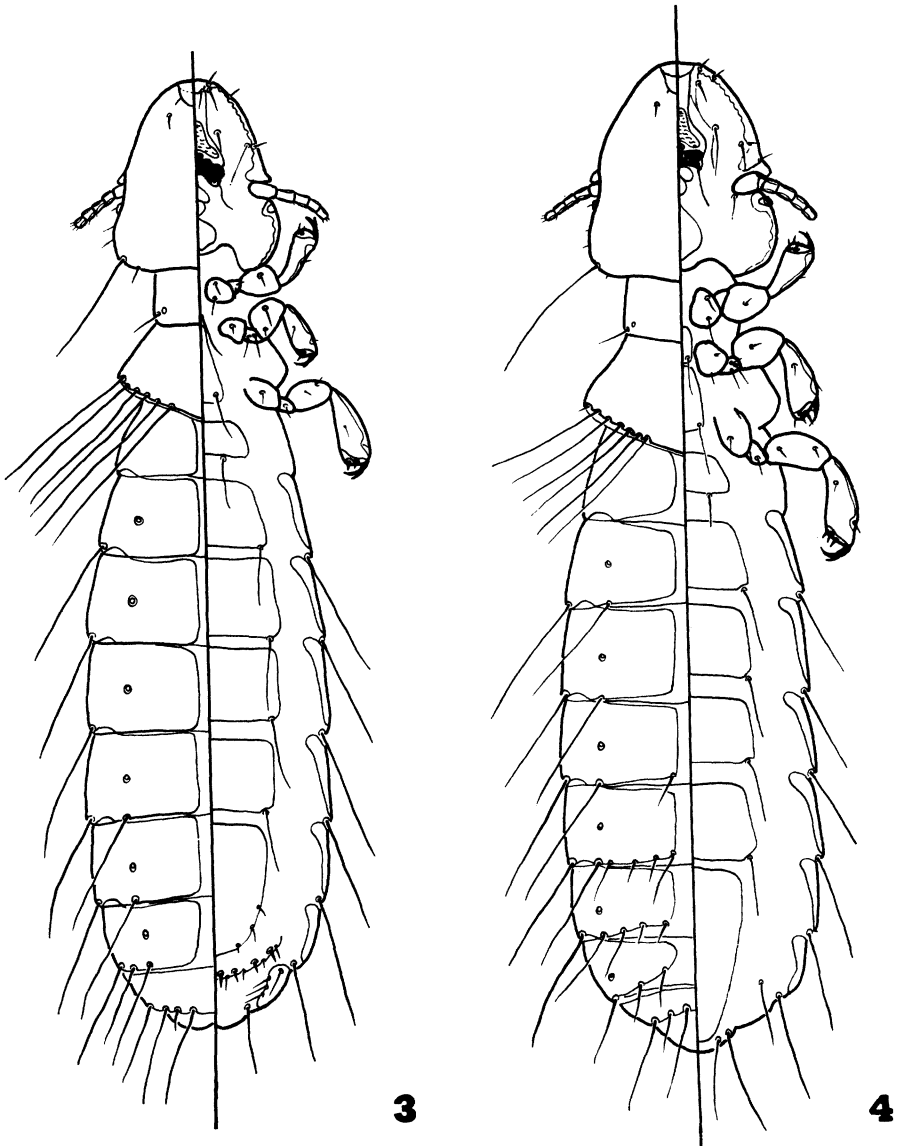
HOLOTYPE ♂ and 1 ♀ paratype from *Phloeocastes guatemalensis* from Santa Clara, Chiriqui Prov., Panama, G. Hartmen, 15 Feb., 1956, Brit. Mus. 1956-449. Types deposited in the British Museum (Natural History).

*Brueelia goertae* n. sp.

