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Morphological revision of the hyperdiverse *Brueelia*-complex (Insecta: Phthiraptera: Ischnocera: Philopteridae) with new taxa, checklists and generic key

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Table of contents

Abstract

The genus *Brueelia* Kéler, 1936a forms the core of the so-called "*Brueelia*-complex", one of the largest and most heterogeneous groups of lice (Phthiraptera). Here we introduce the taxonomic history and present a revision of this group. The limits of the *Brueelia-compl*ex are discussed. We resurrect the genera *Acronirmus* Eichler, 1953, *Corvonirmus* Eichler, 1944, *Guimaraesiella* Eichler, 1949, *Maculinirmus* Złotorzycka, 1964a, *Meropsiella* Conci, 1941a, *Olivinirmus* Złotorzycka, 1964a, *Osculonirmus* Mey, 1982a, *Rostrinirmus* Złotorzycka, 1964a, *Traihoriella* Ansari, 1947, and *Turdinirmus* Eichler, 1951. We describe the following new genera: *Anarchonirmus* **n. gen.**, *Aporisticeras* **n. gen.**, *Aratricerca* **n. gen.**, *Buphagoecus* **n. gen.**, *Ceratocista* **n. gen.**, *Sychraella* **n. gen.**, *Couala* **n. gen.**, *Harpactrox* **n. gen.**, *Hecatrishula* **n. gen.**, *Indoceoplanetes* **n. gen.**, *Manucodicola* **n. gen.**, *Mirandofures* **n. gen.**, *Nemuus* **n. gen.**, *Priceiella* **n. gen.**, *Psammonirmus* **n. gen.**, *Resartor* **n. gen.**, *Saepocephalum* **n. gen.**, *Schizosairhynchus* **n. gen.**, *Teinomordeus* **n. gen.**, *Titanomessor* **n. gen.**, and *Turdinirmoides* **n. gen.**; and the following new subgenera: *Camurnirmus* **n. subgen.**, *Thescelovora* **n. subgen.**, *Torosinirmus* **n. subgen.**, and *Capnodella* **n. subgen.**

The following 37 new species are described: *Anarchonirmus albovittatus* **n. sp.** ex *Pomatostomus temporalis strepitans* (Mayr & Rand, 1935); *Brueelia aguilarae* **n. sp.** ex *Euplectes franciscanus pusillus* (Hartert, 1901); *Brueelia phasmasoma* **n. sp.** ex *Coereba flaveola luteola* (Cabanis, 1850); *Brueelia pseudognatha* **n. sp.** ex *Pycnonotus nigricans superior* Clancey, 1959; *Sychraella sinsutura* **n. sp.** ex *Pomatostomus isidorei isidorei* Lesson, 1827; *Couala dodekopter* **n. sp.** ex *Coua cristata pyropyga* Grandidier, 1867; *Guimaraesiella pandolura* **n. sp.** ex *Pericrocotus flammeus semiruber* Whistler & Kinnear, 1933; *Harpactrox geminodus* **n. sp.** ex *Harpactes erythorcephalus erythrocephalus* (Gould, 1834); *Harpactrox loeiensis* **n. sp.** ex *Harpactes erythrorhynchus annamensis* (Robinson & Kloss, 1919); *Harpactrox pontifrons* **n. sp.** ex *Harpactes ardens ardens* (Temminck, 1824); *Indoceoplanetes* (*Capnodella*) *loboccupatrix* **n. sp.** ex *Lobotos oriolinus* Bates, 1909; *Indoceoplanetes* (*Capnodella*) *laurocorythes* **n. sp.** ex *Edolisoma holopolium holopolium* (Sharpe, 1888); *Maculinirmus ljosalfar* **n. sp.** ex *Oriolus chinensis diffusus* Sharpe, 1877; *Manucodicola acantharx* **n. sp.** ex *Manucodia ater ater* (Lesson, 1830); *Manucodicola semiramisae* **n. sp.** ex *Phonygammus keraudrenii purpureoviolaceus* (Meyer, 1885); *Meropoecus balisong* **n. sp.** ex *Merops americanus* Muller, 1776; *Meropoecus bartlowi* **n. sp.** ex *Merops ornatus* Latham, 1802; *Mirandofures altoguineae* **n. sp.** ex *Oreostruthus fuliginosus* De Vis, 1898; *Mirandofures kamena* **n. sp.** ex *Erythrura trichroa sigillifer* (De Vis, 1897); *Nemuus hoedhri* **n. sp.** ex *Artamus fuscus* Vieillot, 1817; *Nemuus imperator* **n. sp.** ex *Artamus maximus* Meyer, 1874; *Priceiella* (*Camurnirmus*) *hwameicola* **n. sp.** ex *Garrulax taewanus* Swinhoe, 1859; *Priceiella* (*Camurnirmus*) *paulbrowni* **n. sp.** ex *Garrulax leucolophus diardi* (Lesson, 1831); *Priceiella* (*Thescelovora*) *alliocephala* **n. sp.** ex *Platylophus galericulatus ardesiacus* (Bonaparte, 1850); *Priceiella* (*Torosinirmus*) *koka* **n. sp.** ex *Turdoides tenebrosa* (Hartlaub, 1883); *Psammonirmus lunatipectus* **n. sp.** ex *Serilophus lunatus lunatus*

(Gould, 1834); *Aratricerca cirithra* **n. sp.** ex *Ptiloprora guisei guisei* (De Vis, 1894); *Saepocephalum stephenfryi* **n. sp.** ex *Corcorax melanoramphos* (Vieillot, 1817); *Schizosairhynchus erysichthoni* **n. sp.** ex *Aplonis metallica metallica* (Temminck, 1824) and *Aplonis metallica nitida* (Grey, 1858); *Schizosairhynchus minovenator* **n. sp.** ex *Mino dumontii* Lesson, 1827; *Sturnidoecus australafricanus* **n. sp.** ex *Corvinella melanoleuca expressa* Clancey, 1961; *Sturnidoecus mon* **n. sp.** ex *Euplectes hordeaceus* (Linnaeus, 1758); *Sturnidoecus porphyrogenitus* **n. sp.** ex *Cinnyricinclus leucogaster verreauxi* (Bocage, 1870); *Sturnidoecus somnodraco* **n. sp.** ex *Quelea quelea quelea* (Linnaeus, 1758) and *Qualea quelea lathami* (Smith, 1836); *Teinomordeus entelosetus* **n. sp.** ex *Eurocephalus rueppelli* Bonaparte, 1853; *Titanomessor sexloba* **n. sp.** ex *Laniarius erythrogaster* (Cretzschmar, 1829); and *Turdinirmus australissimus* **n. sp.** ex *Zoothera lunulata lunulata* (Latham, 1802). The name *Olivinirmus paraffinis* nom. nov. is proposed as a replacement for the preoccupied *Brueelia affinis* Carriker, 1963. We place 23 names in synonymy, and we consider 6 species as *incertae sedis*, 2 names as *nomina nuda*, and transfer 14 species names to genera not belonging to the *Brueelia*-complex.

We redescribe and illustrate most of the type species of the genera or subgenera included in this revision. Keys to genera, subgenera, and species groups are given, together with updated louse-host and host-louse checklists for 426 species of lice currently placed in the *Brueelia*-complex, including 183 new host-louse records.

Key words: Phthiraptera, Ischnocera, Philopteridae, *Brueelia*-complex, revision, new genera, new subgenera, new species, new combinations, new host records, checklist

Introduction

Fahrenholz' Rule was a guiding principle of louse taxonomy throughout the 20th century (Fahrenholz 1915; Eichler 1941, 1942a; Klassen 1982; Choudhury *et al.* 2002). This rule stated that the phylogeny of permanent ectoparasites, such as lice (Phthiraptera), should mirror that of their hosts. Blind adherence to this rule among some taxonomists during the 20th century resulted in the erection of species and even genera based primarily or entirely on host associations, rather than the evolutionary history or distinctive morphological characters of the lice themselves. The assumption behind Fahrenholz' Rule was that lice are always strictly host-specific, but that morphological diversification of the lice may "lag behind" that of the host, and thus it may be difficult to differentiate closely related species of lice based only on morphological characters. Eichler (1941) argued that while we may not know what the morphological differences between two taxa are, that does not necessarily imply that such differences do not exist. Therefore, some taxonomists considered it acceptable to delimit species based solely on their associations with different host species.

In the last few decades, however, several studies have shown that strict cophylogenetic congruence between host and parasite phylogenies is actually quite rare (Vienne *et al.* 2013). Among birds and lice, host switching and other sorting events erode the cophylogenetic congruence to various degrees (Clayton *et al.* 2004). In some circumstances, lice move between different host species, sometimes even between distantly related host species (Clayton 1990; Weckstein 2004; Bush *et al.* 2016). Thus, the lack of morphological differences among louse populations on two hosts should be treated as data that can illuminate our understanding of ecological factors that may prevent diversification among some parasites. Observed differences in host-specificity, host-parasite cophylogenetic congruence, and morphological and genetic diversity among lice underscore the importance of relying on data rather than assumptions in making taxonomic decisions. This philosophy is not new. Indeed, Clay (1951) argued that taxonomic decisions must be based on morphological criteria rather than assumptions of host specificity.

The practice of naming species and genera largely, if not solely, on host relationships led to a proliferation of taxonomic names within the *Brueelia*-complex (*sensu* Clay & Tandan 1967); many of these descriptions were not supported by rigorous comparative diagnoses or illustrations. Consequently, the species richness of this group is, in part, a taxonomic artifact caused by over-splitting of taxa into different species or genera on different hosts or host groups. This "Fahrenholzian" phase of louse taxonomy was followed by a period of synonymization, where large numbers of species and genera were synonymized. For instance, Hopkins & Clay (1952) synonymized 6 proposed genera with *Brueelia* Kéler, 1936a, and Price *et al.* (2003) treated 16 previously proposed genera as synonyms of *Brueelia*. In some cases, the synonymizations appear to have been an over-reaction to the earlier taxonomists, because even well-described and well-illustrated genera were synonymized. These opposing taxonomic philosophies have left the *Brueelia*-complex in a state of disarray that is desperately in need of a comprehensive revision.

To date, the genus *Brueelia* contains over 300 species and the *Brueelia*-complex nearly one-tenth of all known louse species (Phthiraptera). Lice of the *Brueelia*-complex are primarily found on songbirds (Passeriformes), which is the largest avian order (roughly 60% of all bird species are songbirds; Cracraft & Barker 2009). Lice of the *Brueelia*-complex also occur on some members of Coraciiformes (bee-eaters, motmots, and ground-rollers), Trogoniformes (trogons), Piciformes (woodpeckers, barbets, and toucans), and Cuculiformes (couas). Many species in this complex are quite host-specific and parasitise only one or two host species (Bush *et al*. 2016). There are, however, a few species that are host "generalists," each parasitic on several host species. For instance, one undescribed species of *Guimaraesiella* included in the phylogeny of Bush *et al*. (2016) is found on 19 host species representing nine host families. Given that many species of lice of the Brueelia-complex are quite host specific (Bush *et al*. 2016) and the large number of potential host species in five host orders, it is not surprising that undescribed specimens of this complex line the drawers of museum collections around the world. However, descriptions of this material are hindered by the lack of keys and illustrations, and by the taxonomic disorder within and among the genera in this complex.

Here we propose a new classification of the *Brueelia*-complex based on morphological data that is independent of host associations. Our classification scheme is based primarily on preantennal structure, head, leg, and abdominal chaetotaxy, and male and female genitalia, drawn from nearly all described species of the *Brueelia*-complex. Our proposed classification is largely supported by a recent study that used molecular data (nuclear EF-1α and mitochondial COI genes) to elucidate the relationships of over 300 louse specimens from the *Brueelia*-complex (Bush *et al*. 2015, 2016). Although Bush *et al*. (2015, 2016) did not include all major groups within the *Brueelia*-complex, their study encompassed a broad array of *Brueelia*-complex species from around the world and showed strong support for many previously recognised genera, as well as new genera proposed herein. We comment on molecular support, or lack thereof, as it applies to each of the taxonomic descriptions below.

Based on morphological data, and available molecular data (Bush *et al*. 2015, 2016), we recognise 10 proposed genera previously treated as synonyms of *Brueelia* or *Sturnidoecus* Eichler, 1944 by Hopkins & Clay (1952) and Price *et al*. (2003). We redescribe and illustrate these genera. We also describe 21 new genera, four new subgenera, and 37 new species, and place 41 species names in synonymy, six species as *incertae sedis*, two names as *nomina nuda*, and move 14 species to genera outside the *Brueelia*-complex. We propose one new name for a junior synonym. We report 184 new host-louse records. We also provide an updated louse checklist detailing the known host-associations for all 426 species currently placed in the *Brueelia*-complex (Appendix I), including the 37 new species described herein, totalling 790 host associations for 703 different host species and subspecies. We also provide a host-louse checklist organized by host taxonomy (Appendix II).

Materials, methods and conventions

The specimens examined are deposited in the following institutions:

BPBM	Bernice Pauahi Bishop Museum, Honolulu, Hawaii, U.S.A.
EMEC	Essig Museum of Entomology, University of California, Berkeley, U.S.A.
FMNH	Field Museum of Natural History, Chicago, U.S.A.
MFNB	Museum für Naturkunde, Berlin, Germany
MONZ	Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand
MRAC	Musée Royale de l'Afrique Centrale, Tervuren, Belgium
NHML	Natural History Museum, London, United Kingdom
OSUS	Oklahoma State University, Stillwater, U.S.A.
PIPeR	Price Institute for Parasite Research, University of Utah, Salt Lake City, U.S.A.
PMSL	Slovenian Museum of Natural History, Ljubljana, Slovenia
SMNH	Swedish Museum of Natural History, Stockholm, Sweden
UMSP	University of Minnesota, St. Paul, U.S.A.
USNM	National Museum of Natural History, Washington D.C., U.S.A.

Holotypes for new species described in this paper are deposited at the NHML, unless otherwise noted. The deposition of all other material is indicated under each species description (see also Appendix III).

All studied material was mounted in Canada balsam on microscopy slides. Specimens were examined and measured at PIPeR with a Nikon Eclipse E600 fitted with an Olympus DP25 camera and digital measuring software (ImageJ 1.48v, Wayne Rasband) or similar microscope elsewhere. Illustrations were drawn by hand, using a drawing tube. Line drawings were scanned, collated, and edited in GIMP (www.gimp.org). All measurements are given in millimeters, as ranges (mean value, when n ≥ 10). Abbreviations used: TL = total length; HL = head length (along midline); HW = head width (at temples); PRW = prothorax width; PTW = pterothorax width; AW = abdominal width (at segment V).

Gross head shape follows terminology in Figs 1–9, with common variations in the marginal carina and dorsal preantennal suture indicated in Figs 10–18. Head chaetotaxy (Figs 19–20) follows Clay (1951), as modified by Mey (1994a). Head sensilla follow Valim & Silveira (2014). Nomenclature for thoracic features follows Lyal (1985) and thoracic chaetotaxy follows Mey (1994a). An extensive system of nomenclature for the chaetotaxy of the first three leg segments is proposed in Fig. 25, based on Najer *et al*. (2016). Abdominal chaetotaxy (Fig. 26) follows Cicchino & Castro (1996). Terminology of the male genitalia (Figs 21–24) is based on Lyal (1986). All abbreviations used are listed in Table 1. Setae and sensilla are identified in *italics*. Structural characters are identified with capital letters.

TABLE 1. Abbreviations for chaetotaxy and structural characters. Head chaetotaxy follows Clay (1951) as modified by Mey (1994), and is shown in Figs. 19–20. Leg chaetotaxy is shown in Fig. 25. Abdominal chaetotaxy is modified from Cicchino & Castro (1996). Thoracic and abdominal chaetotaxy are shown in Fig. 26. The location of each character is marked by the following abbreviations: A = Abdomen; G = male genitalia; H = Head; L = Leg; S = female submarginal plate; T = Thorax.

Abbreviation	Name
ads	Anterior dorsal seta (H)
ames	Anterior mesosomal setae (G)
ans	Anal seta (A)
ANS	Antennal socket (H)
aps	Accessory postspiracular seta (A); *spa* of Cicchino & Castro (1996)
as (1–3)	Anterior seta (H)
ATS	Anterior transverse sclerite (G)
avs (1–3)	Anterior ventral seta (H)
BA	Basal apodeme (G)
C	Conus (H)
CCP	Complete cross-piece (S)
cI-a (1–4)	Coxa I anterior seta (L)
cI-d (1)	Coxa I dorsal seta (L)
cI-v (1–3)	Coxa I ventral seta (L)
cII-a (1–3)	Coxa II anterior seta (L)
cII-d (1)	Coxa II dorsal seta (L)
cII-v (1–3)	Coxa II ventral seta (L)
cIII-a (1–3)	Coxa III anterior seta (L)
cIII-d (1–2)	Coxa III dorsal seta (L)
cIII-v (1–2)	Coxa III ventral seta (L)
CLS	Clypeo-labral suture (H)
cs	Caudal seta (A)
DAP	Dorsal anterior plate (H)
DPOS	Dorsal post-antennal suture (H)
DPS	Dorsal pre-antennal suture (H)

......*continued on the next page*

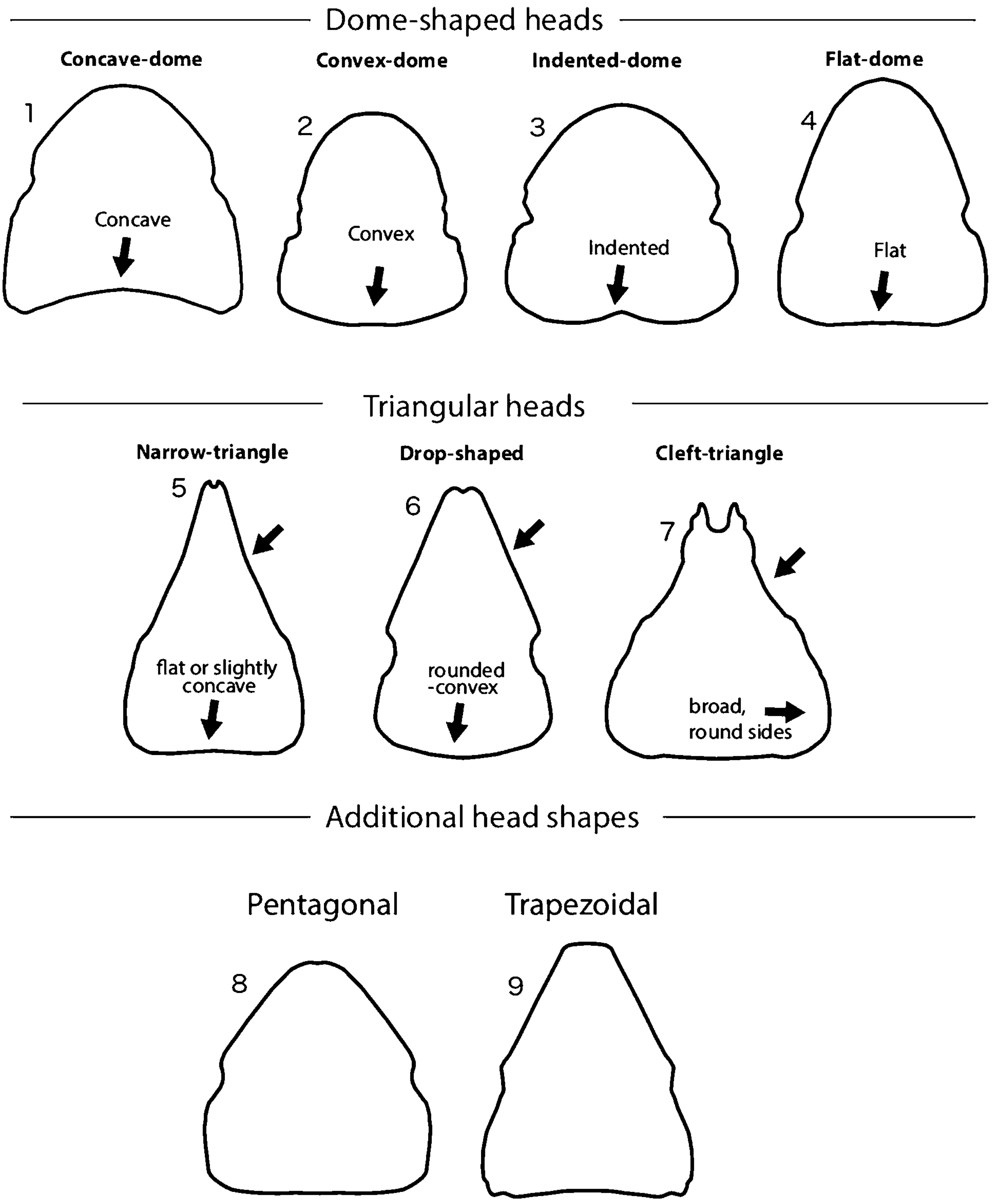
TABLE 1. (Continued)

Abbreviation	**Name**
dsms	Dorsal submarginal seta (H)
DTS	Distal transverse sclerite (G)
E	Eye (H)
fI-d (1–4)	Femur I dorsal seta (L)
fI-dm (1–4)	Femur I distal marginal seta (L)
fI-p (1–3)	Femur I posterior seta (L)
fI-v (1–4)	Femur I ventral seta (L)
fII-a (1–5)	Femur II anterior seta (L)
fII-d (1–2)	Femur II dorsal seta (L)
fII-dm (1–4)	Femur II distal marginal seta (L)
fII-v (1–2)	Femur II ventral seta (L)
fIII-a (1–5)	Femur III anterior seta (L)
fIII-d (1–2)	Femur III dorsal seta (L)
fIII-dm (1–4)	Femur III distal marginal seta (L)
fIII-v (1–2)	Femur III ventral seta (L)
gas	Gonapophysal seta (A)
GN	Gonopore (G)
GP	Gular plate (H)
HM	Hyaline margin (H)
ICP	Interrupted cross-piece (S)
LF	Lateral folds of basal apodeme (G)
LMP	Lateral marginal plate (S)
LSB	Lateral submarginal bulge (S)
LSCP	Laterally submarginal cross-piece (S)
LSE	Lateral submarginal extension (S)
MC	Marginal carina (H)
MCP	Marginal carinal plate (H)
MD	Median displacement [of cross-piece] (S)
mds	Mandibular seta (H)
mets	Metathoracic seta (T)
ML	Mesosomal lobe (G)
mms	Marginal mesometanotal setae (T)
mss	Mesothoracic seta (T)
mts (1–5)	Marginal temporal seta (H)
OCC	Occipital carina (H)
os	Ocular seta (H)
PAN	Pre-antennal nodus (H)
pas	Preantennal seta (H)
PB	Parameral blades (G)
PCP	Partial cross-piece (S)
pcs	Preconal seta (H)
PH	Parameral heads (G)

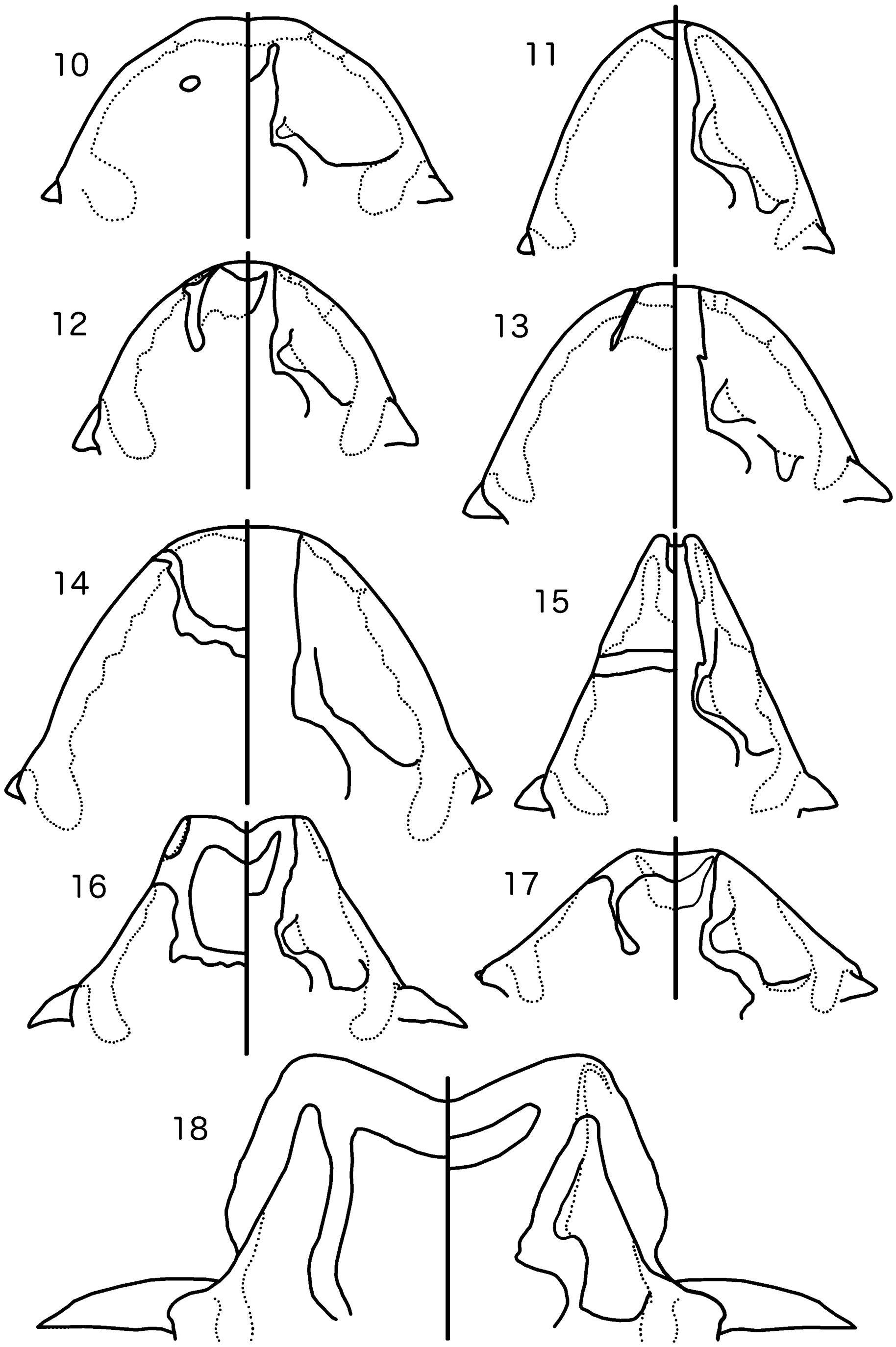
......continued on the next page

TABLE 1. (Continued)

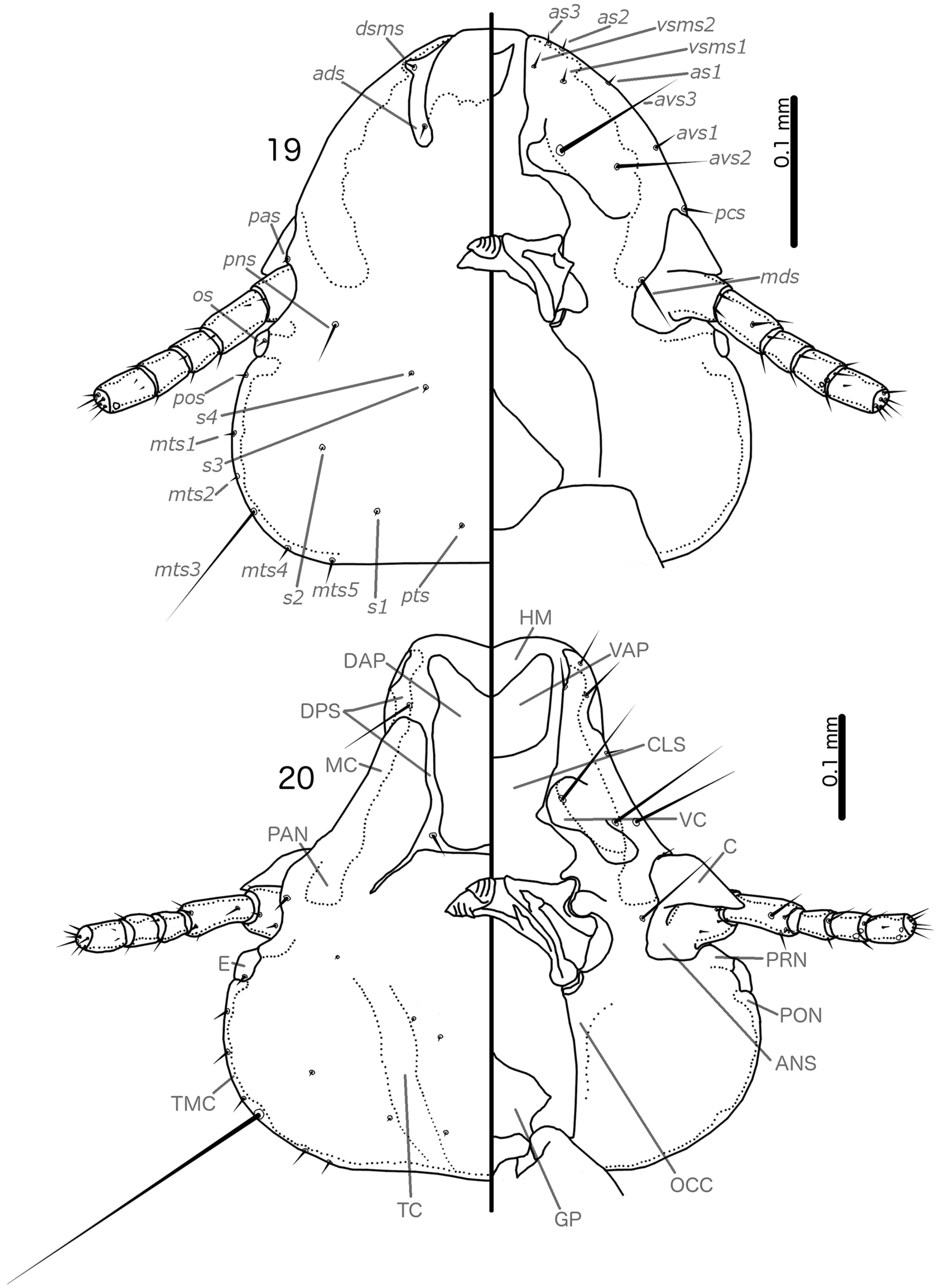
Abbreviation	**Name**
PM	Proximal mesosome (G)
pmes	Posterior mesosomal setae (G)
PN	Parameral necks (G)
pns	Postnodal seta (H)
POMC	Post-marginal carina (H)
PON	Post-ocular nodus (H)
pos	Preocular seta (H)
ppss	Pronotal post-spiracular seta (T)
PRMC	Pre-marginal carina (H)
PRN	Pre-ocular nodus (H)
ps	Paratergal setae (A); *spt* of Cicchino & Castro (1996)
psps	Principal post-spiracular setae (A); *spp* of Cicchino & Castro (1996)
PSR	Pre-spiracular ridges (A)
pss	Post-spiracular sensillus (*sensu* Clay 1954) (A)
pst (1–2)	Parameral seta (G)
pths	Pterothoracic thorn-like seta (T)
ptrs	Pterothoracic trichoid seta (T)
pts	Posttemporal seta (H)
RN	Rugose nodus (G)
s (1–4)	Sensillus (*sensu* Valim & Silveira 2014; *dos* of Mey 1994) (H)
ss	Sutural setae (A)
sts	Sternal setae (A)
TC	Temporal carina (H)
tI-s (1–4)	Trochanter I sensillus (L)
tI-v (1–2)	Trochanter I ventral seta (L)
tII-a (1)	Trochanter II anterior seta (L)
tII-d (1)	Trochanter II dorsal seta (L)
tII-s (1–6)	Trochanter II sensillus (L)
tII-v (1–2)	Trochanter II ventral seta (L)
tIII-a (1)	Trochanter III anterior seta (L)
tIII-d (1)	Trochanter III dorsal seta (L)
tIII-s (1–6)	Trochanter III sensillus (L)
tIII-v (1–2)	Trochanter III ventral seta (L)
TMC	Temporal marginal carina (H)
tps	Tergal posterior setae (A); *stp* of Cicchino & Castro (1996)
ts	Trichoid seta of segment VIII (A)
VAP	Ventral anterior plate (H)
VC	Ventra carina (H)
vms	Vulval marginal seta (A)
vos	Vulval oblique seta (A)
VR	Ventral ridges (G)
VS	Ventral sclerite (G)
vsms (1–2)	Ventral submarginal seta (H)
vss	Vulval submarginal seta (A)



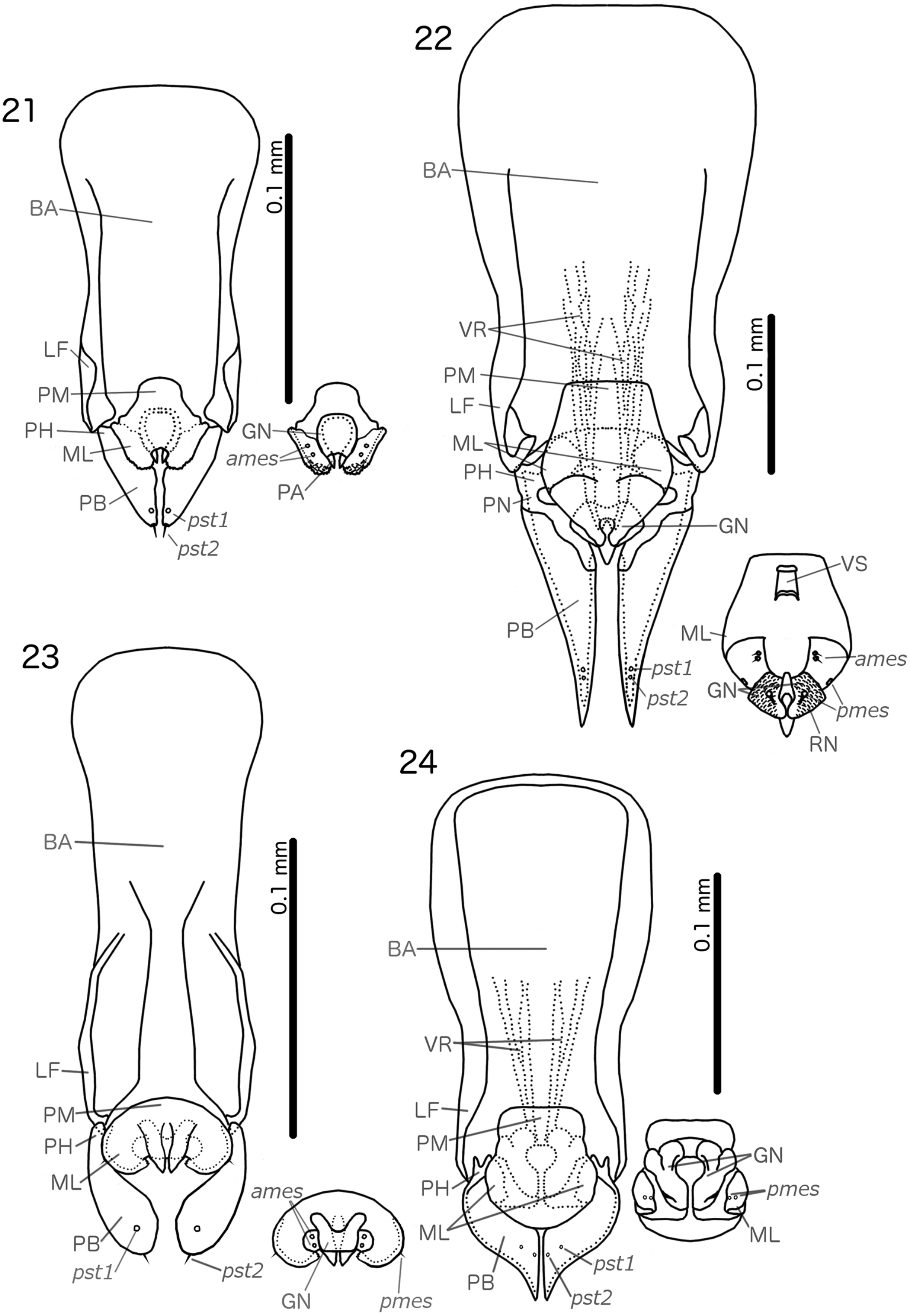
FIGURES 1–9. Head morphology of the *Brueelia*-complex (not drawn to scale). Head shapes are: **1,** concave dome-shaped; **2,** convex dome-shaped; **3,** indented dome-shaped; **4,** flat dome-shaped; **5,** wedge-shaped; **6,** drop-shaped; **7,** bulb-shaped; **8,** pentagonal; **9,** trapezoidal.



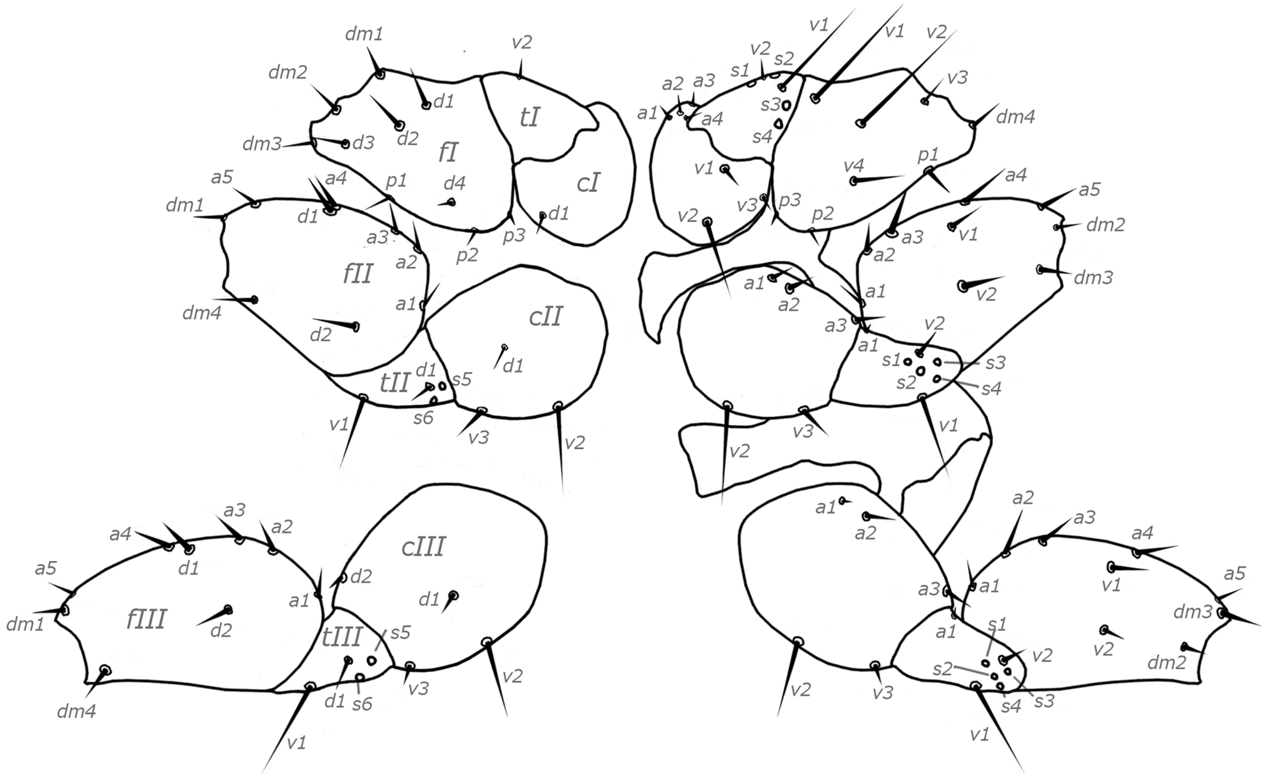
FIGURES 10–18. Dorso-ventral views of the preantennal area showing major variations within the *Brueelia*-complex (setae and pulvinus not shown): **10,** marginal carina not displaced, frons sclerotized, ventral anterior plate fused to marginal carina, dorsal preantennal suture does not interrupt carina. **11,** marginal carina displaced at osculum, frons hyaline, dorsal preantennal suture absent. **12,** marginal carina displaced and extended at osculum, frons hyaline, dorsal preantennal suture interrupts carina submedianly but not laterally. **13,** marginal carina displaced and extended at osculum, frons sclerotized, dorsal preantennal suture interrupts carina submedianly but not laterally. **14,** marginal carina not displaced at osculum, frons sclerotized, dorsal preantennal suture interrupts carina laterally but nit submedianly. **15,** marginal carina displaced and much expanded at osculum, frons hyaline, dorsal preantennal suture interrupts carina laterally but not submedianly. **16,** marginal carina absent at osculum, frons hyaline, dorsal preantennal suture interrupts carina laterally and submedianly, premarginal carina present. **17,** marginal carina absent medianly, frons hyaline, dorsal preantennal suture interrupts carina laterally, premarginal carina absent. **18,** marginal carina absent at osculum, frons hyaline, hyaline margin extends along lateral margins of head, dorsal preantennal suture interrupts carina laterally, premarginal carina absent.



FIGURES 19–20. Dorso-ventral views of the head representing two major head shapes within the *Brueelia* complex, showing morphological features: **19,** *Capnodella* sp. **20,** *Sturnidoecus* sp. Terminology for head setae follows Clay (1951) as modified by Mey (1994), and other structures follow Clay (1951). Sensilla follow Valim & Silveira (2014). *Abbreviations*: *ads*, anterior dorsal seta; ANS, antennal socket; *as1–3*, anterior setae 1–3; *avs1–3*, anterior ventral setae 1–3; C, conus; CLS, clypeo-labral suture; DAP, dorsal anterior plate; DPS, dorsal preantennal suture; *dsms*, dorsal submarginal seta; E, eye; GP, gular plate; HM, hyaline margin; MC, marginal carina; *mds*, mandibular seta; *mts1–5*, marginal temporal setae 1–5; OCC, occipital carina; *os,* ocular seta; PAN, preantennal nodus; *pas*, preantennal setae; *pcs*, preconal seta; *pns*, postnodal seta; *pts*, posttemporal seta; PON, postocular nodus; *pos*, preocular seta; PRN, preocular nodus; *s1–4,* sensilla 1–4; TC, temporal carina; TMC, temporal marginal carina; VAP, ventral anterior plate; VC, ventral carina; *vsms1–2*, ventral submarginal setae 1–2.



FIGURES 21–24. Male genitalia of four species illustrating common genitalic structures in the *Brueelia*-complex: **21,** *Brueelia brachythorax* (Giebel, 1874). **22,** *Corvonirmus uncinosus* (Burmeister, 1838). **23** *Indoceoplanetes laurocorythes* **n. gen. & n. sp. 24,** *Meropsiella apiastri* (Denny, 1842). Terminology follows Lyal (1986). Ventral mesosomes illustrated separately at same scale as genitalia. *Abbreviations*: *ames*, anterior mesosomal setae; BA, basal apodeme; GP, gonopore; LF, lateral folds of basal plate; ML, mesosomal lobes; PB, parameral blades; PH, parameral heads; PM, proximal mesosome; *pmes,* posterior mesosomal setae; PN, parameral necks; *pst1–2,* parameral setae 1–2; RN, rugose nodi; VR, ventral ridges; VS, ventral sclerite.



FIGURES 25. Dorso-ventral views of coxae I–III, trochanters I–III, and femora I–III, showing terminology of the leg setae used here. Other parts of the thorax removed for clarity. Setae situated marginally are illustrated and named on both dorsal (left-hand) and ventral (right-hand) sides. Terminology for individual seta as used in the text obtained by combining the leg segment (larger font) and the setal name (smaller font). *Abbreviations*: *a1–5*, anterior setae 1–5; *cI–III*, coxae I–III; *d1–3,* dorsal setae 1–3; *dm1–4*, distal marginal setae 1–4; *fI–III*, femur I–III; *p1–3,* posterior setae 1–3; *s1–6*, sensilla 1–6; *tI–III*, trochanter I–III; *v1–4*, ventral setae 1–4.

We provide dorso-ventral illustrations of both sexes for nearly all type species of all genera and subgenera treated here. This includes male genitalia, female subgenital plates and vulval margins, as well as dorso-ventral illustrations of the head. Female antennae, where different from male antennae, are illustrated separately at the same scale as male head. Ventral view of mesosomes and dorsal view of paramere illustrated separately at same scale as male genitalia. We do not re-illustrate the genera *Bizarrifrons* Eichler, 1938, and *Buerelius* Clay & Tandan, 1967, fully and do not illustrate the type species of *Meropoecus* Eichler, 1940, and *Melibrueelia* Valim & Palma, 2015, as the type species of these four genera were recently treated by Valim & Palma (2012), Clay & Tandan (1967), Adam (2004), and Valim & Palma (2015) respectively. Host nomenclature follows Clements *et al.* (2015).

In the lists of species included in each genus, the type species are in **boldface**. Species for which we have specimens examined are marked with an asterisk (*). Abreviations in **bold face** are: "**n. sp.**" = new species, "**n. gen.**" = new genus, **n. subgen.** = new subgenus and "**n. comb.**" = new combination. A complete list of all louse species with their hosts is given in Appendix I, and a complete host list with their lice is given in Appendix II. A complete list of identified specimens examined for this study is given in Appendix III.

References to figures appear in two forms. If the figure is from this paper, the abbreviation is in Capital: "Fig." or "Figs". If the figure has been published in another paper the abbreviation is in lower case: "fig." or "figs".

Abbreviations of generic and subgeneric louse names

Due to the large number of louse genera treated here, we use the following two-letter louse genus and subgenus abbreviations. Within each taxonomic description, the scientific names of the hosts are given in full and are abbreviated using standard conventions upon subsequent use.
Ac. = *Acronirmus* Eichler, 1953

An. = *Anarchonirmus* **n. gen.**
Ap. = *Aporisticeras* **n. gen.**
Ar. = *Aratricerca* **n. gen.**
Bi. = *Bizarrifrons* Eichler, 1938
Bo. = *Buphagoecus* **n. gen.**
Br. = *Brueelia* s. str. Kéler, 1936a
Bu. = *Buerelius* Clay & Tandan, 1967
Cc. = *Ceratocista* **n. gen.**
Cl. = *Couala* **n. gen.**
Co. = *Corvonirmus* Eichler, 1944
Cm. = *Camurnirmus* **n. subgen.**
Cp. = *Capnodella* **n. subgen.**
Gu. = *Guimaraesiella* Eichler, 1949
Ha. = *Harpactrox* **n. gen.**
He. = *Hecatrishula* **n. gen.**
In. = *Indoceoplanetes* **n. gen**
Ma. = *Maculinirmus* Złotorzycka, 1964a
Mi. = *Mirandofures* **n. gen.**
Ml. = *Melibrueelia* Valim & Palma, 2015
Mn. = *Manucodicola* **n. gen.**
Mo. = *Meropoecus* Eichler, 1940
Ms. = *Meropsiella* Conci, 1941b
Mt. = *Motmotnirmus* Mey & Barker, 2014
Ne. = *Nemuus* **n. gen.**
Ol. = *Olivinirmus* Złotorzycka, 1964a
Os. = *Osculonirmus* Mey, 1982a
Pe. = *Penenirmus* Clay & Meinertzhagen, 1938
Pr. = *Priceiella* **n. gen.**
Ps. = *Psammonirmus* **n. gen.**
Re. = *Resartor* **n. gen.**
Ro. = *Rostrinirmus* Złotorzycka, 1964a
Sa. = *Saepocephalum* **n. gen.**
Sc. = *Schizosairhynchus* **n. gen.**
St. = *Sturnidoecus* Eichler, 1944
Sy. = *Sychraella* **n. gen.**
Te. = *Teinomordeus* **n. gen.**
Th. = *Thescelovora* **n. subgen.**
Ti. = *Titanomessor* **n. gen.**
To. = *Turdinirmoides* **n. gen.**
Tr. = *Traihoriella* Ansari, 1947
Ts. = *Torosinirmus* **n. subgen.**
Tu. = *Turdinirmus* Eichler, 1951b

Taxonomic history of the genus *Brueelia* Kéler, 1936

At the heart of the *Brueelia*-complex is the genus *Brueelia* Kéler, 1936a. This genus was originally established as a generic name for Piaget's (1880) group *interruptofasciati*, within the large and morphologically diverse genus *Nirmus* Nitzsch, 1818 (for a taxonomic history of *Nirmus*, see Hopkins & Clay 1952: 240). At the time, the *interruptofasciati* group included 39 species, including representatives of several of the genera we here consider valid. Kéler (1936a) erected the genus *Brueelia* using *Nirmus rossittensis* Kéler, 1936a [= *Brueelia brachythorax* (Burmeister, 1838)] as the type species, and characterized this genus as slender lice with triangular heads, which have clypeo-labral sutures that break through the anterior margin of the *limbus zygomanticus* (= "*bandes antennales*" of Piaget, 1880; "marginal carina" of Clay, 1951).

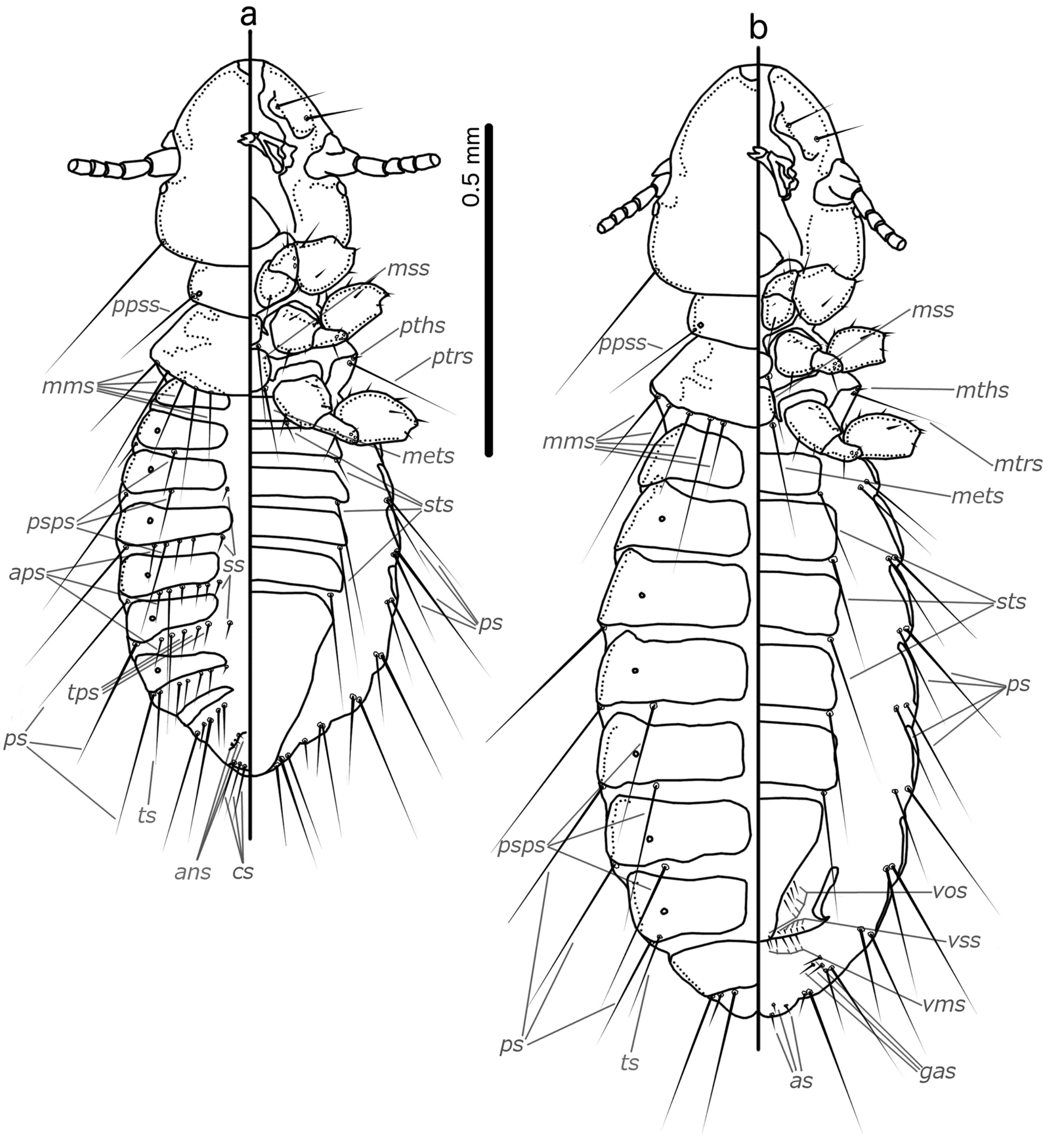
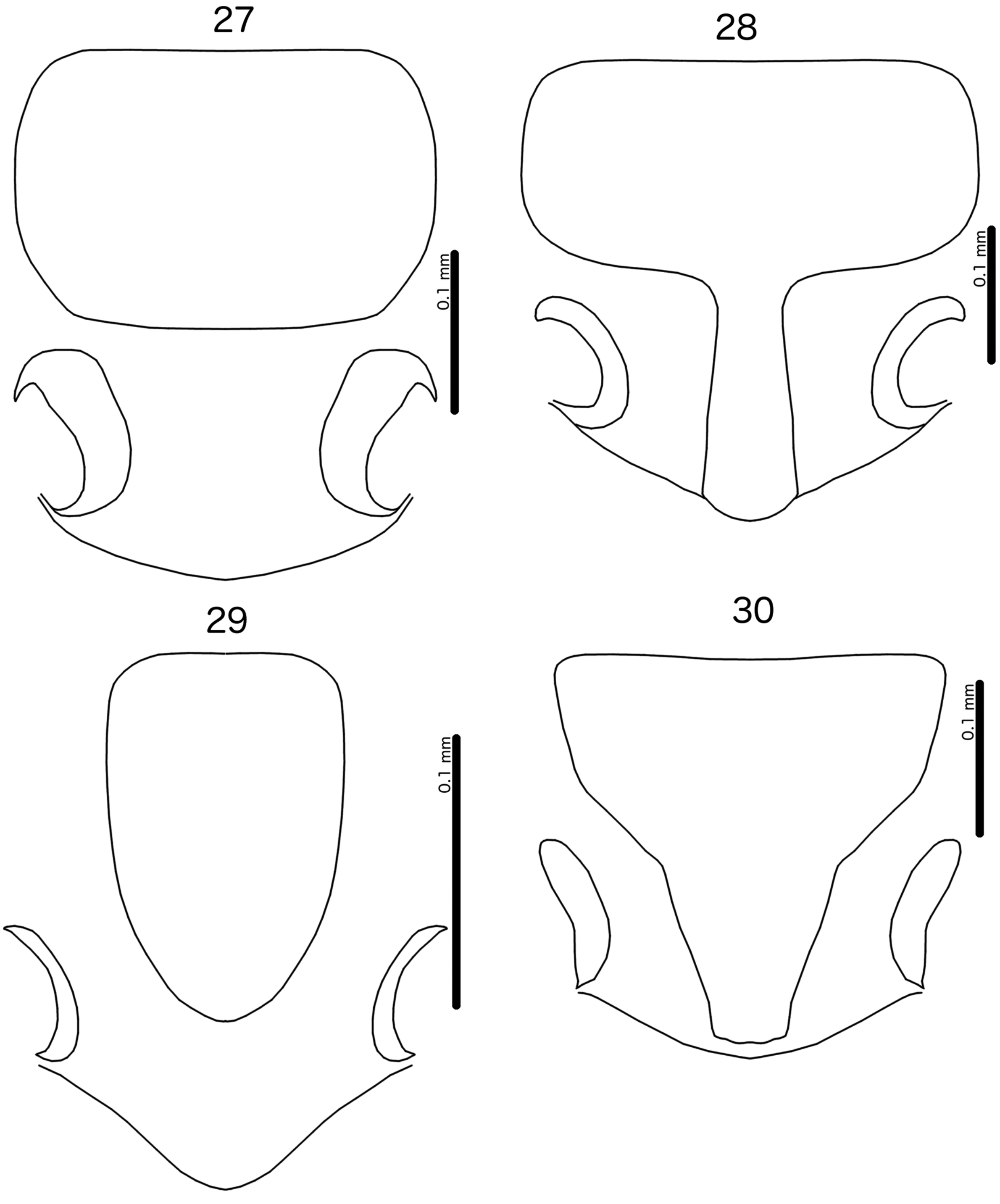


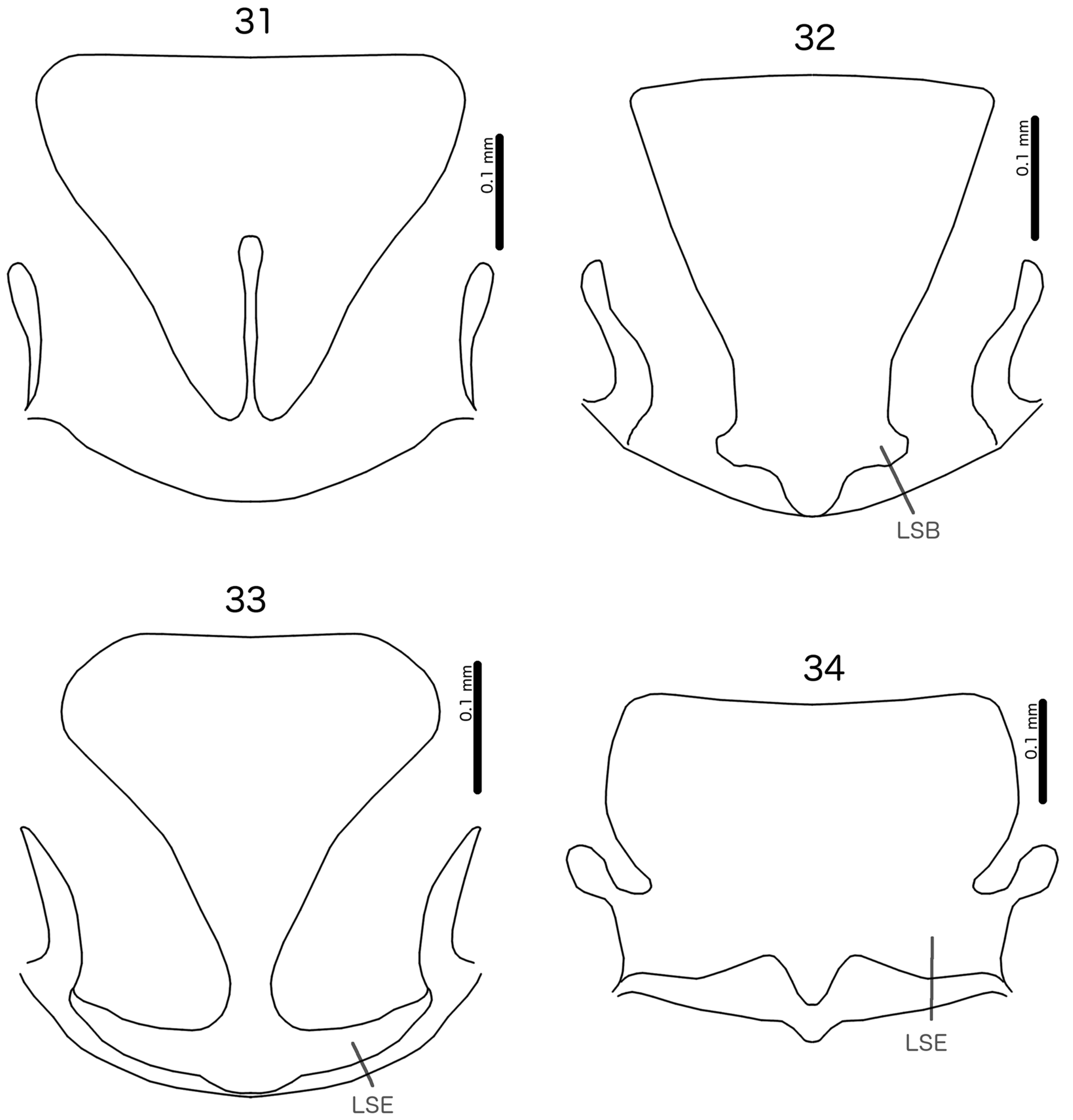
FIGURE 26. Thoracic and abdominal structures typical of (a) male and (b) female lice of the *Brueelia*-complex. Terminology for thoracic structures follows Lyal (1985), terminology for thoracic setae follows Mey (1994) and terminology for abdominal setae follows Cicchino & Castro (1996). *Abbreviations*: (M = only in male; F = only in female): *aps*, accessory post-spiracular seta; *ans*, anal setae (F); *cs,* caudal setae (M); *gas*, gonapophysal setae (F); *mms,* marginal mesometanotal setae; *mss*, mesothoracic seta; *mets*, metathoracic seta; *mms*, marginal mesometanotal setae; *ppss*, pronotal post-spiracular seta; *ps*, paratergal seta; *psps*, principal post-spiracular seta; *pths*, pterothoracic thorn-like seta; *ptrs*, pterothoracic trichoid seta; *ss*, sutural seta; *sts*, sternal seta; *tps*, tergal posterior seta; *ts,* trichoid seta of segment VIII; *vms*, vulval marginal seta (F); *vos*, vulval oblique setae (F); *vss*, vulval submarginal setae (F).



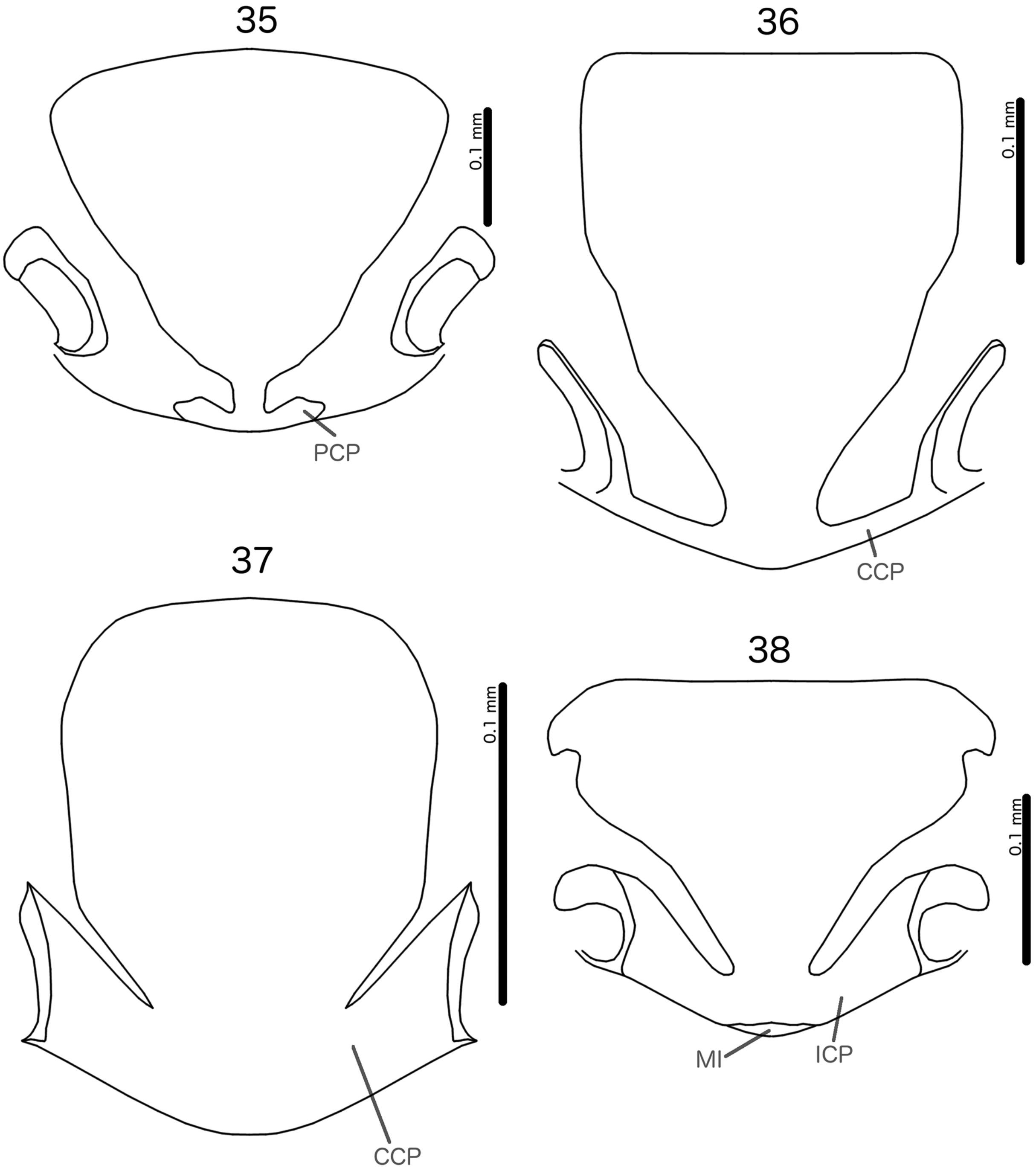
FIGURES 27–30. Types of female subgenital plates I, with no distal modifications (schematic, all setae omitted): **27,** sternite VII not modified into subgenital plate. **28,** sternite VII not differentiated from other sternites, but distal margin elongated medianly. **29,** subgenital plate does not approach vulval margin. **30,** subgenital plate approaches vulval margin but does not flare into cross-piece.

Throughout its taxonomic history, the genus *Brueelia* as it is currently recognised (Price *et al.* 2003) has been subdivided into numerous smaller genera (see below), although these genera were never widely accepted (Hopkins & Clay, 1952; Ledger, 1980; Price *et al.* 2003). Currently, the most widely accepted circumscription of *Brueelia* is that of Price *et al.* (2003), which encompasses a large, morphologically diverse array of species. Based on both molecular (Bush *et al.* 2016) and morphological data, it is now apparent that a narrower definition of the genus

Brueelia is required to accurately reflect the evolutionary history of this group. The recent splitting of *Brueelia* s. lat. (Price *et al*. 2003) into several different genera began with Mey & Barker (2014). At this time, a more comprehensive taxonomic framework for the *Brueelia*-complex is sorely needed.



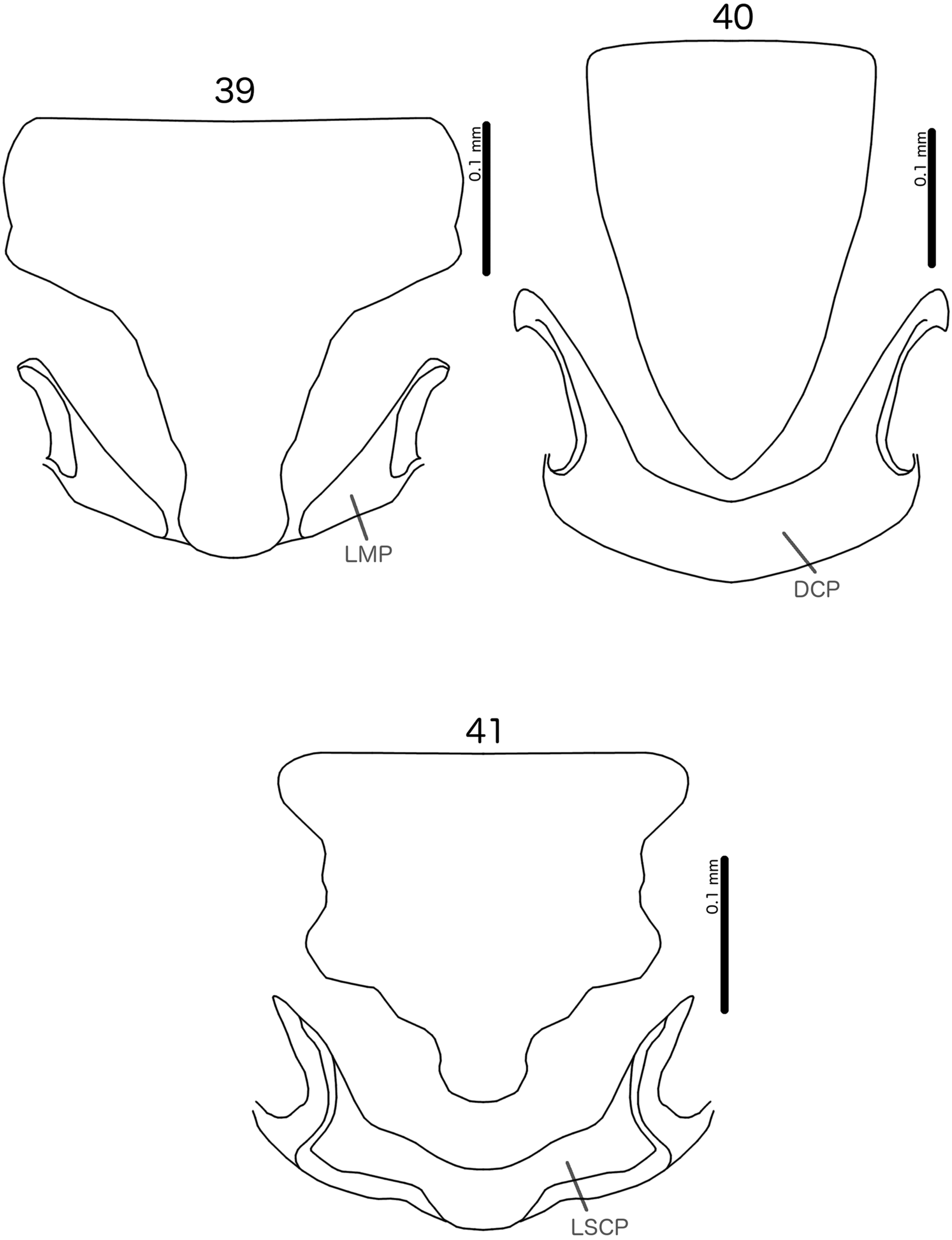
FIGURES 31–34. Types of female subgenital plates II, with distal modifications but no true cross-pieces (schematic, all setae omitted): **31,** subgenital plate with grove on distal margin. **32,** subgenital plate with lateral submarginal bulges. **33,** subgenital plate with narrow lateral submarginal extensions. **34,** subgenital plate with broad lateral submarginal extensions. *Abbreviations*: LSB, lateral submarginal bulge; LSE, lateral submarginal extension.



FIGURES 35–38. Types of female subgenital plates III, with cross-pieces (schematic, all setae omitted): **35,** subgenital plate with partial cross-piece. **36,** subgenital plate with complete, narrow cross-piece. **37,** subgenital plate with complete, broad cross-piece. **38,** subgenital plate with medianly displaced cross-piece. *Abbreviations*: CCP, complete cross-piece; ICP, interrupted cross-piece; MD, median displacement; PCP, partial cross-piece.

Taxonomic history of the *Brueelia*-complex

During the 19th century, species that are currently considered part of the *Brueelia*-complex were placed either in *Nirmus* Nitzsch, 1818, or *Docophorus* Nitzsch, 1818. The long, slender species of lice were placed in *Nirmus* and the broad-headed species were placed in *Docophorus* (e.g. Burmeister, 1838; Giebel 1874; Piaget, 1880). All of these lice were considered part of the family Philopteridae. When Harrison (1916) provided an overarching framework for all lice, he moved these lice to new genera within Philopteridae. The species of *Nirmus* today placed in the *Brueelia*-complex were placed in the genus *Degeeriella* Neumann, 1906 and the species of *Docophorus* today placed in the *Brueelia*-complex were moved to the genus *Philopterus* Nitzsch, 1818.



FIGURES 39–41. Types of female subgenital plates IV, with detached cross-pieces (schematic, all setae omitted): **39,** subgenital plate with sublaterally detached cross-piece, here termed lateral marginal plates. **40,** subgenital plate with detached cross-piece. *Abbreviations*: DCP, detached cross-piece; LMP, lateral marginal plates; LSCP, laterally submarginal cross-piece.

In 1942, Eichler (1942b) established the family Degeeriellidae with two subfamilies: Degeeriellinae, which contained long, slender species such as those in *Degeeriella* and *Brueelia*, and Rallicolinae, which contained the broad-headed species such as those in *Bizarrifrons* Eichler, 1938. The species Harrison (1916) moved to *Philopterus* were retained by Eichler in Philopteridae. However, Eichler (1942b) provided little information to support his proposed classification. Consequently, Hopkins & Clay (1952) did not recognise the family Degeeriellidae, nor did they recognise any taxonomic level between family and genus. In a later classification, Eichler (1963) moved parts of his Degeeriellidae back to the Philopteridae [which is where Hopkins & Clay (1952) kept them]. At this time Eichler erected the subfamily Brueeliinae within the Philopteridae. This subfamily mostly included the species today placed in the *Brueelia*-complex. Aside from the works of Złotorzycka (1964a,b, 1968a,b, 1977, 1997), Eichler's (1963) classification has rarely been used.

Molecular-based phylogenetic reconstructions of Phthiraptera by Cruickshank *et al.* (2001) and Bush *et al.* (2016) found that some families, subfamilies and genera originally recognised by Eichler (1963) are monophyletic clades. Here we reconsider the recognition of many of these genera. We do not, however, recognise Eichler's subfamily Brueeliinae, because this group is paraphyletic in the phylogenetic reconstructions of both Cruickshank *et al.* (2001) and Bush *et al.* (2016). To prevent confusion, we avoid the term "Brueeliinae". Ultimately, with re-defined limits, this subfamily designation may be warranted. However, molecular and morphological studies have not yet robustly identified how genera in the *Brueelia*-complex are related to other major clades of lice. Until more data can shed light on the relationship of this group to other Ischnocera, we use the informal term "complex" for these closely related genera.

To date, the only broad revision of the *Brueelia*-complex is that of Złotorzycka (1964a, 1977, 1997). Złotorzycka's review included species from 20 different host families, but she focused entirely on host species found in central Europe. In this case, Zlotorzycka's approach was problematic because lice of the *Brueelia*-complex are found worldwide and closely related species are often found on different continents (Bush *et al.* 2016). Moreover, Złotorzycka relied heavily on pigmentation patterns for generic subdivisions, yet other studies have identified highly variable colour patterns within genera and even within species of lice (Busvine 1946; Timmerman 1952; Bush *et al.* 2010).

Other revisions of the *Brueelia*-complex focus on small subgroups circumscribed by host associations rather than morphological characters of the lice themselves. For example, revisions have focused on the lice parasitising Corvidae (Ansari 1956b, 1957a; Williams 1986), Icteridae (Cicchino & Castro 1996; Cicchino 1990, 2004), Picidae (Dalgleish 1971), Turdidae (Ansari 1955a, 1956c), or other host families (Ansari 1956a, 1968; Williams 1981, 1983; Valim & Weckstein 2011). Some of these studies identified morphological characters that strongly support monophyletic clades of lice within the *Brueelia*-complex (Ansari 1956a, Cicchino & Castro 1996; Valim & Weckstein 2011). However, the practice of delimiting a revision to a louse group based on its host group is potentially problematic for some members of the *Brueelia*-complex, because, while lice in this complex are quite host-specific, closely related species of lice are not necessarily found on closely related host species (Bush *et al.* 2016). We consider the taxonomic decisions made in these historic revisions and discuss them as they fit within a more comprehensive review of the *Brueelia*-complex.

The scope and limits of the *Brueelia*-complex

We recognise the *Brueelia*-complex as a group of 39 closely related genera and 4 subgenera. Five of these genera (*Bizarrifrons* Eichler, 1938, *Brueelia* Kéler, 1936a, *Buerelius* Clay & Tandan, 1967, *Meropoecus* Eichler, 1940, *Sturnidoecus* Eichler, 1944) were recognised by Price *et al.* (2003). Two recently described genera are also part of this complex: *Motmotnirmus* Mey & Barker, 2014, and *Melibrueelia* Valim & Palma, 2015.

At various times, several other genera have been recognised as valid members of the *Brueelia*-complex. We resurrect and include 10 previously described genera: *Acronirmus* Eichler, 1953, *Corvonirmus* Eichler, 1944, *Guimaraesiella* Eichler, 1949, *Maculinirmus* Złotorzycka, 1964a, *Meropsiella* Conci, 1941a, *Olivinirmus* Złotorzycka, 1964a, *Osculonirmus* Mey, 1982a, *Rostrinirmus* Złotorzycka, 1964a, *Traihoriella* Ansari, 1947, and *Turdinirmus* Eichler, 1951b. Mey & Barker (2014) previously recognised *Meropsiella*, *Corvonirmus, Traihoriella, Turdinirmus, Maculinirmus, Osculonirmus, Hirundiniella* Carriker, 1963, and *Rostrinirmus* as valid genera within the *Brueelia*-complex, and Valim & Palma (2015) included all of these as valid and members of the *Brueelia*-

complex, except *Rostrinirmus*. We accept the inclusion of all these genera, with the exception of *Hirundiniella*, which is a junior synonym of *Acronirmus* Eichler, 1953. The exclusion of *Rostrinirmus* from the *Brueelia*-complex by Valim & Palma (2015) was an error, as none of the characters listed to exclude *Rostrinirmus* from the *Brueelia*-complex actually occurs in members of this genus (see below). The taxonomic history of each of these genera is summarized under the respective descriptions below.

We also describe 21 new genera belonging to the *Brueelia*-complex: *Anarchonirmus, Aporisticeras*, *Aratricerca*, *Buphagoecus*, *Ceratocista*, *Couala*, *Harpactrox*, *Hecatrishula*, *Indoceoplanetes*, *Manucodicola*, *Mirandofures*, *Nemuus*, *Priceiella*, *Psammonirmus*, *Resartor*, *Saepocephalum*, *Schizosairhynchus*, *Sychraella, Teinomordeus*, *Titanomessor***,** and *Turdinirmoides*, and 4 new subgenera: *Camurnirmus*, *Thescelovora*, and *Torosinirmus*, and *Capnodella***.**

The most recent checklist (Price *et al*. 2003) considered the following number of species in the *Brueelia*-complex valid: 7 *Bizarrifrons* Eichler, 1938; 280 *Brueelia*; 2 *Buerelius* Clay & Tandan, 1967; 7 *Meropoecus* Eichler, 1940; 32; and 70 *Sturnidoecus*. One species (*Brueelia erythrophthalma* Cicchino, 1983) was not listed by Price *et al*. (2003) but is considered valid here. Since 2003, 30 species of *Brueelia* (Cicchino 2004; Cicchino & Gonzalez-Acuña 2008, 2009; Gustafsson & Bush 2015; Mey & Barker 2014; Najer *et al*. 2012a,b,c, 2014; Rékási & Saxena 2005; Sychra *et al*. 2009, 2010a,b; Valim & Cicchino 2015a; Valim & Palma 2006, 2015; Valim & Reiley 2015; Valim & Weckstein 2011), 1 species of *Melibrueelia* (Valim & Palma 2015), and 3 species of *Bizarrifrons* (Valim & Palma 2012) have been described. We place 17 species names accepted by Price *et al*. (2003) in synonymy and describe 37 new species. Thus, the total number of valid species names in the *Brueelia*-complex, including the taxonomic acts herein, is 426. Comprehensive host and parasite checklists of the species in the *Brueelia*-complex are provided in Appendices I and II (arranged by louse taxon and host taxon, respectively).

The scope of this review is the smallest monophyletic clade in Bush *et al*. (2016) that contains all species placed in *Brueelia* by Price *et al*. (2003). This includes the genera *Bizarrifrons, Sturnidoecus, Meropoecus, Motmotnirmus, Buerelius*, and *Melibrueelia*.

Genera excluded from the *Brueelia*-complex

Morphological and molecular data, detailed below, indicate that several genera included by Eichler (1963) within the subfamily Brueeliinae are not closely related to the *Brueelia*-complex. Consequently, we do not consider the following genera to be part of this complex: *Alcedoecus* Clay & Meinertzhagen, 1939, *Penenirmus* Clay & Meinertzhagen, 1938, *Picophilopterus* Ansari, 1947, and *Vernoniella* Guimarães, 1942. Other taxonomists (Mey 2004; Mey & Barker 2014) include *Debeauxoecus* Conci, 1941a, and *Furnariphilus* Price & Clayton 1995a in the *Brueelia*-complex, but several morphological characters indicate that these genera are misplaced (Valim & Palma 2015); therefore, we do not consider these two genera to be part of the *Brueelia*-complex. Nor do we include the following morphologically distinct, yet related taxa: *Neopsittaconirmus* Conci, 1942, *Paragoniocotes* Cummings, 1916, *Psittaconirmus* Harrison, 1915, *Theresiella* Guimarães, 1971, *Forficuloecus* Conci, 1941a, *Psittoecus* Conci, 1942, *Formicaphagus* Carriker, 1957, *Formicaricola* Carriker, 1957 and *Nyctibicola* Cicchino, 1989 (see Bush *et al*. 2016). The placement of both *Pseudocophorus* Carriker, 1940 and *Bobdalgleishia* Valim & Cicchino, 2015 is unclear but, at this time, we do not regard these genera as belonging to the *Brueelia*-complex. Justification for these decisions are discussed in detail below.

We exclude *Alcedoecus* from the *Brueelia*-complex because this genus was placed outside the *Brueelia*-complex in the phylogeny of Bush *et al*. (2016) and several morphological characters support its exclusion: *i.e*., setae are present on the anterior end of tergopleurite II, metepisterna are not extended medianly, and parameres are fused to the basal apodeme in *Alcedoecus*.

Penenirmus and *Picophilopterus* were placed in the Brueeliinae by Eichler (1963), but no morphological justification was provided. This placement was followed by Mey & Barker (2014). The similarities between the *Brueelia*-complex and the *Penenirmus*-complex are mainly negative characters (*i.e*. absence of trabecula) or the fact that both groups occur primarily on songbirds. Valim & Palma (2015) later showed that there are fundamental morphological differences between the *Penenirmus*- and *Brueelia*-complexes that suggest that they are not closely related. Moreover, molecular data indicates that *Picophilopterus* is a clade nested within *Penenirmus* (Johnson *et al*. 2001a) and that both genera are more closely related to the *Philopterus*-complex than to the *Brueelia*-complex

(Cruickshank *et al*. 2001; Johnson *et al*. 2001a,b, 2002a,b; Bush *et al*. 2016). Thus, in contrast to Mey & Barker (2014) but following Valim & Palma (2015) we do not include the genera *Penenirmus* and *Picophilopterus* in the *Brueelia*-complex.

Vernoniella shares key characters with the members of the *Brueelia*-complex: *i.e.,* a medianly interrupted ventral carina, lack of setae on anterior margin of tergopleurite II in adults, and the median extent of the metepisternum. However, the single representative of this genus included in the phylogeny of Bush *et al*. (2016) was not placed close to the *Brueelia*-complex. *Vernoniella* differs morphologically from the *Brueelia*-complex in many characters, such as *ads* being located on anterior margin of the preantennal suture, male subgenital plate not reaching terminal end of the abdomen and having at least one macrosetae laterally, and females having a medianly divided, much reduced, subgenital plate and sternal plates posterior to vulval margin. Thus, do not we consider *Vernoniella* to be a member of the *Brueelia*-complex.

Mey (2004) and Mey & Barker (2014) suggested that *Debeauxoecus* should be included in the *Brueelia*-complex, but neither study provided a justification for this taxonomic affiliation. The two species of *Debeauxoecus* we have examined (including the type species) appear to be more closely related to the *Penenirmus*-complex than to the *Brueelia*-complex. Unlike members of the *Brueelia*-complex, both *Debeauxoecus* spp. have setae on the anterior end of tergopleurite II, terminal male genital openings, *ads* situated on anterior margin of preantennal suture, and metepisterna that do not extend medianly.

Mey & Barker (2014) included *Furnariphilus* in the *Brueelia*-complex. However, Valim & Palma (2015) excluded this genus, and we agree with this decision.

The phylogeny of Bush *et al*. (2016) suggested a close relationship between the *Brueelia*-complex and a number of chewing louse genera from parrots and South American passerines. These include *Neopsittaconirmus*, *Formicaphagus, Formicaricola, Psittaconirmus, Theresiella, Forficuloecus*, *Psittoecus*, and *Nyctibicola*. Valim & Palma (2015) included *Paragoniocotes* in the *Brueelia*-complex, despite the fact that members of this genus have medianly complete tergopleural plates and setae on the anterior end of tergopleurite II. Clay & Tandan (1967), Mey & Barker (2014), and Valim & Palma (2015) also included *Formicaricola* and *Formicaphagus* in the *Brueelia*-complex, although members of these genera have setae on the anterior margin of tergopleurite II. Only single specimens of each of these genera were included in the molecular study (Bush *et al*. 2016), so conclusions about how these genera are related to the *Brueelia*-complex based on molecular data would be premature. We do not include these genera as part of the *Brueelia*-complex, and they are not treated here.

Pseudocophorus was not included in the phylogeny of Bush *et al*. (2016), and its relationships to the *Brueelia*-complex remain unclear. We did not examine any material from this genus, however the male genitalia of *Pseudocophorus* are similar of those of *Buerelius,* and other characters are similar to many other members of the *Brueelia*-complex, such as only *mts3* being macrosetae, no anterior setae on tergopleurite II, no trabecula, and median extent of metepisternum. There are, however, some striking differences, e.g. *Pseudocophorus* have several posterior setae of the pronotum. We consider the position of *Pseudocophorus* unresolved, and do not include it in the *Brueelia*-complex at this time.

Valim & Cicchino (2015b) placed their new genus *Bobdalgleishia* within the *Brueelia*-complex. *Bobdalgleishia* is superficially similar to *Motmotnirmus*, in that both genera lack sternal plates, have *mts2* as macrosetae, and have structurally similar male genitalia. However, in *Bobdalgleishia mts1* are macrosetae, *s5* is present, *avs3* is located far anterior, near *vsms2*, there are setae on the anterior margin of tergopleurite II, males have anterior setae on the ventral surface of abdominal segments II, both sexes have *sts* on abdominal segment VII, and males have *sts* on abdominal segment VIII. These characters are not found in the *Brueelia*-complex as circumscribed here, but are found in *Emersoniella* Tendeiro, 1965 (see Gustafsson & Bush 2014). We do not consider *Bobdalgleishia* to be close to the *Brueelia*-complex, and it is not treated further here.

Criteria for the proposed classification

We here present a revised classification of the *Brueelia*-complex based on morphological characters. Our decisions are based heavily on morphological characters that were found to be phylogenetically informative in the molecular phylogenies of Bush *et al*. (2016). Most of the genera proposed here were included in these phylogenetic reconstructions, and found to be monophyletic. However, many of the genera treated here have not yet been included in any phylogenetic reconstruction based on genetic characters. The genus *Traihoriella* forms a special case, for which see this genus entry. Our intent is to provide a taxonomic framework for this large complex that will facilitate future work. In doing so, we have divided the *Brueelia*-complex into genera, subgenera, and species groups based on morphological characters.

We consider all species that do not differ significantly from the type species of a proposed genus as congenerics. Higher taxonomic levels are determined based on the relative difference in morphology between the group and the most similar type species of a proposed genus. These divisions are inevitably somewhat subjective. We studied a large number of character sets for all species, and use a combination of these character sets to classify species in the *Brueelia*-complex. We have generally considered male and female genital characters (including chaetotaxy) to be very important, the structure of the preantennal head, chaetotaxy of the head, legs, and abdomen to be of medium importance, and absence or presence of sexual dimorphism in the antennae, shape and chaetotaxy of the thoracic segments, structure of the postantennal area, and structure of the abdominal segments and their plates to be less important.

All of these character sets show variation among the genera we recognise here, however not all genera differ from each other in all character sets. For instance, *Olivinirmus* Złotorzycka, 1964a, and *Brueelia* s. str. Kéler, 1936a, have identical preantennal structures. Nevertheless, these genera differ significantly in the structure and chaetotaxy of the male genitalia and the abdominal chaetotaxy. In addition, some of these character sets may be variable within a genus. This variability is not evenly distributed across the *Brueelia*-complex, and some characters sets may be constant in one genus but variable in another. For instance, presence or absence of distinct sets of abdominal setae (Cicchino & Castro 1986) is constant within *Maculinirmus* Złotorzycka, 1964a, but variable within *Brueelia* s. str. (Table 3).

We have designated species groups within some of the genera of the *Brueelia*-complex. Species-groups are designated when species within a genus are united by overall morphological characters, but exhibit differences in the structure of the male genitalia (e.g. *Olivinirmus*, Figs 334–338). In two genera (*Priceiella* **n. gen.** and *Indoceoplanetes* **n. gen.**) we designate subgenera. These designations reflect morphologically very distinct groups that exhibit differences in male genitalia as well as differences in other character sets that we use to delimit genera. We have chosen to treat these as subgenera rather than different genera as all of the members within both *Priceiella* and *Indoceoplanetes* exhibit striking morphological characters that are shared among the different subgenera, and are distinct from other members of the *Brueelia*-complex.

Systematics

PHTHIRAPTERA Haeckel, 1896

Ischnocera Kellogg, 1896

Philopteridae Burmeister, 1838

The *Brueelia*-complex

Ansari (1956a) stated that *Brueelia* Kéler, 1936a, was a group unified primarily by abdominal characters. He considered the morphological characters of the head, male genitalia, and abdominal chaetotaxy to be “minor” or “insignificant” for dividing the genus into smaller groups. However, the phylogeny of Bush *et al.* (2016) shows that many characters previously treated as “minor” or “superficial” actually contain phylogenetic signal. Indeed, genital and preantennal characters, as well as the chaetotaxy of the abdomen, head, and legs appear to be shared derived characters that accurately delimit monophyletic clades of lice presently placed in the genus *Brueelia*. For *Brueelia* s. str., the most comprehensive morphological characterization is that of Mey & Barker (2014), who listed 22 different morphological and ecological characters. Their concept of *Brueelia* s. str. also includes species that here we place either in *Olivinirmus* Złotorzycka, 1964 or in *Guimaraesiella* Eichler, 1949. Thus, their characters are most appropriate for delimiting the core genera within the *Brueelia*-complex.

Part of the difficulty in clearly and unambiguously circumscribing either the *Brueelia*-complex or *Brueelia* s.

str. lies in the large number of species in these groups, and in the great morphological variation between and within some groups. Clay & Tandan (1967) made the first attempt to characterise the *Brueelia*-complex as a whole. They used seven characters that are found in all known members of this complex, and they listed additional characters that are found in most of the genera they included in the *Brueelia*-complex. Here we outline the unique characters that keep the *Brueelia*-complex together, as well as some of the large variation in morphology within this complex.

Diagnosis. The *Brueelia*-complex can be identified by the combined presence of the following 17 morphological characters: 1) ventral carina interrupted medially and continuing anteriorly towards the frons forming a clypeo-labral suture; 2) *avs3* situated near bend of ventral carinae, more or less median to *avs2,* and not more anteriorly near *vsms2*; 3) trabecula absent; 4) *s5–7* absent; 5) pronotum with 1 seta on each side; 6) prosternal plate absent; 7) metepisternum fully sclerotized laterally; 8) pleurites, if present, fused to tergites; 9) first apparent tergopleural plate (II) without setae on anterior margin; 10) no *sts* on anterior end of abdominal segment II; 11) no *sts* on male subgenital plate (abdominal segments VII–XI) (but sternal plate VII has setae if male subgenital plate is divided into sternal plate VII + subgenital plate as in e.g. *Turdinirmoides* **n. gen.**, Fig. 128); 11) no *sts* on female abdominal segments VII–XI, except when sternal plate VII is not modified into subgenital plate (as in *Mirandofures kamena* **n. sp.**, Fig. 97); 12) male tergopleurite IX+X separated from XI by definite suture; 13) male anogenital opening and anal setae dorsal; 14) subvulval plates absent; 15) female subgenital plate present at least as sternal plate VII; 16) endomeres, hypomere, and telomeres fused entirely into mesosomal complex; 17) parameres separate from basal apodeme, but may be fused to mesosome (as in *Couala* **n. gen.**, Figs 512, 522).

The following characters are found in most genera within the *Brueelia*-complex: 18) if dorsal preantennal suture is present, *ads* is located in or posterior to suture (except in *Meropoecus* Eichler, 1940: Figs 494, 499); 19) *mts3* only temporal macroseta [except in *Titanomessor* **n. gen.**, Fig. 212; *Harpactrox* **n. gen.**, Fig. 248; *Rostrinirmus ruficeps* (Nitzsch [in Giebel], 1866), Fig. 439; *Motmotnirmus* Mey & Barker, 2014, Fig. 504]; 20) medianly divided tergopleural plates II–IX+X in male and II–VIII in females (except some *Hecatrishula* **n. gen.**); 21) abdominal sternites III–VI in form of central plates (but may be absent in at least some segments as in some *Sturnidoecus* Eichler, 1944, Figs 377–378; *Manucodicola* **n. gen.**, Figs 451–452, 457–458; *Motmotnirmus*, Figs 502–503); 22) female subgenital plate reaches to vulval margin (except in e.g. *Osculonirmus*, Fig. 129; some *Mirandofures* **n. gen.**, Fig. 97; *Turdinirmoides*, Fig. 181); 23) lateral setae posterior to vulval margin on raised area of sternal plate (except in *Buerelius* Clay & Tandan, 1967, Fig. 510); 24) vss thorn-like (except in *Buerelius*, Fig. 511).

The phylogeny of Bush *et al.* (2016) showed that the closest relatives of the *Brueelia*-complex are a grade of genera primarily occurring on parrots and South American passerines. This group includes *Neopsittaconirmus*, *Formicaphagus*, *Formicaricola*, *Paragoniocotes*, *Psittaconirmus*, *Theresiella*, *Forficuloecus*, *Psittoecus* and *Nyctibicola*. These genera share the following characters with the *Brueelia*-complex: ventral carina interrupted medially and continuing anteriorly towards the frons forming a clypeo-labral suture; pronotum with 1 seta on each side; meso- and metanotum fused to form pterothorax; male anogenital opening and anal setae dorsal; trabecula absent; if dorsal preantennal suture is present, *ads* is located in or posterior to suture; prosternal plate absent; endomeres, hypomere, and telomeres fused entirely into mesosomal complex; parameres separate from basal apodeme; *avs3* not situated near *vsms2*; pleurites, if present, fused to tergites; *mts2* only macroseta. However, members of all these genera can be separated from members of the *Brueelia*-complex by the presence of setae on the anterior margin of tergopleurite II; these setae are absent in the *Brueelia*-complex. The sclerotization of the metepisternum is always continuous from the lateral margin of the pterothorax to near the metasternum in the *Brueelia*-complex, but the extent of sclerotization varies among genera in this sister grade. In all these genera except *Nyctibicola* and *Forficuloecus* the tergopleurites are complete medianly, whereas in all *Brueelia*-complex lice except some *Hecatrishula* **n. gen.** tergopleurites II–IX+X in males and II–VIII in females are interrupted medianly. Sensilla *s5–7* are absent in all *Brueelia*-complex genera, but present in some of these closely related genera. For these reasons, we do not presently consider any of these closely related louse genera to be members of the *Brueelia*-complex. However, future studies of this grade may suggest that a more natural circumscription of the *Brueelia*-complex must contain these taxa.

Members of the *Brueelia*-complex share some characters with members of the *Philopterus*-complex, which often occur on the same hosts. Like the *Philopterus*-complex (Mey 2004; Philopterinae, *sensu* Eichler 1963), the genera of the *Brueelia*-complex have a medianly interrupted ventral carina that extends anteriorly, and medianly divided tergopleurites II–IX+X in male and II–VIII in females (except some *Hecatrishula*). However, the two complexes can be separated by the following characters: trabecula are present in the *Philopterus*-complex but are absent in the *Brueelia*-complex; metepisterna do not extend medianly in the *Philopterus*-complex, but do extend medianly to near the metasternum in the *Brueelia*-complex; prosternal plate is present in the *Philopterus*-complex but absent in the *Brueelia*-complex; subvulval plates present in *Philopterus*-complex but absent in *Brueelia*-complex; parameres fused to basal apodeme in *Philopterus*-complex, but separate from basal apodeme in *Brueelia*-complex.

The following characters also separate most of the species in the two complexes: *os* macrosetae in *Philopterus*-complex (except *Cincloecus* Eichler, 1951a), but microseta in the *Brueelia*-complex (except *Rostrinirmus ruficeps*, Fig. 450); *pos* macro- or mesoseta in several *Philopterus*-complex genera, but microsetae or absent in *Brueelia*-complex; *ads* is located on dorsal anterior plate in *Philopterus*-complex, but in or posterior to dorsal anterior suture (if present) in *Brueelia*-complex (except *Meropoecus*); *mts1* macroseta and *mts2* often macroseta in *Philopterus*-complex, but both are microsetae in *Brueelia*-complex (except *Motmotnirmus*, Fig. 504).

Mey & Barker (2014) included the *Penenirmus*-complex (*Penenirmus* Clay & Meinertzhagen, 1938, and *Picophilopterus* Ansari, 1947) within the *Brueelia*-complex. These two complexes are similar in that both lack trabecula and both have a medianly interrupted, anteriorly bent ventral carina. In addition, the metepisternum extends medianly to near the metasternum in both complexes. However, there are distinct differences. In the *Penenirmus*-complex, the parameres are fused to the basal apodeme and the anogenital opening is ventral/terminal; in the *Brueelia*-complex the parameres are articulated with the basal apodeme (but may be fused to the mesosome as in *Couala*), and the anogenital opening is dorsal. Males have setae on the subgenital plate and both sexes have setae on the anterior margin of tergopleurite II in the *Penenirmus*-complex, but not in the *Brueelia*-complex.

Other characters, with few exceptions, delimit the members of the *Penenirmus*- and *Brueelia*-complexes: tergopleurites II–VII are fused medianly in the *Penenirmus*-complex (except *Pe. zeylanicus* Dalgleish 1967), but not in the *Brueelia*-complex [except *Hecatrishula docilis* **n. comb.** (Ansari 1956b)]. Setae *mts1* and sometimes *os* are macrosetae in the *Penenirmus*-complex, but these are microsetae in the *Brueelia*-complex [except in *Ro. ruficeps* (Nitzsch [in Giebel], 1866), Fig. 439].

Description. Apart from the characters listed above, no other morphological characteristics have been identified that are shared among all lice in this complex. The genera of the *Brueelia*-complex even vary enormously in gross morphology. For example, all four feather louse “ecomorphs” (Johnson *et al.* 2012) known to occur on birds are found within the *Brueelia*-complex: “head lice”, “wing lice”, “body lice”, and “generalists”. Each of these ecomorphs vary in morphological traits that are associated with the different microhabitats of the body where they are most commonly found. Head lice have large, triangular heads, round bodies, and usually a widely interrupted marginal carina and derivate preantennal area (e.g. *Schizosairhynchus* **n. gen.**, Figs 463–464; *Sturnidoecus* Eichler, 1944, Figs 377–378). Wing lice have long, slender bodies and smaller, triangular or trapezoidal, heads (e.g. *Acronirmus* Eichler, 1953, Figs 83–84; *Aratricerca* **n. gen.**, Figs 168–169). Body lice have broadly rounded heads and rounded bodies (e.g. *Saepocephalum* **n. gen.**, Figs 238–239; *Couala* **n. gen.**, Figs 512–513). Generalists have intermediate body forms and are commonly found roaming all over the body of the host (e.g. *Mirandofures* **n. gen.**, Figs 90–91). These ecomorphs are convergent forms that have evolved repeatedly within the *Brueelia*-complex (Bush *et al.* 2016).