(Figs. 5, 8)

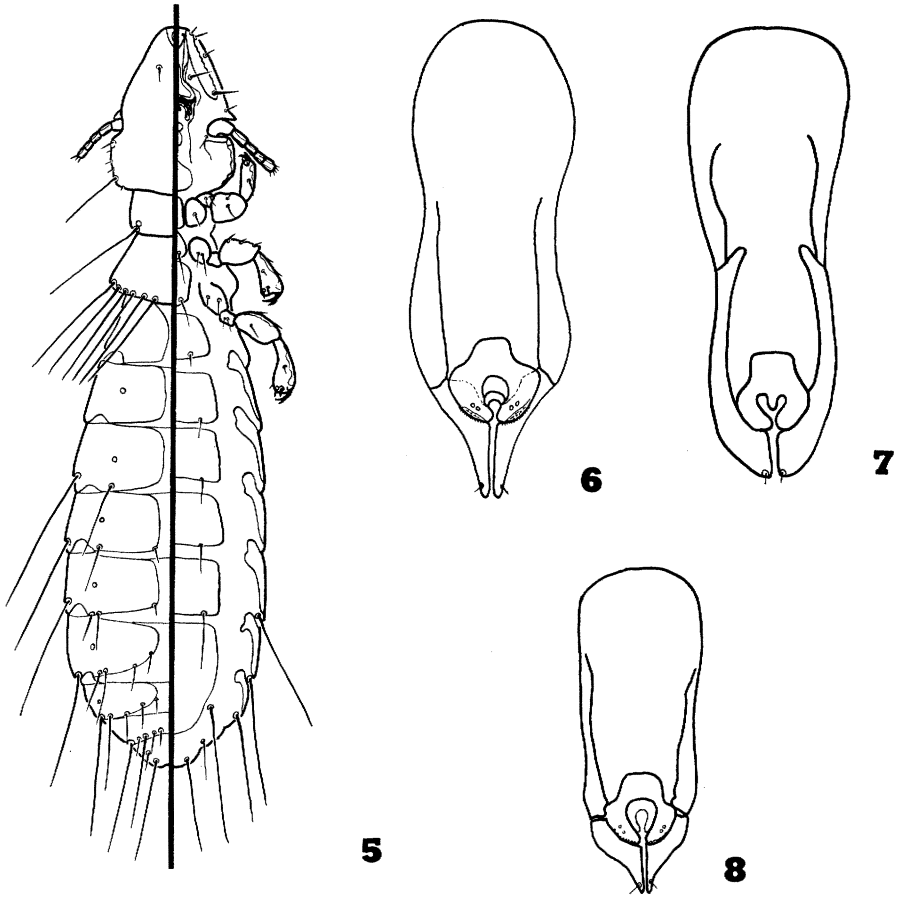
Type host: *Mesopicos goertae* (P. L. S. Müller)

This species does not closely resemble any other known from the Picidae. The slender head, elongate abdomen and sparse abdominal chaetotaxy readily distinguishes it from *B. straminea*, to which there is some similarity in the shape and form of the male genitalia.



Figs. 3, 4. *Brueelia straminea* (Denny), dorsal and ventral views of (3) female and (4) male. Drawn to the same scale.

Known only from a single male. Head longer than wide, anterior median depression of forehead deeper than wide. Marginal temporal seta 3 elongate, others short and inconspicuous. Pterothorax with 6 elongate and 1 short seta each side. Tergites II–VIII divided, IX entire, II–III lacking centroposterior setae, IV–V each with 1 pleural and 1 postspiracular seta each side, VI–VII with 2 pleural and 1 short seta adjacent to the



Figs. 5, 6, 7, 8. *Brueelia goertae* n. sp., dorsal and ventral views of (5) male. Male genitalia of: (6) *Brueelia straminea* (Denny); (7) *Brueelia guatemalensis* n. sp.; (8) *Brueelia goertae* n. sp.

postspiracular setae, VIII with 3 centroposterior setae on each side. Sternites darker than tergites, each with 1 pair of lateroposterior setae. Terminal segment with a shallow posterior notch.