Coloration. Coloration within the *Brueelia*-complex varies from very light and almost translucent to heavily sclerotized and very dark. Extreme colour variation even occurs within some genera (e.g. *Brueelia* Kéler, 1936a). Not all lice in the complex are uniformly pigmented, and in some species pigmentation is restricted to parts of the head, thoracic, and abdominal plates, which gives the lice a striated or otherwise distinct appearance (e.g. *Corvonirmus* Eichler, 1944, *Hecatrishula* **n. gen.**, some *Brueelia* s. str.). Louse colour is not necessarily phylogenetically informative. Bush *et al.* (2010) showed that colour variation among congeneric lice was associated with the colour of the host. Lice that are similar in colour to the hosts’ feathers are cryptic, and are less likely to be removed when the bird preens, which is a bird’s principal defense against ectoparasitic lice (Bush *et al.* 2010). The potential for repeated evolution of cryptic evolution among congeneric lice suggests that the use of pigmentation patterns for generic delimitation (as in Złotorzycka 1964a) may be misleading and should be used cautiously. colour may be informative at the species level, but if pigmentation patterns are used, this should be done cautiously and in combination with other characters, until more is known about colour variation within and between species of lice.

Head. Head shape variable among genera within the complex (Figs 1–9), as well as within some genera (e.g. *Brueelia* s. str. and *Guimaraesiella* Eichler, 1949).

Marginal carina—variable (Figs 10–18). Marginal carina may be uninterrupted (Figs 10–11), interrupted submedianly (Figs 12–13), laterally (Figs 14– 15), or both (Fig. 16). Laterally interrupted marginal carinae may be divided into pre- and postmarginal carinae (*sensu* Clay 1951, Fig. 85), or premarginal carina may be absent (Figs 17–18). The section of the marginal carina between the submedian interruptions may be present (Fig. 13) or absent (Fig. 16). Median section of the marginal carina often displaced posteriorly and dorsally at osculum, in which case frons is hyaline (Figs 11, 15). In some genera marginal carina is not displaced, and there is no hyaline margin (Fig. 10). Displaced section of marginal carina may be present only as a discrete lateral thickening of the dorsal anterior plate (e.g. *Aratricerca*, Fig. 170) or as a medianly continuous sinuous thickening of the dorsal anterior plate (e.g. *Resartor* **n. gen.**, Fig. 163). Displaced section of marginal carina may extend posteriorly into a distinct *marginal carinal plate* (e.g. *Mirandofures kamena* **n. sp.**, MCP in Fig. 92).

Hyaline margin—Hyaline margin generally confined to median section (Fig. 11), but may extend along lateral sides of head (Fig. 18). In *Schizosairhynchus* hyaline margin forms fleshy lobes on antero-lateral ends of head (Figs 465, 472).

Dorsal preantennal sutures—may arise from either submedian or lateral interruptions of marginal carina, or both. Extent of dorsal preantennal sutures variable, even within genera (e.g. *Guimaraesiella*, Figs 361–364). Sutures range from minute dots near base of *dsms* (some *Priceiella* **n. gen.**, Fig. 287) to transversally and longitudinally continuous bands delimiting dorsal anterior plate (e.g. *Sturnidoecus*, Fig. 379). In *Priceiella* (*Thescelovora*) **n. gen et n. subgen.** (Fig. 302) sutures are longitudinal and may reach both *dsms* and *ads*, but sutures do not connect medianly and do not reach margins of head. In *Titanomessor* **n. gen.** (Fig. 212) and *Harpactrox* **n. gen.** (Figs 248, 255, 260) dorsal preantennal suture is transversal but does not reach the margins of the head. In *Mirandofures* (Fig. 92) dorsal preantennal suture is transversally continuous but does not connect to the hyaline margin. Several genera (e.g. *Corvonirmus*, Fig. 321) lack dorsal preantennal sutures entirely.

Dorsal anterior plate—present or absent, variable between and within genera. Plate, when present, may be completely separated from main head plate as in *Sturnidoecus* (Fig. 379), but is often continuous with main head plate at least posteriorly as in many *Guimaraesiella* (Fig. 356). In *Priceiella* (*Thescelovora*) (Fig. 302) doral anterior plate is continuous with main head plate both antero-laterally and posteriorly. In some genera (*Titanomessor*, Fig. 212; *Harpactrox*, Fig. 248) dorsal anterior plate is separated posteriorly but continuous antero-laterally. Posterior margin of dorsal anterior plate may be extended into spur overlapping with main head plate as in *Schizosairhynchus* **n. gen.** (Fig. 465).

Ventral carina and clypeo-labral suture—ventral carina interrupted medianly, bending anteriorly towards frons, thereby forming clypeo-labral suture medianly (Fig. 20). Clypeo-labral suture reaches anterior margin of head in all genera except *Anarchonirmus* **n. gen.** (Fig. 116)*, Harpactrox* (Fig. 248), and *Saepocephalum* (Fig. 240). Ventral carinae displaced medianly at *avs3* (Fig. 20); may have median finger-like extension on each side near anterior end of pulvinus (e.g. *Brueelia pseudognatha* **n. sp.**, Fig. 65; *Resartor*, Fig. 163). In *Harpactrox loeiensis* **n. sp.** (Fig. 248) lateral margins of clypeo-labral suture are not clearly delimited anterior to pulvinus.

Ventral anterior plate—present or absent. When present generally crescent- or square-shaped. In groups where clypeo-labral suture does not reach anterior margin of head, ventral anterior plate not laterally separated from main head plate (e.g. *Harpactrox*, Fig. 255).

Coni—small (Figs 10–11) to large (Fig. 18).

Preantennal nodi—variable between species and genera. Preantennal nodi typically rounded, not extending median to the antennal socket, with defined lateral margin (e.g. *Manucodicola* **n. gen.**, Fig. 453). In many *Brueelia* s. str. (e.g. *Br. pseudognatha*, Fig. 65) lateral margin diffuse or absent. Preantennal nodi prominent in some genera (e.g. *Traihoriella* Ansari, 1947, Fig. 265), and extend almost to base of mandibles in some species of *Couala* (Fig. 520). Small accessory nodi median to preantennal nodi present in *Harpactrox* (Fig. 248).

Pre- and postocular nodi—variable between and within genera. Preocular nodi slightly to considerably larger than postocular nodi. Ocular nodi almost entirely enclose the eye in *Nemuus* **n. gen.** (Fig. 340); nodi almost entirely absent in *Acronirmus* (Fig. 85).

Dorsal postantennal suture—present only in *Meropoecus* Eichler, 1940 (Figs 494, 499), where it is medianly continuous but often diffuse.

Antennae—monomorphic in most genera. Sexually dimorphic antennae do, however, occur sporadically throughout the *Brueelia*-complex, and may differ even within genera. Among species with dimorphic antennae the male scapes and sometimes the male pedicels larger than those of females (e.g. *Anarchonirmus,* Figs 116–117; *Ceratocista* **n. gen.**, Figs 155–156). Flagellomeres generally constant in length and width between sexes even in genera where scapes and pedicel are dimorphic. In *Melibrueelia* Valim & Palma, 2015, and *Ceratocista* (Fig. 155) flagellomeres of male are wider than those of females. Male flagellomeres are large and bulbous in *Anarchonirmus* (Fig. 116) and flagellomere II is extended distally along posterior margin in male *Osculonirmus* Mey, 1982a (Fig. 124).

Head chaetotaxy. Setae of the head generally as in Fig. 19. In many genera, all setae named by Clay (1951) are present, but presence or absence of specific head setae are important in genus delimitations.

Position of *dsms* and *ads* more or less constant throughout *Brueelia*-complex. In species with dorsal preantennal suture, *dsms* may be situated in (e.g. *Guimaraesiella*, Fig. 356), anterior to (e.g. *Titanomessor*, Fig. 212), or lateral to (e.g. *Turdinirmoides australissimus* **n. sp.**, Fig. 191) suture, but never median to suture; *ads* is situated in (e.g. *Osculonirmus*, Fig. 124) or posterior to suture (e.g. *Brueelia phasmasoma* **n. sp.**, Fig, 58), but never anterior to suture or on anterior margin or suture. Position of *pas* more or less constant throughout complex, as in Fig. 19. Presence or absence and length of *pns, pts* and *s1–4* diagnostic for some genera; *s5–7* absent in all genera of the *Brueelia*-complex. In most genera *pns, pts*, and *s1–4* are present, but *pns* is absent in e.g. *Ceratocista* (Fig. 155) and both *pns* and *s4* are absent in *Brueelia* s. str. (Fig. 44). In *Ro. ruficeps* (Nitzsch [in Giebel], 1866) *os* is macroseta (Fig. 439), but this is not the case in other species of this genus [e.g. *Ro. buresi* (Balát, 1958), Fig. 444], and not the case for any other genus treated here. Position of *pos* variable, either on eye or posterior to eye. In the genera *Acronirmus* (Fig. 85), *Ceratocista* (Fig. 155), *Resartor* (Fig. 163), *Aratricerca* (Fig. 170), and *Turdinirmoides* **n. gen.** (Fig. 177) *pos* absent. All five *mts* are present in all genera of the *Brueelia*-complex except *Acronirmus* (Fig. 85), in which *mts1* is absent. The only temporal macrosetae for most genera in complex is *mts3*. In *Couala* (Fig. 514) *mts2* is ventral, thick, and may be curved (Fig. 520). In *Motmotnirmus* Mey & Barker, 2014 (Fig. 514) *mts2* is macroseta. In *Harpactrox* (Fig. 249) all *mts* are microsetae. In *Titanomessor* (Fig. 212) *mts3–5* are of roughly equal length in males, and *mts3–4* are of roughly equal length in females. If present, *as1–3* marginal or submarginal. In many genera (e.g. *Brueelia* s. str., Fig. 19) *as3* absent; *as2–3* absent in *Acronirmus* (Fig. 85). In species with laterally interrupted marginal carina, *as3* is situated either anterior to suture (e.g. *Mirandofures*, Fig. 92) or posterior to suture (e.g. *Sturnidoecus*, Fig. 379). Location of *vsms2* variable, typically on lateral margins of clypeo-labral suture (Fig. 19), but may be inside clypeo-labral suture [e.g. *Br. brachythorax* (Giebel, 1874), Fig. 44]; *vsms1* typically lateral or slightly posterior to *vsms2*. In all *Brueelia*-complex genera, *avs3* is situated near median interruption of ventral carina, clearly separated from *vsms2*; *avs1–2* typically close together, near anterior margin of preantennal nodi. In most genera *avs1* is submarginal (Fig. 20), but may be marginal (Fig. 19). Position of *pcs* and *mds* more or less constant throughout complex, as in Fig. 19.

Thorax. Thoracic segments largely similar throughout subfamily.

Prothorax—usually rectangular, broader than long. Proepisternum slender to broad; pleural ridges prominent in some genera (e.g. *Resartor*, Figs 161–162). Prosternal plate absent. Proepimera generally slender, oblique. Median section of proepimera generally widened anteriorly and posteriorly; posterior extension may be long and curl around coxa II (e.g. *Anarchonirmus*, Fig. 114). One pronotal post-spiracular seta (*ppss*) present on each side on postero-lateral corner of pronotum (Fig. 26) or rarely on posterior margin of pronotum (*Schizosairhynchus*, Figs 463–464); absent in *Meropsiella* Conci, 1941b (Figs 479–480).

Pterothorax—typically short and wide, roughly pentagonal in shape (see e.g. *Brueelia* s. str., Figs 42–43); hexagonal in *Aratricerca* (Figs 168–169). Meso- and metasternal plates may or may not be fused. Pteronotum not medianly divided, except partially in posterior end in *Schizosairhynchus* (Figs 463–464). Metepisternum continuous from metasternum to lateral margin of pterothorax. Metepimeron much thickened in some genera (e.g. *Indoceoplanetes* **n. gen.**, Figs 217–218). Postero-lateral corner of pterothorax with 1 thorn-like (here *pths*) and 1 trichoid seta (here *ptrs*), typically on ventral side; *ptrs* absent in *Osculonirmus* (Figs 122–123). Marginal mesometanotal setae (*mms*) variable, typically forming sparse rows along outer third of pterothorax on each side (e.g. *Titanomessor*, Figs 210–211). In some genera *mms* clustered near poster-lateral corners (e.g. *Aratricerca*, Figs 168–169), in other genera *mms* form continuous row along posterior margin (e.g. *Sturnidoecus*, Figs 377–378). Numbers of setae on pteronotum vary among genera and species.

Leg chaetotaxy—illustrated for coxae, trochanters, and femora in Fig. 25; *cI-d1, cI-a1–4, cI-v3, tI-v2, fI-p2–3,* *cII-d1, tII-a1, tII-d1, cIII-d1, tIII-a1, tIII-d1* are typically very small and inconspicuous, especially if specimens are small, darkly pigmented, or poorly mounted. Leg setae are generally constant throughout a given genus, and are often informative for delimitations of genera and higher levels. However, some groups show slight differences in leg chaetotaxy between species groups.

Abdomen. Abdominal shape varies from slender (e.g. *Acronirmus*, Figs 83–84) to rotund (e.g. *Schizosairhynchus*, Figs 463–464). Typically, males shorter and broader than females.

Tergopleurites—tergites and pleurites are fused into tergopleurites. Male tergopleurites II–IX+X divided medianly (Fig. 26a) except for male segment IX+X in some *Hecatrishula*; in other *Hecatrishula* all tergopleurites connected medianly by narrow bridge (not illustrated). Female tergopleurites II–VIII divided medianly, tergopleurite IX+X transversally continuous (Fig. 26b), except in *Aratricerca* (Fig. 169). Rarely, female tergopleurite IX+X fused with tergopleurite XI [e.g. *Resartor*, Fig. 162; *Indoceoplanetes* (*Capnodella*) **n. gen.** & **n. subgen.**, Fig. 225; *Melibrueelia*]. Some genera (e.g. *Priceiella*, Figs 285–286) with conspicuous ridges anterior to spiracle openings (here *pre-spiracular ridges,* PSR in Fig. 285). In some genera tergopleurites do not reach lateral margins of abdomen (e.g. *Anarchonirmus,* Figs 114–115). Typically tergopleurites extend to ventral side of abdomen, but this is not the case in e.g. some *Corvonirmus* (Figs 319–320). Pleural incrassations generally present at least in anterior segments, but often absent on segments VII–IX+X. Pleural incrassations absent in some genera (e.g. most *Corvonirmus,* Figs 319–320). Pleurites II with median anterior extensions in some genera (e.g. *Meropsiella*, Figs 479–480). Re-entrant heads of pleurites present or absent.

Sternal plates—if present medianly continuous, typically rectangular, and not approaching ventral section of tergopleurites. Sternal plates absent in anterior segments of *Manucodicola* (Figs 451–452) and all segments of some *Sturnidoecus* (Figs 377–378) and *Motmotnirmus* (Figs 502–503). Females with no sternal plates posterior to vulval margin. Lateral margins may be concave (*Anarchonirmus*, Figs 114–115). In some genera sternal plates are crescent-shaped (e.g. some *Sturnidoecus*, Figs 420–421). Sternal plate II of *Schizosairhynchus* (Figs 463–464) modified into transversal band. Accessory sternal plates may be present lateral to medial sternal plates or subgenital plate and pleurites in males [e.g. *Brueelia audax* (Kellogg, 1896), Fig. 71], females (*Meropoecus*, Fig. 493), or both sexes (*Schizosairhynchus*, Figs 463–464). In some *Priceiella* (Fig. 277), accessory sternal plates are present lateral to male subgenital plate. In *Aratricerca* (Figs 168–169) at least sternal plate II with thickened lateral and anterior margins.

Male subgenital plate—typically from segment VII to posterior margin of abdomen; does not reach posterior margin in, e.g. *Meropoecus* (Fig. 492); divided into sternal plate VII and vaguely delimited subgenital plate in *Aratricerca* (Fig. 168) and *Turdinirmoides* (Fig. 175). Male subgenital plate may continue around terminal end of the abdomen, forming small dorsal plate (e.g. *Hecatrishula*, Fig. 138). Male genital opening is dorsal, on segment IX+X, usually with three anal setae on each side.

Female subgenital plate—variable, typically covering segments VII–VIII. Figures 27–41 introduces the terminology used for the shape of the female subgenital plate within the *Brueelia*-complex. If at least the median section of the distal margin of the subgenital plate is continuous with the vulval margin, the subgenital plate is said to *reach* the vulval margin (Figs 29, 35–38). If no section of the distal margin of the subgenital plate is continuous with the vulval margin, but at least the median section is close to the vulval margin (typically reaching to near the *vss*, e.g. *Guimaraesiella*, Fig. 360), the submarginal plate is said to *approach* the vulval margin (Figs 30, 33). In some genera (e.g. *Osculonirmus*, Fig. 89) the subgenital plate does not approach the *vss* (Figs 27, 29, 31, 40). The distal end of the subgenital plate may be unmodified (Figs 27–30), but in many genera the distal end is widened laterally and follows the vulval margin. Ansari (1956a) referred to this structure as a "cross-piece". The term "cross-piece" is here limited to those cases where the widened section of the distal subgenital plate is continuous with the vulval margin (Figs 35–40). The cross-piece may be *partial* (Fig. 35) in which case it does not reach the lateral ends of the vulval margin, but in most species with a cross-piece, this structure reaches the lateral ends of the vulval margin, in which case it is said to be *complete*. The cross-piece may be narrow (Fig. 36) or broad (37). In *Anarchonirmus* (Fig. 83) the cross-piece is *medianly displaced* (Fig. 38), as the median section of the cross-piece is not continuous with the vulval margin. If the lateral widenings of the subgenital plate are not marginal, these are referred to as *lateral submarginal extensions* (Figs 32–34). Lateral extensions may be present as small *bulges* (Fig. 32) that are limited to the median section, or reach the lateral margins of the vulval margin (Figs 33–34), and may be narrow (Fig. 33) or broad (Fig. 34). In *Saepocephalum* (Fig. 181) the sclerotized sections of the vulval margin are separated from the subgenital plate submedianly, and are referred to as *lateral marginal plates* (Fig. 39). In

Turdinirmoides (Fig. 181) and *Sychraella* (Fig. 113) the vulval margin is scleritozed but the subgenital plate does not reach the sclerotized section, which is referred to as a *detached cross-piece* (Fig. 40). In *Sychraella* (Fig. 41) the subgenital plate is detached from the sclerotized median section of the vulval margin, which is connected to lateral extensions that reach the lateral ends of the vulval margins; this structure is here termed a *laterally submarginal cross-piece*.

Abdominal chaetotaxy—variable among genera (Table 2) and within some genera (Tables 3–12). Some setal characters are more or less constant throughout complex. No setae in anterior end of tergopleurite II. Typically no setae on subgenital plates of either sex, except oblique set of short setae in females (Fig. 26b). Trichoid seta of tergopleurite VIII often located submarginally in grove on tergopleurite. Presence or absence of groups of setae are very useful characters for delimiting genera as discussed below (see also Tables 3–12). The post-spiracular sensillus (Clay 1954; here *pss*) is often visible only in segments IV–V, but can be seen in more anterior segments in some genera (e.g. *Anarchonirmus*, Figs 114–115; *Osculonirmus*, Figs 122–123) where it is associated with *psps* in these segments. In *Brueelia* s. str. (Figs 42–43), *Acronirmus* (Figs 83–84), and some other genera, *pss* is present also on segments VI–VII, but this is generally not the case in the *Brueelia*-complex. The *pss* is lateral to and typically contiguous with the aperture of the *psps*, but this is not the case in e.g. *Anarchonirmus* (Figs 114–115) or *Corvonirmus* (Figs 319–320) where the *pss* does not touch the aperture of the *psps*. The *pss* may not differentiate genera within the *Brueelia*-complex, but may be useful in differentiating higher taxonomic levels.

TABLE 2. Summary of abdominal chaetotaxy of segments II–VIII for the *Brueelia*-complex, including both genera and subgenera. In genera where chaetotaxy differs between species group (marked with *), only that of the type species is given here, and more detailed accounts are given separately under the respective genus entries and in Tables 3–12. Trichoid setae of segment VIII are present in all genera, and are not listed. Abbreviations: *ps* = paratergal seta; *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *tps* = tergal posterior seta; *ss* = sutural seta; *sts* = sternal seta.

Genus	Sex	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
*Brueelia**	M	III–VIII	V–VII	VI–VIII	–	V–VIII	II–VI
	F	IV–VIII	–	VI–VII	–	–	II–VI
Teinomordeus	M	III–VIII	III–VII	V–VIII	V–VIII	III–VIII	II–VI
	F	II–VIII	–	V–VII	–	VIII	II–VI
Acronirmus	M	III–VIII	VI–VIII	VII–VIII	VII–VIII	V–VIII	II–VI
	F	III–VIII	–	VII–VIII	–	VII–VIII	II–VI
*Mirandofures**	M	IV–VIII	–	–	IV–VIII	V–VIII	II–VI
	F	III–VIII	–	–	–	–	II–VI
Sychraella	M	III–VIII	IV–V	VI–VIII	IV–VIII	IV–VIII	II–VI
	F	III–VIII	–	–	–	–	II–VI
Anarchonirmus	M	IV–VIII	II–V	II–VI	II–VIII	II–VIII	II–VI
	F	IV–VIII	–	II–VI	–	II–VIII	II–VI
Osculonirmus	M	III–VIII	–	II–VIII	–	II–VIII	II–VI
	F	III–VIII	–	II–VIII	–	II–VIII	II–VI
Hecatrishula	M	III–VIII	–	III–VII	II–VIII	II–VIII	II–VI
	F	III–VIII	–	III–VII	II–VIII	II–VIII	II–VI
Psammonirmus.	M	IV–VIII	–	IV–VIII	V–VIII	II–VIII	II–VI
	F	IV–VIII	–	V–VIII	V–VIII	–	II–VI
Ceratocista	M	IV–VIII	–	V–VII	VI–VIII	VII–VIII	II–VI
	F	II–VIII	–	V–VIII	–	–	II–VI
*Resartor**	M	IV–VIII	–	IV–VII	VI–VIII	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	–	II–VI

......*continued on the next page*

TABLE 2. (Continued)

Genus	Sex	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
Aratricerca	M	III–VIII	–	IV–VII	–	II–VIII	II–VII
	F	III–VIII	–	V–VII	–	II–VIII	II–VI
*Turdinirmoides**	M	III–VIII	–	IV–VIII	V–VIII	II–VIII	II–VII
	F	III–VIII	–	IV–VIII	–	II–VIII	II–VI
Turdinirmus	M	IV–VIII	–	IV–VII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Maculinirmus	M	IV–VIII	–	IV–VII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Titanomessor	M	IV–VIII	–	IV–VII	VII–VIII	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Indoceoplanetes (Capnodella)	M	IV–VIII	–	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Indoceoplanetes (Indoceoplanetes)	M	IV–VIII	–	IV–VIII	IV–VIII	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Saepocephalum	M	III–VIII	–	III–VII	IV–VII	II–VIII	II–VI
	F	III–VIII	–	IV–VII	–	II–VIII	II–VI
Harpactrox	M	III–VIII	–	IV–VIII	– (VIII)	II–VIII	II–VI
	F	III–VIII	–	IV–VIII	–	II–VIII	II–VI
*Traihoriella**	M	IV–VIII	V–VII	IV–VII	–	V–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	VII–VIII	II–VI
Priceiella (Priceiella)	M	III–VIII	III–VII	IV–VIII	–	II–VIII	II–VI
	F	III–VIII	–	IV–VIII	–	II–VIII	II–VI
Priceiella (Camurnirmus)	M	IV–VIII	IV–VIII	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VIII	–	II–VIII	II–VI
Priceiella (Thescelovora)	M[1]	IV–VIII	–	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Priceiella (Torosinirmus)	M	III–VIII	III–VII	IV–VIII	–	II–VIII	II–VI
	F	III–VIII	–	IV–VII	–	II–VIII	II–VI
Corvonirmus	M	III–VIII	IV–VII	II–VIII	III–VIII	II–VIII	II–VI
	F	III–VIII	–	III–VIII	–	II–VIII	II–VI
*Olivinirmus**	M	IV–VIII	IV–VII	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VII (VIII)	–	II–VIII	II–VI
Nemuus	M	II–VIII	II–VII	II–VII	IV–VIII	II–VIII	II–VI
	F[2]	II–VIII	II–VII	II–VII	VI–VIII	II–VIII	II–VI
Melibrueelia	M	IV–VIII	III–VII	V–VII	VIII	II–VIII	II–VI
	F	IV–VIII	–	V–VII	–	II–VIII	II–VI
*Guimaraesiella**	M	IV–VIII	IV–VII	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VIII	–	II–VIII	II–VI
*Sturnidoecus**	M	IV–VIII	II–VIII	II–VIII	II–VIII	II–VIII	II–VI
	F	IV–VIII	II–VIII	II–VIII	II–VIII	II–VIII	II–VI

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TABLE 2. (Continued)

Genus	Sex	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
Buphagoecus	M	IV–VIII	IV–VII	III–VIII	VIII	II–VIII	II–VI
	F	IV–VIII	–	IV–VIII	–	II–VIII	II–VI
*Rostrinirmus**	M	IV–VIII	II–VII	II–VIII	VII–VIII	II–VIII	II–VI
	F	IV–VIII	II–VII	II–VIII	–	II–VIII	II–VI
Manucodicola	M	IV–VIII	VI–VIII	IV–VIII	VI–VIII	II–VIII	II–VI
	F	IV–VIII	–	IV–VIII	–	II–VIII	II–VI
Schizosairhynchus	M	IV–VIII	IV–VIII	IV–VIII	II–VIII	II–VIII	II–VI
	F	IV–VIII	–	IV–VIII	II–VIII	II–VIII	II–VI
Bizarrifrons	M	IV–VIII	V–VII	IV–VIII	VI–VIII	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Meropsiella	M	IV–VIII	–	IV–VII	VI–VIII	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Meropoecus	M	IV–VIII	–	II–VIII	II–VIII	II–VIII	II–VI
	F	IV–VIII	–	II–VIII	II–VIII	II–VIII	II–VI
Motmotnirmus	M[3]	IV–VIII	–	III–VIII	VII–VIII	II–VIII	II–VI
	F[4]	IV–VIII	–	III–VIII	VIII	II–VIII	II–VI
Buerelius	M	IV–VIII	–	IV–VII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Couala	M	III–VIII	–	VI–VII	VII–VIII	II–VIII	II–VI
	F	III–VIII	–	VI–VII	–	II–VIII	II–VI
Aporisticeras	M	IV–VIII	–	IV–VII	VI–VIII	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI

[1] Males of some undescribed species of *Thescelovora* have *aps* on tergites VI–VII.

[2] *Nemuus hoedhri* **n. sp.** has *tps* also on tergites II–V.

[3] An undescribed species from *Eumomota superciliosa australis* Bangs, 1906, has 1–3 *tps* on tergite VI.

[4] *Motmotnirmus humphreyi* lacks *tps* on tergite VII.

Male genitalia. Male genitalia are variable among genera (Figs 21–24), and within some genera, where they form the basis of delimited species-groups (e.g. *Olivinirmus* Złotorzycka, 1964a, Figs 334–337; *Sturnidoecus,* Figs 384–398). In other genera (*Brueelia* s. str., Fig. 45; *Acronirmus*, Fig. 86) male genitalia are more or less identical in structure throughout genus, and only the shape of the genitalic elements differ between species. Most genera within the *Brueelia*-complex have similar genitalic structures that are described here and illustrated in Figs 21–24. The structures of two genera with aberrant genitalia (*Meropoecus*, Fig. 495; *Aporisticeras* **n. gen.**, Fig. 527–530) are not treated here, instead see relevant genus and species descriptions. All other genera treated here follow a general pattern.

Basal apodeme—present, usually large. Lateral margins may be folded medianly in distal end. Lower endomere absent; however several genera have a ventral sclerite which may be remnant of lower endomere (e.g. *Hecatrishula*, Fig. 135; *Corvinirmus*, Fig. 324; *Schizosairhynchus*, Fig. 467). Male genitalia of *Aporisticeras* (Fig. 538) contain structures that may correspond to the lower endomere. In many genera extrusor muscles well defined as convergent ventral ridges (VR in Figs 22, 24).

Mesosome—the endomeres, hypomere, and telomeres are fused entirely into mesosomal complex; distinct parts cannot be discerned clearly in any genus. To avoid any positive statements of homology we use terms that divide the mesosome into three clearly visible parts: proximal mesosome, mesosomal lobes, and gonopore (see Figs 21–24).

Proximal mesosome—this term refers to the proximal end of the mesosome, which often overlaps with the posterior end of the basal apodeme and/or the parameres. Proximal mesosome may be homologous to antero-dorsal endomere (*sensu* Ewing 1932) but is completely fused to other parts of mesosomal complex and this cannot be established with certainty. Shape typically variable between species in same genus. Ventral ridges distinctly convergent and wing-shaped (e.g. *Rostrinirmus* Złotorzycka, 1964a, Figs 442, 446, 449) or band-shaped (e.g. *Guimaraesiella*, Fig. 357). When present, ventral ridges usually reach or are continuous with gonopore distally and extrusor muscles proximally. Anterior margin of proximal mesosome may be thickened (e.g. *Schizosairhynchus*, Figs 467, 474). In *Couala* (Figs 515, 521) proximal mesosome is fused to basal apodeme.

Gonopore—present in most genera, but highly modified in some *Sturnidoecus* (Figs 384–398). Gonopore may be entirely ventral (Figs 22, 24), or may be located on terminal margin of mesosome (Figs 21, 23). Gonopore typically visible as a circle or semicircle, and is typically open distally (e.g. *Brueelia* s. str., Fig. 46), but may be open proximally as well, present as convergent median ridges (e.g. *Turdinirmoides*, Fig. 178). However, gonopore is usually a ventral dome, in which the ridges or circle are just the outline. Gonopore may be expanded laterally (e.g. *Sychraella* **n. gen.**, Fig. 111). Distally gonopore may extend posterior to mesosomal lobes (e.g. *Hecatrishula atherae*, Fig. 135).

Mesosomal lobes—lateral structures of distal mesosome, variable between and within genera. Lobes may be homologous to endomeres, but fused to rest of mesosomal complex. In many groups the shape of lobes, as well as the shapes of structures (carinae, nodi, ridges) on lobes and the position of setae are one of the best ways to recognise closely related species. In some genera lobes form prominent lateral "wings" that overlap considerably with parameres (e.g. *Hecatrishula*, Fig. 135). Conversely, mesosomal lobes are almost entirely absent in genera like *Guimaraesiella* s. str. (Fig. 358) and *Traihoriella* (Fig. 274). Lateral and posterior margins usually with carina, distal margin may be fringed, scaly, brush-like, or rugose (e.g. *Brueelia* s. str., Fig. 46; *Psammonirmus* **n. gen.**, Fig. 150; *Ceratocista*, Fig. 158). Postero-lateral corner in many genera with distinct rugose nodi (e.g. *Nemuus*, Fig. 351). In *Couala* (Figs 516, 522) mesosomal lobes are partially fused to parameral heads.

Genital chaetotaxy—Up to 6 setae present on each side of mesosome, here tentatively divided into two sets. *Anterior mesosomal setae* (*ames*) are located ventrally, anterior to gonopore. *Posterior mesosomal setae* (*pmes*) are located lateral or posterior to gonopore, and may be on lateral margin of mesosome. In some genera (e.g. *Priceiella,* Fig. 289) both *ames* and *pmes* are anterior to gonopore; in these cases, we interpret the lateral set, which is typically associated with a marginal thickening of the mesosomal lobes, as *ames*, and the more median set, typically associated with the gonopore, as *pmes*. In *Buphagoecus husaini* (Ansari, 1968) **n. comb.** both *ames* and *pmes* are located distal to gonopore (Fig. 432) Other configurations also exist, e.g. *Sturnidoecus* (Figs 384–398). Sensilliform *pmes* and *ames* are typically very hard to see, especially on mesosomes that are partially papillate, rugose, or with multiple ventral folds or thickenings. Lateral *pmes* and *ames* are often easy to overlook in non-everted gentalia. Distal part of paramere with 0–2 setae, here called *parameral setae 1–2* (*pst1–2*, Fig. 21); *pst1* typically sensillus located centrally on paramers; *pst2* sensillus or microseta, located either centrally, laterally, or distally on paramere. *Meropoecus* (Fig. 495) and *Aporisticeras* (Fig. 529) unique within the *Brueelia*-complex in having more then two parameral setae.

Parameral heads—shapes differ among genera. In some genera (e.g. some *Brueelia*, Fig. 61) heads are bluntly rounded with no modifications. In some genera (e.g. *Osculonirmus*, Fig. 128; *Turdinirmus*, Fig. 187) heads are bifid. In *Hecatrishula* (Figs 136, 144) the heads are divided into several anterior points. In *Maculinirmus* (Figs 201, 208) heads are folded laterally into narrow semi-circle. In many genera (e.g. *Corvonirmus,* Fig. 325; *Guimaraesiella*, Fig. 359; *Bizarrifrons* Eichler, 1938*,* Fig. 478) heads extend medianly, and often overlap with the proximal mesosome; these median extensions are often rectangular (e.g. *Bizarrifrons*, Fig. 478), triangular (e.g. *Nemuus*, Fig. 344), or oblique finger-like (e.g. some *Sturnidoecus*, Figs 382, 385), but other shapes occur.

Parameral blades—variable among genera. Four basic shapes common: roughly triangular with lateral margin variable, often elongated distally (e.g. *Brueelia* s. str., Fig. 47); irregularly oval, widening distally (e.g. *Maculinirmus*, Fig. 201); slenderly rounded-rectangular, tapering only in distal end (e.g. many *Sturnidoecus*, Fig. 382); elongatedly triangular (e.g. *Nemuus*, Fig. 344). In some genera, parameral blades are connected to parameral heads by slender parameral neck (e.g. *Corvonirmus*, Fig. 325). Parameral blades may be curled around mesosome (e.g. *Schizosairhynchus*, Fig. 466), highly convergent (*Titanomessor*, Fig. 215), or highly divergent [*Priceiella* (*Camurnirmus*) **n. gen et n. subgen.**, Fig. 298). Some genera have distinct "heel" on median margin just distal to mesosome (e.g. some *Mirandofures*, Fig. 104; *Anarchonirmus*, Fig. 120). Parameral blades of *Meropsiella bullockoda* (Williams, 1981) have rugose bands (Fig. 488).

Female genitalia. Female genitalia more or less constant throughout complex. Vulval margin typically gently rounded, but highly convex in some genera (e.g. *Osculonirmus*, Fig. 129).

Vulval chaetotaxy is identified in Fig. 26b. Vulval chaetotaxy typically consisting of one *marginal set* of slender setae (*vms*), one *submarginal set* of thorn-like setae (*vss*), and one *oblique set* of slender setae (*vos*) following lateral margins of subgenital plate. Number, size, and position of setae vary among genera.

In most groups, *vss* are situated clearly anterior to the *vms*, but in some groups [e.g. many *Priceiella* (*Thescelovora*), Fig. 306] both *vms* and *vss* form a combined row of setae. In these groups, the number of setae in the two different set can still be counted separately as the *vms* and *vss* differ in shape and size.

Distally convergent rows of *vos* typically situated lateral to submarginal plate, but some or all *vos* may be situated on plate (e.g. *Schizosairhynchus,* Fig. 469). If cross-piece is present, most *vos* are typically located anterior to cross-piece. However, 1–3 distal *vos* typically located near distal margin of subgenital plate. These distal *vos* are typically located median to the *vss* (e.g. *Nemuus imperator* **n. sp.**, Fig. 345). In many genera, there is a gap in the row of *vos* on each side, so that the distal 1–3 *vos* are separated from the more proximal ones (e.g. *Resartor*, Fig. 167). Typically, the *vos* distal to the gap are longer than the *vms*, but the same length as the more proximal *vos*. In addition, in most cases these distal *vos* are not situated on the vulval margin, but more proximally, often proximal to the *vss*. If the subgenital plate reaches the vulval margin, the distal *vos* are often situated on the surface of the subgenital plate (e.g. *Brueelia*, Fig. 48). If the subgenital plate does not reach the vulval margin, the distal *vos* are typically situated on the distal margin of the subgenital plate (e.g. *Resartor*, Fig. 167). Due to the difference in length between these setae and the *vms*, the more proximal placement of these setae, and the fact that in many groups there is no gap in the row of *vos* (e.g. *Nemuus*, Fig. 345) we treat all *vos* as one set, separate from the *vms*.

***Brueelia* Kéler, 1936**

Philopterus Nitzsch, 1818: 288 (*in partim*).
Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257.
Painjunirmus Ansari, 1947: 285.
Allobrueelia Eichler, 1951b: 36 (*in partim*).
Nigronirmus Złotorzycka, 1964a: 248.
Spironirmus Złotorzycka, 1964a: 261.
Serinirmus Soler-Cruz, Rodríguez, Florido-Navío & Muñoz-Parra, 1987: 244.

Type species. *Brueelia rossittensis* Kéler, 1936a: 257 [= *Nirmus brachythorax* Giebel, 1874: 134] (by original designation).

Diagnosis. *Brueelia* s. str. is part of a group of genera including *Acronirmus*, *Teinomordeus* **n. gen.**, and *Mirandofures* **n. gen.**, *Sychraella* **n. gen.**, and *Anarchonirmus* **n. gen.**, that share the following characters: absence of *pns*, *as3, fII-v2, fIII-v2*; parameral heads not folded medianly; absence of *ames* (except in species from *Turdoides* spp.); distal margin of mesosomal lobes at least partially rugose. All known *Brueelia* s. str. except *Br. phasmasoma* **n. sp.** (Fig. 58) and *Br. audax* (Fig. 70) lack a dorsal preantennal suture and have an uninterrupted marginal carina, which separates the genus from the otherwise similar genera *Acronirmus* (Fig. 85) and *Mirandofures* (Fig. 92) in all of which the marginal carina is interrupted at least laterally and dorsal preantennal suture is present. Antennae are sexually dimorphic in *Teinomordeus* (Figs 77–78), *Mirandofures* (Figs 92–93), *Sychraella* (Figs 108–109), and *Anarchonirmus* (Figs 116–117), but monomorphic in *Brueelia* s. str. (Fig. 44) except in species on *Turdoides* spp.

Female *Brueelia* s. str. (Fig. 48) is separated from females of other genera in this group on the structure of the subgenital plate, which always flares into a cross-piece in *Brueelia* s. str. In females of *Teinomordeus* (Fig. 82) and *Mirandofures* (Figs 97, 105) there is no cross-piece, even in species where the subgenital plate reaches the vulval margin. Females of both *Sychraella* (Fig. 113) and *Anarchonirmus* (Fig. 121) have cross-pieces, but these are laterally submarginal and not connected to the subgenital plate in *Sychraella*, and medianly interrupted in *Anarchonirmus*. The subgenital plate of female *Acronirmus* (Fig. 89) has a cross-piece as in *Brueelia* s. str., but most members of these two genera can be separated by non-genital characters, such as the presence in *Acronirmus* of a dorsal preantennal suture which is absent in most *Brueelia* s. str. In *Brueelia* s. str. species like *Br. phasmasoma* **n. sp.** where a dorsal preantennal suture is present, females can be separated from female *Acronirmus* by the following characters: *as2* and *pos* present in *Brueelia* s. str (Fig. 58), but absent in *Acronirmus* (Fig. 85); *ss* present on tergopleurites VII–VIII in *Acronirmus* (Fig. 82), but absent in *Brueelia* s. str. (Fig. 57).

Description. ***Both sexes***. Head shape variable, often flat-dome (Fig. 4) or convex-dome (Fig. 2), but may be narrow-triangle (Fig. 5), drop-shaped (Fig. 6), pentagonal (Fig. 8) or trapezoidal (Fig. 9). Marginal carina uninterrupted (except in *Brueelia phasmasoma*, Fig. 58); displaced dorsally and posteriorly at osculum; in some species narrow and translucent at osculum [e.g. *Br. acutangulata* (Piaget, 1880); not illustrated]; median section possibly absent in species with a deeply concave frons (e.g. *Br. chalcomitrae* Najer & Sychra [in Najer *et al.*], 2012a; not illustrated). Displaced section in some species extending posteriorly into marginal carinal plate. Dorsal preantennal suture absent (except in *Br. phasmasoma,* Fig. 58). Ventral anterior plate present or absent. Ventral carinae typically clearly continuous with marginal carina, but diffuse anteriorly in some species. Finger-like extensions of ventral carina into clypeo-labral suture present in some species (e.g. *Br. pseudognatha* **n. sp.**, Fig. 65). Head setae as in Fig. 44: *as3* absent or present; *pas* minute, possibly absent in some species; *pns* absent; *s3* typically absent. Coni small. Antennae monomorphic, except in species parasitising *Turdoides* spp. where the males scape is slightly swollen compared to the female scape (not illustrated). Temporal carinae not visible; *mts3* only macrosetae. Gular plate generally triangular.

Prothorax (Figs 42–43, 49–50, 56–57, 63–64) rectangular; *ppss* on postero-lateral corner. Median ends of proepimera variable. Pterothorax bell-shaped or pentagonal; lateral margins weakly divergent; posterior margin rounded or convergent to median point; *mms* widely separated medianly. Meso- and metasterna not fused; one seta on postero-lateral corner on each side of each plate. Median ends of metepisterna variable, in some species associated with sublateral nodi. Leg chaetotaxy as in Fig. 25, except *cIv3, fI-d1, fI-p2, fI-v4, fII-v2, fIII-v2* absent; *fIm4* absent or present. *Brueelia audax* has aberrant leg chaetotaxy for genus (see below).

Abdomen oblong or elongated oval (Figs 42–43, 49–50, 56–57, 63–64), chaetotaxy as in Table 2 (but see Table 3 for some known exceptions). Tergopleurites rectangular to quadratic; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly to moderately divided medianly. Sternal plates medianly continuous, rectangular, may approach but not reach pleurites. Pleural incrassations slender; re-entrant heads typically long, slender.

Male. Subgenital plate trapezoidal or pentagonal, reaching posterior margin of abdomen. Genitalia (Figs 45–47, 52–54, 59–61, 66–68) roughly homogeneous throughout genus. Basal apodeme small, oblong, and constricted along medial-lateral margins. Proximal mesosome small, typically rounded but elongated in some species (not illustrated). Gonopore (Figs 46, 53, 60, 67) slender to broad, widely open distally; gonopore often comparatively large. Mesosomal lobes small, rounded or angular; distal margin serrated, papillate, fringed, or rugose. Typically 2 *pmes* on each side on lobes just lateral to gonopore. Parameral heads (Figs 45, 54, 61, 68) cup-shaped, bifid, or blunt. Parameral blades broadly triangular, may be elongated distally; *pst1* sensillus, typically near median margin; *pst2* microseta, lateral near distal end.

Female. Subgenital plate pentagonal, reaching vulval margin where it flares into cross-piece (may be absent in *Brueelia audax*; see below). Vulval margin (Figs 48, 55, 62, 69) with slender *vms*, thorn-like *vss*; *vos* follows lateral margins of subgenital plate; distal *vos* may be median to *vss*.

Host distribution. *Brueelia* s. str. occurs on a wide range of host families, but some host association patterns are discernable. The genus appears most widely distributed on host families that are largely or wholly Holarctic, or that have widely distributed representatives in the Holarctic area. Conversely, whereas some *Brueelia* are known from the tropics, the genus appears to be absent on most host families that are entirely tropical or subtropical. Species of *Brueelia* from the tropics are most often found on host families that also occur in the Holarctic. This pattern may be due to sampling bias, however the large material examined by us from museums across the world included many samples from the tropics, and the pattern appears to hold.

Geographical range. Species of *Brueelia* sensu stricto have a world-wide distribution, but are only known from introduced hosts in Australasia, where other genera of the *Brueelia*-complex occur.

Remarks. The circumscription of *Brueelia* proposed here removes roughly half the species of this genus listed in Price *et al*. (2003) to other genera, but makes the definition of *Brueelia* s. str. more homogeneous. However, the placement of *Br. phasmasoma* deep within *Brueelia* s. str. in the phylogeny of Bush *et al*. (2016; specimen #24) indicates that the genus still contains some variety in preantennal structure. *Brueelia* s. str. includes an enormous range of intrageneric variation: there is considerable variation in abdominal chaetotaxy, even between closely related species, and the range of pigmentation patterns is unequalled in other genera within the *Brueelia*-complex.

Several groups that we include in *Brueelia* s. str. may ultimately warrant recognition as subgenera. These include species formerly recognised in the genera *Painjunirmus* Ansari, 1947, and *Spironirmus* Złotorzycka, 1964a, as well as the *Br. ornatissima* species group. Additional morphological and molecular work is needed to determine whether the monophyly of these groups are supported. We do not recognise or propose any new subgenera within *Brueelia* s. str. at this time.

We consider the following proposed genera (*in totum*) as synonyms of *Brueelia* s. str.: *Painjunirmus* Ansari, 1947, *Nigronirmus* Złotorzycka, 1964a, *Spironirmus* Złotorzycka, 1964a, and *Serinirmus* Soler-Cruz, Rodríguez, Florido-Navío & Muñoz Parra 1987.

Painjunirmus was erected by Ansari (1947: 285) for the *interrupto-fasciata* group (*sensu* Piaget, 1880) of *Degeeriella*, and thus repeated the taxonomic acts of Kéler (1936a). The type species of *Painjunirmus*, *P. pengya* Ansari, 1947, is an atypical *Brueelia* s. str., with male genitalia and abdominal chaetotaxy that differs from *Br. brachythorax* (see Table 3). Ultimately, with the examination of more material, species previously considered to be *Painjunirmus* may form a species group or subgenus within *Brueelia* s. str. This group would include the species *Br. pengya, Br. magnini* Ansari, 1956a, *Br. chilchil* Ansari, 1955b, and *Br. brevipennis* Ansari, 1956a.

TABLE 3. Chaetotaxy of abdominal segments II–VIII of some *Brueelia* s. str. Trichoid setae of segment VIII are not listed as they present in all species. Sets of setae differing from those of *Br. brachythorax* are highlighted in **bold**. Examined material from all species is from the type host. Other groups of abdominal setae do exist, but are not represented here. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	**Sex**	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
Br. brachythorax	M	III–VIII	V–VII	VI–VIII	–	V–VIII	II–VI
	F	IV–VIII	–	VI–VII	–	–	II–VI
Br. audax	M	**IV–VIII**	–	VI–VIII	**VII–VIII**	V–VIII	II–VI
	F[1]	IV–VIII	–	V–VIII	?	?	II–VI
Br. brevipennis	M	III–VIII	**IV–VII**	VI–VIII	**V–VIII**	V–VIII	II–VI
	F	**III–VIII**	–	VI–VII	–	–	II–VI
Br. chilchil	M	III–VIII	**IV–VII**	VI–VII	**VI–VIII**	V–VIII	II–VI
	F	**III–VIII**	–	VI–VII	–	–	II–VI
Br. embernagrae [2]	F	IV–VIII	_	**VI–VIII**	_	–	II–VI
Br. limbata	M	III–VIII	**VII**	VI–VIII	**VII–VIII**	**VIII**	II–VI
	F	**III–VIII**	–	**VI–VIII**	**VIII**	–	II–VI
Br. nebulosa	M	III–VIII	V–VII	VI–VII	**V–VIII**	**IV–VIII**	II–VI
	F	**III–VIII**	–	VI–VII	–	–	II–VI
Br. ornatissima	M	III–VIII	V–VII	VI–VII	**VI–VIII**	V–VIII	II–VI
	F	III–VIII	–	VI–VII	–	**VIII**	II–VI
Br. phasmasoma	M	**IV–VIII**	V–VII	VI–VII	**VII–VIII**	V–VIII	II–VI
	F	**IV–VIII**	–	VI–VII	–	–	II–VI
Br. picturata	M	**IV–VIII**	**VI–VII**	**VI–VII**	**VI–VIII**	V–VIII	II–VI

[1] All examined females poorly preserved, and *tps* and *ss*, if present, are not visible.

[2] Chaetotaxy taken from original illustrations (Cicchino & Castro 1980). No material examined. Male unknown.

Nigronirmus was erected by Złotorzycka (1964a: 248); inclusion of species in this genus was largely based on pigmentation differences among these and species of *Brueelia sensu* Złotorzycka (1964a). Structurally, these lice are all similar, and given the variability in colour among closely related lice in *Brueelia* s. str., we do not presently consider these differences in coloration to be sufficient justification for separating *Nigronirmus* from *Brueelia* s. str.

Spironirmus was erected by Złotorzycka (1964a: 261) and it included four species that were vaguely unified by “pleural loops” and male genitalia. Recent molecular data indicates that the type species, *Brueelia nebulosa*

(Burmeister, 1838) is nested deeply inside *Brueelia* s. str. (Bush *et al*. 2016), and most morphological characters used to separate *Spironirmus* from *Brueelia* s. str. are actually within the variation of *Brueelia* s. str. as circumscribed here. Thus, we retain *Spironirmus* as a synonym of *Brueelia* s. str. It should be noted that "pleural loops" are not found in three of the four species Złotorzycka (1964a) included in *Spironirmus*.

Serinirmus was established as a monotypic genus by Soler-Cruz *et al.* (1987) on the basis that *Serinirmus sexytanum* Soler-Cruz, Rodríguez, Florido-Navío & Muñoz Parra, 1987, did not fit any of the five groups of genera proposed by Złotorzycka (1964a). We have not examined any specimens of *Serinirmus sexytanum*, but the original description and illustrations of Soler-Cruz *et al.* (1987) provide no morphological justification for the separation of *Serinirmus* from *Brueelia* s. str.

Included species
Brueelia abrupta (Osborn, 1896: 229) [in *Nirmus*]
Brueelia acuminata Cicchino, 1982: 281
**Brueelia acutangulata* (Piaget, 1880: 156) [in *Nirmus*]
    Brueelia elbeli Ansari, 1957b: 185 **new synonymy [1]**
Brueelia aguilarae* **new species
**Brueelia albida* (Rudow, 1869: 21) [in *Nirmus*]
**Brueelia alexandrii* Eichler, 1953: 338
Brueelia alophoixi Sychra [in Sychra *et al.*], 2009: 155
**Brueelia altaica* Mey, 1982b: 168
Brueelia amazonae* Stafford, 1943: 52 **[2]
**Brueelia americana* Cicchino & Castro, 1996: 21
**Brueelia anamariae* Cicchino, 1980: 5
**Brueelia angustifrons* (Carriker, 1902: 221) [in *Nirmus*]
**Brueelia antimarginalis* Eichler, 1951b: 40 [page given as 12]
Brueelia anumbii Cicchino, 1981: 37
**Brueelia argentina* Cicchino, 1981: 31
Brueelia atricapillae Soler-Cruz, Alcántara-Ibañez & Florido-Navío, 1984: 145 **[3]**
    Brueelia paratricapillae Price, Hellenthal & Palma, 2003: 157 **new synonymy**
Brueelia audax* (Kellogg, 1899: 25) [in *Nirmus*] **[4]
Brueelia badia Cicchino & Castro, 1996: 23
Brueelia balati Kristofík, 1999: 139
**Brueelia bicurvata* (Piaget, 1880: 159) [in *Nirmus*]
**Brueelia blagovescenskyi* Balát, 1955: 504
Brueelia boae Cicchino & Castro, 1996: 7
**Brueelia bonariensis* Cicchino & Castro, 1996: 22
Brueelia borini Lunkaschu, 1970: 53
**Brueelia brachythorax* (Giebel, 1874: 134) [in *Nirmus*]
    Brueelia rossittensis Kéler, 1936a: 257 [Ref.: Hopkins & Clay 1952: 61]
**Brueelia breueri* Balát, 1955: 505
**Brueelia brevicolor* Ansari, 1956c: 110
**Brueelia brevipennis* Ansari, 1956a: 159
Brueelia calandrellae Fedorenko, 1975: 46
Brueelia cambayensis Ansari, 1955b: 54
Brueelia cantans Sychra [in Sychra *et al.*], 2010a: 62
**Brueelia cedrorum* (Piaget, 1880: 151) [in *Nirmus*]
Brueelia cela* Stafford, 1943: 53 **[2]
Brueelia chalcomitrae Najer & Sychra [in Najer *et al.*], 2012a: 92
**Brueelia chayanh* Ansari, 1955b: 55
**Brueelia chelydensis* Hopkins, 1951: 377
    Nirmus vulgatus galapagensis Kellogg & Kuwana, 1902: 474 [Ref.: Hopkins & Clay 1952: 56]
**Brueelia chilchil* Ansari, 1955b: 53

Brueelia chopi Valim & Cicchino, 2015: 509
**Brueelia chrysomystris* (Blagoveshtchensky, 1940: 60) [in *Degeeriella*]
**Brueelia clara* Gustafsson & Bush 2015: 505
**Brueelia conocephala* (Blagoveshtchensky, 1940: 87) [in *Degeeriella*]
Brueelia coquimbana Cicchino & González-Acuña, 2008: 302
**Brueelia corydalla* Timmerman, 1950: 5
**Brueelia coryliventer* Gustafsson & Bush 2015: 513
**Brueelia cruciata* (Burmeister, 1838: 429) [in *Nirmus*]
Brueelia cucullata Cicchino, 1982: 284
**Brueelia currucae* Bechet, 1961: 153
Brueelia cyanopa Cicchino, 2004: 73
Brueelia cyclothorax* (Burmeister, 1838: 429) [in *Nirmus*] **[5]
    Nirmus subtilis Nitzsch [in Giebel], 1874: 137 **new synonymy**
    Brueelia subtilis obligatus Eichler, 1954: 63 [Ref.: Emerson 1972: 34]
Brueelia decumana Cicchino & Castro, 1996: 12
**Brueelia deficiens* (Piaget, 1885: 23) [in *Nirmus*]
    Nirmus ampullatus Piaget, 1885: 25 [Ref.: Williams 1986: 431]
**Brueelia delicata* (Nitzsch [in Giebel], 1866: 368) [in *Nirmus*]
**Brueelia densilimba* (Nitzsch [in Giebel], 1866: 368) [in *Nirmus*]
Brueelia diucae Cicchino & González-Acuña, 2009: 505
**Brueelia dorsale* Williams, 1983: 600
**Brueelia ductilis* (Kellogg & Chapman, 1899: 89) [in *Nirmus*]
Brueelia embernagrae Cicchino & Castro, 1980: 83
Brueelia emersoni Cicchino & Castro, 1996: 18
Brueelia exigua (Nitzsch [in Giebel] 1866: 366) [in *Nirmus*]
**Brueelia ferianci* Balát, 1955: 508
**Brueelia flinti* Cicchino & Castro, 1996: 27
**Brueelia fulmeki* Eichler, 1957: 580
Brueelia fuscopleura* (Blagoveshtchensky, 1951: 303) [in *Degeeriella*] **[6]
    Brueelia gulabitilyar Ansari, 1955a: 54 **new synonymy**
**Brueelia ginginianus* Ansari, 1955b: 55
**Brueelia glizi* Balát, 1955: 509
**Brueelia gobiensis* Mey, 1982b: 170
**Brueelia goertae* Dalgleish, 1971: 141
**Brueelia guldum* Ansari, 1955b: 54
**Brueelia iliaci* (Denny, 1842: 51) [in *Nirmus*]
    Brueelia inornata Timmermann, 1950: 3 [Ref.: Ansari 1956c: 110]
    Brueelia iliaci indiensis Ansari, 1956c: 111 [Ref.: Price *et al*. 2003: 155]
**Brueelia immaculata* (Piaget, 1890: 230) [in *Nirmus*]
**Brueelia imponderabilica* Eichler, 1954: 61
**Brueelia infrequens* (Carriker, 1902: 220) [in *Nirmus*]
**Brueelia infuscata* Cicchino, 1979: 92
Brueelia intermedia* (Nitzsch [in Giebel], 1866: 366) [in *Nirmus*] **[7]
**Brueelia jacarinae* Valim & Palma, 2006: 28
**Brueelia jacobi* Eichler, 1951b: 10
**Brueelia juno* (Giebel, 1874: 137) [in *Nirmus*]
Brueelia kalkalichi (Ansari, 1955b: 58) [in *Philopterus*] **[8]**
**Brueelia kistiakowskyi* Fedorenko, 1975: 48
**Brueelia kluzi* Balát, 1955: 512
**Brueelia kratochvili* Balát, 1958: 413
Brueelia latiuscula (Kellogg & Chapman, 1899: 90) [in *Nirmus*] **[9]**
**Brueelia limbata* (Burmeister, 1838: 429) [in *Nirmus*]
    Docophorus serenus Rudow, 1869: 16 [Ref.: Hopkins & Clay 1952: 61]

Brueelia limnothlypiae Valim & Reiley, 2015: 855
Brueelia locustellae Fedorenko, 1975: 49
Brueelia longifrons Carriker, 1956a: 81
Brueelia longipes (Piaget, 1880: 160) [in *Nirmus*]
Brueelia lullulae Bechet, 1961: 154
Brueelia magnini Ansari, 1956a: 161
Brueelia marcoi Cicchino & Castro, 1996: 20
Brueelia matvejevi Balát, 1981a: 278
Brueelia mauroi Cicchino & Castro, 1996: 17
Brueelia mediterranea Cicchino, 1981: 34
Brueelia melanocoryphae Bechet, 1966: 79
Brueelia mimas Cicchino & Castro, 1996: 28
Brueelia minor Lunkaschu, 1970: 55
Brueelia mirabile Carriker, 1963: 306
Brueelia modularis (Piaget, 1880: 151) [in *Nirmus*]
Brueelia mongolica Mey, 1982b: 172
Brueelia moreli Ansari, 1957b: 182
Brueelia museiberolinensis (Eichler, 1957: 579) [in *Allobrueelia*]
Brueelia nebulosa (Burmeister, 1838: 429) [in *Nirmus*]
    Docophorus ochroleucus Nitzsch [in Giebel], 1874: 90 [Ref.: Hopkins & Clay 1952: 59]
    Brueelia chitlatilyar Ansari, 1955b: 55 [Ref.: Emerson 1972: 31]
Brueelia nivalis (Giebel, 1874: 140) [in *Nirmus*]
Brueelia ornatissima (Giebel, 1874: 144) [in *Nirmus*]
    Nirmus illustris Kellogg, 1896: 494 [Ref.: Hopkins & Clay 1952: 56]
Brueelia oxypyga (Giebel, 1874: 135) [in *Nirmus*]
Brueelia pagodarum Ansari, 1955b: 55
Brueelia pakistanaise Ansari, 1955b: 52
Brueelia parabolocybe (Carriker, 1903: 137) [in *Nirmus*]
Brueelia paradoxa Valim & Cicchino, 2015: 515
Brueelia parae Ansari, 1955b: 57
Brueelia parviguttata (Blagoveshtchensky, 1940: 62) [in *Degeeriella*]
Brueelia pelikani Balát, 1958: 414
Brueelia pengya (Ansari, 1947: 285) [in *Painjunirmus*]
Brueelia peninsularis (Kellogg, 1899: 21) [in *Nirmus*]
Brueelia phasmasoma **new species**
Brueelia picturata (Osborn, 1896: 226) [in *Nirmus*]
Brueelia piechockii Mey, 1982b: 157
Brueelia plocea (Lakshminarayana, 1968: 99) [in *Nigronirmus*]
Brueelia priniae Najer & Sychra [in Najer *et al.*], 2012a: 94
Brueelia propinqua (Giebel, 1874: 136) [in *Nirmus*]
Brueelia pseudognatha **new species**
Brueelia pseudopicturata Cicchino, 1986a: 8
Brueelia pyrrhularum Eichler, 1954: 62
Brueelia quelea Sychra & Barlev [in Sychra *et al.*], 2010b: 18
Brueelia rhipidura (Thompson, 1941: 533) [in *Degeeriella*]
Brueelia rigbyi Gustafsson & Bush 2015: 510
Brueelia rosickyi Balát, 1955: 517
Brueelia rotundifrons Cicchino, 1981: 38
    Brueelia montana Williams, 1983: 600
Brueelia ruficapilla Cicchino, 1990: 22
Brueelia sallei Carriker, 1963: 307
Brueelia sayacae Cicchino, 1982: 284

Brueelia scotocercae (Blagoveshtchensky, 1951: 304) [in *Degeeriella*]
Brueelia senegala Sychra [in Sychra *et al.*], 2010a: 65
Brueelia sexytana (Soler-Cruz, Rodríguez, Florido-Navío & Muñoz Parra, 1987: 244) [in *Serinirmus*]
**Brueelia sibirica* Mey, 1982b: 174
**Brueelia solitaria* Cicchino, 1990: 22
**Brueelia stadleri* Eichler, 1954: 61
**Brueelia straminea* (Denny, 1842: 53) [in *Nirmus*]
  Degeeriella sublucida Blagoveshtchensky, 1940: 58 [Ref.: Hopkins & Clay 1952: 62]
  Brueelia fixa Złotorzycka, 1964a: 256 [Ref.: Dalgleish 1971: 144]
Brueelia tersinae Cicchino, 1982: 279
Brueelia thilia Cicchino, 2004: 75
**Brueelia tkachi* Gustafsson & Bush 2015: 510
**Brueelia trinidadensis* Cicchino & Castro, 1996: 21
Brueelia trithorax (Burmeister, 1838: 429) [in *Nirmus*]
**Brueelia vaneki* Balát, 1982: 277
Brueelia virgata (Kellogg, 1899: 19) [in *Nirmus*]
**Brueelia vulgata* (Kellogg, 1896: 496) [in *Nirmus*]
Brueelia weberi Balát, 1982: 44
**Brueelia xanthocephali* (Osborn, 1896: 224) [in *Nirmus*]
Brueelia xanthocollis Ansari, 1955b: 56
Brueelia yal Cicchino & González-Acuña, 2008: 303
**Brueelia zavattariornis* Ansari, 1956b: 387
**Brueelia zohrae* Ansari, 1956b: 389

[1] There are no apparent differences between *Br. acutangulata* and *Br. elbeli* in the material we have examined (Appendix III), and the original description of *Br. elbeli* Ansari 1957b does not provide sufficient diagnostic characters to separate *Br. elbeli* from *Br. acutangulata*.

[2] Having examined type material of both species (Appendix III), we agree with the treatment of *Br. amazonae* and *Br. cela* as separate species following Cicchino & Castro (1996), despite the treatment of these two as conspecific by Hopkins & Clay (1952), Carriker (1955), and Price *et al*. (2003).

[3] As noted by Martín-Mateo (2009: 340), the difference of a single letter in a species epithet prevents homonymy according to article 57.6 of the I.C.Z.N. (International Commission on Zoological Nomenclature, 1999); thus, the erection of a new name for this species by Price *et al*. (2003: 157) was unjustified.

[4] *Brueelia audax* is a very aberrant member of *Brueelia* s. str. (see below), and most of the material examined (including all females) are poorly preserved. Examinations of future collections of this species may warrant the erection of a new subgenus, or even genus, for this species.

[5] We examined material of *Br. subtilis* and *Br. s. obligatus* from the two known host species (*Passer montanus* and *P. domesticus*) (Appendix III). These specimens are inseparable from *Br. cyclothorax*. Although the poor condition of type material makes direct comparisons difficult, we consider these species to be the same (as in Złotorzycka 1997: 145) despite the treatment of these as separate species by Price *et al*. (2003: 159).

[6] We consider *Br. gulabitilyar* to be a synonym of *Br. fuscopleura*, based on the specimens we examined from *Pastor roseus* (the type host of *Br. gulabitilyar*; Appendix III). The original description of *Br. gulabitilyar* Ansari (1955b) is also inseparable from the vague description of *Degeeriella cruciata fuscopleura* by Blagoveshchensky (1951).

[7] We disagree with the synonymization of *Br. intermedia* with *Br. marginata* by Price *et al*. (2003). Based on morphology of material examined and the original descriptions, we place *Br. intermedia* in *Brueelia* s. str., whereas we place *Br. marginata* in *Guimaraesiella*.

[8] We agree with Mey & Barker (2014: 114) that *Philopterus kalkalichi* as described by Ansari (1955b, 1958a) and illustrated by Ansari (1958a) is actually a *Brueelia* s. str. Ansari later redescribed and illustrated this species (Ansari 1956d) and in doing so contradicted his earlier work, as the illustration in Ansari (1956d) is a *Philopterus*. It seems that Ansari himself confused two different species found on the same host. As the original description (Ansari 1955b) refers to characters that are not found in *Philopterus* but are found in *Brueelia* s. str., we disagree with Palma & Price (2006) and Sychra *et al.* (2011), and consider this species a member of *Brueelia* s. str. We agree with Mey & Barker (2014) that *Philopterus kalkalichi sensu* Ansari (1956d) needs a new name, but this is outside the scope of this study. Interestingly, no other *Brueelia* s. str. are known from the Dicruridae, and this host association may be a case of straggling.

[9] We disagree with Price *et al*. (2003) about the synonymy of *Br. latiuscula* as *Br. ornatissima*. Emerson (1972) treated the two as separate (this was mis-cited in Price *et al*. 2003, and may be the source of error). *Brueelia ornatissima* has dark ventral carinae, whereas the illustrations of *Br. latiuscula* has translucent ventral carinae.

Brueelia brachythorax (Giebel, 1874)
(Figs 42–48)

Nirmus brachythorax Giebel, 1874: 134.
Degeeriella brachythorax (Giebel, 1874); Harrison, 1916: 109.
Brueelia rossittensis Kéler, 1936a: 257.
Brueelia brachythorax (Giebel, 1874); Hopkins & Clay, 1952: 54.

Type host. *Bombycilla garrulus garrulus* (Linnaeus, 1758)—Bohemian waxwing.
Type locality. None given, likely Germany, but type series is lost. Type locality for *Brueelia rossittensis* is Rossitten [now: Rybachy], Kaliningrad Oblast, Russia.
Other host. *Bombycilla garrulus pallidiceps* Reichenow, 1908—Bohemian waxwing **new host record.**

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in Fig. 44. Marginal carina barely widened at osculum. Ventral anterior plate very small, not visible in old material. Short *vsms2* situated in clypeo-labral suture, not on lateral margins of clypeo-labral suture. Preantennal nodi moderate. Coni short, blunt, barely or not reaching distal margin of scape. Pre- and postocular nodi prominent, connected dorsally. Gular plate drop-shaped. Thoracic and abdominal segments as in genus description and Figs 42–43; 5 *mms* on each side, alternating between short and long setae. Proepimera broad, median ends hooked around coxae II. Median ends of metepisterna broad, blunt. *tps* absent on all segments in both sexes.

Male. Abdominal chaetotaxy as in Table 3 and Fig. 42. Subgenital plate pentagonal. Male genitalia typical for genus (Fig. 45). Proximal mesosome broadly rounded. Gonopore (Fig. 46) large, narrowly open distally. Parameres (Fig. 47) not much elongated distally; *pst1* sensillus, submarginal; *pst2* microseta, on distal tip. Measurements: ex *Bombycilla garrulus garrulus* (n = 6): TL = 1.48–1.59; HL = 0.36–0.37; HW = 0.29–0.32; PRW = 0.19–0.20; PTW = 0.27–0.29; AW = 0.40–0.45. Ex *B. g. pallidiceps* (n = 8): TL = 1.52–1.69; HL = 0.35–0.37; HW = 0.28–0.31; PRW = 0.18–0.20; PTW = 0.25–0.32; AW = 0.38–0.45.

Female. Abdominal chaetotaxy as in Table 3 and Fig. 43. Subgenital plate pentagonal, flaring distally along vulval margin (Fig. 48). Vulval margin (Fig. 48) gently rounded, with 3 (rarely 4) short, slender *vms* on each side, and 2–3 (rarely 4) short, thorn-like *vss* on each side; 2–3 slender *vos* on each side anterior to cross-piece and 1 *vos* median to *vss* on each side. Measurements Ex *Bombycilla garrulus garrulus* (n = 15): TL = 1.61–1.89 (1.74); HL = 0.36–0.39 (0.38); HW = 0.29–0.33 (0.32); PRW = 0.19–0.21 (0.20); PTW = 0.28–0.31 (0.30); AW = 0.38–0.50 (0.45). Ex *B. g. pallidiceps* (n = 15): TL = 1.71–2.08 (1.91); HL = 0.37–0.41 (0.40); HW = 0.31–0.35 (0.33); PRW = 0.20–0.22 (0.21); PTW = 0.29–0.34 (0.32); AW = 0.42–0.51 (0.46).

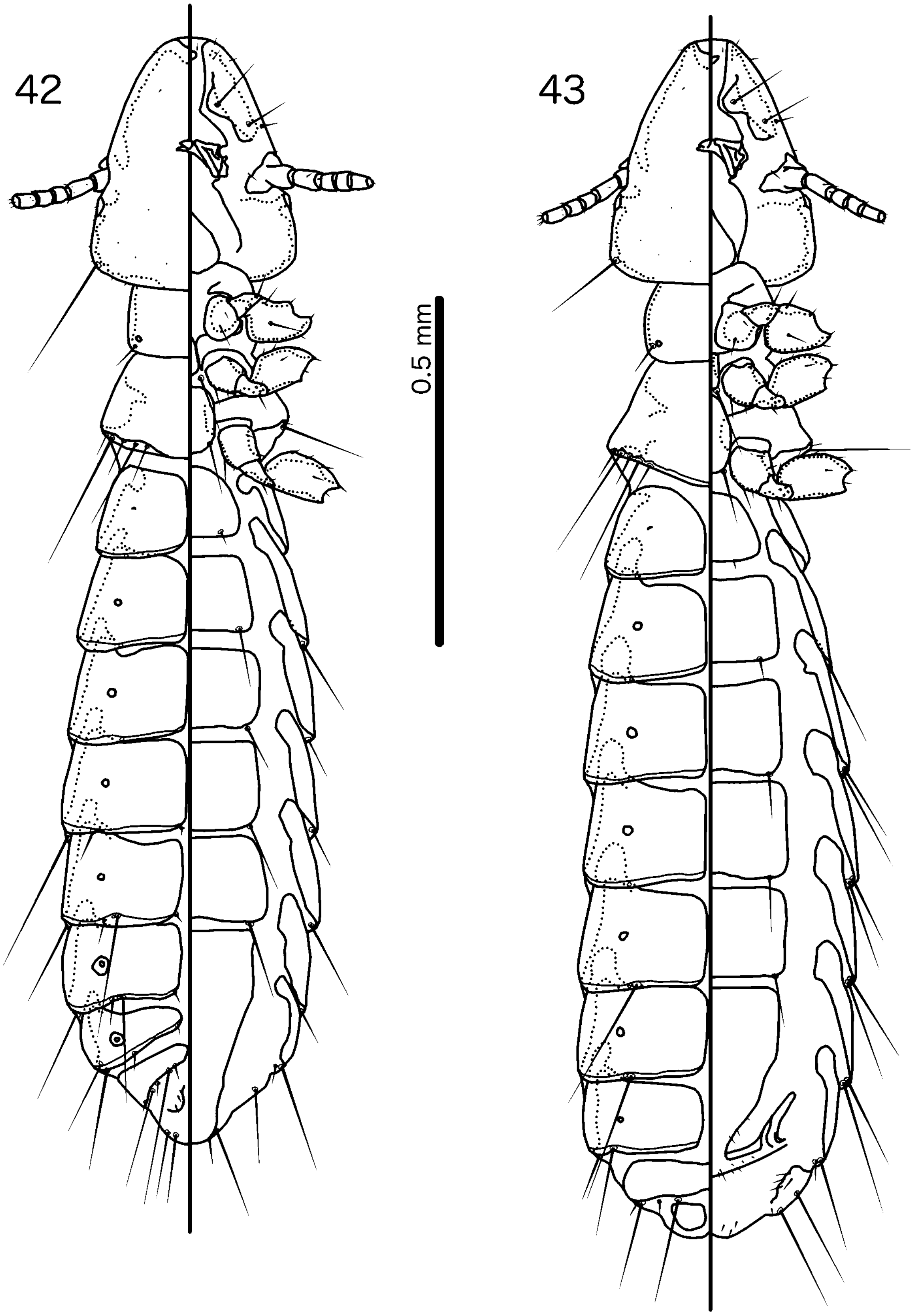
Type material. Paratype of *Br. rossittensis*: 1♀, Germany, R. Meinertzhagen, 10918 (NHML).

Additional material examined (non-types)

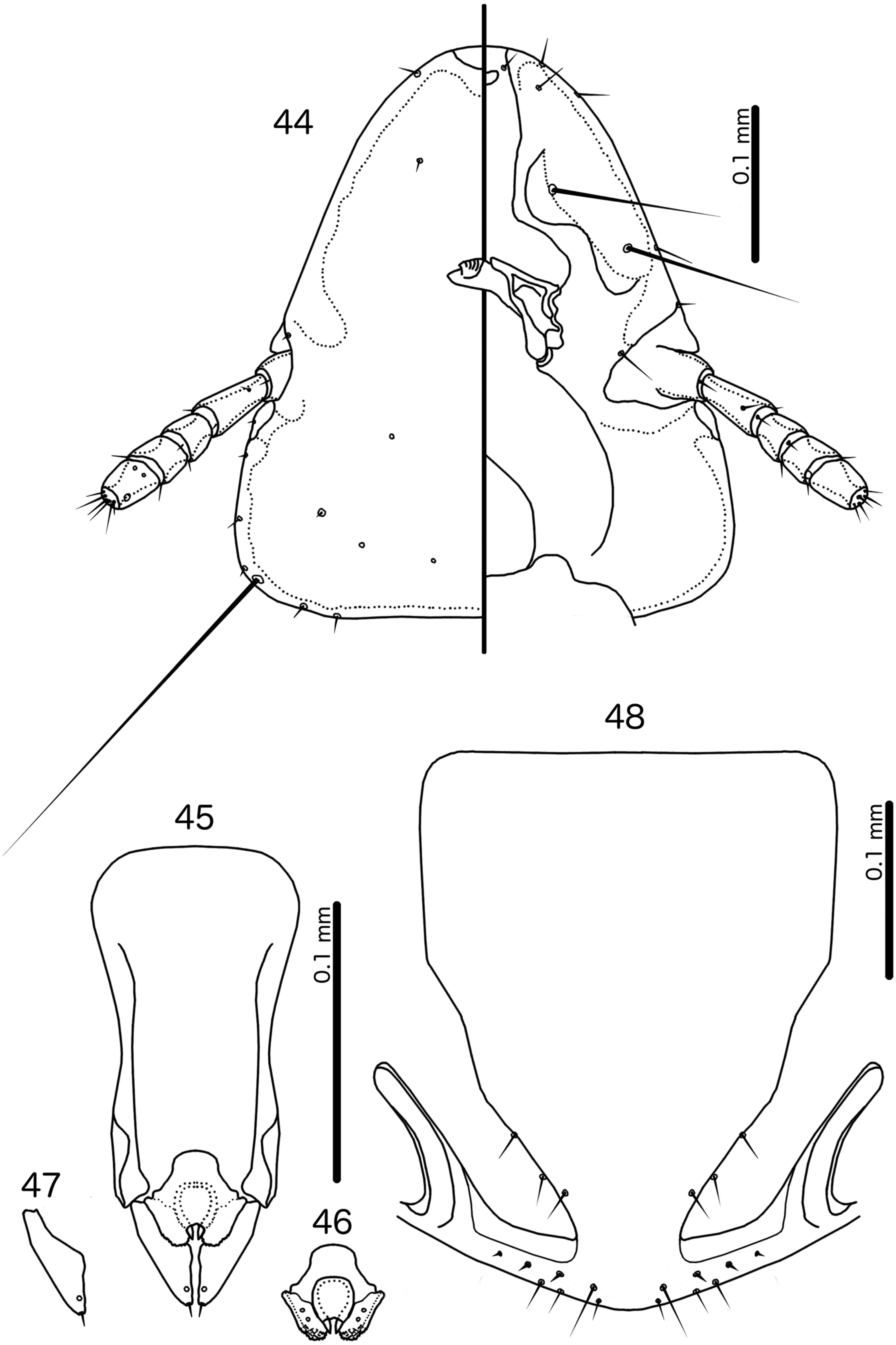
Ex ***Bombycilla garrulus garrulus*** **[**Russian material may be from subspecies ***Bombycilla garrulus centralasiae*** **Poliakov, 1915):** 1♀, Edinburgh, Scotland, United Kingdom, Nov. 1912, R. Meinertzhagen, 4402 (NHML); 4♀, Scotland, United Kingdom, Oct, 1901, R. Meinertzhagen, 3804 (NHML); 9♂, 10♀, Russia, R. Meinertzhagen, 10970 (NHML); 1♀, Piaget Collection, 1230 (NHML); 1♀, Wroclaw, United Kingdom, 2. Jan. 1950, 171a.12 (MFNB); slide also contains unidentified *Columbicola*. 5♂, 5♀, Stozice, Ljubljana, Slovenia, 11 Sep. 1975, D. Sere, 12564–12573 (PMSL); 3♀, Dubrovnik, Croatia, 22 Feb. 1962, A. Lesinger, 5648–5650 (PMSL); 1♀, Dubrovnik, Croatia, 20 Jan. 1966, A. Lesinger, 11515 (PMSL); 2♀, Cluj, Romania, 4 Mar. 1960, I. Bechet, 9222–9223 (PMSL); 1♂, 1♀, Medvode, Slovenia, 15 Dec. 1963, S. Brelih, 8443–8444 (PMSL); 1♂, 2♀, Ljubljana, Slovenia, 13 Mar. 1976, A. Smuc, 13150–13152 (PMSL); 1♂, Stari Trg, Loz, Slovenia, 30 Jan. 1976, A. Smuc, 12920 (PMSL); 1♀, Stozice, Ljubljana, Slovenia, 11 Sep. 1975, D. Sere, 12574 (PMSL).

Ex ***Bombycilla garrulus pallidiceps***: 1♀, Noatak River, Alaska, USA, 5. Jul. 1961, JH-536, 15869 on reverse (OSUS); 10♂, 15♀, 2nd Deseret Livestock Ranch, North Skull Valley, Tooele County, Utah, USA, 11 Mar. 1964, E & E Branch, EE-4117, 2 PIPeR #08 and PIPeR #109 (PIPeR); 4♀, 2nd Deseret Livestock Ranch, North Skull Valley, Tooele County, Utah, USA, 17 Mar. 1964, E & E Branch, EE-4118 (PIPeR); 1♀, Callao, Juab County, Utah, USA, 19 Dec. 1963, E & E Branch, EE-0387 (PIPeR); 1♀, Callao, Juab County, Utah, USA, 19 Dec. 1963, E & E Branch, EE-0392 (PIPeR).

Remarks. No significant morphological differences have been found between material from the type host subspecies and the North American subspecies *B. g. pallidiceps*. However, North American specimens are generally longer, and females are slightly larger in all dimensions. The population on *B. g. pallidiceps* may be a separate species, or natural variation among populations. We have provided the measurements of material from both host subspecies.



FIGURES 42–43. *Brueelia brachythorax* (Giebel, 1874) ex *Bombycilla garrulus garrulus*: **42,** male habitus, dorsal and ventral views. **43,** female habitus, dorsal and ventral views.



FIGURES 44–48. *Brueelia brachythorax* (Giebel, 1874) ex *Bombycilla garrulus garrulous*: **44,** male head, dorsal and ventral views. **45,** male genitalia, dorsal view. **46,** male mesosome, ventral view. **47,** male paramere, dorsal view. **48,** female subgenital plate and vulval margin, ventral views.

Brueelia brachythorax was not included in the phylogeny of Bush *et al*. (2016), but *Br. cedrorum* was. The two species are very similar and may be conspecific. *Brueelia cedrorum* was placed near a few other *Brueelia* s. str. from larger-bodied North American hosts, and this clade was placed as sister to a large clade of mainly Holarctic *Brueelia* s. str. from emberizid, fringillid, and picid hosts. *Brueelia* s. str. occurs mainly on host families that are predominantly Holarctic, or that have representatives that are widely distributed in the Holarctic region, but is largely absent on host families that are exclusively or largely tropical or subtropical.

Brueelia aguilarae **Gustafsson & Bush, new species**

(Figs 49–55)

Type host. *Euplectes franciscanus* (Isert, 1789)—northern red bishop.
Type locality. Somaliland, Somalia.

Diagnosis. *Brueelia aguilarae* **n. sp.** belongs to a group of Old World *Brueelia* s. str. that are very strikingly pigmented in black and white. Only three species have previously been described in this Old World striped group: *Brueelia plocea* (Lakshminayarana, 1968), *Brueelia cantans* Sychra [in Sychra *et al*.], 2010a, and *Brueelia queleae* Sychra & Barlev [in Sychra *et al*.], 2010b. These lice are similar to the *Brueelia* s. str. from icterids in the New World (the "*ornatissima*" group, *sensu* Cicchino & Castro, 1996), but unlike the New World group, the Old World group lacks dark pigmentation on the tergopleurites (except VIII–XI), and has a different pattern of abdominal chaetotaxy [*cf. Br. aguilarae* (Figs 49–50) and *Br. ornatissima*, Table 3].

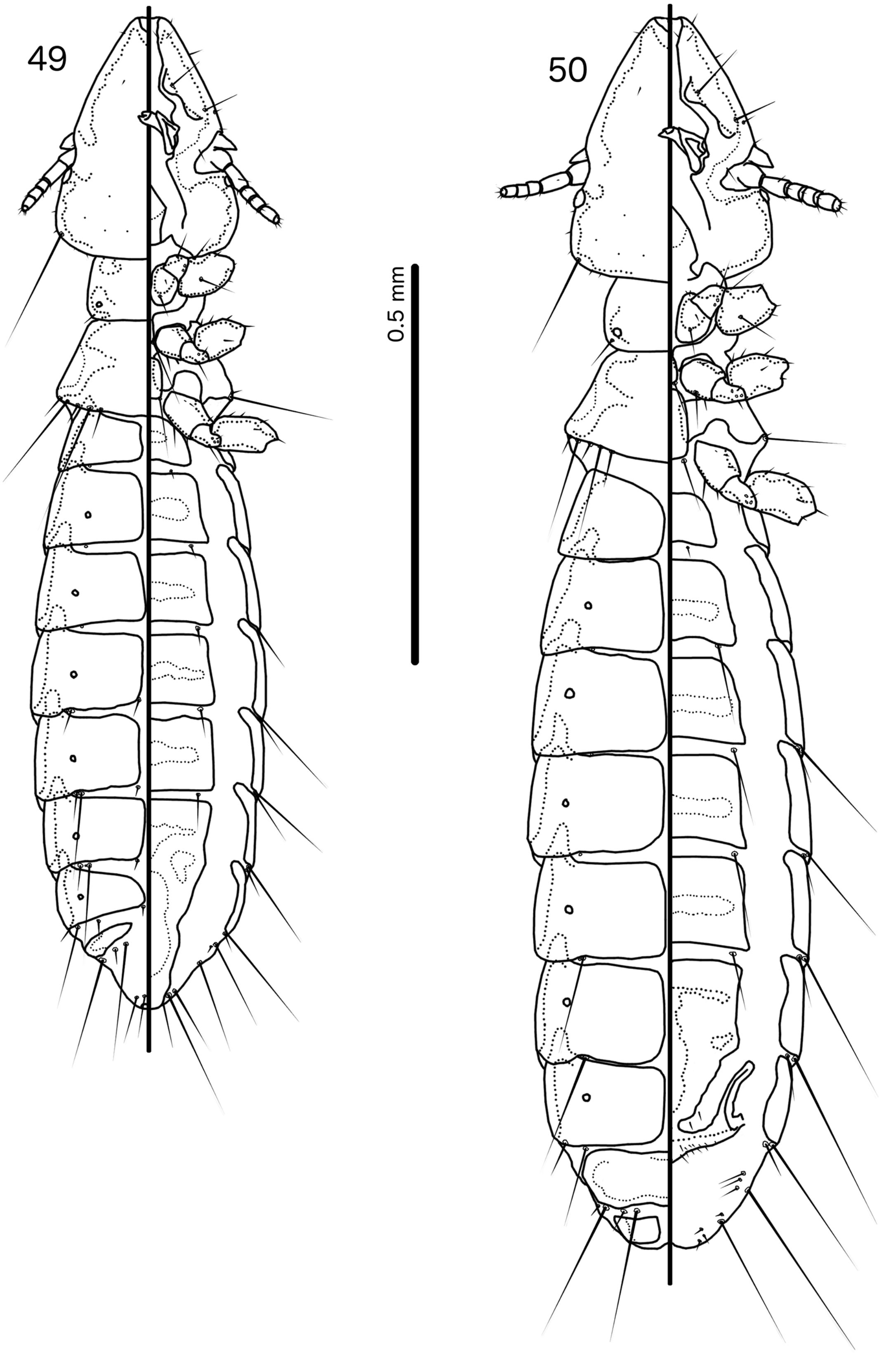
Brueelia aguilarae is most similar to *Br. plocea*, which has a similar head shape and few abdominal setae (Figs 49–50). These two species differ in the following characters: darkly pigmented bands on anterior and posterior margins of sternal plates not connected laterally in *Br. plocea*, but connected in *Br. aguilarae* (Figs 49–50); 2 *ps* on each side on male abdominal segment IV in *Br. plocea* but only 1 *ps* per side in *Br. aguilarae* (Fig. 49); mesosomal lobes rounded in *Br. plocea* but angular in *Br. aguilarae* (Fig. 53); male subgenital plate predominantly unpigmented in *Br. plocea* but predominantly darkly pigmented in *Br. aguilarae* (Fig. 49). Lakshminarayana (1968) did not describe the female of *Br. plocea*, and comparisons of the females of the two species is currently not possible.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in Fig. 51. Marginal carina slightly widened at clypeo-labral suture. Ventral anterior plate absent. Attachment areas of mandibular adductor muscles prominent in males. Short *vsms2* located on lateral margin of clypeo-labral suture. Preantennal nodi long, slender. Coni short, blunt, not reaching distal margin of scape. Pre-ocular nodi somewhat elongated, post-ocular nodi small. All *mts* except *mts3* minute, easier to locate based on attendant canals in marginal temporal carina. Gular plate broadly lanceolate. Dark pigmentation on marginal carina (except anterior sixth and osculum), preantennal nodi, margins of antennal socket, marginal temporal carina (except at occiput), pedicel and flagellomeres I–III, and anterior half of gular plate. Thoracic and abdominal segments as in Figs 49–50; 5 *mms* on each side, alternating between short and long setae. Proepimera broad, median ends hooked around coxae II. Median ends of metepisterna broad, blunt. Dark pigmentation on meso- and metasterna, pro-, mes-, and metepisterna, proepimera, anterior end of pronotum. Legs with nodi distinctly pigmented, and connected by dark, diffuse bands. Tergopleurites entirely translucent, except posterior margins of tergopleurites VIII and IX+X in both sexes, and much of tergopleurite XI in females. Sternal plates II–VI and subgenital plates of both sexes with dark pigmentation except centrally (Figs 49–50).

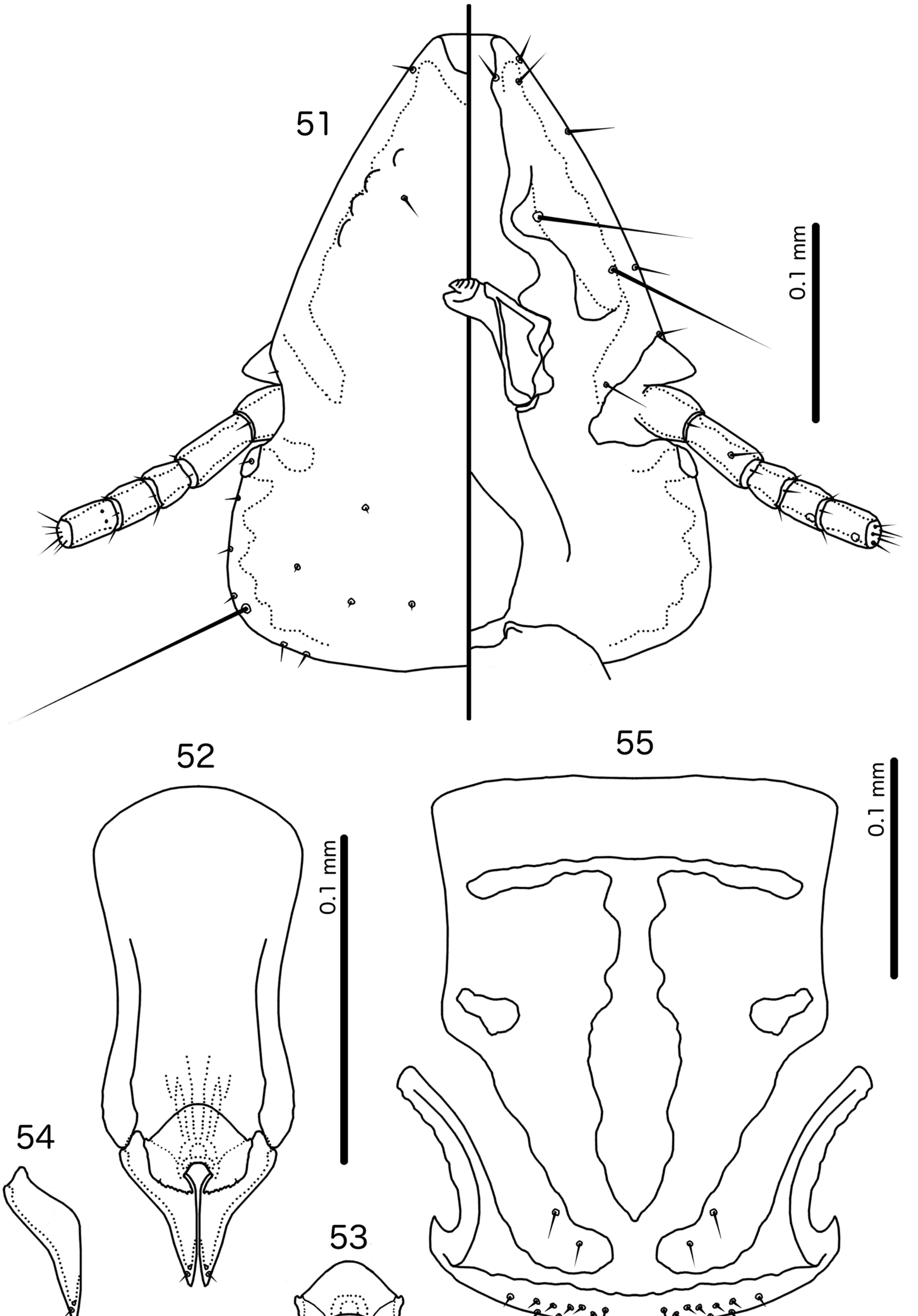
Male. Abdominal chaetotaxy as in Table 3 and Fig. 49. Subgenital plate irregularly trapezoidal (Fig. 32), with four fenestrae: a transversal band in anterior end, a pair of roughly C-shaped areas laterally, and a central oblong area. Male genitalia (Fig. 52) typical for genus. Extrusor muscles barely visible. Proximal mesosome broadly rounded. Gonopore (Fig. 53) widely open distally. Parameral blades (Fig. 54) slightly elongated distally, broad; *pst1* sensillus, near distal tip; *pst2* seta, on lateral margin near distal tip. Measurements ex *Euplectes franciscanus* (n = 2): TL = 1.26–1.32; HL = 0.30–0.31; HW = 0.23–0.24; PRW = 0.15–0.16; PTW = 0.23–0.24; AW = 0.30–0.33.

Female. Abdominal chaetotaxy as in Table 3 and Fig. 50. Subgenital plate pentagonal, flaring distally, but not reaching vulval margin (Fig. 55), with 3 fenestrae: one central T-shaped area and two smaller areas laterally. Vulval margin bulging medianly (Fig. 55), with 4–5 (rarely 3) short, slender *vms* on each side, and 6–7 short, thorn-like *vss* on each side; 2 *vos* on each side anterior to cross-piece, and 1 *vos* on each side median to *vss*. Measurements ex

Euplectes franciscanus (n = 4): TL = 1.42–1.62; HL = 0.32–0.34; HW = 0.25–0.26; PRW = 0.16–0.17; PTW = 0.25–0.29; AW = 0.33–0.38.



FIGURES 49–50. *Brueelia aguilarae* **n. sp.** ex *Euplectes franciscanus pusillus*: **49,** male habitus, dorsal and ventral views. **50,** female habitus, dorsal and ventral views. Thin dotted lines delimit pigmented areas on head, pterothorax, sternites, and tergite IX+X.



FIGURES 51–55. *Brueelia aguilarae* **n. sp.** ex *Euplectes franciscanus pusillus*: **51,** male head, dorsal and ventral views. **52,** male genitalia, dorsal view. **53,** male mesosome, ventral view. **54,** male paramere, dorsal view. **55,** female subgenital plate and vulval margin, ventral views.

Etymology. The species epithet is in honour of Ms Alexandra Aguilar, previously an undergraduate in the Clayton/Bush lab (University of Utah, Salt Lake City, Utah) who contributed immensely to this project at the initial stages, and gave much technical assistance.

Type material. Ex ***Euplectes franciscanus*****: Holotype** ♂, "Somaliland", Somalia, Feb. 1949, R. Meinertzhagen, 18634-5, marked with black dot on slide (NHML). **Paratypes:** 1♂, 4♀, same data as holotype (NHML).

Brueelia phasmasoma Gustafsson & Bush, new species

(Figs 56–62)

Type host. *Coereba flaveola luteola* (Cabanis, 1850)—bananaquit.
Type locality. Cumuto, Sangre Grande, Trinidad, Trinidad and Tobago.

Diagnosis. *Brueelia phasmasoma* **n. sp.** is immediately separated from all other species here placed in *Brueelia* s. str. by the structure of the preantennal area, which is the same as that of *Acronirmus* (Fig. 85). However, *as2* and *pos* are absent in *Acronirmus* (Fig. 58), but present in *Br. phasmasoma* (Fig. 58). In *Acronirmus* spp. *ads* is posterior to *avs3*, whereas in *Br. phasmasoma*, as in all *Brueelia* s. str., *ads* is anterior to *avs3*. In addition, the abdominal chaetotaxy of *Acronirmus* differ from that of *Br. phasmasoma* (*cf. Br.* phasmasoma in Table 3 with *Acronirmus* in Table 2, and Figs 56–57 with Figs 83–84).

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in Fig. 58. Marginal carina interrupted laterally and medianly, premarginal carina absent. Dorsal preantennal suture arises from hyaline margin and lateral interruption of marginal carina, and is transversally continuous posterior to small, rounded pentagonal dorsal anterior plate. Ventral anterior plate small. Short *vsms2* on lateral margins of clypeo-labral suture. Preantennal nodi small, blunt, do not reach *mds*. Coni slender, reaching to distal margin of scape. Pre- and post-ocular nodi small. Gular plate spade-shaped. Head largely translucent except dark pigmentation on post-marginal carina, preantennal nodi, margins of antennal socket, a dorsal band across antennal socket, flagellomeres II–III, pre- and post-ocular nodi, marginal temporal carina except at occiput, and anterior half of gular plate. Thoracic and abdominal segments as in genus description and Figs 56–57; 5 *mms* on each side, alternating between short and long setae. Proepimera broad, median ends curled around coxae II. Median ends of metepisterna broad, blunt. Body largely translucent, but dark pigmentation on lateral margins of pro- and pterothorax, proepimera, metepisterna, small nodi on all legs, and pleurites.

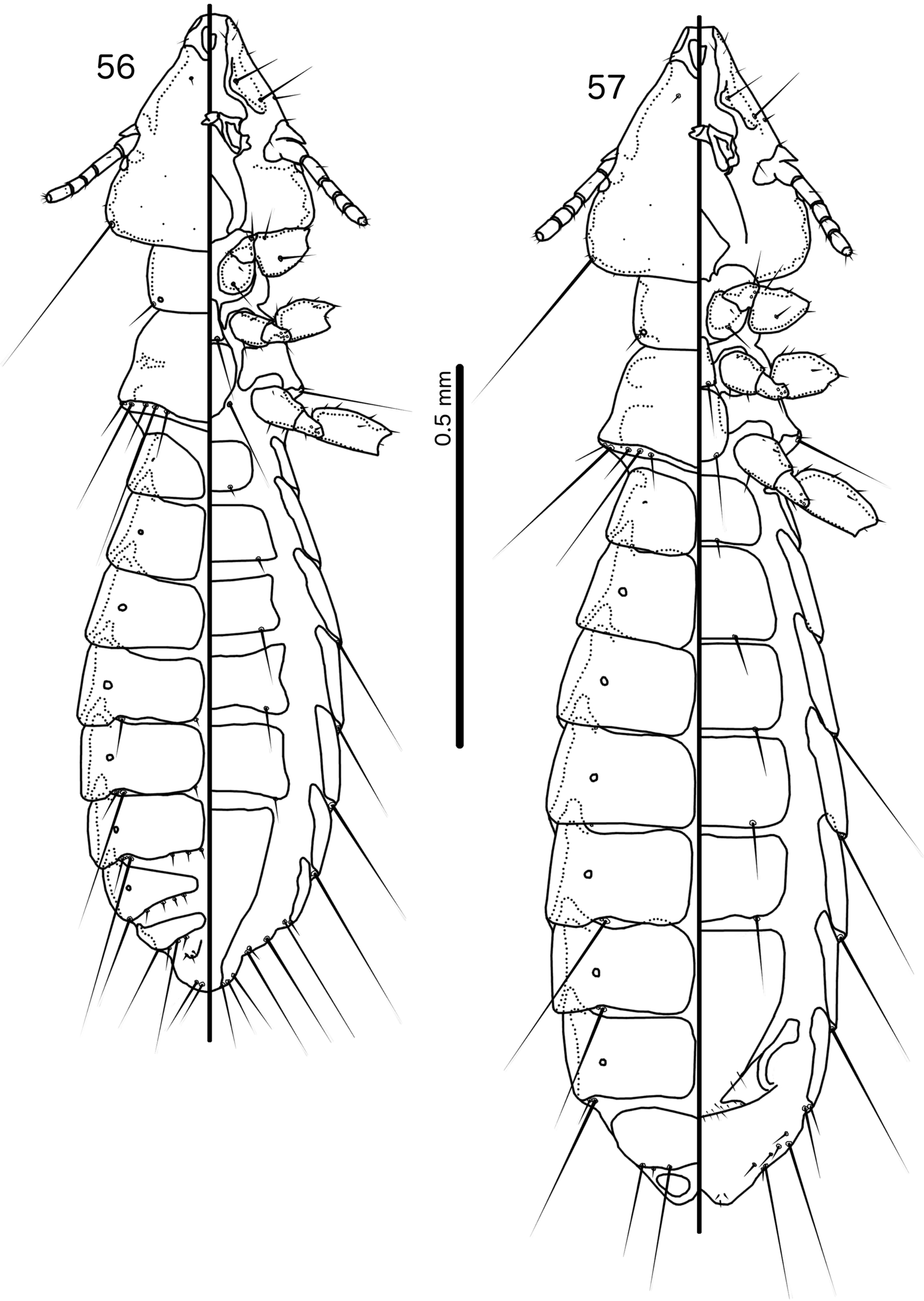
Male. Abdominal chaetotaxy as in Table 3 and Fig. 56; *tps* on tergopleurites VII–VIII. Subgenital plate trapezoidal (Fig. 56). Genitalia (Fig. 59) typical for genus. Anterior end of basal apodeme cannot be seen in the material examined. Proximal mesosome narrowly rounded. Gonopore (Fig. 60) widely open distally. Parameral blades (Fig. 61) slightly elongated distally; *pst1* sensillus, submarginal near distal tip; *pst2* seta, lateral near distal tip. Measurements ex *Coereba flaveola luteola* (n = 1): TL = 1.30; HL = 0.32, HW = 0.28; PRW = 0.17; PTW = 0.25; AW = 0.36.