Male genitalia (Fig. 8) with parameres concave laterally and shorter than those of *B. straminea*. Basal plate only slightly concave laterally. Mesosomal plate with 2 pairs of sensilla and an irregular distal margin.

Dimensions (in mm.). Male, holotype: total length, 1.66; head length, 0.38; head width, 0.29; prothorax width, 0.19; pterothorax width, 0.29; abdominal width, 0.44.

HOLOTYPE ♂ from *Mesopicos goertae*, Maroua, N. Cameroon, J. Mouchet, Brit. Bus., 1960–295. Type deposited in the British Museum (Natural History).

*Brueelia straminea* (Denny, 1842)

(Figs. 3, 4, 6)

Type host: *Dendrocopos major anglicus* (Hartert)

*Nirmus stramineus* Denny, 1842, Mon. Anopl. Brit.: **53**, 139, pl. 8, fig. 9. Host: *Picus major* L.

*Picicola straminea* (Denny); Eichler, 1942, Deut. ent. Ges. **11**: 78.

*Degeeriella straminea* (Denny); Seguy, 1944, Fauna de France **43**: 310, fig. 471.

*Brüelia straminea* (Denny); Hopkins and Clay, 1952, Check list of genera and species of Mallophaga: 61. Host: *Dendrocopos major anglicus*. (*B. sublucida* placed as a synonym.)

*Degeeriella sublucida* Blagoveshchensky, 1940, Mag. Parasit. Leningrad **8**: 58, 85, fig. 15.

Type host: *Dryobates major poelzami* (Bogdanov).

*Brueelia fixa* Zlotorzyczka, 1964, Acta Parasit. Polon. **12**: 256, figs. 4e, 4f. Type host: *Dendrocopos leucotos* (Bechstein). NEW SYNONYMY.

This species (Figs. 3, 4) is distinguished from the two others known from the Picidae, by the single pair of elongate marginal temporal setae and the wide hyaline median depression of the anterior margin of the forehead.

Head longer than wide, anterior hyaline depression wider than deep. Dorsal anterior plate of forehead poorly defined by a narrow preantennal suture. Marginal temporal seta 3 elongate, others short and inconspicuous. Posterior dorsal margin of pterothorax angulate and bearing 8 elongate and 1 short seta each side. Pleural thickenings lightly sclerotized. Sternites poorly defined, 1 slender, elongate seta each posterior angle. Pleural setae on segments III–IX. Additional chaetotaxy is as figured, except that an occasional specimen may have 1–3 additional short tergoventral setae on segments VII and VIII.

Male genitalia (Fig. 6) with basal apodeme uniformly sclerotized, lateral margins convex. Parameres elongate and tapered, each with a short subterminal seta. Mesosomal plate with 2 pairs of sensilla and with the distal margin irregular.

Specimens of both sexes from the type host have been examined and found to be indistinguishable from those of the other hosts listed. The wide range of hosts infested is in sharp contrast to the high degree of host specificity of the species recognized by Ansari (1956) from the Corvidae.

Dimensions (in mm.). Male: total length, 1.36–1.75; head length, 0.33–0.38; head width, 0.28–0.33; prothorax width, 0.17–0.23; pterothorax width, 0.26–0.35; abdominal width, 0.32–0.48. Female: total length, 1.63–2.11; head length, 0.35–0.42; head width, 0.29–0.36; prothorax width, 0.17–0.24; pterothorax width, 0.27–0.37; abdominal width, 0.32–0.57.