Female. Abdominal chaetotaxy as in Table 3 and Fig. 57. Subgenital plate rounded triangular (Fig. 62), flaring into cross-piece at vulval margin. Vulval margin (Fig. 62) gently rounded, with 3–5 slender *vms* on each side, and 5–7 short, thorn-like *vss* on each side; 3–4 slender *vos* on each side anterior to cross-piece, and 1 slender *vos* on each side just anterior to *vss*. Measurements ex *Coereba flaveola luteola* (n = 7): TL = 1.43–1.60; HL = 0.33–0.35; HW = 0.28–0.32; PRW = 0.17–0.19; PTW = 0.26–0.29; AW = 0.38–0.45.

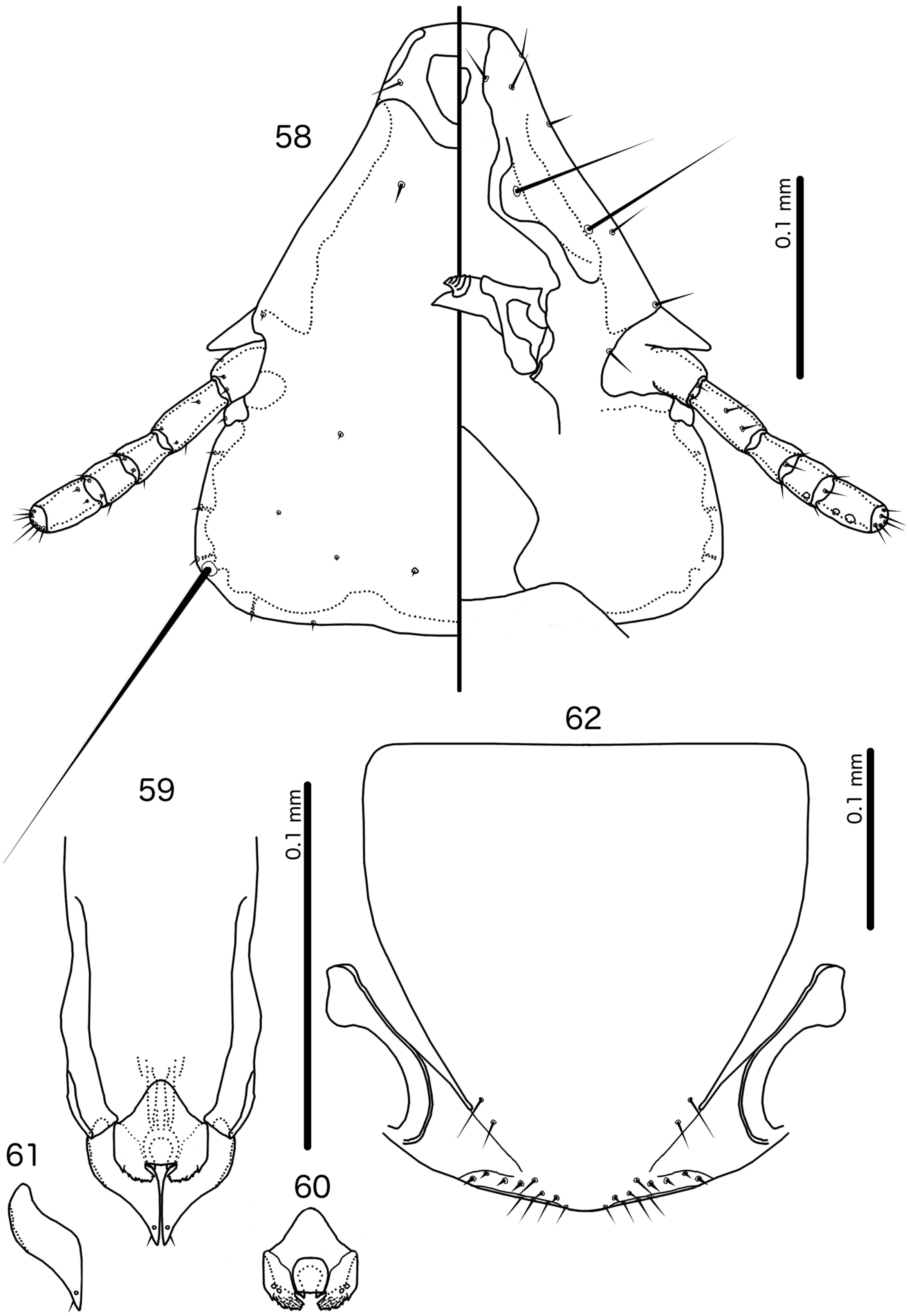
Etymology. The species epithet is formed by Latin "*phasma*" for "ghost" and Greek "*soma*" for "body", referring to the almost entirely translucent body of this species.

Type material. Ex ***Coereba flaveola luteola*****: Holotype** ♂, Cumuto, Sangre Grande, Trinidad, Trinidad and Tobago, 10 May 1960, TRVL-4363, Brit. Mus. 1974-636 (NHML). **Paratypes:** 2♀, same data as holotype (NHML); 2♀, Nariva Swamp, Sangre Grande/Rio Claro Mayaro, Trinidad, Trinidad and Tobago, 30 Sep. 1960, TRVL-4978, Brit. Mus. 1974-636 (NHML); 3♀, Vega de Oropouche, Sangre Grande, Trinidad, Trinidad and Tobago, 24 Nov. 1959, TRVL-3675, Brit. Mus. 1974-636 (NHML); 2♀, Vega de Oropouche, Sangre Grande, Trinidad, Trinidad and Tobago, 14 Apr. 1959, TRVL-2313, Brit. Mus.1974-636 (NHML).

Remarks. *Brueelia phasmasoma* was placed deep inside *Brueelia* s. str. in the phylogeny of Bush *et al.* (2016). However, none of the species closely related to *Br. phasmasoma* have similar modifications of the preantennal



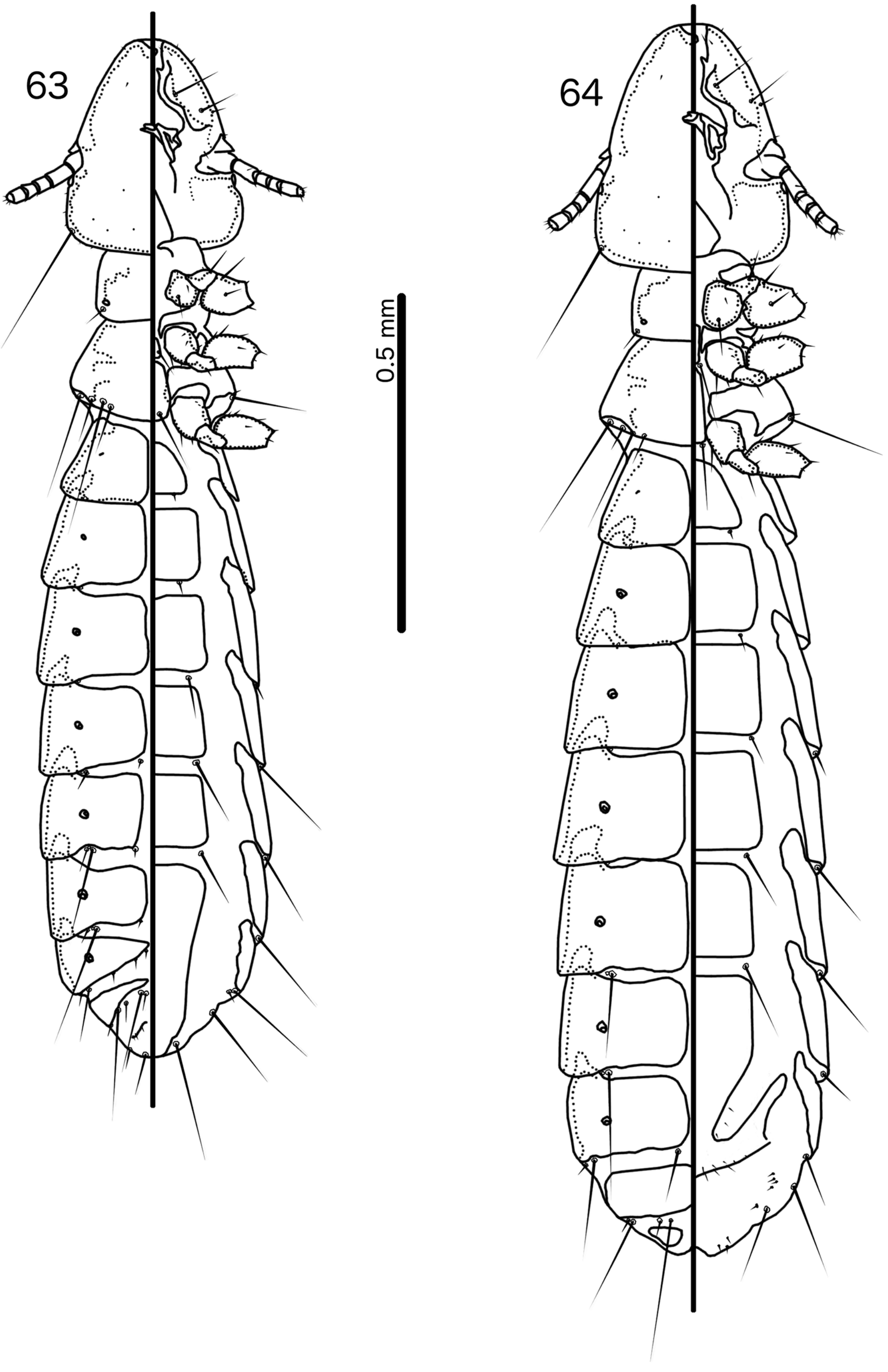
FIGURES 56–57. *Brueelia phasmasoma* **n. sp.** ex *Coereba flaveola luteola*: **56,** male habitus, dorsal and ventral views. **57,** female habitus, dorsal and ventral views.



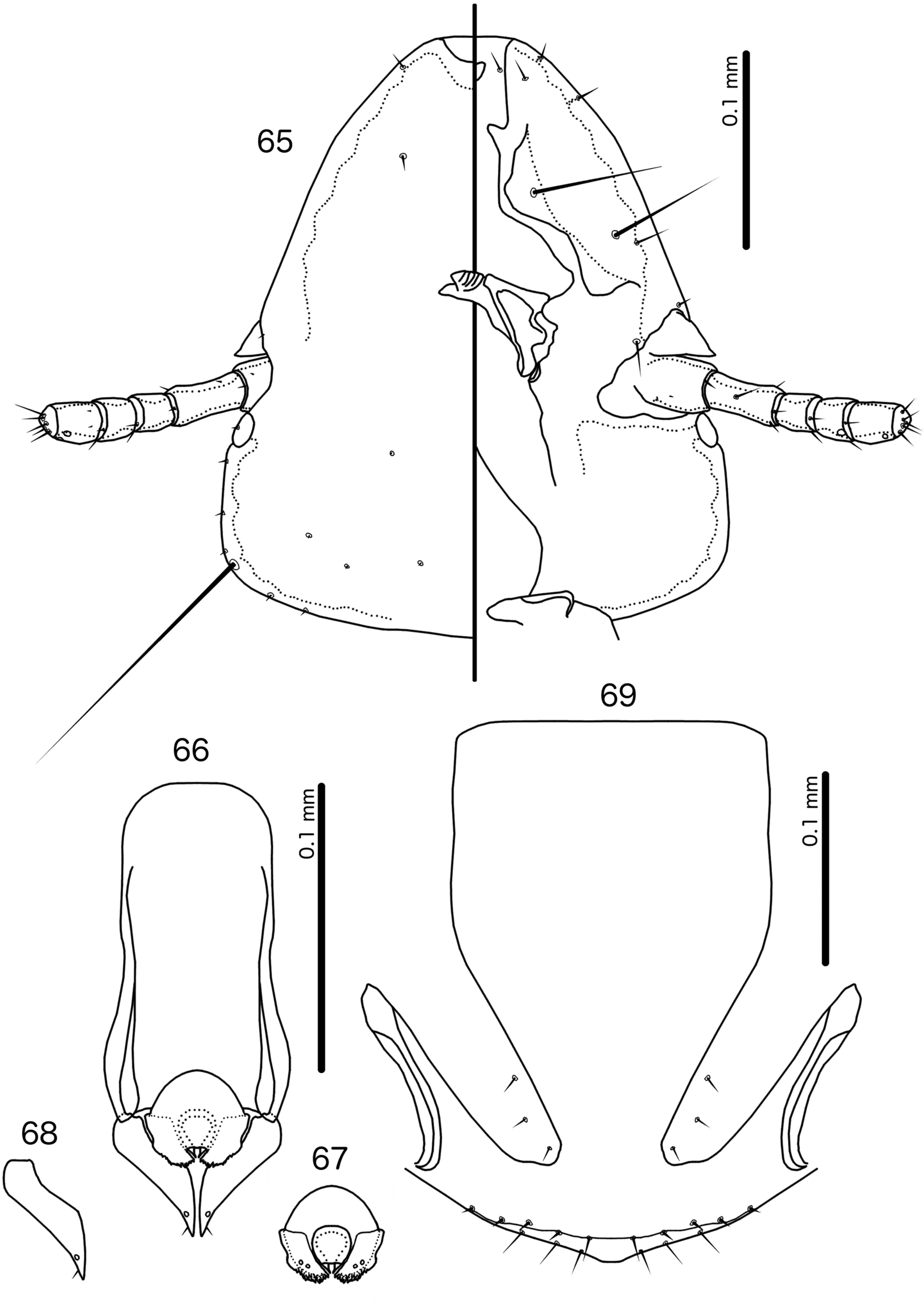
FIGURES 58–62. *Brueelia phasmasoma* **n. sp.** ex *Coereba flaveola* luteola: **58,** male head, dorsal and ventral views. **59,** male genitalia, dorsal view. **60,** male mesosome, ventral view. **61,** male paramere, dorsal view. **62,** female subgenital plate and vulval margin, ventral view.

area. Specimens from *Manacus manacus trinitatis* (Hartert, 1912) and *Volatinia jacarina* (Linnaeus, 1766), both from Trinidad, have similar modifications of the preantennal area but, since only single females from each host were available to us, we cannot properly assess if these females belong to *Br. phasmasoma*.

Williams (1982a) previously reported *Brueelia* sp. from *Coereba flaveola sanctothomae* (Sundevall, 1870) but, as she gave no details about its morphology, we cannot be certain if it is the same species as *Br. phasmasoma*.



FIGURES 63–64. *Brueelia pseudognatha* **n. sp.** ex *Pycnonotus nigricans superior*: **63,** male habitus, dorsal and ventral views. **64,** female habitus, dorsal and ventral views.



FIGURES 65–69. *Brueelia pseudognatha* **n. sp.** ex *Pycnonotus nigricans superior*: **65,** male head, dorsal and ventral views. **66,** male genitalia, dorsal view. **67,** male mesosome, ventral view. **68,** male paramere, dorsal view. **69,** female subgenital plate and vulval margin, ventral view.

Brueelia pseudognatha Gustafsson & Bush, new species

(Figs 63–69)

Type host. *Pycnonotus nigricans superior* Clancey, 1959—black-fronted bulbul.
Type locality. Potchefstroom, Transvaal, South Africa.

Diagnosis. *Brueelia pseudognatha* **n. sp.** belongs to a group of *Brueelia* s. str. that occurs mainly on bulbuls (Pycnonotidae). This group is characterised by the fingerlike extensions of the median margin of the ventral carinae and the abdominal chaetotaxy. The only previously described species that we can positively identify with this group is *Brueelia alophoixi* Sychra [in Sychra *et al*.], 2009. *Brueelia guldum* Ansari, 1955a, probably belongs to this group, but illustrations of *Br. guldum* given by Ansari (1958a) are not detailed enough to be certain. *Brueelia pseudognatha* and *Br. alophoixi* can readily be separated by head shape, with *Br. alophoixi* having a shorter, more trapezoidal head, and *Br. pseudognatha* (Fig. 65) having a more oblong head. In addition, male *Br. pseudognatha* have fewer and shorter abdominal setae, especially on segments VIII–IX (Fig. 42).

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in Fig. 65. Marginal carina slightly widened at clypeo-labral suture. Ventral anterior plate small. Short *vsms2* located in clypeo-labral suture, not on lateral margin. Lateral margins of clypeo-labral suture with distinct protruding finger at anterior end of pulvinus. Preantennal nodi oblong. Coni broad, reaching distal margin of scape. Pre- and post-ocular nodi small. Gular plate spade-shaped. Thoracic and abdominal segments as in genus description and Figs 63–64; 4 *mms* on each side, alternating between short and long setae. Proepimera broad, median ends curled around coxae II. Median ends of metepisterna broad, blunt. Tergopleurites almost entirely translucent. Sternal plates weakly pigmented, but slightly darker around edges.

Male. Abdominal chaetotaxy as in Table 3 and Fig. 63. *tps* present on segment VIII. Subgenital plate slenderly trapezoidal (Fig. 63). Male genitalia (Fig. 66) typical for genus. Proximal mesosome broadly rounded. Gonopore (Fig. 67) narrowly open distally. Parameral blades (Fig. 68) slightly elongated distally; *pst1* sensillus, submarginal near distal tip; *pst2* seta, lateral near distal tip. Measurements ex *Pycnonotus nigricans superior* (n = 2): TL = 1.69–1.78; HL = 0.35; HW = 0.28; PRW = 0.18; PTW = 0.28; AW = 0.37–0.38.

Female. Abdominal chaetotaxy as in Table 3 and Fig. 64. Subgenital plate (Fig. 69) slenderly pentagonal, flaring into cross-piece at vulval margin. Sutural setae present on tergopleurite VIII. Vulval margin slightly protruding medianly (Fig. 69), with 3–4 slender *vms* on each side, and 4 short, thorn-like *vss* on each side; 3–4 slender *vos* on each side anterior to cross-piece, and 1 slender *vos* median to *vss*. Measurements ex *Pycnonotus nigricans superior* (n = 2): TL = 1.48–1.55; HL = 0.33; HW = 0. 26; PRW = 0.17; PTW = 0.25–0.26; AW = 0.33–0.35.

Etymology. The species epithet is derived from Greek "*pseudos*" for "false" and "*gnathos*", for "jaw", referring to the fingerlike extension of the ventral carinae (Fig. 65).

Type material. Holotype ♂, Potchefstroom, Transvaal, South Africa, 12 Jul. 1954, H.E. Paterson, Brit. Mus. 1955-660 (NHML). **Paratypes:** 1♀, same data as holotype (NHML); 1♂, 1♀, Potchefstroom, Transvaal, 1 Oct. 1953, Brit. Mus. 1954-474 (NHML); 1♀, Free State, South Africa, 2 Aug. 1998, K. Johnson, PIPeR #150, voucher for sequence Brsp.Pynig.2.10.1999.3 (PIPeR).

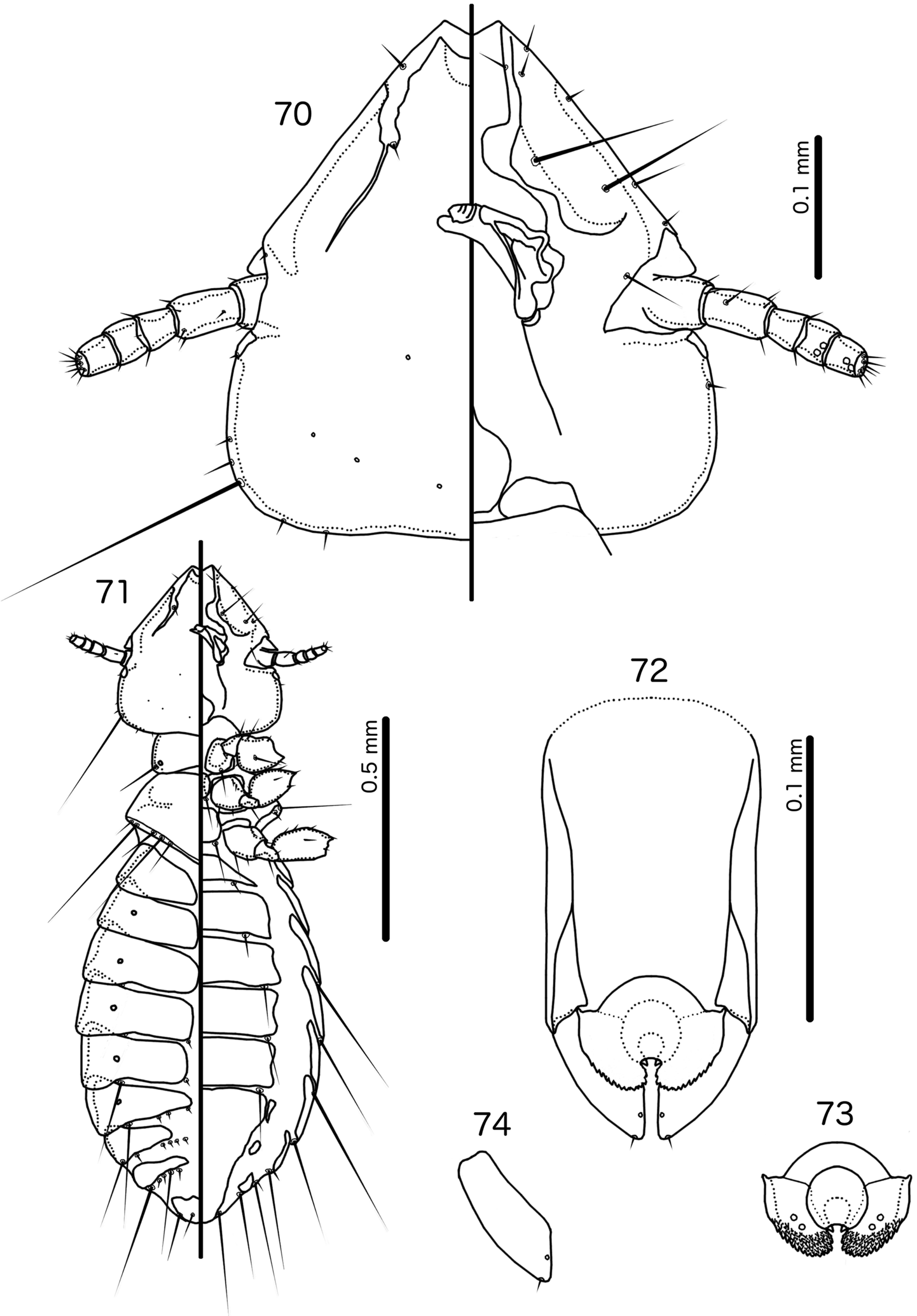
Brueelia audax (Kellogg, 1899)

(Figs 70–74)

Nirmus audax Kellogg, 1899: 25.
Brueelia audax (Kellogg, 1899); Hopkins & Clay, 1952: 53.

Type host. *Auriparus flaviceps* (Sundevall, 1850)—verdin.
Type locality. Baja California.
Other host. *Auriparus flaviceps ornatus* (Lawrence, 1851)—verdin.

Description. ***Both sexes***. Head pentagonal (Fig. 70). Marginal carina widely interrupted submedianly. Hyaline margin continuous with dorsal preantennal suture that follows lateral margin of head posterior to location of *as1*, where it turns median to reach *ads*. Suture not transversally continuous and dorsal anterior plate thus not separated



FIGURES 70–74. *Brueelia audax* (Kellogg, 1899) ex *Auriparus flavifrons ornatus*: **70,** male head, dorsal and ventral views. **71,** male habitus, dorsal and ventral views. **72** male genitalia, dorsal view. **73,** male mesosome, ventral view. **74,** male paramere, dorsal view.

from main head plate. Ventral anterior plate absent. Head setae as in Fig. 70; *as3*, *pns, s3* absent, *pos* clearly ventral and submarginal. Coni short, not reaching distal margin of scapes. Gular plate broadly spade-shaped. Thoracic and abdominal segments as in Fig. 71. Leg chaetotaxy as in genus description, except *fI-p3* absent and *cIv3, fI-d1* present. Abdominal chaetotaxy as in Table 2.

Male. Thoracic and abdominal chaetotaxy as in Table 2 and Fig. 71. Segments VII–VIII with accessory sublateral sternal plates. Basal apodeme (Fig. 72) broad, anterior margin diffuse. Proximal mesosome diffuse, broadly rounded. Gonopore (Fig. 73) broad, narrowly open distally. Mesosomal lobes highly rugose distally. 2 *pmes* visible each mesosomal lobe. Parameral heads (Fig. 74) diffusely rounded. Parameral blades roughly triangular, broad; *pst1* sensillus, submarginal on median margin; *pst2* seta, lateral near distal tip. Measurements ex *Auriparus flaviceps ornatus* (n = 3): TL = 1.23–1.36; HL = 0.34–0.35; HW = 0.35–0.36; PRW = 0.20–0.21; PTW = 0.33–0.34; AW = 0.47–0.52.

Female. Pteronotal setae undetected. Partial abdominal chaetotaxy as in Table 2. Subgenital plate (not illustrated) with median reticulation, possibly without cross-piece but this cannot be seen clearly in specimens examined. Vulval margin (not illustrated) appears strongly curved in holotype, with 3 slender *vms* on each side and 6 short, thorn-like *vss* on each side; 5 long, slender *vos* on each side, 1 distal *vos* median to *vss*. Measurements ex *Auriparus flaviceps ornatus* (n = 1): TL = 1.46; HL = 0.37; HW = 0.38; PRW = 0.23; PTW = 0.36; AW = 0.57.

Type material. Ex ***Auriparus flaviceps*****: Holotype** ♀, Baja California, Mexico, Nov. 1896, [J.F.] Abbott, 437A, EMEC-75, 383 (EMEC).

Additional material examined (non-types)

Ex ***Auriparus flaviceps ornatus*****:** 1♂, 25 miles S of Allende, Coahuila, Mexico, 6 Apr. 1958, C.A. Ely, CAE-461, 15526 on reverse (OSUS); 1♂, same data as previous (NHML); 1♂, same data as previous except CAE-460, PIPeR #104–5 (PIPeR).

Remarks. The holotype is poorly preserved and the only female examined. It can be identified as conspecific with other material examined by us only by the shape of the pterothorax and the preantennal area. Due to the poor state of the holotype, we are unable to illustrate the female body and the vulval margin, and the measurements given here are approximate.

The type locality of this species is unclear, given simply as “Baja Calif.”, and the subspecific identity of the type host cannot be established, as three different subspecies of the host occur near Baja California: *Auriparus flaviceps flaviceps* (Sundevall, 1850), *A. flaviceps lamprocephalus* Oberholser, 1897, and *A. flaviceps acaciarum* Grinnell, 1931.

Brueelia audax was not included in the phylogeny of Bush *et al.* (2016), but the structure of the male genitalia suggests a close relationship with *Brueelia* s. str. In our material studied, the dorsal preantennal suture continues posterior past *ads* towards the preantennal nodi. This section of the suture is narrower than the anterior section, and may be an artifact of mounting. We have illustrated the head with this extension. The preantennal structure and presence of accessory sternal plates in the male are unlike all other *Brueelia* s. str., and the leg chaetotaxy of *Br. audax* differs from all other *Brueelia* s. str. However, considering that the specimens examined are very few and poorly preserved, we tentatively include this species in *Brueelia* s. str. based on the male genitalia and abdominal chaetotaxy.

Teinomordeus Gustafsson & Bush, new genus

Type species. *Teinomordeus entelosetus* **new species**

Diagnosis. *Teinomordeus* **n. gen.** (Figs 75–76) is morphologically similar to *Brueelia* s. str. (Figs 42–43), sharing the same preantennal head structure and chaetotaxy, except that *s3* is present in *Teinomordeus* (Fig. 77) but absent in most *Brueelia* s. str. (Fig. 44). The two genera are separated by the following characters: antennae monomorphic in *Brueelia* s. str. (Fig. 44; except species on *Turdoides* spp.) but sexually dimorphic in *Teinomordeus* (Figs 77–78); *ps* absent on segment II in female *Brueelia* s. str. (Fig. 43) but present in female *Teinomordeus* (Fig. 76); female subgenital plate with cross-piece in *Brueelia* s. str. (Fig. 48), but without cross-piece in *Teinomordeus* (Fig. 82); *ss* absent in male *Brueelia* s. str. on tergopleurites III–IV [except in *Br. nebulosa* (Burmeister, 1838) where *ss* are present on tergopleurite IV; Table 3], but these are present in *Teinomordeus* (Fig. 75). In male *Br. brachythorax tps* are absent, but these are present in male *Teinomordeus* (Fig. 75) and in some groups of *Brueelia* s. str. (see Table 3); however, only in *Br. brevipennis* and *Br. nebulosa* and near relatives of these are *tps* present on tergopleurite V.

Male genitalia of *Teinomordeus* (Figs 79–81) similar to those of *Anarchonirmus* **n. gen.** (Figs 118–120), but differs in the shape of the basal apodeme and mesosomal lobes. In both genera, antennae are sexually dimorphic, but this is more pronounced in *Anarchonirmus* (Figs 116–117) than in *Teinomordeus* (Figs 77–78). Clypeo-labral suture does not reach anterior margin of head in *Anarchonirmus* (Fig. 116), but does so in *Teinomordeus* (Fig. 77). Tergopleurites reach lateral margins of abdomen in *Teinomordeus* (Figs 75–76) but not in *Anarchonirmus* (Figs 114–115). There are also differences in abdominal chaetotaxy of both genera (see Table 2), and while the female subgenital plate flares into a medianly displaced cross-piece in *Anarchonirmus* (Fig. 121), no cross-piece is present in *Teinomordeus* (Fig. 81).

Description. ***Both sexes***. Head convex-dome shaped (Fig. 77), preantennal area shorter than postantennal area in male, but not in female. Marginal carina narrow, not interrupted, but deeply displaced posteriorly and dorsally at clypeo-labral suture. Frons hyaline. Ventral carinae diffuse anterior to pulvinus, not clearly continuous with marginal carina. Head setae as in Fig. 77; *as3* and *pns* absent; *ads* very long; *pos* on eye. Ventral anterior plate absent. Antennae sexually dimorphic: male scape (Fig. 77) longer and broader than female scape (Fig. 78). Coni small. Marginal and occipital carinae not visible. Marginal temporal carina narrow; *mts3* only macroseta. Gular plate diffuse, broadly triangular.

Prothorax (Figs 75–76) rectangular; *ppss* on postero-lateral corner. Proepimera with hook-shaped median ends. Pterothorax trapezoidal: lateral margins divergent, posterior margin gently rounded. Meso- and metasterna not fused; one seta on postero-lateral corner of each on each side. Median ends of metepisterna blunt; *mms* moderately separated medianly. Leg chaetotaxy as in Fig. 25, except *fI-p2, fI-v4, fII-v2, fIII-v2* absent.

Abdomen (Figs 75–76) oval, more oblong in female. Tergopleurites rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly divided medianly. Female tergopleurite XI diffuse. Sternal plates medianly continuous, rectangular, in male approaching pleurites. Pleurites completely fused to tergopleurites; re-entrant heads absent. Abdominal chaetotaxy as in Table 2. Male subgenital plate broadly trapezoidal, reaching posterior margin of abdomen. Female subgenital plate broadly trapezoidal, reaching or approaching vulval margin, but not flaring into cross-piece. Vulval margin (Fig. 82) with slender *vms*, thorn-like *vss*. *vos* follows lateral margins of subgenital plate; distal *vos* median to *vss*.

Basal apodeme (Fig. 79) slenderly rectangular, lateral sections extending distally. Proximal mesosome small, rounded. Gonopore (Fig. 80) large, open distally, antero-laterally with pronounced extensions. Mesosomal lobes large, elongated, rugose distally. Two *pmes* visible on each lobe. Parameral heads (Fig. 81) bluntly bifid. Parameral blades elongated distally, with distinct median heel just distal to mesosome; *pst1–2* near distal end.

Host distribution. Limited to a single species of Laniidae, *Eurocephalus rueppelli.*

Geographical range. Afrotropical.

Etymology. *Teinomordeus* is formed by Greek "*teino*" for "extended", referring to the distally elongated parameres, and Latin "*mordeo*" for "biting", referring to the fact that this is a chewing louse. Gender: masculine.

Remarks. No representative of *Teinomordeus* was included on the phylogeny of Bush *et al.* (2016), and its relationships with other members of the *Brueelia*-complex are unknown. Similarities in head structure and structure of male genitalia places the genus close to *Brueelia* s. str.

Included species
**Teinomordeus entelosetus* new species

Teinomordeus entelosetus Gustafsson & Bush, new species

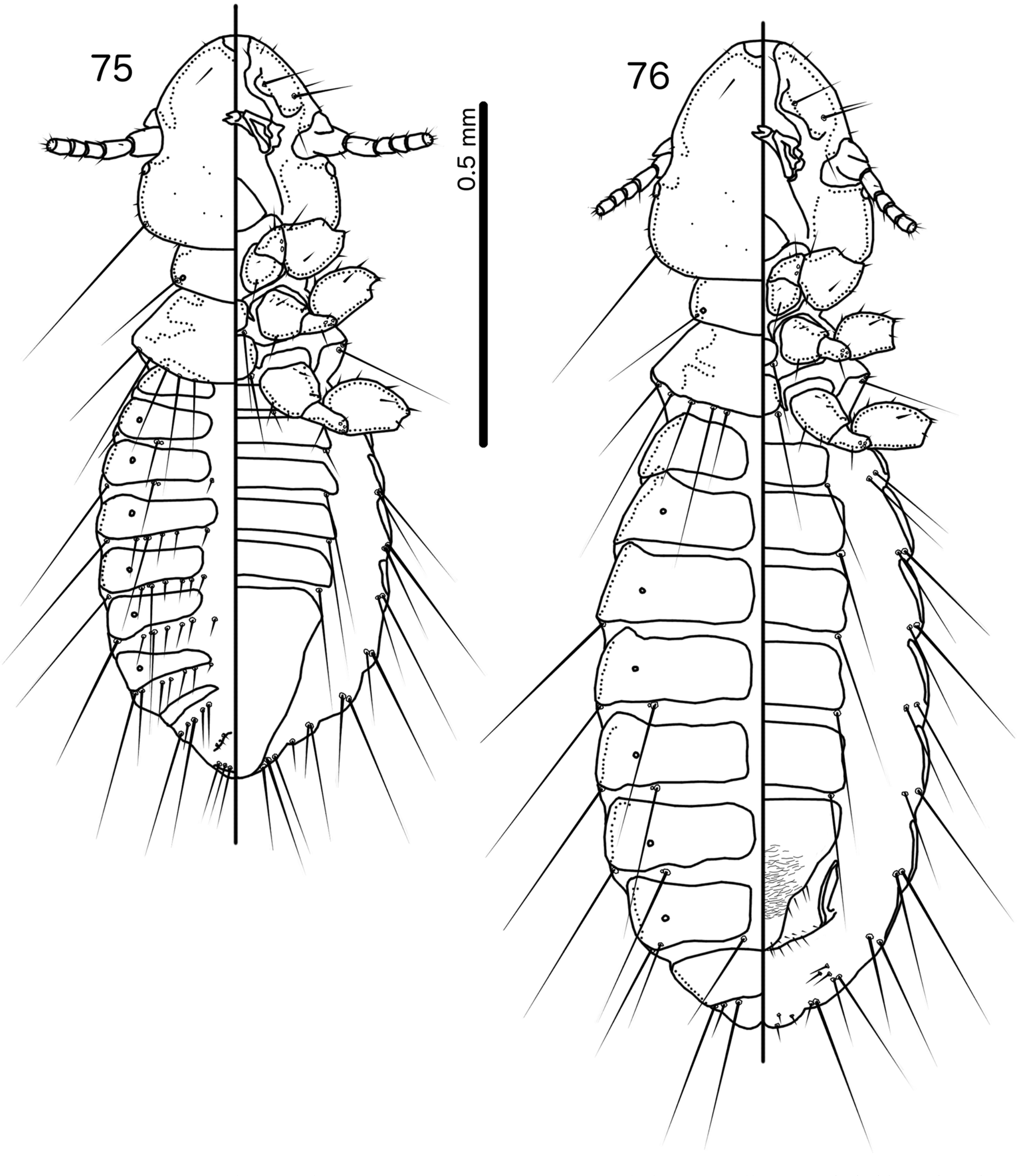
(Figs 75–82)

Type host. *Eurocephalus rueppelli* Bonaparte, 1853—northern white-crowned shrike.
Type locality. "Somaliland", Somalia.

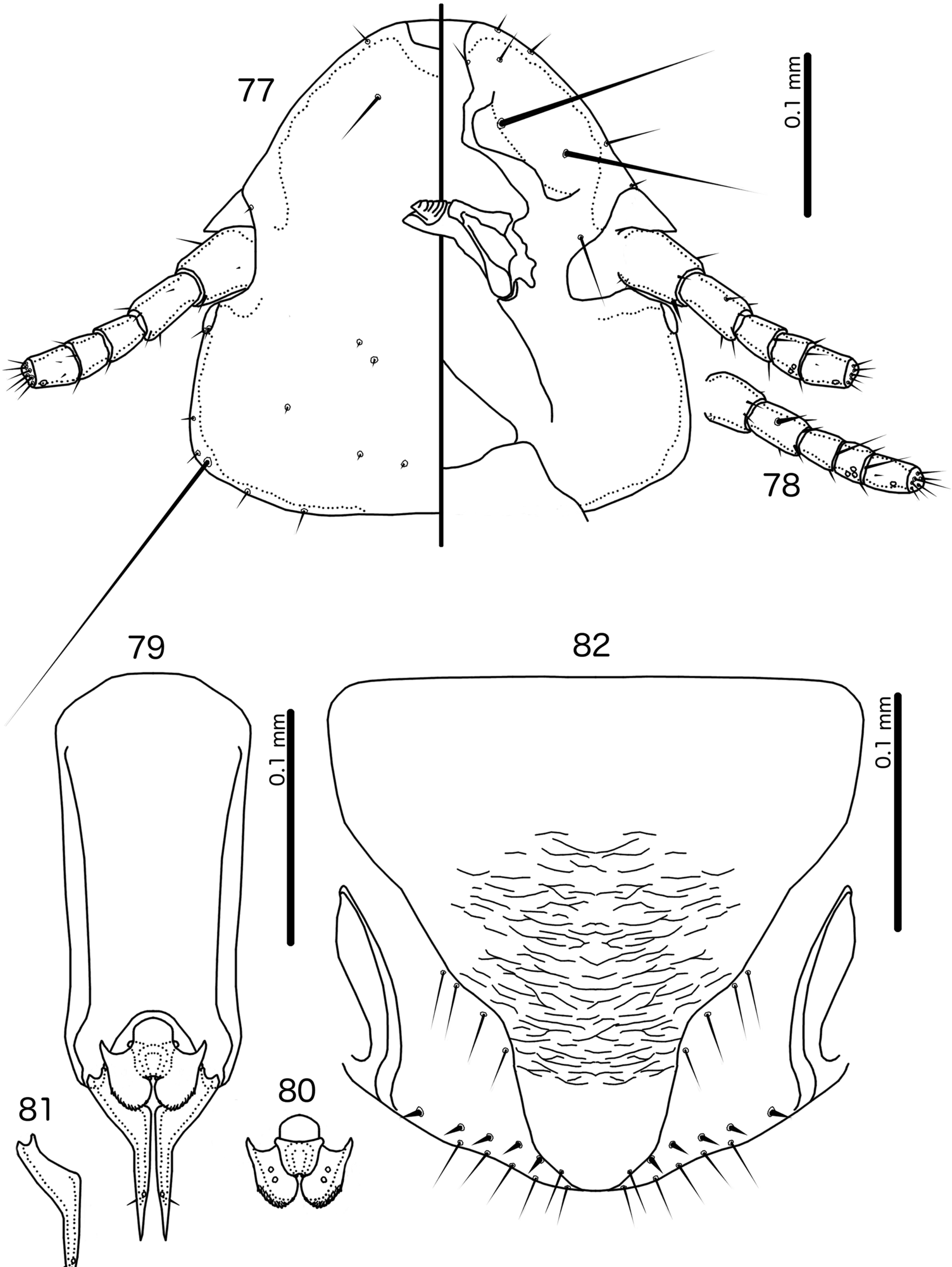
Diagnosis. *Teinomordeus entelosetus* **n. sp.** is superficially similar to some *Brueelia* s. str., particularly *Br. nebulosa* and species from *Turdoides* Cretzschmar, 1826, which also have abdominal setae in more anterior segments. However, *Te. entelosetus* in the only known species in the *Brueelia*-complex which has *ps* on female abdominal segment II, and females are separated from all *Brueelia* s. str. on the lack of a cross-piece. Male *Te. entelosetus* are separated from all *Brueelia* s. str. by the presence of *s3* and the shape of the mesomeral lobes and gonopore (Fig. 80).

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 77. Preantennal nodi long, slender. Pre-ocular nodi prominent, post-ocular nodi absent. Thoracic and abdominal segments as in genus description and Figs 75–76. Sternal plates moderately pigmented, tergopleurites paler.

Male. Preantennal area short (Fig. 77). Scapes approximately twice as long as in female (Fig. 78). Pteronotum with 5–6 *mms* on each side. Abdominal chaetotaxy as in Table 32 and Fig. 75. Male genitalia as genus description and Figs 79–81. Rugose area of mesosomal lobes restricted to lateral and distal margins. Parameres more or less translucent distally; *pst1* sensillus, submarginal near distal tip; *pst2* seta, lateral near distal tip. Measurements ex *Eurocephalus rueppelli* (n = 11, except TL = 10): TL = 0.99–1.15; HL = 0.28–0.32; HW = 0.27–0.31; PRW = 0.17–0.20; PTW = 0.26–0.32; AW = 0.38–0.43.



FIGURES 75–76. *Teinomordeus entelosetus* **n. gen. & n. sp.** ex *Eurocephalus rueppelli*: **75,** male habitus, dorsal and ventral views. **76,** female habitus, dorsal and ventral views.



FIGURES 77–82. *Teinomordeus entelosetus* **n. gen. & n. sp.** ex *Eurocephalus rueppelli*: **77,** male head, dorsal and ventral views. **78,** female antennae, ventral view. **79,** male genitalia, dorsal view. **80,** male mesosome, ventral view. **81,** male paramere, dorsal view. **82,** female subgenital plate and vulval margin, ventral view.

Female. Preantennal area of females (Fig. 76) longer than that of males. Antennae as in Fig. 53. Pteronotum with 5 *mms* on each side. Abdominal chaetotaxy as in Table 2 and Fig. 76; *ps* present on segment II. Subgenital plate rounded triangular, reaching vulval margin but not flaring into cross-piece (Fig. 82); vague reticulation in at least mid-section. Vulval margin (Fig. 82) gently rounded, with 3–5 slender *vms* on each side, 5–6 thorn-like *vss* on each side; 5–6 *vos* on each side, the 1–2 distal *vos* median to *vss*. Measurements ex *Eurocephalus rueppelli* (n = 24): TL = 1.20–1.45 (1.35); HL = 0.32–0.35 (0.34); HW = 0.28–0.32 (0.30); PRW = 0.16–0.20 (0.18); PTW = 0.27–0.32 (0.30); AW = 0.39–0.51 (0.44).

Etymology. The species epithet is formed by Greek "*entēles*" for "complete" and Latin "*seta*" for "bristle". This refers to the fact that the females have pleural setae on all segments, that is, the "complete set" (Fig. 76).

Type material. Ex ***Eurocephalus rueppelli*** **[**as ***Eurocephalus angutimiens rueppelli*** or ***Eurocephalus angutimiens erlangeri*****]: Holotype** ♂, "Somaliland", Somalia, Feb. 1949, R. Meinertzhagen, 18680 (NHML). **Paratypes:** 1♂, 16♀, same data as holotype, 18680–1, 18690–1 (NHML); 9♂, 5♀, Somaliland, Somalia, Jan. 1949, R. Meinertzhagen, 18145 (NHML).

Additional material examined (non-types)

Ex *Eurocephalus rueppelli*: 2♂, 4♀, Zuai, Ethiopia, 20 Nov. 1960, S. Brelih, 3076–7, 3079–82 (PMSL).

Acronirmus Eichler, 1953

Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).
"Acronirmus Kéler, 1939: 50" *nomen nudum*.
Acronirmus Eichler, 1953: 338.
Hirundiniella Carriker 1963: 312.

Type species. *Acronirmus buettikeri* Eichler, 1953: 338 [= *Nirmus gracilis* Burmeister, 1838: 429], by original designation.

Diagnosis. Male genitalia (Figs 85–88), female subgenital plate (Fig. 89), and lack of *pns* and *s3* (Fig. 85) places *Acronirmus* close to *Brueelia* s. str. (Figs 42–48). These two genera can be separated by the following characters: except for *Br. phasmasoma* **n. sp.** (Fig. 58) no *Brueelia* s. str. have interrupted marginal carina or dorsal preantennal sutures, but this is present in all *Acronirmus* (Fig. 85); cross-piece in *Brueelia* s. str. complete (Fig. 48), but partial in *Acronirmus* (Fig. 89); *as2* and *pos* are present in *Brueelia* s. str. (Fig. 44) but absent in *Acronirmus* (Fig. 85). Except for *Br. ornatissima* species group, *Br. pseudognatha* **n. sp.** (Fig. 64), and their close relatives, female *Brueelia* s. str. do not have *ss* (Table 2), but these are present on segments VII–VIII in *Acronirmus* (Fig. 84).

Description. *Both sexes*. Head slenderly pentagonal to drop-shaped (Fig. 85), with preantennal area longer than postantennal area. Marginal carina interrupted laterally and submedianly. Hyaline margin continuous with dorsal preantennal suture which reaches *dsms* and *ads* and may separate dorsal anterior plate from main head plate entirely. Ventral carina not clearly connected to marginal carina anteriorly. Ventral anterior plate present. Head setae as in Fig. 85; *as2-3*, *pns*, and *pos* absent; *s3* absent in *Acronirmus gracilis* but present in other species. Coni small, slender. Antennae monomorphic. *os* small, often hard to see. Temporal carinae not visible; *mts3* only macrosetae, other *mts* small and inconspicuous; *mts1* absent in *Ac. longus*. Gular plate spade-shaped.

Prothorax (Figs 83–84) rectangular; *ppss* on postero-lateral corner. Proepimera hammer-shaped. Pterothorax trapezoidal; lateral margins divergent; posterior margin gently rounded; *mms* widely separated medianly. Meso- and metasterna not fused; 1 seta on each side of each plate. Metepisterna wide, median sections blunt; separation of coxae II and III wider than separation of coxae I and II. Leg chaetotaxy as in Fig. 25, except *cI-v3, fI-p2–3, fI-v2, fII-v2, fIII-v2* absent. Many leg setae minute and hard to see.

Abdomen elongated (Figs 83–84). Abdominal chaetotaxy as in Table 2. Tergopleurites quadratic; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly separated medianly. Sternal plates medianly continuous, quadratic, not reaching pleurites. Pleural incrassations with dorsal and ventral median margins, slender. Re-entrant heads prominent. Male subgenital plate nearly triangular, reaching posterior margin of abdomen. Female subgenital plate pentagonal, reaching vulval margin and falring into cross-piece. Vulval margin (Fig. 89) with slender *vms*, thorn-like *vss*. *vos* follow lateral margins of subgenital plate, not approaching *vss*.

Basal apodeme constricted at midlength (Fig. 86). Proximal mesosome rounded, overlapping basal apodeme. Gonopore (Fig. 87) prominent, open distally. Mesosomal lobes small, thickened distally, rugose. Parameral heads (Fig. 88) bifid. Parameral blades roughly triangular; *pst1* absent; *pst2* microseta, lateral near distal tip.

Host distribution. Exclusive to members of the Hirundinidae, but it is presently known mainly from Holarctic hosts.

Geographical range. Global.

Remarks. In the phylogeny of Bush *et al.* (2016), *Acronirmus* was placed as sister to *Mirandofures* **n. gen.**, and both together formed the sister group of *Brueelia* s. str., a topology that was strongly supported by the molecular data (≥ 0.96 Bayesian Posterior Probability). Distinct morphological characters also support these relationships.

The name *Acronirmus* was first used by Kéler (1939: 50), but was not formally described (Hopkins & Clay 1952: 20), rendering it a *nomen nudum*. Clay & Meinertzhagen (1941: 330) considered the establishment of this genus "unjustified". Eichler (1953) provided a short but characteristic description, stating that the genus (which he did not claim to be new, and seems to have ascribed to Conci; *ibid.* p. 338) was erected for the "extremely slender Brüelinii from the Hirundinidae that are characterised by their special clypeal structure". He provided a single microphotograph of the type, but no satisfactory description either of the genus or of the type host. This short, uninformative description is formally sufficient for the name to be available (*contra* Carriker 1963; Mey & Barker 2014), and thus the more thoroughly described *Hirundiniella* Carriker, 1963, becomes a junior synonym of *Acronirmus* Eichler, 1953.

Included species
Acronirmus albiventris* (Carriker, 1963: 314) **n. comb. [in *Hirundiniella*]
Acronirmus crusculus (Carriker, 1963: 313) **n. comb.** [in *Hirundiniella*]
***Acronirmus gracilis* (Burmeister, 1838: 429) [in *Nirmus*]**
  Nirmus elongatus Denny, 1842: 53 *nec Nirmus elongatus* Olfers, 1816: 88
  Nirmus brevipes Piaget, 1880: 179 **new synonymy**
  Nirmus longus var. *domesticus* Kellogg & Chapman, 1899: 93 **new synonymy**
  Acronirmus buettikeri Eichler, 1953: 338 **new synonymy**
Acronirmus longus* (Kellogg, 1896: 490) **n. comb. [in *Nirmus*]
Acronirmus neotropicalis (Carriker, 1963: 315) **n. comb.** [in *Hirundiniella*]
Acronirmus subis* (Carriker, 1963: 315) **n. comb. [in *Hirundiniella*]
Acronirmus tenuis (Burmeister, 1838: 429) **n. comb.** [in *Nirmus*]

Acronirmus gracilis (Burmeister, 1838)
(Figs 83–89)

Philopterus (*Nirmus*) *gracilis* Nitzsch, 1818: 291 *nomen nudum*.
Nirmus gracilis Burmeister, 1838: 429.
Nirmus elongatus Denny, 1842: 53 *nec Nirmus elongatus* Olfers, 1816: 88.
Nirmus brevipes Piaget, 1880: 179 **new synonymy.**
Nirmus longus var. *domesticus* Kellogg & Chapman, 1899: 93 **new synonymy.**
Degeeriella brevipes Piaget; Harrison, 1916: 109.
Degeeriella domestica Kellogg & Chapman, 1899; Harrison, 1916: 112.
Degeeriella elongata Denny; Harrison, 1916: 112.
Degeeriella gracilis Nitzsch in Burmeister; Harrison, 1916: 114.
Degeeiella gracilis (Nitzsch, 1818); Séguy, 1944: 312.
Brueelia brevipes (Piaget), 1880; Hopkins & Clay, 1952: 54.
Brueelia domestica (Kellogg & Chapman), 1899; Hopkins & Clay, 1952: 55.
Brueelia elongata (Denny), 1842; Hopkins & Clay, 1952: 55 (as junior synonym of *Br. gracilis*).
Brueelia gracilis (Burmeister), 1838; Hopkins & Clay, 1952: 56.
Acronirmus buettikeri Eichler, 1953: 338 **new synonymy.**
Hirundiniella gracilis (Burmeister, 1838); Złotorzycka, 1997: 178.
Hirundiniella domestica (Kellogg & Chapman, 1899); Złotorzycka, 1997: 178.
Brueelia buettikeri (Eichler, 1953); Price *et al.* 2003: 153.

Type host. *Delichon urbicum urbicum* (Linnaeus, 1758).

Type locality. None given, likely Germany.

Other hosts. *Cecropis abyssinica puella* (Temminck & Schlegel, 1845)– lesser striped-swallow **new host record.** *Cecropis abyssinica unitatis* (Sclater & Mackworth-Praed, 1942)—lesser striped-swallow **new host record.** *Cecropis badia* Cassin, 1853—rufous-bellied swallow **new host record.** *Cecropis daurica erythropygia* (Sykes, 1832)—red-rumped swallow **new host record.** *Cecropis daurica japonica* (Temminck & Schlegel, 1845)—red-rumped swallow **new host record.** *Cecropis daurica rufula* (Temminck, 1835)—red-rumped swallow **new host record.** *Cecropsis senegalensis saturatior* (Bannermann, 1923)—mosque swallow **new host record.** *Delichon dasypus cashmirensis* (Gould, 1858)—Asian house-martin **new host record.** *Delichon dasypus dasypus* (Bonaparte, 1850)—Asian house-martin **new host record.** *Hirundo aethiopica amadoni* White, 1956—Ethiopian swallow **new host record.** *Hirundo angolensis* Bocage, 1868—Angola swallow **new host record.** *Hirundo rustica erythrogaster* Boddaert, 1783—barn swallow **new host record.** *Hirundo rustica rustica* Linnaeus, 1758—barn swallow [Ref.: Złotorzycka,1997: 179]. *Hirundo rustica savignii* Stephens, 1817—barn swallow **new host record.** *Hirundo rustica tytleri* Jerdon, 1864—barn swallow **new host record.** *Hirundo tahitica javanica* Sparrman, 1789—Pacific swallow **new host record.** *Ptyonoprogne rupestris* (Scopoli, 1769)—Eurasian crag-martin [Ref.: Blagoveshchensky 1951]. *Riparia chinensis chinensis* (Gray, 1830)—grey-throated martin **new host record.** *Riparia diluta indica* Ticehurst, 1916—pale sand martin **new host record.**

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in Fig. 85. Marginal carina widely interrupted laterally; the interruption of the carina is wider than the dorsal preantennal suture where it meets the lateral margin of the head. Dorsal anterior plate short, broadly pentagonal. Ventral anterior plate rounded. Dorsal preantennal suture completely separates dorsal anterior plate from main head plate. Ventral carinae very slender. Preantennal nodi not distinct. Coni very short. Preocular nodi small, rectangular. Postocular nodi small, not much wider than marginal temporal carina. Gular plate roundedly-triangular. Thoracic and abdominal segments as in genus description and Figs 83–84. 6 *mms* setae on each side, alternating between long and short setae.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 83. Subgenital plate roughly triangular, narrowing only in distal third. Male genitalia (Fig. 86) dissimilar to those depicted by Fresca (1925: 287), apart from the general outline. Proximal mesosome broadly rounded, narrowed slightly at proximal third. Mesosomal lobes (Fig. 87) short and broad, rugose or fringed distally, with two *pmes* on each side. Parameral heads (Fig. 88) bifid anteriorly, but fingers very short. Parameral blades curved medianly, not much elongated distally; *pst2* setae, lateral near distal tip. Measurements ex *Cecropsis abyssinica puella* (n = 1): TL = 1.49; HL = 0.33; HW = 0.25; PRW = 0.18; PTW = 0.22; AW = 0.24. Ex *C. badia* (n = 2): TL = 1.43–1.46; HL = 0.32–0.34; HW = 0.24–0.25; PRW = 0.16–0.17; PTW = 0.20–0.23; AW = 0.22–0.32. Ex *C. daurica erythropygia* (n = 1): TL = 1.40; HL = 0.33; HW = 0.23; PRW = 0.16; PTW = 0.20; AW = 0.25. Ex *C. daurica rufula* (n = 1): TL = 1.69; HL = 0.36; HW = 0.26; PRW = 0.18; PTW = 0.23; AW = 0.29. Ex *C. senegalensis saturiator* (n = 3): TL = 1.40–1.43; HL = 0.34–0.36; HW = 0.25; PRW = 0.17; PTW = 0.22–0.23; AW = 0.26–0.28. Ex *Delichon dasypus dasypus* (n = 2): TL = 1.43–1.50; HL = 0.33–0.34; HW = 0.24; PRW = 0.16; PTW = 0.21–0.23; AW = 0.27–0.28. Ex *D. urbicum* (n = 15): TL = 1.58–1.75 (1.63); HL = 0.34–0.37 (0.36); HW = 0.23–0.27 (0.25); PRW = 0.16–0.19 (0.17); PTW = 0.22–0.26 (0.24); AW = 0.26–0.34 (0.30). Ex *Hirundo aethiopica* (n = 2): TL = 1.46–1.61; HL = 0.31–0.35; HW = 0.23–0.26; PRW = 0.16–0.17; PTW = 0.21–0.23; AW = 0.25–0.29. Ex *H. angolensis* (n = 2): TL = 1.59–1.60; HL = 0.34; HW = 0.25; PRW = 0.16–0.17; PTW = 0.23; AW = 0.29–0.32. Ex *H. rustica rustica* (n = 15): TL = 1.50–1.72 (1.60); HL = 0.34–0.37 (0.35); HW = 0.25–0.27 (0.26); PRW = 0.17–0.19 (0.17); PTW = 0.22–0.26 (0.24); AW = 0.25–0.34 (0.30). Ex *H. r. savignii* (n = 1): TL = 1.58; HL = 0.35; HW = 0.26; PRW = 0.18; PTW = 0.23; AW = 0.27. Ex *H. r. tytleri* (n = 1): TL = 1.52; HL = 0.33; HW = 0.24; PRW = 0.17; PTW = 0.23; AW = 0.27. Ex *H. tahitica javancia* (n = 2): TL = 1.46–1.50; HL = 0.31–0.32; HW = 0.24; PRW = 0.17; PTW = 0.22; AW = 0.26–0.27. Ex *Riparia chinensis* (n = 1): TL = 1.52; HL = 0.34; HW = 0.26; PRW = 0.17; PTW = 0.23; AW = 0.25.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 84. Female subgenital plate roughly pentagonal, with concave lateral margins (Fig. 89). Vulval margin (Fig. 89) with 3–4 short, slender *vms* on each side, and 5–7 short, thorn-like *vss* on each side; median *vss* progressively longer; 3–4 slender *vos* on each side. Measurements ex *Cecropsis abyssinica puella* (n = 1): TL = 1.88; HL = 0.37; HW = 0.29; PRW = 0.21; PTW = 0.28; AW = 0.36. Ex *C. a. unitatis* (n = 1): TL = 1.85; HL = 0.38; HW = 0.29; PRW = 0.19; PTW = 0.24; AW = 0.38. Ex *C. badia* (n = 1): TL = 1.80; HL = 0.37; HW = 0.27; PRW = 0.18; PTW = 0.24; AW = 0.39. Ex *C. daurica japonica* (n = 1): TL = 1.82; HL = 0.36; HW = 0.27; PRW = 0.17; PTW = 0.23; AW = 0.33. Ex *C. d. rufula* (n = 1): TL = 2.06; HL = 0.38; HW = 0.28; PRW = 0.19; PTW = 0.27; AW = 0.40. Ex *C. senegalensis saturiator* (n = 1): TL = 1.79; HL = 0.38; HW = 0.27; PRW = 0.18; PTW = 0.26; AW = 0.35. Ex *Delichon dasypus cashmirensis* (n = 1): TL = 1.82; HL

= 0.36; HW = 0.27; PRW = 0.18; PTW = 0.25; AW = 0.31. Ex *D. d. dasypus* (n = 1): TL = 1.80; HL = 0.36; HW = 0.26; PRW = 0.17; PTW = 0.25; AW = 0.28. Ex *D. urbicum* (n = 15): TL = 1.84–2.11 (1.95); HL = 0.37–0.41 (0.38); HW = 0.26–0.30 (0.28); PRW = 0.18–0.21 (0.19); PTW = 0.25–0.30 (0.27); AW = 0.29–0.38 (0.33). Ex *Hirundo aethiopica* (n = 1): TL = 1.92; HL = 0.38; HW = 0.28; PRW = 0.19; PTW = 0.25; AW = 0.34. Ex *H. angolensis* (n = 2): TL = 1.97–2.08; HL = 0.37–0.39; HW = 0.29; PRW = 0.19; PTW = 0.26–0.28; AW = 0.39–0.41. Ex *H. rustica erythrogaster* (n = 1): TL = 1.88; HL = 0.35; HW = 0.27; PRW = 0.18; PTW = 0.25; AW = 0.33. Ex *H. r. rustica* (n = 15): TL = 1.84–2.07 (1.94); HL = 0.37–0.41 (0.39); HW = 0.27–0.31 (0.29); PRW = 0.19–0.22 (0.20); PTW = 0.25–0.29 (0.27); AW = 0.32–0.38 (0.34). Ex *H. r. savignii* (n = 5): TL = 1.91–2.04; HL = 0.36–0.38; HW = 0.28–0.29; PRW = 0.18–0.20; PTW = 0.25–0.27; AW = 0.29–0.35. Ex *H. r. tytleri* (n = 2): TL = 1.91–1.99; HL = 0.36–0.38; HW = 0.28; PRW = 0.19; PTW = 0.26–0.27; AW = 0.35–0.38. Ex *H. tahitica javanica* (n = 3): TL = 1.79–1.92; HL = 0.36–0.38; HW = 0.28–0.29; PRW = 0.19–0.20; PTW = 0.25–0.26; AW = 0.32–0.37. Ex *Ptyonoprogne rupestris* (n = 2): TL = 2.03–2.05; HL = 0.39–0.40; HW = 0.29–0.30; PRW = 0.19; PTW = 0.27–0.28; AW = 0.39–0.40. Ex *Riparia diluta diluta* (n = 2): TL = 1.98–2.07; HL = 0.37–0.38; HW = 0.28–0.29; PRW = 0.19–0.20; PTW = 0.26–0.27; AW = 0.30–0.34.

Type material. Ex ***Delichon urbicum urbicum***: **Holotype** ♀, Ilkley, Yorkshire, England, United Kingdom, Denny Collection, [BM] 1852-98 (NHML). **Paratypes:** 2♀, same data as holotype (NHML).

Ex ***Hirundo rupestris***: **Holotype** ♀ **of *Acronirmus buettikeri***: Capri, Italy, Dec. 1885, A. König, 302b (MFNB).

Ex ***Calidris ferruginea***: **Syntypes** of ***Brueelia brevipes***: 2♀, unknown locality, Piaget Collection, 767 (NHML).

Additional material examined (non-types)

Ex ***Cecropsis abyssinica puella***: 1♂, 1♀, Kumasi, [Ashanti Region], Ghana, 30 Apr. 1966, F.R. Allison, BM 1966-291 (NHML).

Ex ***Cecropsis abyssinica unitatis***: 1♀, Kenya, Feb. 1930, R. Meinertzhagen, 6791 (NHML).

Ex ***Cecropsis badia***: 1♂, Wang Blachun, Satun Province, Thailand, 8 Aug. 1967, 7E-1544, 24616 on reverse (NHML); 1♂, "on road", Krabi Province, Thailand, 28 Jun. 1962, W. Songprakob, RE-6317 (PIPeR); 1♀, Thap Put District, Phang Nga Province, Thailand, 20 Aug. 1962, W. Songprakob, RE-6396 (PIPeR).

Ex ***Cecropsis daurica erythropygia***: 1♂, Yercaud, Salem District, Tamil Nadu, India, 11 May 1970, XIE-951, 24613 on reverse (NHML).

Ex ***Cecropsis daurica japonica***: 1♂, Mount Cagua, Philippines, 11 Jul. 2011, P4494 RMT121 (PIPeR); 1♀, Philippines, voucher for sequence Brsp.Hidau.10.25.2011.9 (PIPeR).

Ex ***Cecropsis daurica rufula***: 1♂, 1♀, "M.M.", Israel, 4 Aug. 1959, 80b/4, BM 1959-541 (NHML).

Ex ***Cecropsis senegalensis saturatior***: 1♂, Kenya, Jan. 1936, R, Meinertzhagen, 6214 (NHML); 2♂, 1♀, Kenya, Mar. 1936, R. Meinertzhagen, 7002 (NHML).

Ex ***Delichon dasypus cashmirensis***: 1♀, Sankhuwasabha District, Kosi Zone, Eastern Region, Nepal, 29 Jul. 1973, HE-0654 (NMNH).

Ex ***Delichon dasypus dasypus***: 1♂, 1♀, Tachikawa Air Force Base, Tokyo, Japan, 31 May 1965, H.E. McClure, SE-1537–8, 16461 and 16464 on reverse (OSUS); 1♂, Chino, Nagano Prefecture, Japan, 7 Jul. 1964, H.E. McClure, SE-1633, 16463 on reverse (OSUS); 1♀, Fort Brooks, Malaysia, 26 Jan. 1963, M-02325, 16465 on reverse (OSUS).

Ex ***Delichon urbicum urbicum***: 1♂, Khuta Maji, Vwaza Marsh, Vwaza Wildlife Preserve, Malawi, 17 Oct. 2009, Swati Patel, FMNH-INS 0000 029 059, voucher for sequence Brgr.2.9.2011.37 (FMNH); 1♂, 1♀, Borovnica, Slovenia, 25 Feb. 1953, S. Brelih, 2515, 2517 (NMNH); 3♂, 3♀, unknown locality and date, 50356, 50357, and 50406 (MFNB); 1♂, 1♀, Netherlands? [host name in Dutch], 24 Jul. 1937, Geihskers, 418 (MFNB); 1♀, Tolmin, Slovenia, 18 Jun. 1958, S. Brelih, 2520 (PMSL); 1♀, Borovnica, Slovenia, 25 Aug. 1953, F. Leben, 29 (PMSL); 5♂, 4♀, Borovnica, Slovenia, 25 Aug. 1953, S. Brelih, 216–8, 1987–8, 2029–30, 2513–4, 25–6, 2518–9 (PMSL); 1♂, 1♀, Stozice, Ljubljana, Slovenia, 25 Jul. 1978, D. Sere, 13589–90 (PMSL); 1♀, Tolmin, Slovenia, 18 Jun. 1958, S. Brelih, 16466 on reverse (OSUS); 1♂, 4♀, Bolton, United Kingdom, 2 Sep. 1953 (NHML); 10♂, 4♀, Wiltshire, United Kingdom, Aug. 1946, R. Meinertzhagen, 15882 (NHML); 1♂, 1♀, Midlothian, Scotland, United Kingdom, 26 Jul. 1965, Eskgrove Lab, BM 1965-641 (NHML); 1♀, Ross-Shire, Scotland, United Kingdom, Jul. 1934, R. Meinertzhagen, 1230 (NHML); 5♂, 5♀, Barns Elm Reservoir, Surrey, England, United Kingdom, 27 Jul, 1965, C.A. Walker, BM 1965-307 (NHML); 1♀, Budds Farm Sweage Works, Bedhampton, Hampshire, United Kingdom, 20 May 1979, W. Sanders, BM 19789-308 (NHML); 1♂, 1♀, Bolton, Lancashire, United Kingdom, 28 Sep. 1958, A. Hazelwood, BM 1958-561 (NHML); 3♂, 4♀, Suffolk, United Kingdom, Jun. 1934, R. Meinertzhagen, 1284 (NHML); 1♂, 1♀, Austey Hall, Cambridgeshire, United Kingdom, Sep. 1949, G.B. Thompson, BM 1980-40 (NHML); 1♂, 6♀, Morocco, Nov. 1938, R. Meinertzhagen, 12129 (NHML).

Ex ***Hirundo aethiopica amadoni***: 2♂, 1♀, Somalia, Jan, 1949, R. Meinertzhagen, 18188 (NHML).

Ex ***Hirundo angolensis***: 2♂, 2♀, "Baluba Stream", Zambia, 16 Nov. 1953, BM 1954-137, ML/110 (NHML).

Ex ***Hirundo rustica erythrogaster***: 1♀, Orr's Farm, Dugway, Tooele County, Utah, USA, 14 Jan. 1954, N.V. Chamberlain, 382 B-1601, 16450 on reverse (OSUS).

Ex ***Hirundo rustica rustica***: 1♀, Ljubljane Okolica, Slovenia, 21 Apr. 1956, S. Brelih, 213 (NMNH); 1♀, Miez. Wisl., Skowronki, Poland, 12 Sep. 1962, [J.] Złotorzycka, 18/a/7 (MFNB); 2♂, unknown locality, Eichler Collection, 7005 (MFNB); 3♂, 1♀, Berlin, Germany, 26 Jun. 1952, Sanft, IN 1388/1 (MFNB); 2♂, 2♀, Sliven, Bulgaria, 26 May 1957, F. Balát (PMSL); 2♀, Idrija, Slovenia, 22 Aug. 1974, S. Brelih, 13000 (PMSL); 1♂, 3♀, Stozice, Ljubljana, Slovenia, 12 Jul. 1977, D. Sere, 13015–13018 (PMSL); 4♂, 1♀, Idrija, Slovenia, 18 Sep. 1977, D. Sere, 13121–13125 (PMSL); 1♀, Jarse ob Savi, Ljubljana, Slovenia, 1 Oct. 1980, D. Sere, 14040 (PMSL); 1♂, 2♀, Cleveland, Yorkshire, United Kingdom, 21 May 1954, BM 1954-473 (NHML); 1♀, Norfolk, United Kingdom, 29 Jun. 1969, M. Payne, BM 1970-259 (NHML); 1♂, North Stoke, Sussex, United Kingdom, 20 May 1937, G.B. Thompson, BM 1980-40 (NHML); 1♀, Hursley Road, Chandler's Ford, Hampfordshire, United Kingdom, 10 Aug. 1978, W.P. Sanders BM 1979-251 (NHML); 4♂, 4♀, Ushant, Brittany, France, Apr. 1935, R. Meinertzhagen, 3409, 3350 (NHML); 2♂, Dollymount, Leinster County, Ireland, 7 Sep. 1938, O. Mahoney, BM 1980-40 (NHML); 1♀, Tel Fara, Israel, 29 Sep. 1960, 1220/1 and BM 1961-403 (NHML); 2♂, near Figuig, Morocco, 12 Apr. 1965, C.A. Walker, BM 1965-307 (NHML); 6♂, 16♀, Morocco, Oct. 1938, R. Meinertzhagen, 12131 (NHML); 1♂, 1♀, Slivem, Bulgaria, 26 May 1957, F. Balát, BM 1972-342 (NHML).

Ex ***Hirundo rustica savignii***: 1♂, 5♀, Egypt, Apr. 1936, R. Meinertzhagen, 4828 (NHML).

Ex ***Hirundo rustica tytleri***: 1♂, 2♀, Imphal, Manipur, India, 13 Jan. 1952, R. Meinertzhagen, 19715 (NHML).

Ex ***Hirundo rustica* ssp.** [Material from Thailand and Malaysia is likely from either *H. r. gutturalis* Scopoli, 1786, or *H. r. tytleri* Jerdon, 1864]: 2♀, Phayuha Khiri District, Nakhon Sawan Province, Thailand, 8 Mar. 1953, R.E. Elbel, RE-1659, RT-B-17592 (PIPeR); 2♂, 2♀, Bangkok, Thailand, 18 Jan. 1966, MAPS-3870 (OSUS); 1♂, 1♀, same data as previous (NHML); 2♂, 3♀, Bangkok, Thailand, 10 Mar. 1965, H.E. McClure, SE-1696, one slide marked 16455 on reverse (OSUS); 1♂, 1♀, Phayuha Khiri District, Nakhon Sawan Province, Thailand, 8 Mar. 1953, R.E. Elbel, RE-1659, RT-B-17597 (OSUS); 1♂, 1♀, Mount Brinchang, Pahang State, Malaysia, 14 Dec. 1961, M-00723 (OSUS); 3♂, no collection data, (NHML); 1♂, 1♀, Phayuha Khiri District, Nakhon Sawan Province, Thailand, 8 Mar. 1953, R.E. Elbel, RE-1659, RT-B-17597, PIPeR#116 (PIPeR)

Ex ***Hirundo tahitica javanica***: 2♂, 2♀, Calatagan, Batangas Province, Philippines, 8 Sep. 1965, MAPS 6E-1263, 24614 and 24611 on reverse (NHML); 1♀, Banjarmasin, South Kalimantan Province, Borneo, Indonesia, 7 Jan. 1971, XIE-122, 015-71800, 24612 on reverse (NHML).

Ex ***Ptyonoprogne rupestris***: 1♀, Dubrovnik, Croatia, 10 Jan. 1977, A Lesinger, 13560 (PMSL); 1♀, Afghanistan, May 1937, R. Meinertzhagen, 10244 (NHML).

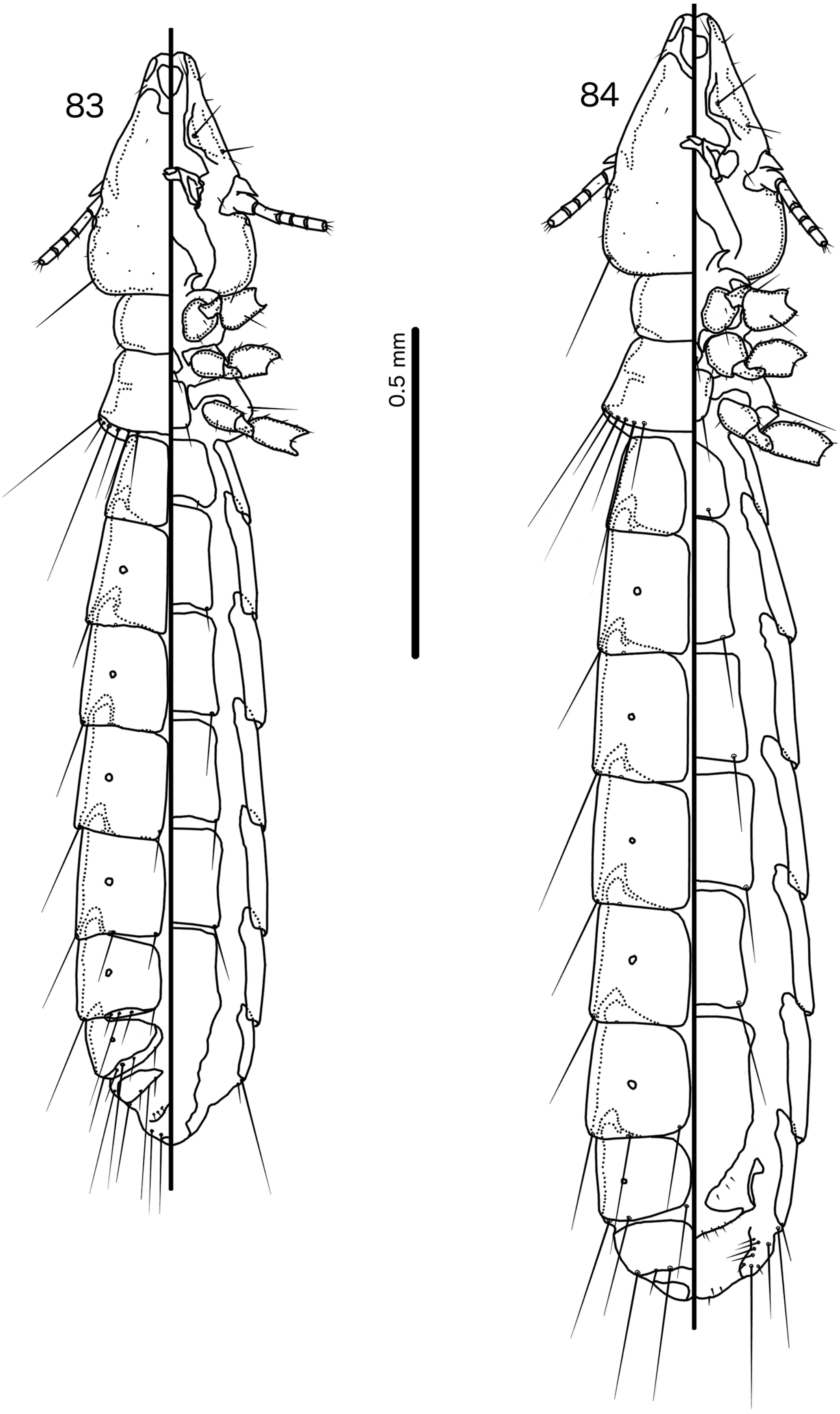
Ex ***Riparia chinensis chinensis***: 1♂, Sind, India, Jan. 1937, R. Meinertzhagen, 10374 (NHML).

Ex ***Riparia diluta indica***: 3♀, Peshawar, India, Mar. 1937, R. Meinertzhagen, 9234-35 (NHML).

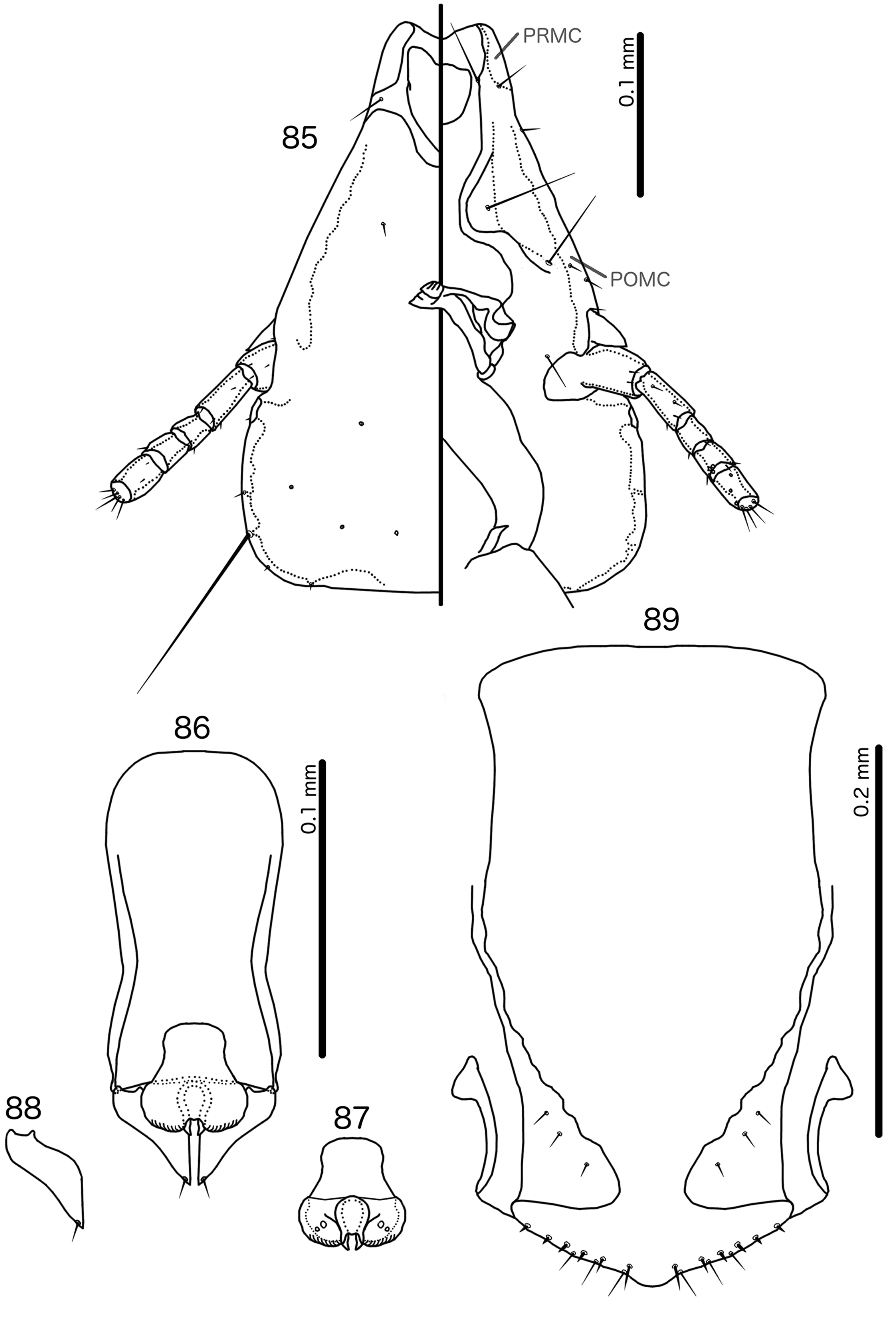
Ex ***"Mehlschwalbe"***: 3♀, unknown locality and date, IN 1335/44 (MFNB).

Remarks. First mentioned as *Philopterus* (*Nirmus*) *gracilis* by Nitzsch (1818: 291), but this is a *nomen nudum*. When Burmeister (1838: 421) gave the first formal description of the species, he changed the type host from *Hirundo rustica* to *Delichon urbicum*, which is therefore the correct type host and author.

We were unable to find any morphological differences among *Acronirmus gracilis*, *Ac. buettikeri,* and *Ac. longus domesticus* from their type hosts, or among these and most specimens of *Acronirmus* from other Old World hosts (see host list). Genetically, material from Eurasian *D. urbicum*, *H. rustica*, and *Cecropsis daurica* is virtually identical (Bush *et al.* 2016 and unpublished data). We therefore consider *Brueelia longus domesticus* and *Ac. buettikeri* to be junior synonyms of *Br. gracilis*. The original descriptions of all three species are poor, and modern redescriptions (Złotorzycka 1997) of *Ac. gracilis* and *Ac. domesticus* are uninformative.



FIGURES 83–84. *Acronirmus gracilis* (Burmeister, 1838) ex *Delichon urbicum urbicum*: **83,** male habitus, dorsal and ventral views. **84,** female habitus, dorsal and ventral views.



FIGURES 85–89. *Acronirmus gracilis* (Burmeister, 1838) ex *Delichon urbicum urbicum*: **85,** male head, dorsal and ventral views. **86,** male genitalia, dorsal view. **87,** male mesosome, ventral view. **88,** male paramere, dorsal view. **89,** female subgenital plate and vulval margin, ventral view. *Abbreviations*: POMC, postmarginal carina; PRMC, premarginal carina.

We here report many new host records. Material examined from these hosts is morphologically inseparable from that of *D. urbicum*. This suggests that virtually all Old World hosts from which *Acronirmus* are known are parasitised by the same species, *Ac. gracilis*. We have not seen any material of *Ac. tenuis* (Burmeister, 1838), with type host *Riparia riparia*, but this louse species is very likely conspecific with *Ac. gracilis*.

Some material examined, ostensibly from *D. urbicum*, is from outside the range of this host (see Turner & Rose 1994), and most likely collected from its close relative *D. dasypus*, now often considered a separate species (see e.g. Sheldon *et al*. 2005). Other reports from East Asia (e.g. McClure & Ratanaworabhan 1973) may also refer to this host species, but the wintering ranges overlap (see Turner & Rose 1994).

We have examined two females of *Bruelia brevipes* from the Piaget Collection at the NHML, and both are *Ac. gracilis*. The type host of this species is *Tringa subarquata* (= *Calidris ferruginea* Pontoppidan, 1763), but extensive surveys of this host (DG, unpublished data) have revealed no specimens of *Acronirmus*. We therefore assume this is a straggler or a misattribution of the host, and do not list this host species in the checklist.

In general, heads of both sexes are smaller towards southern localities (see measurements), with Southeast Asian and Australasian specimens having smaller heads than European and Mediterranean specimens. This distinction does not hold for material from migratory species (*D. urbicum*, *H. rustica,* and *C. daurica*), which contain both small-headed and large-headed specimens collected from the same general areas. We therefore do not presently attach any significance to these differences. Potentially, this could be evidence of a difference between small-headed lice on host wintering grounds in Africa or South-East Asia, and large-headed lice on host breeding grounds in temperate Eurasia. The material available to us from wintering grounds of the hosts is not sufficient to test this hypothesis.

This louse species has an unusually wide host range, and we can only speculate about why it infests so many host species across Eurasia, Africa, and North America. Hippoboscid flies are common on swallows (DG, pers. obs.) and may provide means of transmission by phoresy. Keirans (1975) listed a single record of phoresy on a hippoboscid fly taken from a swallow. There may also be opportunities for direct contact among those host species that have overlapping wintering or breeding grounds.

Mirandofures **Gustafsson & Bush, new genus**

Nirmus Nitzsch, 1818: 291 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).

Type species. *Mirandofures kamena* **new species**

Diagnosis. The structure of the male genitalia of *Mirandofures* **n. gen.** (Figs 94–96, 102–104) suggests a close relationship with *Brueelia* s. str. (Figs 45–47), *Teinomordeus* **n. gen.** (Figs 79–81), *Sychraella* **n. gen.** (Figs 110–112), and *Anarchonirmus* **n. gen.** (Figs 118–120), yet members of all these genera (except *Br. phasmasoma* **n. sp.**, Fig. 58) lack a dorsal preantennal suture and have uninterrupted marginal carina. In contrast, the marginal carina of *Mirandofures* (Figs 92, 100) is interrupted laterally, and these interruptions are connected transversally by a suture that does not reach or approach the anterior end of the head. This dorsal preantennal suture pattern is unique within the *Brueelia*-complex. The marginal carina of some species within *Brueelia* s. str. widens at the osculum, but this pattern is never as extreme in *Brueelia* s. str. as in *Mirandofures* where the wideing forms a marginal carinal plate (Fig. 92). Male genitalia of *Mirandofures* are variable (Figs 94–96, 102–104), with some being more similar to those of *Brueelia* s. str. (Figs 45–47) and some more similar to those of *Teinomordeus* (Figs 79–81). In *Mirandofures* (Figs 96, 104) *pst1* is distal to *pst2*, which is similar to *Sychraella* (Fig. 112), but unlike in *Brueelia* s. str. (Fig. 47), *Teinomordeus* (Fig. 81), *Acronirmus* (Fig. 88), and *Anarchonirmus* (Fig. 120).

Description. ***Both sexes***. Head drop-shaped to trapezoidal (Figs 92, 100). Preantennal area much elongated in some species (Fig. 92). Marginal carina interrupted only laterally, deeply displaced dorsally and posteriorly at osculum. Displaced section in many species widened into distinct marginal carinal plate. Ventral anterior plate present. Ventral carinae typically continuous with marginal carina but diffuse anteriorly in some species. Dorsal preantennal suture arises from lateral interruptions of marginal carina and is transversally continuous; dorsal anterior plate roughly triangular. Head setae as in Figs 92, 100; *as3*, *pns*, and *pos* absent; *as1* often minute and hard to see; *vsms1* much longer than *vsms2*; *ads* located in transversal suture. Coni moderate, blunt. Antennae sexually dimorphic, with male scapes (Figs 92, 100) longer and thicker than female scapes (Figs 93, 101). Pedicel and flagellomeres often slightly longer in male than in female. Temporal carinae not visible; *mts3* only macrosetae. Gular plate long, spade-shaped.

Prothorax (Figs 90–91, 98–99) square to slightly rectangular; *ppss* on postero-lateral corner. Proepimera slender median ends; hook- or hammer-shaped. Pterothorax trapezoidal (Figs 90–91, 98–99); lateral margins moderately divergent; posterior margin flat or rounded convergent to blunt median point; *mms* widely to moderately separated medianly. Meso- and metasterna not fused, either with one seta on postero-lateral corner on each side of both plates, or with setae only on postero-lateral corners of metasternum. Metasternum typically much larger than mesosternum. Metepisternum very broad: median ends blunt. Distance between coxae II–III much larger than between coxae I–II. Third pair of legs typically noticeably longer than others. Leg chaetotaxy as in Fig. 25 except *fI-d1*, *fI-p2, fI-v4, fII-v2, fIII-v2* absent.

Abdomen drop-shaped in male (Figs 90, 98), elongated oval in female (Figs 91, 99). Abdominal chaetotaxy as in Tables 2 and 4. The most lateral *tps* is often longer than more median *tps*, but it is not associated with the sensillus of the *psps*, and therefore we do not interpret these as *psps* here (however *Mirandofures fasciata* Sychra [in Sychra *et al.*], 2010a, has setae that appears to be *psps* and *aps*; but we have not examined any material of this species). Tergopleurites square to rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly divided medianly. Sternal plates medianly continuous, broad, approaching pleurites. Pleural incrassations with dorsal and ventral median margins. Re-entrant heads elaborate, hook-shaped. Male subgenital plate broadly trapezoidal (Fig. 90) to T-shaped (Fig. 98) reaching posterior margin of abdomen. Female subgenital plate variable (Figs 97, 105; see also e.g. *Mi. amandavae* Rékási & Saxena, 2005). Vulval margin (Figs 97, 105) with slender *vms*, thorn-like *vss*; *vos* forms transversal row on posterior end of segment VII, with some setae scattered posterior to subgenital plate in some species (e.g. *Mi. kamena* **n. sp.**, Fig. 97).

TABLE 4. Chaetotaxy of abdominal segments II–VIII of males of some *Mirandofures*. Trichoid setae of segment VIII are present in all species, and are not listed. Sets of setae differing from those of *Mi. kamena* are highlighted in **bold**. Material examined from all species is from their respective type hosts. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
Mi. kamena **n. sp.**	IV–VIII	–	–	IV–VIII	V–VIII	II–VI
Mi. fasciata	**III–VIII**	**V–VII**	**V–VII**	**IV–VII**	**IV–VII**	**II–VI**
Mi. amandavae and Mi. stenozona	**III–VIII**	–	**VI–VII**	IV–VIII	V–VIII	II–VI

Male genitalia as in Figs 94–96, 102–104. Basal apodeme rectangular, with or without constriction at mid-length; posterior margin indented medianly. Proximal mesosome oval or trapezoidal, small. Gonopore (Figs 95, 103) closed proximally. Mesosomal lobes small, typically densely rugose along distal and lateral margins. Up to 3 *pmes* visible on each side near gonopore. Parameral heads blunt (Fig. 104) or shallowly bifid (Fig. 96) Parameral blades typically elongated triangular, but may be much extended distally as in *Mirandofures altoguineae* (Fig. 104); *pst1* sensillus, located distal to *pst2* and at or near distal tip of parameres; *pst2* microseta, lateral. Both *pst1–2* often hard to see.

Host distribution. *Mirandofures* is so far known mainly from members of the Estrildidae. Apart from the species listed below, we have seen material from a range of genera within this family, indicating that *Mirandofures* may be found throughout the Estrildidae.

Geographical range. *Mirandofures* appears to occur throughout the range of the host family, with species described from Africa, Asia, and Australasia.

Etymology. *Mirandofures* is a combination of Latin "*miranda*", meaning "worthy of admiration", and Latin "*fur*", meaning "thief", with the arbitrary ending "*es*". Gender: feminine.

Remarks. *Mirandofures* formed a monophyletic clade in the phylogenies of Balakrishnan & Sorensen (2006) and Bush *et al.* (2016). In the Balakrishnan & Sorensen (2006) study, the *Brueelia*-complex lice on the Estrildidae were placed in a polytomy with other clades which may all be *Brueelia* s. str., but we have not studied their material, and no identifications to species level were given in their paper. In their COI-only tree (Balakrishnan &

Sorensen 2006: fig. 3), the group from the Estrildidae is placed as a sister group to a taxon we suspect is *Brueelia* s. str. This placement was echoed roughly in Bush *et al*. (2016), where *Mirandofures* ("Clade J") forms a sister group to *Acronirmus*, and together these are placed as a sister group to *Brueelia* s. str. In Bush *et al's*. (2016) analysis, the *Mirandofures* terminal taxa show several deep divisions, possibly reflecting the large differences in male genitalia found in the genus. *Mirandofures kamena* is placed as a sister to all other *Mirandofures*, perhaps reflecting the unique shape of the female subgenital plate found in this species.

Included species
Mirandofures altoguineae* **new species
Mirandofures amandavae* (Rékási & Saxena, 2005: 88) **n. comb. [in *Brueelia*]
Mirandofures astrildae (Tendeiro & Mendes, 1994: 124) **n. comb.** [in *Brueelia*]
Mirandofures fasciata (Sychra [in Sychra *et al*.], 2010a: 61) **n. comb.** [in *Brueelia*]
***Mirandofures kamena* new species**
Mirandofures lonchurae (Tendeiro & Mendes, 1994: 125) **n. comb.** [in *Brueelia*]
Mirandofures munia (Ansari, 1955b: 56) **n. comb.** [in *Brueelia*]
Mirandofures muniae* (Eichler, 1957: 580) **n. comb. [in *Brueelia*] **[1]**
    Brueelia eichleri Lakshminarayana, 1969: 62 **new synonymy**
Mirandofures stenozona* (Kellogg & Chapman, 1902: 158) **n. comb. [in *Brueelia*]

[1] A single letter is technically sufficient to prevent homonymy according to article 57.6 of the I.C.Z.N (International Commission on Zoological Nomenclature, 1999). We therefore reinstate Eichler's name.

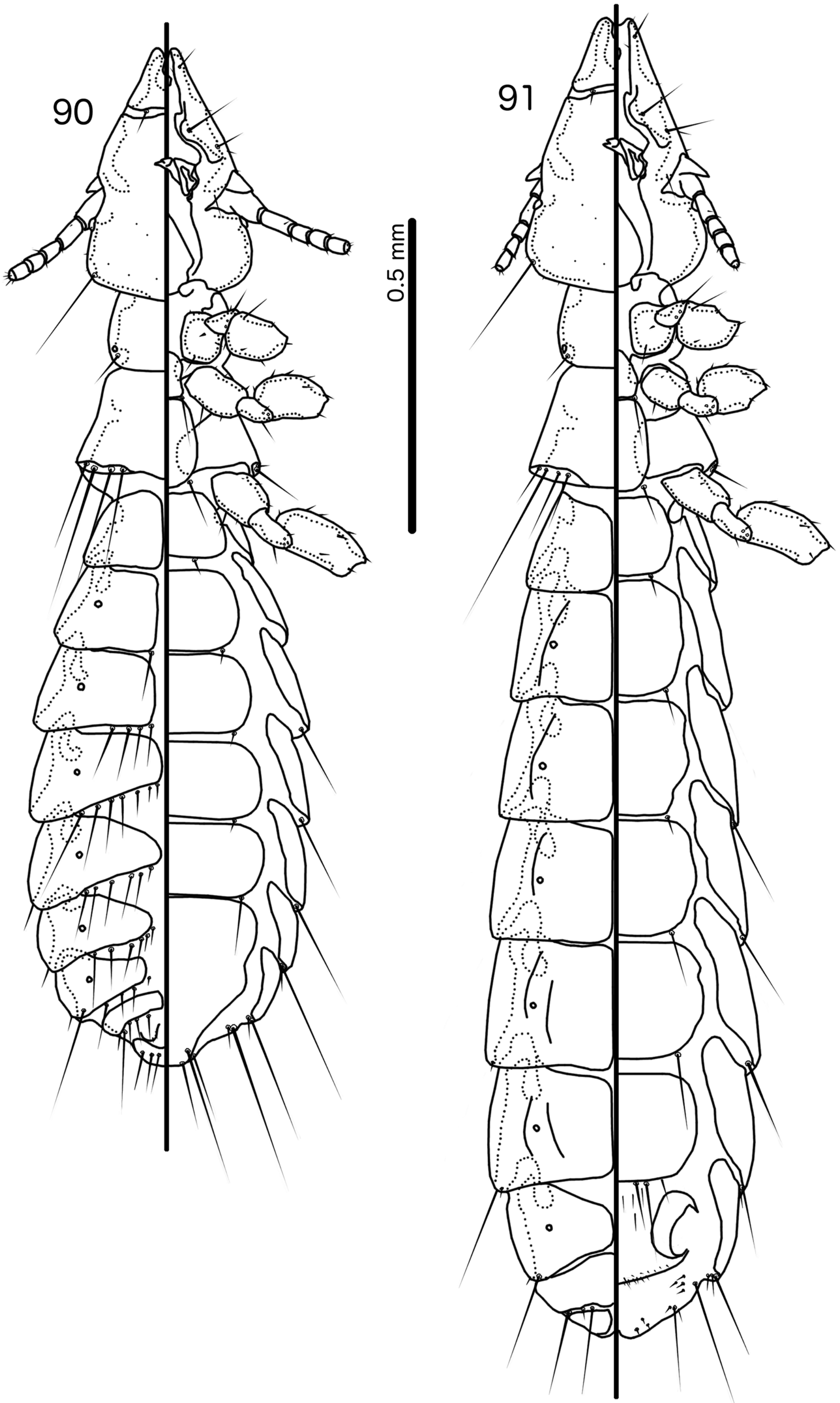
Mirandofures kamena Gustafsson & Bush, new species
(Figs 90–97)

Type host. *Erythrura trichroa sigillifer* (De Vis, 1897)—blue-faced parrotfinch.
Type locality. Mount Kaindi, elev. 2300 m, Morobe District, Papua New Guinea.