Material examined: 3 ♀ from *Jynx ruficollis cosensi* Grant from Kenya, Africa; 1 ♂ from *Colaptes auratus* (L.) from Iowa, U.S.A.; 3 ♀ from *Asyndesmus lewis* (Gray), from Oregon, U.S.A.; 11 ♂, 10 ♀ from *Melanerpes erythrocephalus* (L.) from Minnesota and Nebraska, U.S.A.; 4 ♂, 16 ♀ from *Melanerpes formicivorus* (Swainson) from California, U.S.A.; 3 ♀ from *Melanerpes formicivorus bairdi*, Ridgway from California, U.S.A.; 7 ♂, 7 ♀ from *Melanerpes carolinus* (L.) from Indiana, Iowa and Mississippi, U.S.A.; 4 ♂, 3 ♀ from *Melanerpes carolinus zebra* (Boddaert) from Kansas, U.S.A.; 2 ♀ from *Sphyrapicus varius* (L.) from San Louis Potosi, Mexico; 2 ♂, 6 ♀ from *Sphyrapicus v. varius* (L.) from Texas, U.S.A.; 1 ♀ from *Sphyrapicus thyroideus* (Cassin) from California, U.S.A.; 2 ♀ from *Dendrocopos major* (L.) from Glostershire, England; 5 ♂, 5 ♀ from *Dendrocopos major anglicus* (Hartert)

from Somerset, England; 18 ♂, 32 ♀ from *Dendrocopos albolarvatus* (Cassin) from California, U.S.A.; 4 ♂, 4 ♀ from *Dendrocopos villosus* (L.) from California, Minnesota, Nebraska and Vermont, U.S.A.; 1 ♂, 2 ♀ from *Dendrocopos villosus harrisi* (Audubon) from Oregon, U.S.A.; 3 ♂, 15 ♀ from *Dendrocopos villosus hyloscopus* (Cabanis & Heine) from California, U.S.A.; 2 ♂, 7 ♀ from *Dendrocopos pubescens* (L.) from Minnesota, Nebraska, New York and Wisconsin, U.S.A.; 2 ♀ from *Dendrocopos pubescens medianus* (Swainson) from New York, U.S.A.; 7 ♂, 10 ♀ from *Dendrocopos borealis* (Vieillot) from Florida, Mississippi and North Carolina, U.S.A.

*Picicola superciliosus* (Nitzsch, 1866) NEW COMB.

Type host: *Dendrocopos m. medius* (L.)

*Nirmus superciliosus* Nitzsch, 1866, in Giebel, Z. ges. Nat. Wiss., **28**: 370. Type host: *Dendrocopos medius*.

*Briuelia superciliosa* (Nitzsch); Hopkins and Clay, 1952, Check list of genera and species of Mallophaga: 62. Host: *Dendrocopos m. medius*.

? *Brueelia superciliosa* (Nitzsch); Zlotorzycza, 1964, **12**: 261. Type host: *Dryobates m. medius*.

I concur with Zlotorzycza (1964:261) in questioning the placement, by Hopkins and Clay (1952:62), of *Nirmus superciliosus* Nitzsch in *Brueelia*.

The original description, as cited below, leaves much to be desired. It does not agree entirely with any of the species known from the Picidae. The Nitzsch types were destroyed during World War II.

"54 *N. superciliosus* N.

*Picus medius*

Sehr ähnlich dem vorigen, aber mit dunklen Rückenflecken und deutlicher Stirnsignatur." The previous species: N. 53 is *Nirmus candidus* Nitzsch and it is clearly a *Picicola* species. Giebel (1874:150) redescribed *N. superciliosus* N.; this description however, is equally vague and has no figures.

Assuming that the host is correct and that the species in question belongs to a genus known from the Picidae, it would appear to belong best in *Picicola*. No reference is made to the oval abdomen and dark tergites, or any of the other characters generally included in the early descriptions of *Penenirmus* species. Its comparison with *N.* (= *Picicola*) *candidus* and the "dunklen Rückenflecken" leads me to believe it is not a species of *Brueelia*. The *Picicola* species group to which *P. candidus* belongs (Dagleish, 1969:105) is similar in form to the group (SNODGRASSI GROUP) including species known from *Dendrocopos* spp. except that the latter has conspicuous dark pigmented areas on the head, thorax and abdomen.

Unfortunately, specimens from the type host were not available for this study. Nevertheless it does seem appropriate to reconsider the previous interpretation and assign this species to *Picicola*.

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