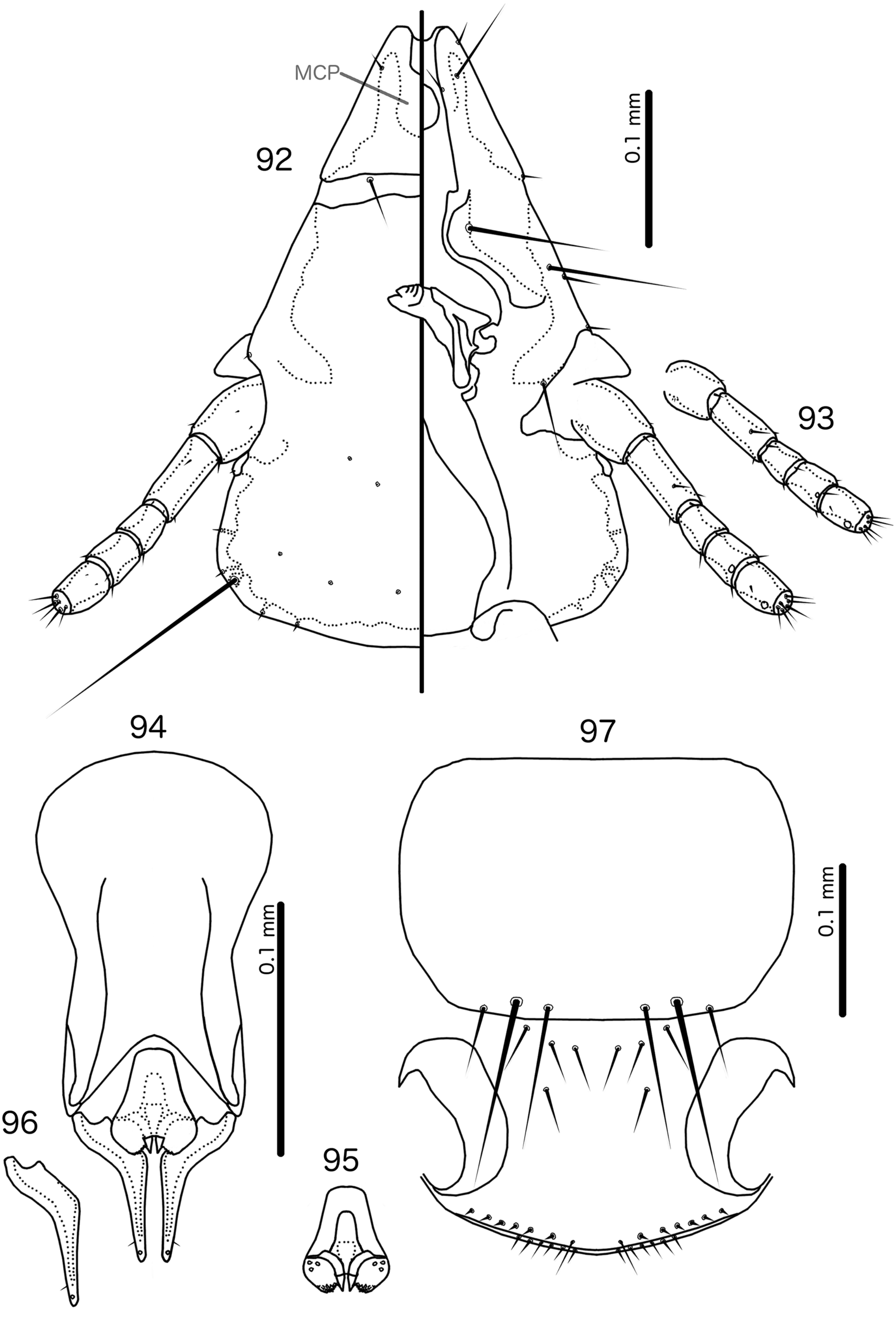
Diagnosis. Females are separated from all other described species in the genus by the lack of a median extension of the subgenital plate (Fig. 97) and the set of large setae on the posterior margin of the subgenital plate. Male genitalia (Figs 94–96) similar to those of *Mirandofures amandavae*, but the parameres of *Mirandofures kamena* **n. sp.** are larger, more elongate, and more strongly curved. The mesosome of *Mi. kamena* is longer and broader with more extensive mesosomal lobes and more prominent lateral nodi of the gonopore in *Mi. kamena* than in *Mi. amandavae*.

The head shape (Fig. 92) and male genitalia (Figs 94–96) of *Mi. kamena* are similar to those of *Mi. stenozona*. However, the preantennal area of *Mi. kamena* is proportionally longer and more narrow anteriorly than is the case in *Mi. stenozona*, and the marginal carinal plate is not as extensive in *Mi. stenozona* as in *Mi. kamena.* In both species, the proximal mesosome is roughly rectangular, the parameres are slender and elongated, and there is no distinct heel of the paramere distal to the mesosome. However, the mesosomal lobes of *Mi. kamena* are broad and rounded with rugose area limited to distal margin, whereas in *Mi. stenozona* the lobes are slender, somewhat angular distally, and with the rugose areas extending along the entire lateral margins. Female *Mi. kamena* are separated from female *Mi. stenozona* by the fact that in the former species the subgenital plate does not extend posteriorly towards the vulval margin, whereas in the latter species a broad median section of the subgenital plate reaches the vulval margin. The long setae at the posterior margin of the subgenital plate in *Mi. kamena* (Fig. 97) are absent in *Mi. stenozona*.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 92. Marginal carinal plate extensive, obovate. Marginal temporal carina, postmarginal carina, and head nodi with dark brown pigmentation. Thoracic and abdominal segments as in genus description and Figs 90–91. Pleural ridge prominent, swollen. Pleural incrassations with large median extensions in anterior end, especially prominent in females. Sternal plates and median section of tergopleurites translucent in both sexes, but pleurites and lateral sections of tergopleurites medium to dark brown, lighter brown in area around spiracle openings.



FIGURES 90–91. *Mirandofures kamena* **n. gen.** & **n. sp.** ex *Erythrura trichroa sigillifer*: **90,** male habitus, dorsal and ventral views. **91,** female habitus, dorsal and ventral views.



FIGURES 92–97. *Mirandofures kamena* **n. gen.** & **n. sp.** ex *Erythrura trichroa sigillifer*: **92,** male head, dorsal and ventral views. **93,** female antenna, ventral view. **94,** male genitalia, ventral view. **95,** male mesosome, ventral view. **96,** male paramere, dorsal view. **97,** female subgenital plate and vulval margin, ventral view. *Abbreviation*: MCP, marginal carinal plate.

Male. Antennae as in Fig. 92. Abdominal chaetotaxy as in Table 4 and Fig. 90; *ss* of tergopleurites III–IV often absent. Basal apodeme with constriction at mid-length (Fig. 94). Proximal mesosome trapezoidal, rounded. Gonopore (Fig. 95) narrowly open distally. Mesosomal lobes rounded, small, with rugose distal ends. Small submedian spur on each lobe; 3 *pmes* sensilla sublaterally on each lobe. Parameral heads (Fig. 96) bifid. Parameral blades gently curved around mesosome, distally elongate, slender; *pst1–2* as in genus description. Measurements ex *Erythrura trichroa sigillifer* (n = 13, except n = 10 for TL and n = 12 for AW): TL = 1.41–1.57 (1.48); HL = 0.33–0.39 (0.36); HW = 0.24–0.26 (0.25); PRW = 0.16–0.20 (0.18); PTW = 0.23–0.28 (0.26); AW = 0.36–0.44 (0.39).

Female. Antennae as in Fig. 93. Abdominal chaetotaxy as in Table 4 and Fig. 91. Subgenital plate rounded rectangular (Fig. 97), not modified compared to other sternal plates; distal margin not or only slightly bulging medianly, not approaching vulval margin. Vulval margin gently rounded, not bulging medianly (Fig. 97), with 4–6 slender *vms* on each side, and 4–6 short, thorn-like *vss* on each side. One long, slender setae median to *vss* on each side; 2–3 long setae on posterior margin of subgenital plate on each side, and 3–5 shorter, slender *vos* scattered posterior to subgenital plate on each side. Measurements ex *Erythrura trichroa sigillifer* (n = 15 except n = 14 for TL and n = 13 for AW): TL = 1.89–2.08 (1.99); HL = 0.40–0.42 (0.41); HW = 0.27–0.29 (0.28); PRW = 0.19–0.21 (0.20); PTW = 0.25–0.30 (0.29); AW = 0.36–0.59 (0.44).

Etymology. The species epithet "*kamena*" is derived from the Greek "*kaména*", meaning burned or charred, and referring to the darkened pleurites, perhaps particularly the darkened median margin of the hook-shaped pleural heads, which looks as though they have been touched by flames.

Type material. Ex *Erythrura trichroa sigillifer:* Holotype ♂, Mount Kaindi, elev. 2300 m, Morobe District, Papua New Guinea, 19 Jun. 1967, P.H. Colman, BBM-NG-50772 (BPBM). **Paratypes:** 1♀, same data as holotype (BPBM); 3♂, 3♀, vicinity of Wau, elev. 7700 ft, Mount Kaindi, Morobe District, Papua New Guinea, 25 Jun. 1970, A.B. Mirza, BBM-NG-98787–8 (BPBM); 6♂, 7♀, Mount Kaindi, Morobe District, Papua New Guinea, 25 Sep. 1970, A.B. Mirza or F.J. Radovsky, BBM-NG-99139, BBM-NG-99143–4, BBM-NG-99155 (BPBM); 1♀, Mount Kaindi, elev. 2350 m, Morobe District, Papua New Guinea, 25 Jun. 1967, A.C. Ziegler, BBM-NG-53463 (BPBM); 1♂, 3♀, Mount Kaindi, elev. 2300 m, Morobe District, Papua New Guinea, 9 Jul. 1967, A.C. Ziegler, BBM-NG-53488 (BPBM).

Additional material examined (non-types)

Ex ***Erythrura trichroa sigillifer***: 1♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 4 Aug. 1967, P.H. Colman, BBM-NG-51347 (BPBM); 2♂, 3♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 2 Aug. 1967, P.H. Colman, BBM-NG-51301 (BPBM); 1♂, 1♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 12 Aug. 1967, P.H. Colman, BBM-NG-54213 (BPBM).

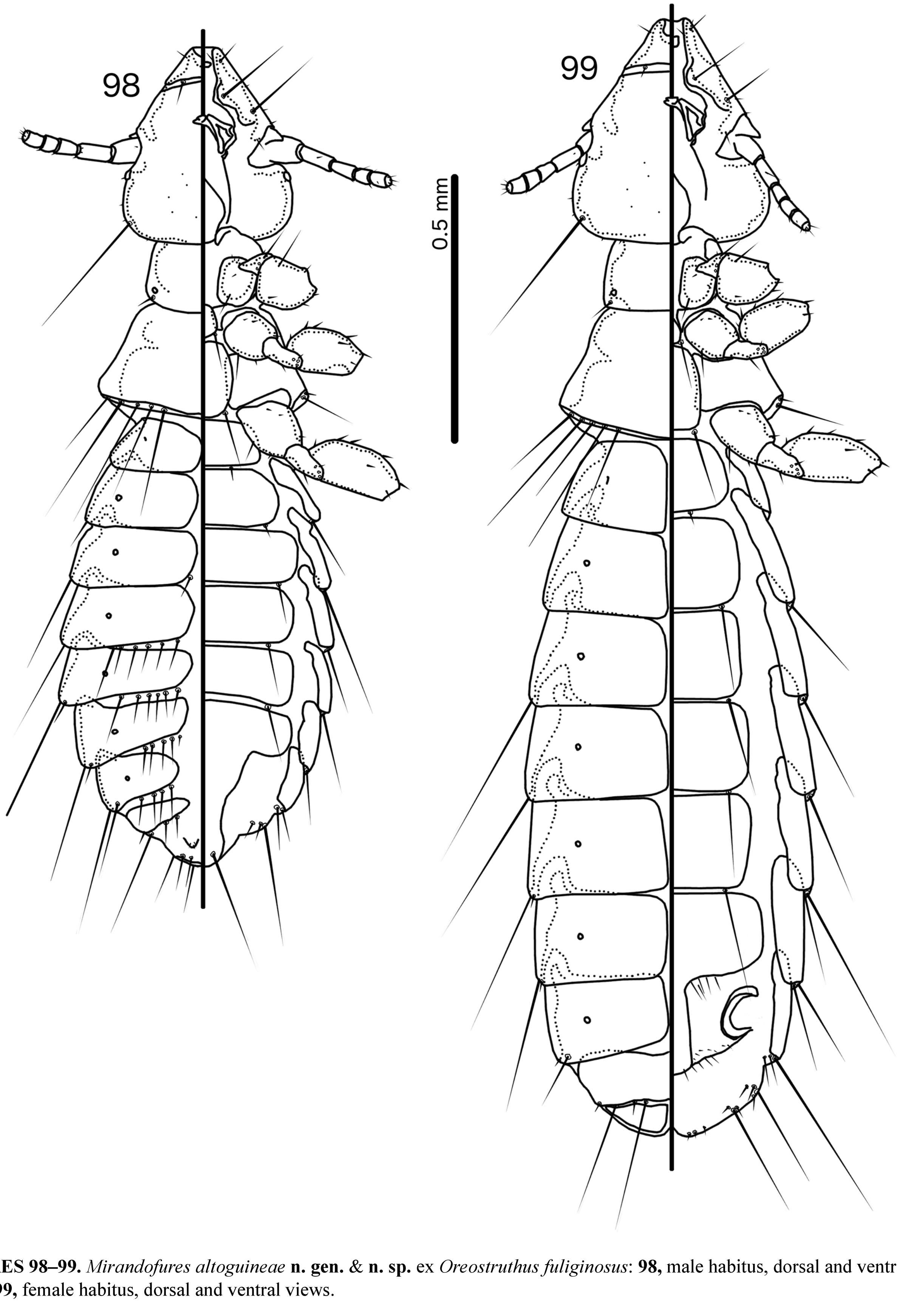
Mirandofures altoguineae Gustafsson & Bush, new species

(Figs 98–105)

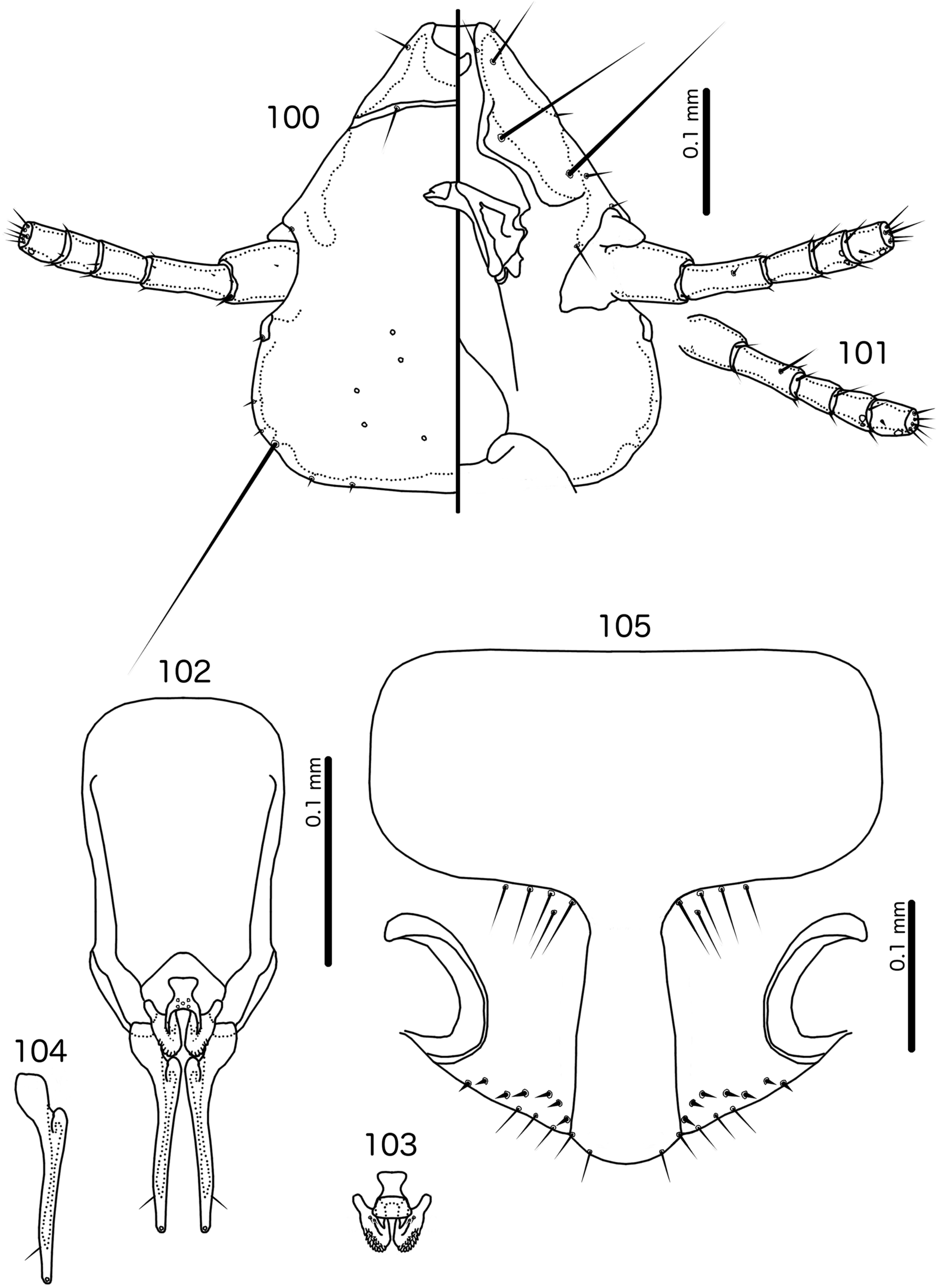
Type host. *Oreostruthus fuliginosus hagenensis* De Vis, 1898—mountain firetail.
Type locality. Mount Kaindi, elev. 2300 m, Morobe District, Papua New Guinea.

Diagnosis. *Mirandofures altoguineae* **n. sp.** is separated from all other described species of *Mirandofures* **n. gen.** by the short, broad head (Fig. 100). The male genitalia of *Mi. altoguineae* (Figs 102–104) are similar to those of species from *Lonchura* spp., such as *Mi. stenozona* (Kellogg & Chapman, 1902) and *Mi. muniae* (Eichler, 1957), but separated from these by the presence of a distinct heel on the median margin of the parameres (Fig. 104) just distal to the mesosome. In *Mirandofures* from members of *Lonchura* the proximal mesosome is small and rectangular, typically not protruding much anterior to the gonopore, whereas in *Mi. altoguineae* it is trapezoidal and somewhat extended (Fig. 103).

Description. *Both sexes*. Head shape, structure, and chaetotaxy as in genus description and Fig. 100. Marginal carinal plate extensive, roughly crescent-shaped. Marginal temporal carina and pre- and postocular nodi more darkly pigmented than rest of head. Thoracic and abdominal segments as in genus description and Figs 98–99. Thorax and abdomen uniformly light brown, with pleurites darker.



FIGURES 98–99. *Mirandofures altoguineae* **n. gen.** & **n. sp.** ex *Oreostruthus fuliginosus*: **98,** male habitus, dorsal and ventral views. **99,** female habitus, dorsal and ventral views.



FIGURES 100–105. *Mirandofures altoguineae* **n. gen.** & **n. sp.** ex *Oreostruthus fuliginosus*: **100,** male head, dorsal and ventral views. **101,** female antenna, ventral view. **102,** male genitalia, dorsal view. **103,** male mesosome, ventral view. **104,** male paramere, dorsal view. **105,** female subgenital plate and vulval margin, ventral view.

***Male*.** Antennae as in Fig. 100. Abdominal chaetotaxy as in Table 4 and Fig. 98. Basal apodeme roughly rectangular (Fig. 98). Proximal mesosome trapezoidal with 5 small sensilla medianly; these sensilla may be the *ames*; 2 *pmes* on each side lateral to gonopore. Gonopore (Fig. 103) widely open distally. Mesosomal lobes slender, somewhat elongated distally; antero-lateral corner with distinct elongated nodi; lateral and distal margins rugose. Parameral heads (Fig. 104) blunt. Parameral blades much elongated, with distinct median heel just distal to mesosome; *pst1–2* as in genus description. Measurements ex *Oreostruthus fuliginosus hagenensis* (n = 8 except n = 7 for TL): TL = 1.45–1.49; HL = 0.34–0.36; HW = 0.29–0.32; PRW = 0.20–0.22; PTW = 0.36–0.38; AW = 0.49–0.51.

***Female*.** Antennae as in Fig. 101. Abdominal chaetotaxy as in Table 4 and Fig. 99. Subgenital plate rectangular (Fig. 105), distal margin with slender median extension that reaches vulval margin. Vulval margin (Fig. 105) with distinct median bulge; 3–5 long, slender *vms* on each side, and 5–7 short, thorn-like *vss* on each side; 4–5 long, slender *vos* on posterior margin, not following median extension and not approaching *vss*. Measurements ex *Oreostruthus fuliginosus hagenensis* (n = 14 except n = 13 for AW): TL = 1.94–2.07 (1.98); HL = 0.38–0.41 (0.40); HW = 0.33–0.35 (0.34); PRW = 0.22–0.23 (0.22); PTW = 0.39–0.41 (0.40); AW = 0.50–0.57 (0.52).

Etymology. The species epithet is formed by Latin "*altus*" for "high", combined with the type locality, referring to the highland habitats of the host.

Type material. Ex ***Oreostruthus fuliginosus hagenensis*: Holotype** ♂, 40 road km N of Mendi, elev. 2800 m, Kagaba, Southern Highlands Province, Papua New Guinea, 19 Dec. 1967, M. Nadchatram & A.B. Mirza, BBM-NG-60535 (BPBM). **Paratypes:** 4♂, 7♀, same data as holotype (BPBM); 1♂, 5♀, same data as holotype, except BBM-NG-60537 (BPBM); 1♀, 40 km NNE of Mendi, elev. 2800 m, Kagaba, Southern Highlands Province, Papua New Guinea, 18 Sep. 1968, A.B. Mirza, BBM-NG-97136 (BPBM); 1♂, 1♀, Mount Giluwe, elev. 3300 m, Southern Highlands Province, Papua New Guinea, 2 Jun. 1963, J.H. Sedlacek, BBM-NG-20226 (BPBM).

Sychraella Gustafsson & Bush, new genus

Type species. *Sychraella sinsutura* **new species**

Diagnosis. *Sychraella* **n. gen.** (Figs 106–107) is most similar to some *Mirandofures* **n. gen.** (Figs 98–99). Both genera have rows of *tps* on male tergopleurites V–VIII (also on male tergopleurite IV in *Sychraella* and some *Mirandofures*; Table 2), sexually dimorphic antennae, and lack *pns* but both genera have *s3*; together, these characters separate these genera from most *Brueelia* s. str. (Fig. 44). *Mirandofures* (Fig. 92) and *Sychraella* (Fig. 108) are also similar in that both genera lack *pos*, *pst1* is situated distal to *pst2* (Figs 96, 104, 112), the parameres may have a distinct heel distal to mesosome (Figs 104, 112), *vos* do not approach the vulval margin, and females lack all dorsal abdominal setae except the trichoid seta of segment VIII and the setae of segment IX+X.

Several characters separate *Sychraella* from *Mirandofures*: cross-piece in absent in *Mirandofures* (Figs 97, 105), whereas in *Sychraella* (Fig. 113) there is a detached laterally submarginal cross-piece; *aps* or *psps* are present in *Sychraella* (Figs 106–107) but absent in *Mirandofures* (Figs 90–91); *Mirandofures* (Fig. 92) has a transversally continuous dorsal preantennal suture, but there is no preantennal suture in *Sychraella* (Fig. 108); marginal carinal plate present at osculum in *Mirandofures* (Fig. 92), but not in *Sychraella* (Fig. 108); mesosomal lobes are separate distally in *Mirandofures* (Figs 95, 103), but fused in *Sychraella* (Fig. 111); *fI-p2* absent in *Mirandofures*, but present in *Sychraella*.

Description. *Both sexes*. Head flat-dome shaped (Fig. 108). Marginal carina uninterrupted; displaced posteriorly and dorsally at osculum. Ventral carinae clearly continuous with marginal carina anteriorly. Dorsal preantennal suture, dorsal anterior plate, and ventral anterior plate absent. Head setae as in Fig. 108; *as3, pns,* and *pos* absent. Coni long but slender. Antennae sexually dimorphic; male scapes and pedicel (Fig. 108) longer and thicker than in female (Fig. 109). Temporal carinae not visible; *mts3* only macrosetae. Gular plate rhomboid.

Prothorax rectangular (Figs 106–107); *ppss* on postero-lateral corner. Proepimera slender, median ends hook-shaped. Pterothorax trapezoidal; lateral margins slightly divergent; posterior margin flat or barely convergent to median point; *mss* widely separated medianly, and further separated into distinct groups (most conspicuous in female). Meso- and metasterna not fused, the latter very large; 1 seta on posterior margin on each side of each plate. Coxae II and III widely separated by wide metepisterna with broad, blunt median ends; metepisterna often diffuse and hard to see. Leg chaetotaxy as in Fig. 25, except *fI-d1, fI-v4, fII-v2*, *fIII-v2* absent; *cI-v1* thorn-like, very stout; *fI-v3–4* microsetae. Only one *cI-a* present. Only genus treated here in which *fI-p2* is present.

Abdomen oval in male, more elongated in female (Figs 106–107). Abdominal chaetotaxy as in Table 2. Female entirely lack dorsal abdominal setae, apart from trichoid setae on segment VIII. Tergopleurites rectangular in female, rounded triangular in male; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly divided medianly. Sternal plates broad, lateral margins concave, pigmentation more intense in anterior and posterior thirds than in middle section of each sternal plate; sternal plates do not approach pleurites. Pleural incrassations slender. Re-entrant heads large, translucent. Male subgenital plate broad, irregularly shaped, reaching distal end of abdomen. Female subgenital plate pentagonal, lateral margins concave, posterior extension rounded triangular, not approaching vulval margin. Detached cross-piece present, continuous with vulval margin medianly but lateral sections submarginal. Vulval margin with distinct median bulge (Fig. 113); slender *vms*, thorn-like *vss*; *vos* nn two parallel rows of slender setae on each side of subgenital plate; set not approaching vulval margin.

Basal apodeme broad, rectangular (Fig. 110). Proximal mesosome slender, with concave lateral margins. Gonopore large, dominating mesosome; open distally; anterior end with lateral extensions. Mesosomal lobes fused medianly, forming crescent distal to gonopore (Fig. 111); 1 *ames* present antero-lateral to gonopore on each side. 1 *pmes* present just lateral to gonopore on each side; 2 additional *pmes* present as microsetae near antero-lateral margins of each primary mesosomal lobe. Parameral heads (Fig. 112) bluntly bifid. Parameral blades strongly curved around mesosome; distinct heel present; blades elongated distally; *pst1* sensilla, distal to *pst2* near distal ends of parameres; *pst2* microseta, lateral, near distal tip.

Host distribution. Presently known only from two subspecies of *Pomatostomus isidorei*.

Geographical range. Presently known only from New Guinea, but the host family extends to Australia.

Etymology. *Sychraella* is named in honour of phthirapterist Oldrich Sychra (University of Veterinary and Pharmaceutical Sciences, Brno, Czech Republic), in recognition of his many contributions to louse taxonomy, and for his long friendship with the authors. Gender: feminine

Remarks. The host *Pomatostomus temporalis strepitans* (Mayr & Rand, 1935), congeneric to the only known host of *Sychraella*, is parasitised by a very dissimilar species in the *Brueelia*-complex, which we here place in its own genus, *Anarchonirmus* **n. gen.** (see below). The morphological differences among lice from these hosts echo recent hypotheses that the hosts are not close relatives. Indeed, recent authors have placed *P. isidorei* in the monotypic genus *Garritornis* Iredale, 1956 (Cibois 2003; Geland *et al.* 2008). In the future, molecular studies of these lice may help elucidate the evolutionary history of their hosts.

Included species
***Sychraella sinsutura* new species**

Sychraella sinsutura Gustafsson & Bush, new species

(Figs 106–113)

Type host. *Pomatostomus isidorei isidorei* Lesson, 1827—New Guinea babbler.

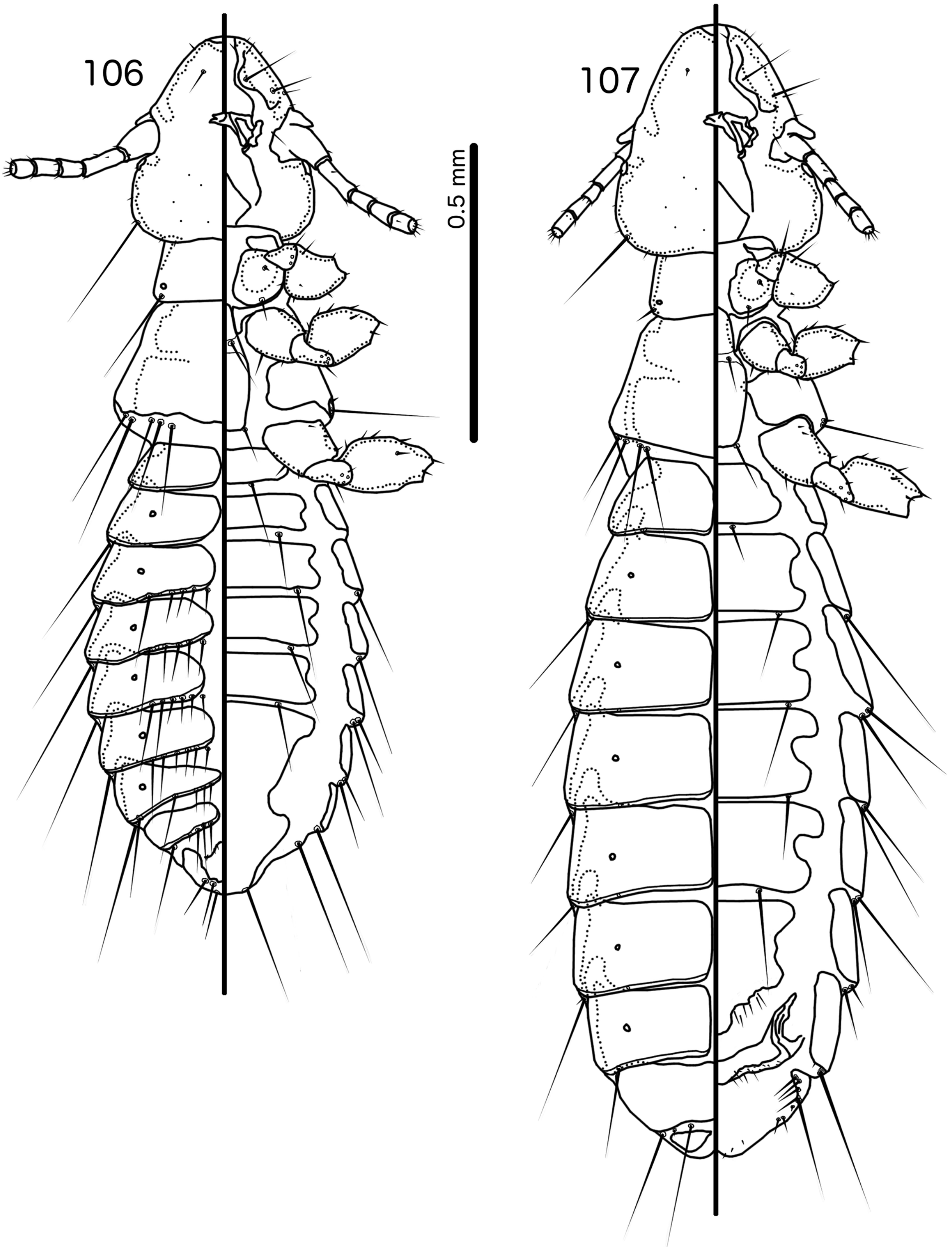
Type locality. Oriomo River, elev. 20 ft., Western District, Papua New Guinea.

Other host. *Pomatostomus isidorei calidus* Rothschild, 1931—New Guinea babbler.

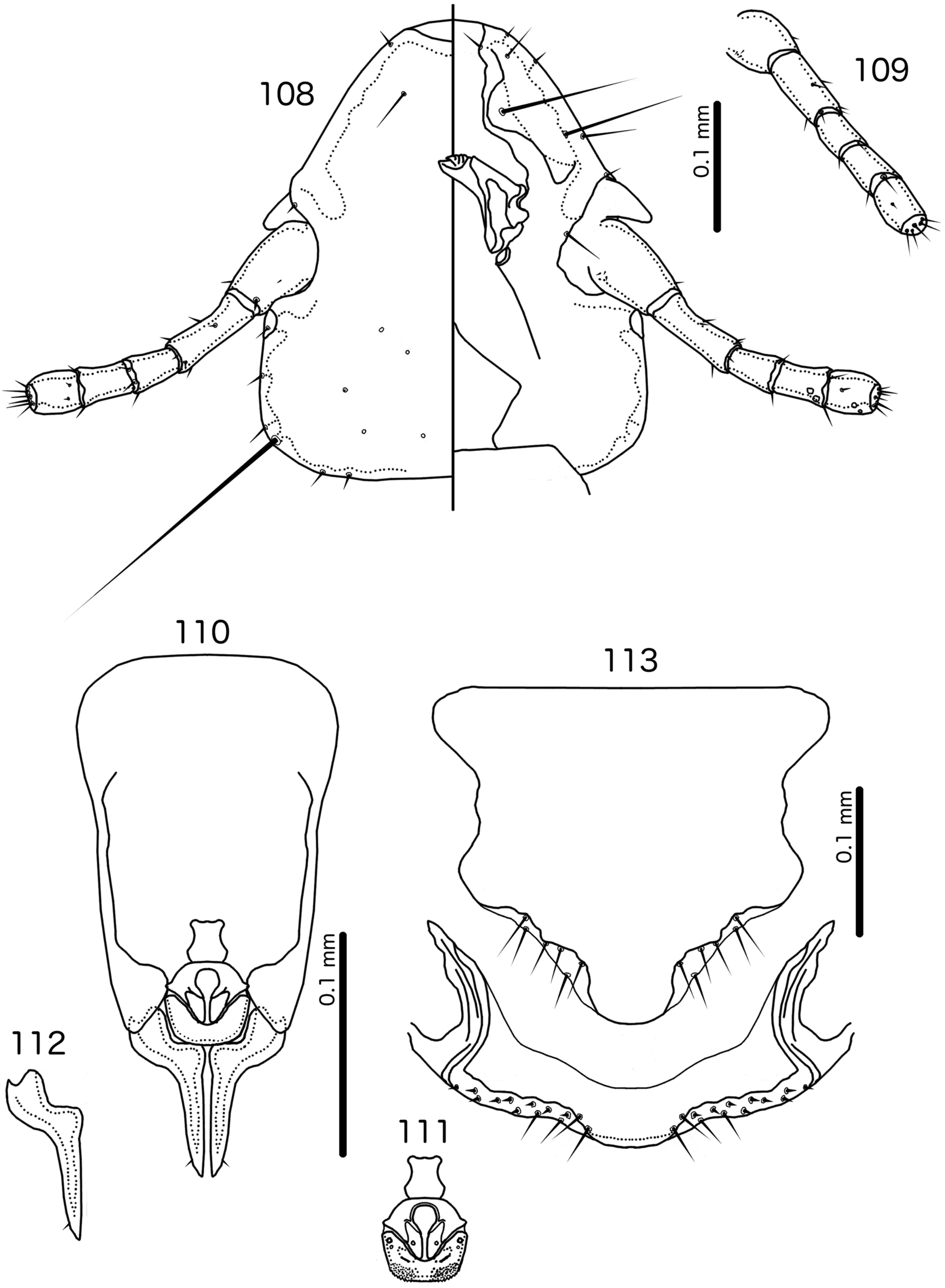
Diagnosis. *Sychraella sinsutura* **n. sp.** is not morphologically close to any other species in the *Brueelia*-complex. Head and abdominal chaetotaxy, female genitalia, shape of mesosome, and presence of sexually dimorphic antennae are similar to some *Mirandofures* **n. gen.**, but *Sy. Sinsutura* is separated from all *Mirandofures* by the lack of dorsal preantennal suture, marginal carinal plate, and the presence of a laterally submarginal cross-piece along the vulval margin.

Description. ***Both sexes***. Head shape, structure and chaetotaxy as in genus description and Fig. 108. Thoracic and abdominal segments as in genus description and Figs 106–107.

Male. *ads* long (Fig. 108). Scapes oval, about twice as long as those of female; pedicel and flagellomeres (Fig. 108) more elongate than those of female (Fig. 109). Pteronotum with 5 *mms* setae on each side. Tergopleurites rounded triangular, widely separated medianly. Abdominal chaetotaxy as in Table 2 and Fig. 106. Basal apodeme (Fig. 110) broad, shallowly concave laterally. Proximal mesosome small, rectangular with concave anterior and lateral margins. Gonopore (Fig. 111) broader than long, with small lateral extensions. Mesosomal lobes fused distally. Parameral heads (Fig. 112) bluntly bifid. Parameral blades with distinct median heels just distal to mesosome. Genital chaetotaxy as in genus description. Measurements ex *Pomatostomus isidorei isidorei* (n = 3): TL = 1.39–1.52; HL = 0.34–0.36; HW = 0.30–0.32; PRW = 0.23–0.24; PTW = 0.36–0.40; AW = 0.35–0.46. Ex *P. i. calidus* (n = 1): TL = 1.57; HL = 0.38; HW = 0.32; PRW = 0.23; PTW = 0.39; AW = 0.49.



FIGURES 106–107. *Sychraella sinsutura* **n. gen. & n. sp.** ex *Pomatostomus isidorei isidorei*: **106** male habitus, dorsal and ventral views. **107** female habitus, dorsal and ventral views.



FIGURES 108–113. *Sychraella sinsutura* **n. gen.** & **n. sp.** ex *Pomatostomus isidorei isidorei*: **108,** male head, dorsal and ventral views. **109,** female antenna, ventral view. **110,** male genitalia, dorsal view. **111,** male mesosome, ventral view. **112,** male paramere, dorsal view. **113,** female subgenital plate and vulval margin, ventral view.

Female. *ads* minute (Fig. 107). Antennae as in Fig. 109. Pteronotum with 4 *mms* on each side (Fig. 107). Tergopleurites rectangular and narrowly separated medianly. Abdominal chaetotaxy as in Table 2 and Fig. 107. Female subgenital plate as in genus description and Fig. 113. Vulval margin (Fig. 113) bulging medianly, with 2 long, slender *vms* on each side, and 7–10 short thorn-like *vss* on each side; 6–8 slender *vos* on each side, with 2 distal *vos* median to *vss*. Measurements ex *Pomatostomus isidorei isidorei* (n = 5): TL = 1.79–1.98; HL = 0.37–0.40; HW = 0.34–0.38; PRW = 0.23–0.25; PTW = 0.37–0.42; AW = 0.51–0.56. Ex *P. i. calidus* (n = 1): TL = 2.00; HL = 0.42; HW = 0.38; PRW = 0.25; PTW = 0.41; AW = 0.58.

Etymology. The species epithet is formed by Latin "*sine*" for "without" and "*sutura*" for "seam", referring to the dorsal preantennal suture, which is missing in this species (Fig. 108). This is one of the characters separating it from *Mirandofures* **n. gen.**, which is otherwise very similar.

Type material. Ex *Pomatostomus isidorei isidorei*: Holotype ♂, Oriomo River, elev. 20 ft., Western District, Papua New Guinea, 4 Feb. 1964, H. Clissold, BBM-NG-29393 (BPBM). **Paratypes:** 2♂, 5♀, same data as holotype (BPBM).

Additional material examined (non-types)

Ex *Pomatostomus isidorei calidus*: 1♂, 1♀, Wewak, East Sepik District, Papua New Guinea, 23 Oct. 1972, 101674 (OSUS).

Remarks. Our single male and female from *Pomatostomus isidorei calidus* are very similar to those from the type host, but differ slightly in the shape of the mesosome, the length of the parameral blades, and the number of submarginal thorn-like setae of the vulval margin (11 in material ex *P. i. calidus*; 7–10 in material ex *P. i. isidorei*). The marginal carina is more slender anteriorly, and the displaced section at osculum is not as clearly visible as in material from type host. These differences may ultimately warrant the separation of this material as a distinct subspecies or species, but additional specimens are needed to confirm their correct taxonomic status.

Anarchonirmus Gustafsson & Bush, new genus

Type species. *Anarchonirmus albovittatus* **new species**

Diagnosis. *Anarchonirmus* **n. gen.** does not appear to be very close to any of the previously treated genera. The male genitalia are most similar to those of *Brueelia* s. str. (Figs 45–47). Like in *Brueelia* s. str. (Fig. 48), the female subgenital plate of *Anarchonirmus* (Fig. 121) flares into a cross-piece; however in *Anarchonirmus* the cross-piece is medianly displaced. *as3* and *pns* are absent in both *Brueelia* s. str. (Fig. 44) and *Anarchonirmus* (Fig. 116). However, unlike in *Brueelia* s. str. (Fig. 44), the antennae are sexually dimorphic in *Anarchonirmus* (Figs 116–117), and whereas in *Brueelia* s. str. (Figs 42–43) the tergopleurites in are rectangular and reach the lateral margins of the abdomen, the tergopleurites of *Anarchonirmus* (Figs 114–115) are much reduced and no not reach the lateral margins of the abdomen. *Brueelia* s. str. lacks *aps* and *psps* on more anterior segments (Figs 42–43), but these are present in *Anarchonirmus* (Figs 114–115; see also Tables 2–3).

The structure and chaetotaxy of the head of *Anarchonirmus* (Fig. 116) is similar to that of *Sychraella* **n. gen.** (Fig. 108) and *Teinomordeus* **n. gen.** (Fig. 77). In all three genera the antennae are sexually dimorphic; however, the dimorphism is more extreme in *Anarchonirmus* (Figs 116–117) than in either of the other two genera (Figs 77–78, 108–109). In *Sychraella* (Figs 106–107) and in *Anarchonirmus* (Figs 114–115) the *ads* is sexually dimorphic, and in both these genera the sternal plates and subgenital plates of both sexes have deeply concave lateral margins (Figs 106–107, 114–115). However, while male *Sychraella* (Fig. 106) have no setae on tergopleurites II–III, male *Anarchonirmus* (Fig. 114) have both *aps, psps, tps*, and *ss* on these segments. Female *Sychraella* have no setae apart from *ps* on tergopleurites II–VII (Fig. 107), yet both *psps* and *ss* are present on these segments in *Anarchonirmus* (Fig. 115).

Description. *Both sexes*. Head indented-dome shaped (Fig. 116). Marginal carina uninterrupted; displaced dorsally and posteriorly at osculum. Clypeo-labral suture does not reach the anterior margin of the head. Ventral carinae fused to short but broad ventral anterior plate continuous with marginal carina. Broad median fingers of ventral carinae protrude into clypeo-labral suture. Dorsal preantennal suture absent. Head setae as in Fig. 116; *ads* sexually dimorphic; *as3* and *pns* absent; *vsms2* on lateral margins of ventral anterior plate; *s1–2* and *pts* not visible in the material examined; *s3–4* mesosetae. Coni short and broad, obscured almost entirely by lateral protrusions of the head in male. Antennae sexually dimorphic; male scapes (Fig. 116) swollen, longer than female scapes (Fig. 117). Temporal carinae not visible; *mts3* only temporal macrosetae. Gular plate slender, pentagonal.

Prothorax (Figs 114–115) rectangular; *ppss* on postero-lateral corner. Proepimera slender; median ends blunt. Pterothorax pentagonal; lateral margins divergent; posterior margin convergent to median point; *mms* moderately separated medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner of each side of each plate. Metepisterna moderate; median ends blunt. Leg chaetotaxy as in Fig. 25, except *fI-v4, fI-p2–4, fII-v2, fIII-v2* absent; *cI-d1, cI-v3, tII-d1* not visible in the material examined; *cIII-v2–3* of about equal length.

Abdomen (Figs 114–115) oval. Abdominal chaetotaxy as in Table 2. Tergopleurites hook-shaped, encircling spiracle openings; tergopleurites II–IX+X in male and tergopleurites II–VIII in female widely separated medianly; tergopleurite IX+X in female continuous with lateral section of tergopleurite XI. Sternal plates with concave lateral margins; only anterior and posterior margin pigmented in female. Antero-lateral corners of tergopleurites thickened, but plates do not reach lateral margins of abdomen. Abdominal setae generally thick. Male subgenital plate of irregular shape, reaching posterior margin of abdomen. Female subgenital plate roughly triangular; anterior margin pigmented; distally reaches vulval margin where it flares; postero-lateral margins thickened. Vulval margin (Fig. 121) with slender *vms*, thorn-like *vss*; *vos* follow lateral margins of subgenital plate.

Basal apodeme (Fig. 118) constricted at mid-length, anterior end pointed. Proximal mesosome trapezoidal. Gonopore (Fig. 119) slight, open distally, associated anteriorly with lateral extensions. Mesosomal lobes elongated, rugose; lateral and distal margins serrated; *ames* and *pmes* not visible. Parameral heads (Fig. 120) blunt. Parameral blades elongated, slender; distinct heel at about half length (Fig. 82); *pst1* not visible; *pst2* microseta, lateral near distal tip of paramere.

Host distribution. Presently known only from the host genus *Pomatostomus*. We have seen some specimens from *P. superciliosus ashbyi* Mathews, 1911, but these are too poorly preserved to compare with the material from *P. temporalis strepitans*.

Geographical range. New Guinea.

Etymology. The name *Anarchonirmus* is ultimately derived from Greek "*an-*" for "without" and "*archos*" for "leader". "Anarchy" usually denotes a form of socialist society in which there are no hierarchies or leaders. However "*anarchos*" is here used in the derived meaning of "chaotic, unruly", referring to the wild mixture of morphological characters that defies close association with any of the other genera in the *Brueelia*-complex. "*Nirmus*" is a common generic suffix in louse taxonomy, referring to Nitzsch's (1818) genus of the same name. Gender: masculine.

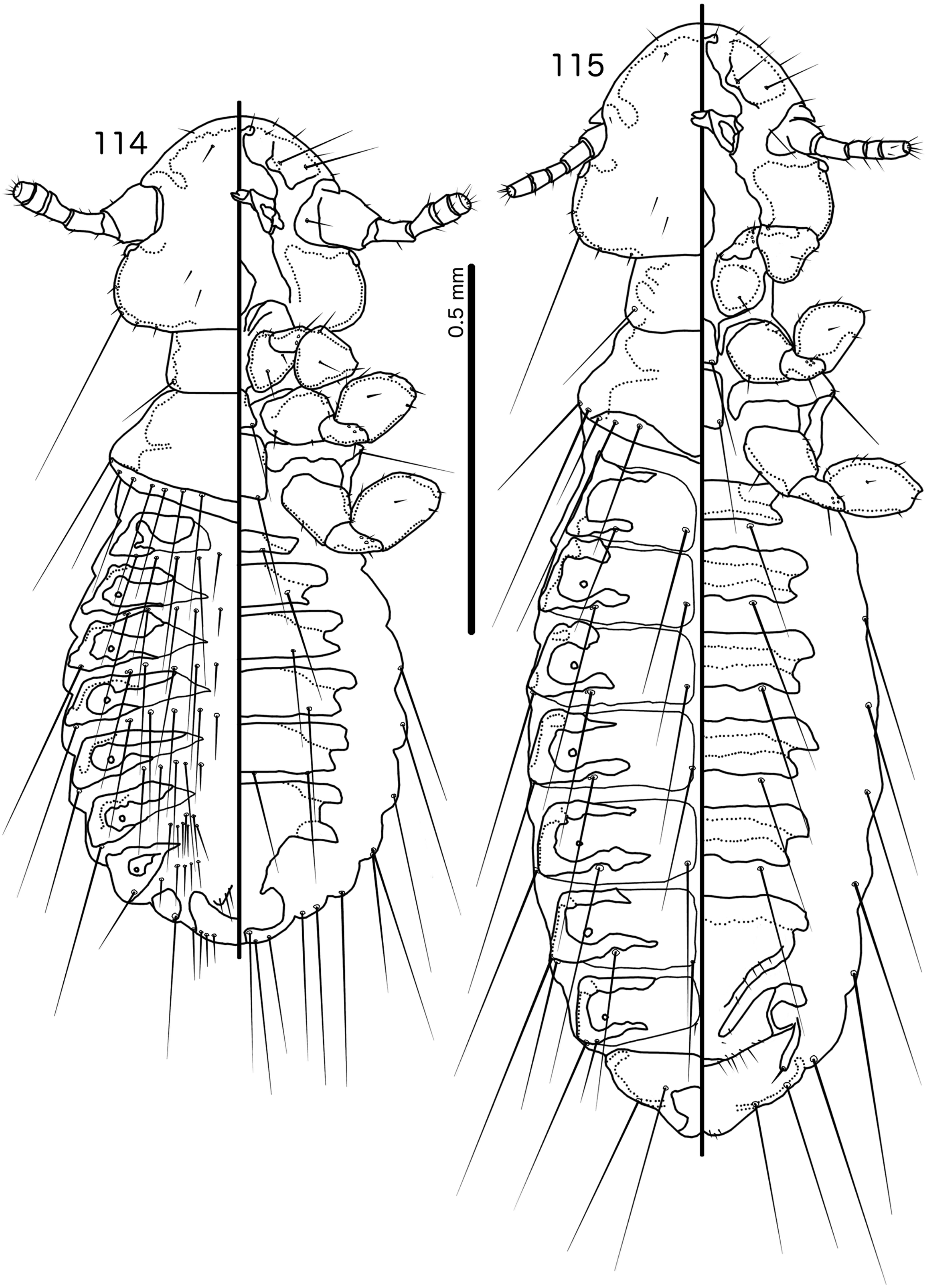
Remarks. *Anarchonirmus* was not included in the phylogeny of Bush *et al.* (2016), and its position within the *Brueelia*-complex is uncertain.

Included species
**Anarchonirmus albovittatus* new species

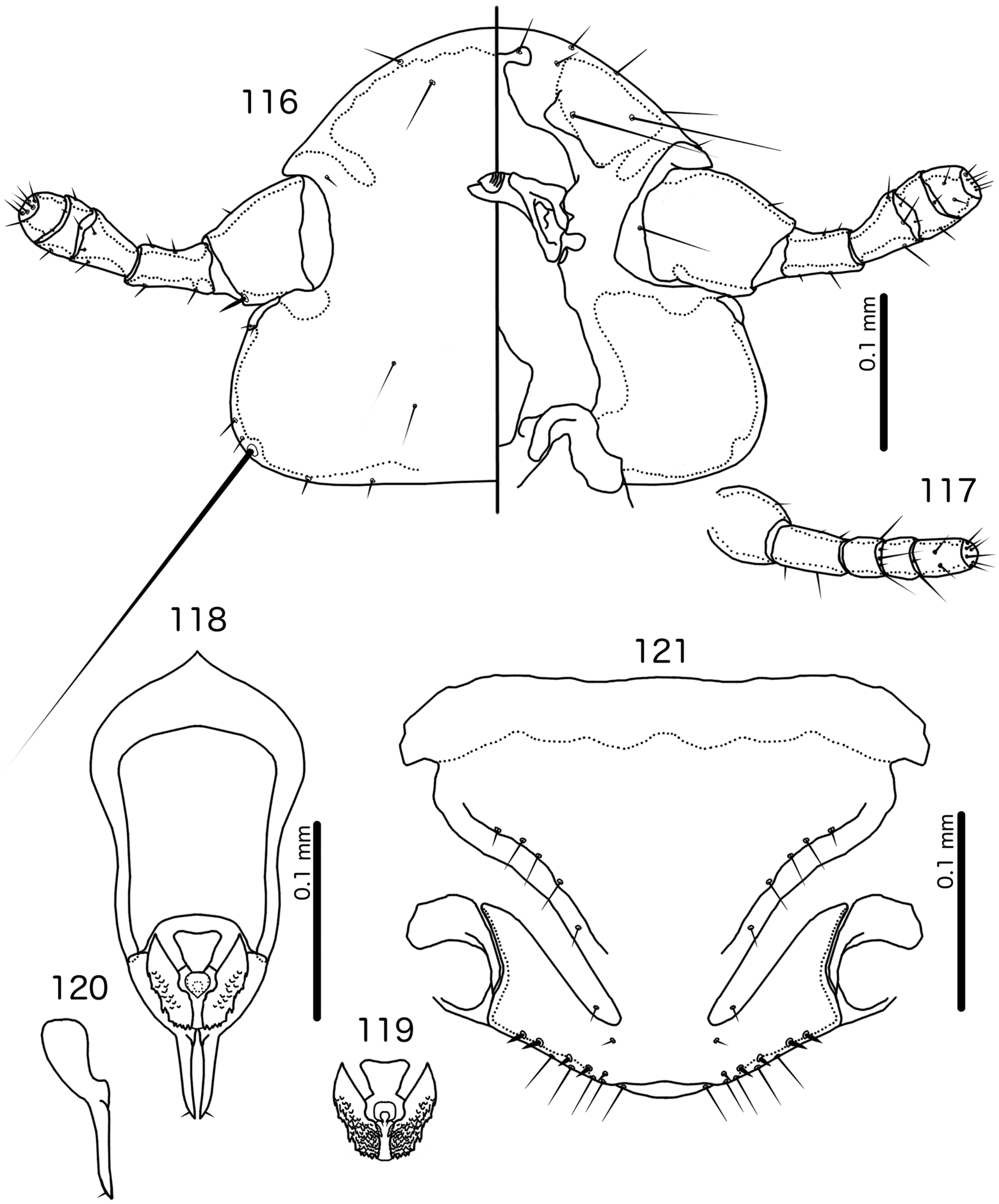
Anarchonirmus albovittatus Gustafsson & Bush, new species
(Figs 114–121)

Type host. *Pomatostomus temporalis strepitans* (Mayr & Rand, 1935)—gray-crowned babbler.
Type locality. Weam (elev. 40 ft), Western District, Papua New Guinea.

Diagnosis. As mentioned above, *Anarchonirmus* **n. gen.** displays a conglomerate of morphological characters that makes it difficult to establish what other genus of the *Brueelia*-complex it is most closely related to. Male genitalia and other characters suggest relationships with *Brueelia* s. str., *Sychraella* **n. gen.**, *Hecatrishula* **n. gen.**, and *Osculonirmus*. *Anarchonirmus* (Figs 114–121) can be separated from *Brueelia* s. str. (Figs 42–48), *Sychraella* (Figs 106–113), *Osculonirmus* (Figs 122–129) and *Hecatrishula* (Figs 130–137) by the following characters: in these four genera the clypeo-labral suture reaches the anterior end of head, and the marginal carina is displaced dorsally at the osculum, but this is not the case in *Anarchonirmus* (Fig. 116); sternal plates and the anterior end of the subgenital plate of both sexes have no special modification in either of these four genera, but antero-lateral corners are densely sclerotized into nodi in *Anarchonirmus* (Figs 114–115); ventral anterior plate, if present, is separate from marginal carina in the four genera, but fused to the carina in *Anarchonirmus* (Fig. 116).



FIGURES 114–115. *Anarchonirmus albovittatus* **n. gen.** & **n. sp.** ex *Pomatostomus temporalis strepitans*: **114,** male habitus, dorsal and ventral views. **115,** female habitus, dorsal and ventral views. (dotted lines on sternites outline densely pigmented areas).



FIGURES 116–121. *Anarchonirmus albovittatus* **n. gen.** & **n. sp.** ex *Pomatostomus temporalis strepitans*: **116,** male head, dorsal and ventral view; dorsal sensilla and *pts* not visible in the material examined. **117,** female antenna, ventral view. **118,** male genitalia, dorsal view. **119,** male mesosome, ventral view. **120,** male paramere, dorsal view. **121,** female subgenital plate and vulval margin, ventral view (anterior dotted line outline pigmented part of subgenital plate, posterior dotted line extent of marginal thickening).

Description. ***Both sexes***. Head shape, cheatotaxy, and preantennal structure as in genus description and Fig. 116. Preocular nodi large, postocular nodi not wider than marginal temporal carina. Head largely translucent, but marginal, ventral, and occipital carinae, margins of antennal socket, mouth parts, gular plate and bands on antennae pigmented brown. Thoracic and abdominal segments and chaetotaxy as in genus description and Figs 114–115; *psps* long. Only anterior, posterior, and lateral margins of tergopleurites pigmented. Sternal plates short but broad, approaching lateral margins of abdomen. Pigmentation of sternal plates distinctive, with anterior and posterior margins light brown, and middle section translucent. Pigmentation of sternal plates more extensive in females than in males. Lateral ends of anterior pigmentation more intensely pigmented in segments II–VII, giving the impression of large brown spots.

Male. Preantennal nodi slender (Fig. 116). Scape (Fig. 116) almost 3 times as thick and twice as long as female scape (Fig. 117), and more distal antennal segments swollen in males. Pedicle pigmented brown. Pteronotum with 7 *mms* macrosetae on each side. Abdominal chaetotaxy as in Table 2 and Fig. 114; 5–7 *tps* on segments VII–VIII. Lateral bulges of subgenital plate as intensely pigmented as sternal plates, shaped as in Fig. 114. Basal apodeme (Fig. 118) broad, somewhat constricted at mid-length, with pointed proximal end. Lateral thickenings slender, but broadens markedly in proximal end, and are medianly continuous anteriorly. Distal margin of basal apodeme deeply concave. Proximal mesosome small, bluntly trapezoidal, with slight distal lateral thickening that appear continuous with small, slender, distally open gonopore. Mesosomal lobes (Fig. 119) uniquely shaped within *Brueelia*-complex, extending proximally to reach concave distal margin of the basal apodeme. Distally, lobes are moderate, with serrated or pectinate distal margins, and large rugose areas that cover more or less all of the lobes distal to gonopore. Parameral heads (Fig. 120) broad, cup-shaped, interlocking with the lateral distal ends of the basal apodeme. Parameral blades curve around mesosomal lobes, forming a small heel medianly just distal to lobes. Distal part of blades much elongated; *pst1* not visible; *pst2* microseta, lateral near distal tip. Measurements ex *Pomatostomus temporalis* (n = 5): TL = 1.09–1.18; HL = 0.28–0.30; HW = 0.33–0.35; PRW = 0.19–0.22; PTW = 0.32–0.35; AW = 0.44–0.49.

Female. Preantennal nodi rounded (Fig. 115). Pedicel and flagellomeres pigmented brown. Pteronotum with 5 *mms* macrosetae on each side. Abdominal chaetotaxy as in Table 2 and Fig. 115. Female subgenital plate (Fig. 121) intensely pigmented in antero-lateral corners. Vulval margin (Fig. 121) with 4–6 slender *vms* on each side, and 5–6 thorn-like *vss* on each side; 4–7 slender *vos* on each side; distal seta much separated from proximal setae and much shorter. Gonapophyse with 1 stout seta, and 1 microseta on each side. Measurements ex *Pomatostomus temporalis* (n = 11): TL = 1.42–1.61 (1.48); HL = 0.31–0.35 (0.32); HW = 0.35–0.39 (0.37); PRW = 0.19–0.23 (0.21); PTW = 0.34–0.38 (0.36); AW = 0.46–0.53 (0.49).

Etymology. The species epithet is formed by Latin "*album*" for "white" and "*vitta*" for "ribbon", referring to the broad, translucent bands across the tergopleurites and sternal plates.

Type material. Ex *Pomatostomus temporalis strepitans*: Holotype ♂, Weam (elev. 40 ft), Western District, Papua New Guinea, 2 Jun. 1964, H Clissold, BBM-NG-50789 (marked with black dot) (BPBM). **Paratypes:** 1♂, 1♀, same data as holotype (NHML); 1♀, same data as holotype, except BBM-NG-50790 (BPBM); 1♂, 4♀, Weam (elev. 40 ft), Western District, Papua New Guinea, 31 May 1964, H Clissold, BBM-NG-50779 (BPBM) [slide also contains one unidentified male *Myrsidea*]. 2♂, 6♀, Weam (elev. 30 ft.), Western District, Papua New Guinea, 11 Jun. 1964, H. Clissold, BBM-NG-50784 (BPBM).

Osculonirmus Mey, 1982

Brueelia Kéler, 1936a: 257 (*in partim*).
Osculonirmus Mey, 1982a: 59.

Type species. *Osculonirmus limpidus* Mey, 1982a: 60, by original designation.

Diagnosis. *Osculonirmus* is superficially similar in general habitus to *Brueelia* s. str., but does not appear to be closely related to any other genus treated here. As in *Anarchonirmus* **n. gen.** (Fig. 116) *s3* is a mesoseta and the antennae are sexually dimorphic in *Osculonirmus* (Figs 124–125), with flagellomeres II–III modified in males of both species. In both genera *psps* are present on tergopleurites II–III of both sexes (Table 2), but *aps* are absent in *Osculonirmus*, and the *pss* is not contiguous with the aperture of *psps* II–III in *Anarchonirmus* (Figs 114–115). The two genera can be told apart based on the following characters: in *Anarchonirmus* (Fig. 116) clypeo-labral suture does not reach anterior margin of the head, ventral carinae and ventral anterior plate are continuous with marginal carina, and there is no dorsal preantennal suture (Fig. 116), whereas in *Osculonirmus* (Fig. 124) the clypeo-labral suture reaches the frons and widens there, marginal carina is displaced dorsally at osculum, there is no ventral anterior plate, but there is a dorsal preantennal suture. In *Anarchonirmus* (Fig. 114) there are *tps* on tergopleurites II–VIII in males, but these are absent in *Osculonirmus* (Fig. 122). The male (Figs 126–128) and female (Fig. 129) genitalia of *Osculonirmus* are different from those of all other genera treated here.

Description. ***Both sexes***. Head flat-dome shaped with broad, slightly concave, frons (Fig. 124). Marginal carina uninterrupted, but displaced posteriorly and dorsally at osculum. Dorsal preantennal suture present, following lateral margin of head to near *dsms* and then obliquely to reach *ads*. Ventral carinae continuous with marginal carina but often diffuse anterior to pulvinus. Clypeo-labral suture widens anteriorly. Head setae as in Fig. 124; *vsms2* not on lateral margin of clypeo-labral suture; *pos, pns,* and *mts1* absent; *s3* mesosetae. Coni small, blunt. Antennae sexually dimorphic, with male scapes (Fig. 124) swollen and twice as long as female scapes (Fig. 125); flagellomeres II–III modified in male as in Fig. 124. Temporal carinae not visible; *mts3* only macrosetae. Gular plate small, oblong.

Prothorax rectangular (Figs 122–123); *ppss* on postero-lateral corner. Proepimera slender; median ends hook-shaped. Pterothorax pentagonal; lateral margins widely divergent; posterior margin convergent to median point. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna broad, median ends blunt. *mms* widely separated medianly. *mths* absent. Leg chaetotaxy as in Fig. 25, except *cI-v3, cI-d1, fI-v1, fI-v4, fIm2–4, cII-a3, cIII-a3, fIII-v2* absent; *cI-v2, cII-v2, tII-v1, cIII-v2, tIII-v1* short

Abdomen oblong (Figs 122–123). Tergopleurites rounded rectangular, more oblong in males; tergopleurites II–IX+X in male and tergopleurites II–VIII in females moderately divided medianly (*contra* Mey 1982a: fig. 1). Large fenestrae surround spiracle openings. Sternal plates rectangular, not approaching pleurites. Pleural incrassations narrow. Re-entrant heads absent. Male subgenital plate trapezoidal, but diffuse posteriorly; whether it reaches posterior margin of abdomen is not clear. Abdominal chaetotaxy as in Table 2. Female subgenital plate obovate, does not approach vulval margin. Vulval margin (Fig. 129) narrowly convex.

Male genitalia (Fig. 126) distinct. Basal apodeme slender and elongated. Proximal mesosome slender, rectangular, overlapping with basal apodeme. Gonopore (Fig. 127) open distally. Mesosomal lobes small, fused distally, with irregular distal and lateral margins; 2 *pmes* visible on each side of mesosome. Parameral heads (Fig. 128) large, bulbous, bifid. Parameral blades elongated, slender; *pst1* sensilla, near distal tip; *pst2* microseta, lateral near distal tip.

Host distribution. *Osculonirmus* is known only from *Eremophila alpestris* (Linnaeus, 1758), where it appears to be widely distributed on four different subspecies (see below). All other material we examined from larks (species of *Alaemon* Keyserling & Blasius, 1840, *Alauda* Linnaeus, 1758, *Ammomanes* Cabanis, 1851, *Calandrella* Kaup, 1829, *Eremopterix* Kaup, 1836, *Galerida* Boie, 1828, *Lullula* Kaup, 1829, *Melanocorypha* Boie, 1828, and *Mirafra* Horsfield, 1821) belong to *Brueelia* s. str. In addition, material examined from *Eremophila alpestris ammophila* (Oberholser, 1902) and *E. a. flava* (Gmelin, 1789) belong to *Brueelia* s. str., similar to other species of *Brueelia* s. str. known from larks. Alström *et al.* (2013) showed that *Eremophila* is deeply nested inside the Alaudidae, being closely related to *Calandrella*, and host phylogeny thus does not appear to offer any clues to the relationships of *Osculonirmus*, nor suggestions for where other members of the genus may occur.

Geographical range. Holarctic.

Remarks. Males of *Osculonirmus limpidus* appear to be very rare; among the 61 individuals we examined, only 5 were males and all from North American host subspecies. Mey (1994b) appears to have collected several individuals from most of the hosts he examined, but did not examine any males prior to his description of *Os. limpidus*. *Osculonirmus* was not included in the phylogeny of Bush *et al.* (2016), hence its exact placement within the *Brueelia*-complex is unknown.

Included species
Osculonirmus limpidus **Mey, 1982a: 60**

Osculonirmus limpidus Mey, 1982
(Figs 122–129)

Osculonirmus limpidus Mey, 1982a: 60.
Brueelia limpidus (Mey, 1982); Price *et al*. 2003: 156.

Type host. *Eremophila alpestris brandti* (Dresser, 1874)—horned lark.
Type locality. 15 km W of Chovd-chot, Aimak Chovd, Mongolia.
Other hosts. *Eremophila alpestris adusta* (Dwight, 1890)—horned lark **new host record**. *Eremophila alpestris albigula* (Bonaparte, 1850)—horned lark **new host record**. *Eremophila alpestris utahensis* (Behle, 1938)—horned lark **new host record**.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 124. Displacement of marginal carina at osculum generally deeper in females than in males. Thoracic and abdominal segments as in genus description and Figs 122–123.

Male. Scape swollen (Fig. 124). Abdominal chaetotaxy as in Table 2 and Fig. 122. Male genitalia distinct (Fig. 126). Basal apodeme long, slender. Proximal mesosome elongated, slender. Gonopore (Fig. 127) narrowly open distally, anterior end pointed, distal ends widened and slightly elongated. Mesosomal lobes small, rounded. Parameral heads (Fig. 128) swollen, deeply bifid. Parameral blades much elongated, convergent distal to mesosome and distal parts close together; *pst1* sensilla, near distal tip; *pst2* microseta, lateral near distal tip. Measurements ex *Eremophila alpestris adusta* (n = 1): TL = 1.47; HL = 0.37; HW = 0.31; PRW = 0.18; PTW = 0.33; AW = 0.44. Ex *E. a. utahensis* (n = 3 except n = 2 for TL and AW): TL = 1.47–1.48; HL = 0.36–0.37; HW = 0.30–0.32; PRW = 0.14–0.17; PTW = 0.27–0.29; AW = 0.35–0.41.

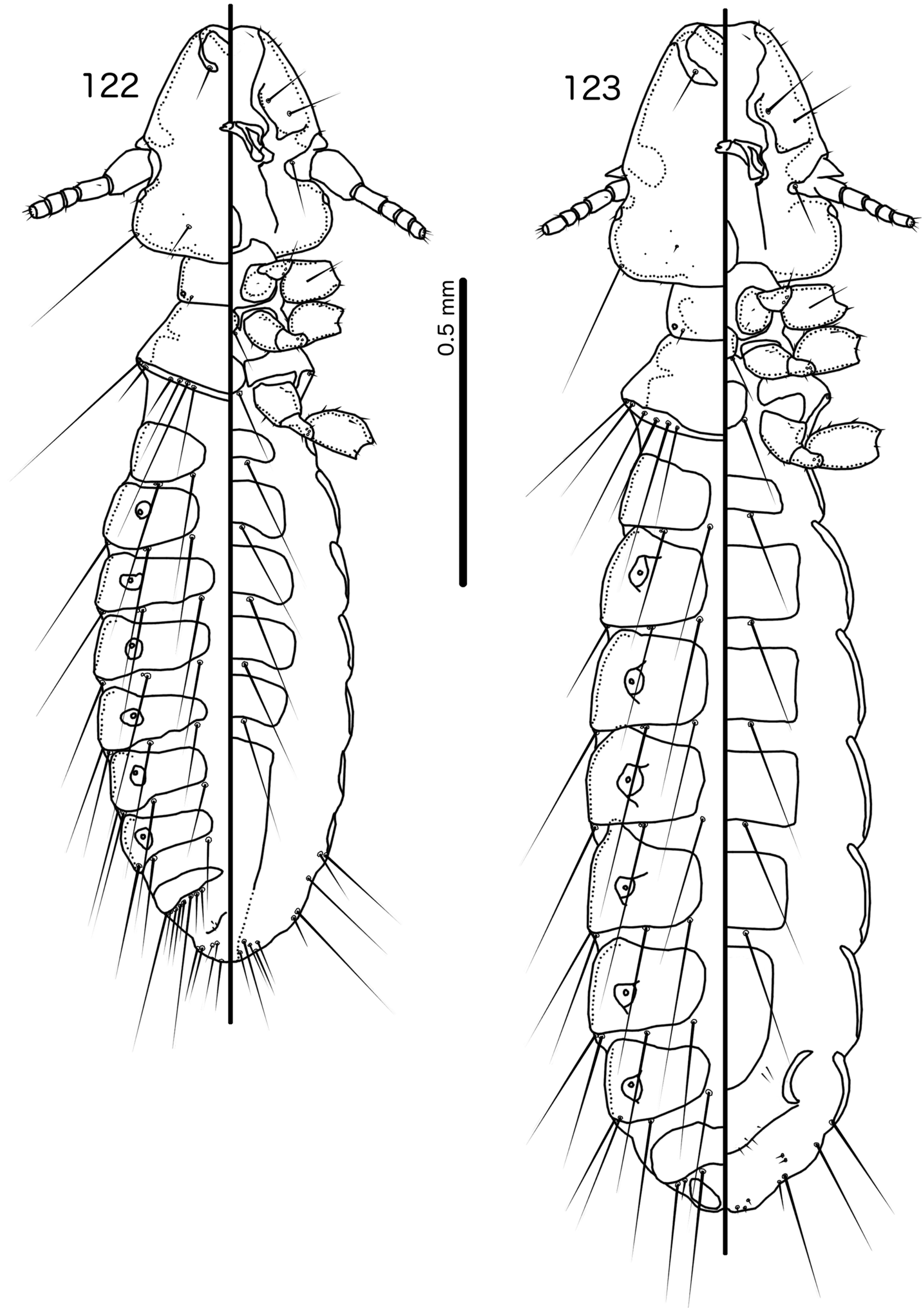
Female. Antennae as in Fig. 125. Abdominal chaetotaxy as in Table 2 and Fig. 123. Subgenital plate oval to rounded triangular, not approaching vulval margin (Fig. 129). Vulval margin narrowly convex (Fig. 129), with 3 short, slender *vm* on each side, and 2 short, thorn-like *vss* on each side; 2 short, slender *vos* on each side. Measurements ex *Eremophila alpestris adusta* (n = 9): TL = 1.86–2.09; HL = 0.41–0.43; HW = 0.35–0.37; PRW = 0.19; PTW = 0.31–0.35; AW = 0.41–0.51. Ex *E. a. albigula* (n = 9): TL = 1.67–2.02; HL = 0.41–0.43; HW = 0.35–0.38; PRW = 0.18–0.20; PTW = 0.30–0.36; AW = 0.39–0.52. Ex *E. a. utahensis* (n = 14 except n = 2 for AW): TL = 1.79–1.97 (1.89); HL = 0.40–0.43 (0.42); HW = 0.34–0.38 (0.36); PRW = 0.16–0.20 (0.18); PTW = 0.31–0.36 (0.33); AW = 0.40–0.46 (0.43).

Material examined (non-types). Ex ***Eremophila alpestris adusta***: 1♂, 10♀, Arizona, USA, Mar. 1939, R. Meinertzhagen, 13237–8 (NHML).

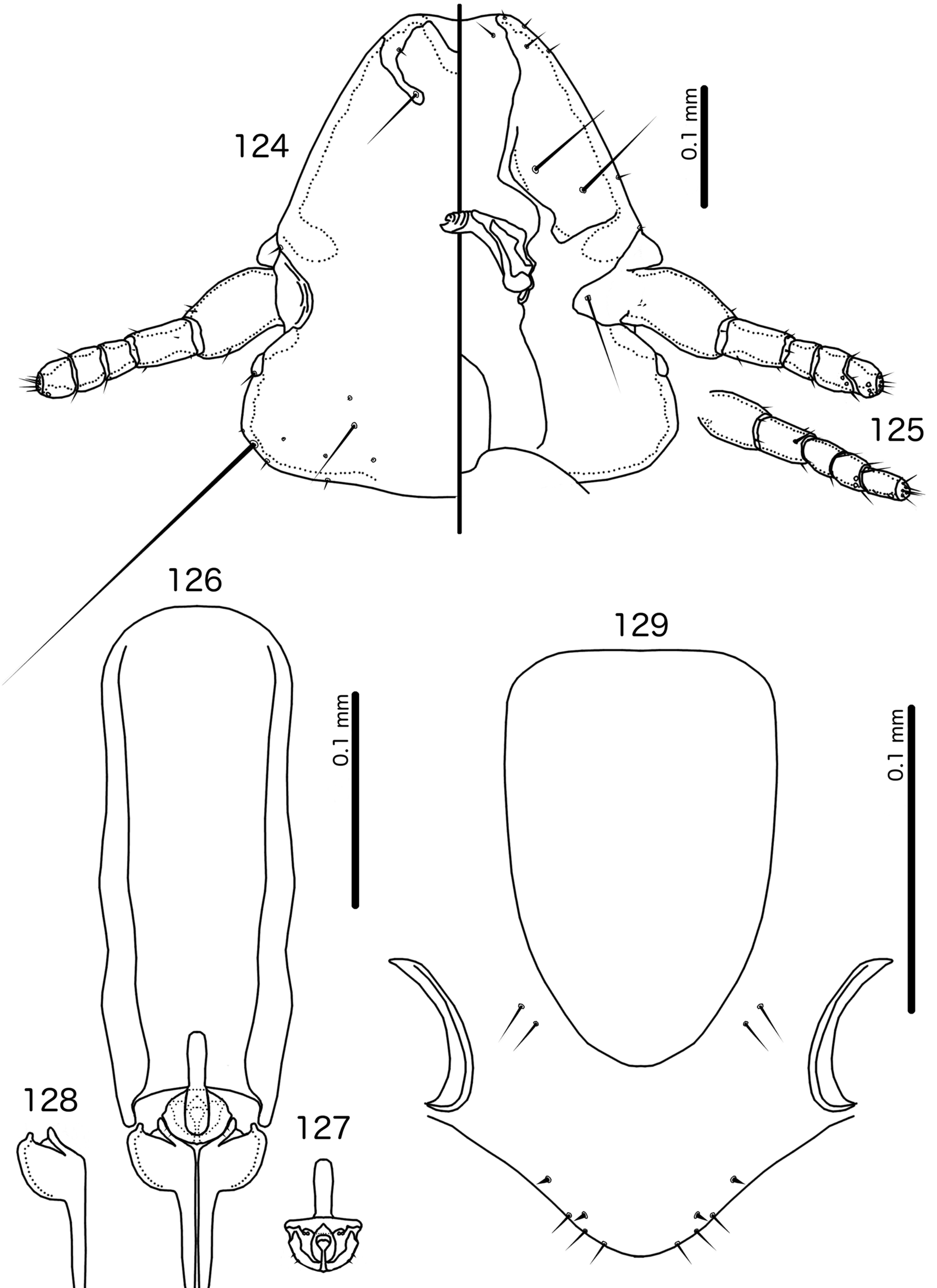
Ex ***Eremophila alpestris albigula***: 9♀, Afghanistan, Mar. 1937, R. Meinertzhagen, 10303–5 (NHML).

Ex ***Eremophila alpestris utahensis***: 1♂, 2♀, Sewerline, Dugway Valley, Tooele County, Utah, USA, 2 Jul. 1953, Fremling, 357, B-285, one slide with 8202 on reverse (OSUS); 1♀, Sewerline, Dugway Valley, Tooele County, Utah, USA, 20 Jan. 195[4?] [last digit not filled in on slide], R.D. Porter, 104, B-37, 8197 on reverse (OSUS); 1♀, Sewerline, Dugway Valley, Tooele County, Utah, USA, 23 Nov. 1953, W. Denzer, 206, B121–2, 8199 on reverse (OSUS); 1♂, Government Creek, Dugway Valley, Tooele County, Utah, USA, 9 Feb. 1954, R. Porter, 203, B-900, 8201 on reverse (OSUS); 3♀, Government Creek, Dugway [Valley], Tooele County, Utah, USA, 5 Feb. 1962, E. & E. [Branch], Ea30 (PIPeR); 11♀, same locality and collector as previous, 15 Mar. 1962, Ea81–2 (PIPeR); 2♂, 1♀, same locality and collector as previous, 22 Jul. 1962, Ea211 (PIPeR); 2♀, same locality and collector as previous, 29 May 1962, E1187 (PIPeR); 2♀, same locality and collector as previous, 5 Feb. 1962, Ea28 (PIPeR); 1♀, Dugway [Valley], Tooele County, Utah, USA, 6 May 1969, E. & E. Branch, EE-700-129 (PIPeR); 1♀, same locality and collector as previous, 18 May 1964, 5206 (PIPeR); 1♀, same locality and collector as previous, 13 Feb. 1962, EE-700-128 (PIPeR); 5♀, same locality as previous, Mar. 1962, EE-700-125–6 (PIPeR); 1♀, same location as previous, 26 May 1962, EE-700-130 (PIPeR); 1♀, Fish Springs, Juab County, Utah, USA, 17 May 1962, E. & E. Branch, Ea147 (PIPeR); 4♀, Skull Valley, Tooele County, Utah, USA, 27 Feb. 1962, E. & E. [Branch], B3836 (PIPeR).

Remarks. Our material from North American hosts differs from that illustrated by Mey (1982a) in the shape of the head and the pterothorax, but chaetotaxy and other characters appear to be the same. We have not seen any material from the type host subspecies, and cannot assess whether the apparent differences are between the actual specimens or in how they are illustrated. The tergopleurites are not medianly continuous in any material examined by us, unlike Mey's (1982a: fig. 1) illustration.



FIGURES 122–123. *Osculonirmus limpidus* Mey, 1982a ex *Eremophila alpestris utahensis*: **122,** male habitus, dorsal and ventral views. **123,** female habitus, dorsal and ventral views.



FIGURES 124–129. *Osculonirmus limpidus* Mey, 1982a ex *Eremophila alpestris utahensis*: **124,** male head, dorsal and ventral views. **125,** female antennae, ventral view. **126,** male genitalia, dorsal view. **127,** male mesosome, ventral view. **128,** male paramere, dorsal view. **129,** female subgenital plate and vulval margin, ventral view.

Hecatrishula Gustafsson & Bush, new genus

Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).
Corvonirmus Eichler, 1944 (*in partim*).

Type species. *Brueelia atherae* Ansari, 1957a: 161

Diagnosis. *Hecatrishula atherae* (Figs 130–137) species group are most similar to *Corvonirmus* (Figs 319–326), and both occur on the same host species. Both groups typically have reduced tergopleurites, limited dark-brown to black pigmentation, wide, rounded head without dorsal preantennal sutures, and setose abdomens that include accessory ventral setae on at least some segments. However, the two groups are easily separated by the following characters: *as3* absent in *Corvonirmus* (Fig. 321) but present in *Hecatrishula* **n. gen.** (Fig. 132); *aps* present in male *Corvonirmus* (Fig. 319) but absent in male *Hecatrishula* (Fig. 130); female subgenital plate flares into cross-piece in *Corvonirmus* (Fig. 326) but only lateral submarginal bulges present in *Hecatrishula* (Fig. 137); parameres are gently tapering and elongated, with blunt median extensions of the heads in *Corvonirmus* (Fig. 325), but strongly curved, and with 2–4 fingers on heads in *Hecatrishula* (Fig. 136); *pst2* is sensillus located centrally near *pst1* in *Corvonirmus* (Fig. 325), but microseta located laterally in *Hecatrishula* (Fig. 136); mesosomal lobes not extended laterally in *Corvonirmus* (Fig. 324), whereas in *Hecatrishula* mesosomal lobes are much extended laterally (Fig. 135).

Members of the *Hecatrishula biguttata* species group (Figs 138–145) are most similar to *Brueelia* s. str. (Figs 42–48) in overall habitus, and like many members of *Brueelia* s. str., members of the *He. biguttata* species group typically have an even, brown pigmentation. These groups are distinguished by the following characters: *as3* is absent in *Brueelia* s. str. (Fig. 44), but present in *Hecatrishula* (Fig. 140), and the abdomen is much more setose in *Hecatrishula* (Figs 138–139) than in *Brueelia* s. str. (Figs 42–43). No *Brueelia* s. str. have accessory sternal setae, but these are present in all *Hecatrishula*. *psps, tps,* and *ss* are absent in anterior abdominal segments of both sexes in *Brueelia* s. str., but present in *Hecatrishula* (see Table 2). The male genitalia of these two genera are also quite distinct: parameral heads blunt or cup-shaped in *Brueelia* s. str. (Fig. 47) but polyfid in *Hecatrishula* (Fig. 144); mesosomal lobes do not extend into lateral wings in *Brueelia* s. str. (Fig. 46), but do in *Hecatrishula* (Fig. 143); gonopore is terminal in *Brueelia* s. str. (Fig. 46) but ventral in *Hecatrishula* (Fig. 143). The female subgenital plate flares into cross-piece in all *Brueelia* s. str. (Fig. 48), but form only lateral submarginal bulges in (Fig. 145).

Description. ***Both sexes***. Head convex- to indented-dome shaped (Figs 132, 140). Marginal carina uninterrupted, displaced dorsally and posteriorly at osculum. Dorsal preantennal suture, dorsal anterior plate, and ventral anterior plate absent. Ventral carinae diffuse anteriorly, not clearly continuous with marginal carina. Head setae as in Figs 132, 140; *pts* and *s1–4* all with visible microsetae. Preantennal nodi with “hollow” interior in *Hecatrishula atherae* species-group. Coni small, blunt. Antennae sexually dimorphic, male scapes larger than female scapes; pedicel and flagellomeres largely the same between sexes. Temporal carinae not visible; *mts3* only macrosetae. Gular plate broad, triangular. Pigmentation patterns of head variable among species.

Prothorax rectangular (Figs 130–131, 138–139); *ppss* on postero-lateral corner in *Hecatrishula biguttata* species-group, more median in *He. atherae* species-group. Proepimera slender, median ends hook-shaped. Pterothorax short, pentagonal (Figs 130–131, 138–139); lateral margins widely divergent; posterior margin convergent to median point. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna slender to broad, median ends widened, blunt. *mms* not or only narrowly separated medianly. Leg chaetotaxy as in Fig, 25, except *fI-p2–4, fI-v4* absent.

Abdomen oval (Figs 130–131, 138–139). Abdominal chaetotaxy as in Table 2. Both sexes with at last some accessory sternal setae situated between central sternal plate and abdominal margin in all or most segments. Tergopleurites bluntly triangular; tergopleurites II–IX+X in male, and tergopleurites II–VIII in female separated medianly; in *Hecatrishula docilis* (not illustrated) tergopleurites V–VII in male and tergopleurites VI–VII in female medianly continuous, connected by narrow postero-median bridge; in *He. biguttata* (Figs 138–139) male tergopleurites IX+X and female tergopleurites VIII medianly continuous; 1–2 fenestrae on tergopleurites II–VIII in both sexes of *He. atherae* species-group, none in *He. biguttata* species-group. Tergopleurites not or only barely reaching lateral margins of abdomen. Pleural incrassations and re-entrant heads absent. Sternal plates rectangular, transversally continuous, not approaching lateral margins of abdomen. Male subgenital plate triangular, with narrow point reaching posterior margin of abdomen. Female subgenital plate triangular, reaching or approaching vulval margin, with lateral submarginal bulges but no cross-piece. Vulval margin (Figs 137, 145) with slender *vms*, thorn-like *vss*; *vos* follows lateral margins of subgenital plate; distal *vos* median to *vss*.

Male genitalia distinct (Figs 134–136, 142–144). Basal apodeme roughly rectangular. Proximal mesosome small, with prominent U or V-shaped ventral thickening. Gonopore (Figs 135, 143) subterminal and ventral, narrowly open distally, often projecting far distal to mesosomal lobes. Mesosomal lobes large, extending laterally to overlap with parameral heads. Lobes may be fused dorsal to mesosomal opening (Fig. 135). Distal margin of lobes papillate or fringed on ventral side (Figs 95, 143); 2–3 robust *pmes* on each side submedianly on distal part of mesosome, often hard to see due to papillation of mesosome. Small rugose nodi may be present near gonopore. Parameral heads with 2–4 fingers (Fig, 136, 144). Dorsal finger often appears to be separate sclerite, but connected to paramere through largely translucent neck. Parameral blades stout, heavily curved around the mesosome (Figs 136, 144), and not much elongated distally; *pst1* sensillus, near distal tip, often very hard to see in *He. atherae* species group; *pst2* microseta, lateral near distal tip.

Species groups. Based on preantennal and abdominal characters, we recognise two species groups, as follows: ***Hecatrishula atherae* species-group** (Figs 130–137). Head indented-dome shaped. Ventral carinae broad, diffusely continuous with marginal carina. *ppss* on posterior margin of pronotum. Tergopleurites II–VIII of both sexes typically each with 1–2 fenestrae. Tergopleurites IX+X in male and tergopleurites VIII in female not connected medianly. Ex *Pica* spp., *Nucifraga multipunctata*, and *Corvus* spp.

***Hecatrishula biguttata* species-group** (Figs 138–145). Head convex-dome shaped. Ventral carinae slender, not visible anterior to pulvinus, thus not clearly continuous with marginal carina. *ppss* on postero-lateral corners of pronotum. Tergopleurites II–VIII of both sexes usually without fenestrae, or with only one small fenestra around spiracle openings. Tergopleurites IX+X in male and tergopleurites VIII in female medianly continuous; more anterior tergopleurites may be connected by narrow bridge. Ex *Pyrrhocorax* spp. and *Podoces* spp.

Host distribution. Known only from the Corvidae, where they are patchily distributed on *Pica*, *Pyrrhocorax, Podoces, Nucifraga,* and large species of *Corvus*. *Hecatrishula hamatofasciata* is known only from a member of the Bucerotidae, but this is likely to be a straggler, a contaminant, or a host mix-up.

Geographical range. Widely distributed across Africa, Eurasia, and North America. There appears to be a concentration of species in the mountains and highlands of Central Asia, where most of the hosts of *Hecatrishula* occur. The lack of any known *Hecatrishula* on other species of *Nucifraga* and on most *Corvus* spp. may indicate that the genus is rare or only patchily distributed across the potential host range.

Etymology. The genus name is derived from the Greek goddess *Hekátē*, who is often depicted holding a pair of torches, and the Hindu trident *trishula*. Both these words refer to the shape of the mesosome, specifically the shape of the mesosomal lobes. Gender: feminine.

Remarks. No member of *Hecatrishula* was included in the phylogeny of Bush *et al*. (2016) and, because of the unique structure of the male genitalia, this genus is difficult to place within the *Brueelia*-complex. Some species of *Hecatrishula* were included in *Corvonirmus* by Złotorzycka (1964a, 1997), likely due to similarities in pigmentation patterns rather than structural characters. The illustrations of the male genitalia of *Co. perforatus* and *Co. varius* by Złotorzycka (1964a: fig. 1d,e) are overly simplified, with the genitalia of *Co. perforatus* drawn from everted and folded genitalia, which makes comparisons difficult.

Included species
***He. atherae* group**
***Hecatrishula atherae* (Ansari, 1957a: 161) n. comb. [in *Brueelia*]**
Hecatrishula biocellata (Piaget, 1880: 666) **n. comb.** [in *Nirmus*] **[1]**
    Nirmus nigropictus (Carriker, 1902: 219) [in *Nirmus*] **[1, 2]**
Hecatrishula bipunctata (Rudow, 1870: 467) **n. comb.** [in *Nirmus*] **[3]**
Hecatrishula cryptoleuca (Ansari, 1957a: 164) **n. comb.** [in *Brueelia*] **[1, 4]**
Hecatrishula multipunctata (Clay, 1936: 906) **n. comb.** [in *Degeeriella*]
Hecatrishula nawabi (Ansari, 1957a: 166) **n. comb.** [in *Brueelia*]
Hecatrishula varia (Burmeister, 1838: 430) **n. comb.** [in *Nirmus*] **[5]**
    Hecatrishula perforata (Złotorzycka, 1964a: 244)

He. *biguttata* group

Hecatrishula biguttata* (Kellogg & Paine, 1914: 234) **n. comb. [in *Nirmus*]
Hecatrishula docilis* (Ansari, 1956b: 393) **n. comb. [in *Brueelia*] **[6]**
Hecatrishula koslovae* (Clay, 1936: 908) **n. comb. [in *Degeeriella*]

[1] Williams (1986) examined material from *Pica hudsonia*, *Corvus cryptoleucus* (though her material was from Illinois, i.e. well outside the known range of this species) and *Corvus corax* [*sinuatus*], but she could not find any differences among the samples from those three host species. Therefore, Williams (1986) regarded both *Brueelia cryptoleuca* and *Br. nigropicta* as junior synonyms of *Br. biocellata*. We have examined material from those three hosts, as well as from *Pica pica*, *P. nuttallii*, and Old World subspecies of *Corvus corax*. While we agree with Williams (1986) in regarding *Br. nigropicta* as a junior synonym of *Br. biocellata* (now *He. biocellata*), we consider that lice from both *Corvus cryptoleucus* and North American *C. corax* are separate from those from Old World subspecies of *C. corax,* and are here regarded as conspecific with *He. cryptoleuca*.

[2] This species may ultimately be separable from *He. biocellata*, but based on the few specimens we have seen from *Pica* spp. are morphologically very similar. Thus, we prefer to keep these samples together under *He. biocellata* until more morphological or molecular data are available.

[3] Ansari (1957a: 151, 171) mentions an unpublished account by Hopkins & Clay that states that *Nirmus bipunctatus* is not a *nomen novum* for *Nirmus quadrangularis* Rudow, 1869 (= *Corvonirmus quadrangularis*), as the head shapes are different. In Ansari's illustrations of *Br. bipunctata* (*ibid.,* p. 157, fig. 23), all three *as* can clearly be seen, thus *Br. bipunctatus* is a *Hecatrishula*, while *Br. quadrangularis* is a *Corvonirmus*. We therefore resurrect *Br. bipunctatus* from synonymy with *Br. quadrangularis*.

[4] The type material of *He. cryptoleuca* that we examined includes paratypes ostensibly collected from *Corvus cryptoleucus* from far outside the range of this species (Illinois). The material was collected by Richard Meinertzhagen, whose host identification and collection circumstances cannot always be trusted. It is likely this material was collected from *C. corax* ssp., which does occur at the collection locality. This North American material differs from *He. atherae* from *C. corax* ssp. from the Old World in the male genitalia, pigmentation patterns, and preantennal head shape, but is similar to *He. cryptoleuca* from the type host. It thus appears like North American *C. corax* ssp. are parasitised by a different species of *Hecatrishula* than Old World subspecies of the same host.

[5] Louse samples from *Corvus frugilegus* and *C. monedula* are morphologically very similar, and appear to differ only in size. Therefore, we tentatively consider *He. varia* and *He. perforata* as synonyms.

[6] The type series of this species is from Morocco, making the type host *Pyrrhocorax pyrrhocorax barbarous* and not *Pyrrhocorax pyrrhocorax docilis*, which is distributed from the Balkans to Pakistan.

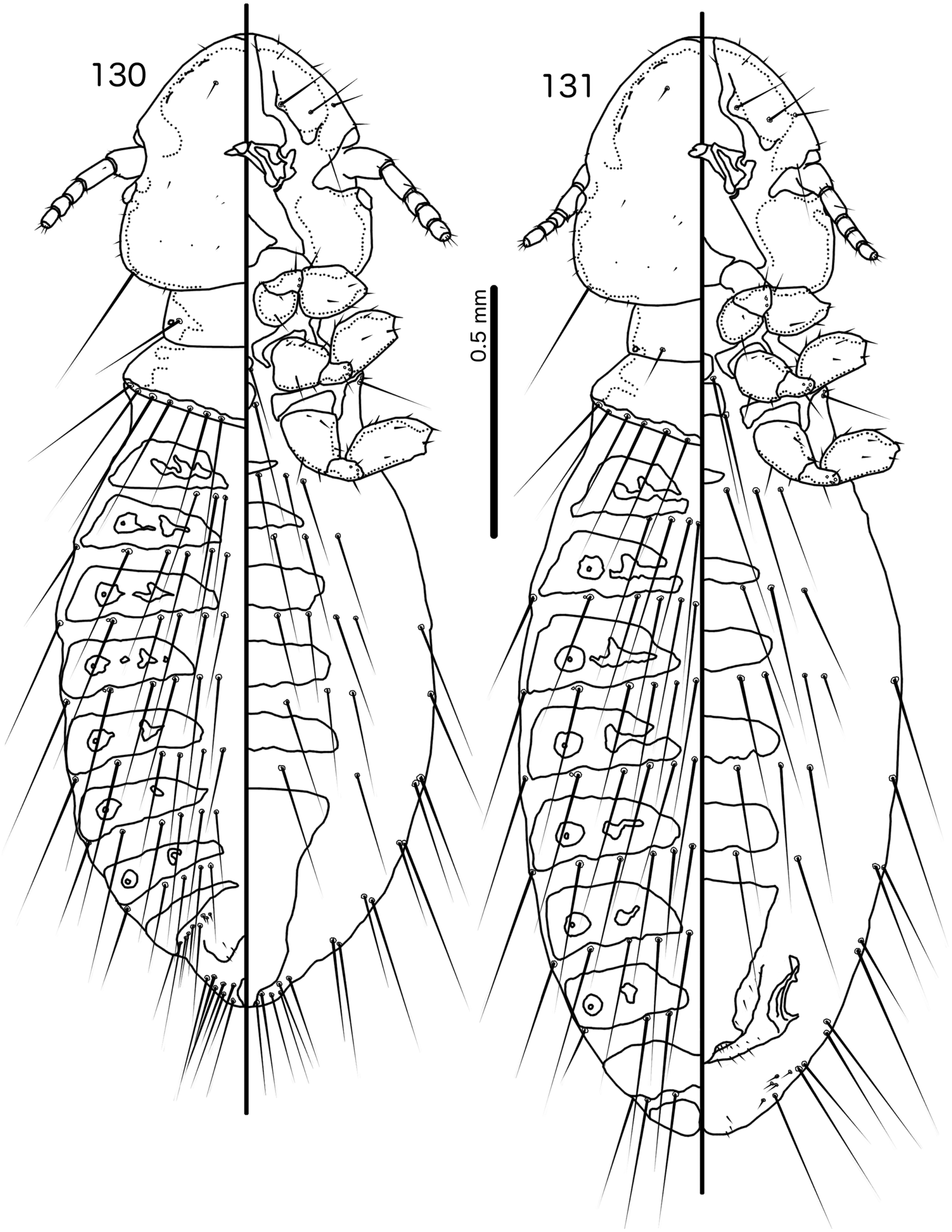
Hecatrishula atherae (Ansari, 1957a) n. comb.

(Figs 130–137)

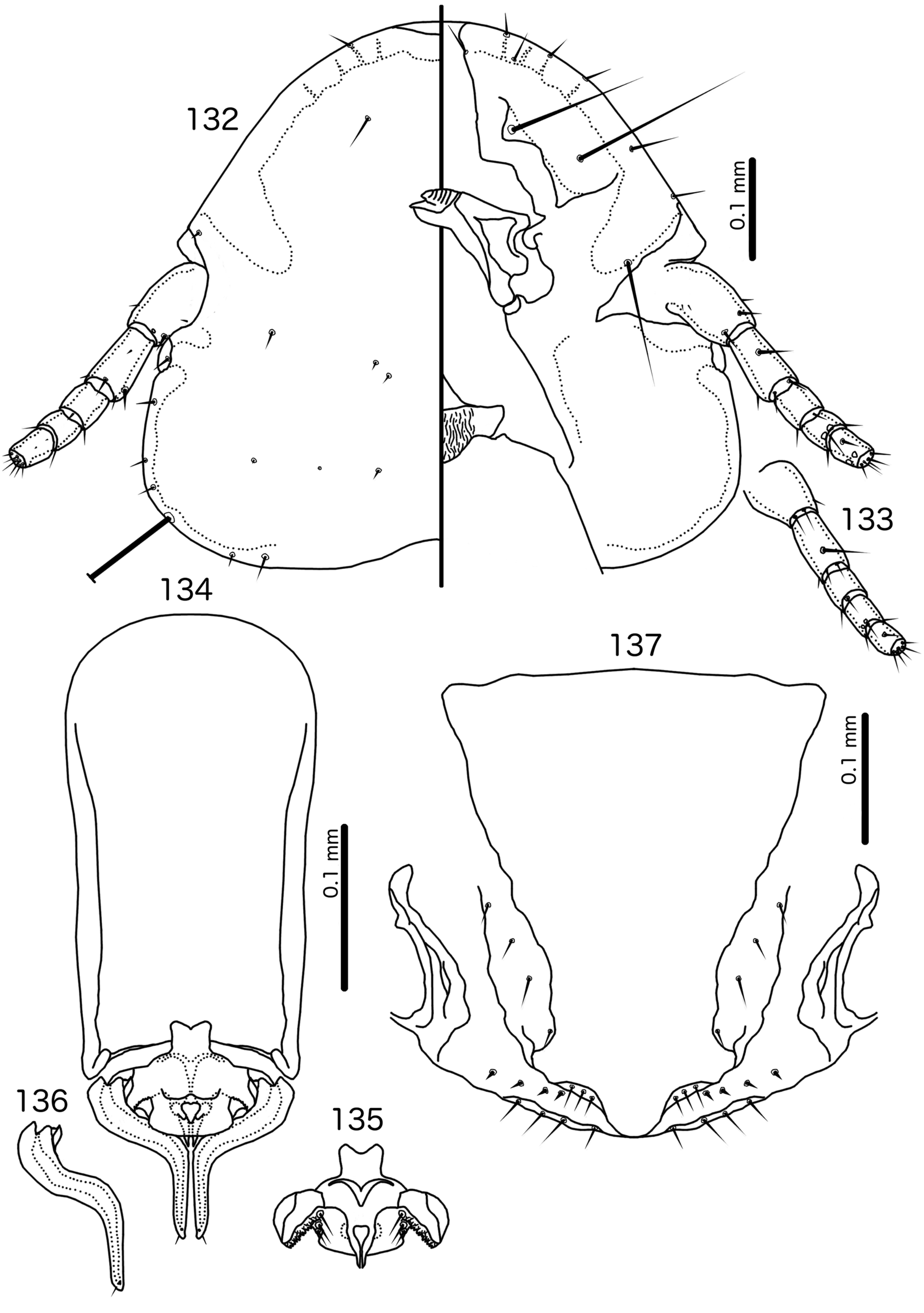
Brueelia atherae Ansari, 1957a: 161.

Type host. *Corvus corax laurencei* Hume, 1873—common raven.
Type locality. Shibar Pass, Afghanistan.
Other hosts. *Corvus corax corax* Linnaeus, 1758—common raven. *Corvus corax tibetanus*—common raven.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 132; *ads* clearly anterior to *avs3*. Preantennal nodi oblong, with hollow appearance. Coni short and wide, often barely visible from dorsal side. Pre- and postocular nodi moderate; *pos* on posterior margin of postocular nodi. Gular plate short, rugose, with prominent lateral projections. Head largely translucent, but dark pigmentation on marginal carina (except at clypeo-labral suture), lateral half of ventral carinae, preantennal nodi, pedicel, flagellomeres 1–3, preantennal nodi, mouth parts and mandibular framework, gular plate, and much of central temples. Thoracic and abdominal segments as in genus and subgenus descriptions and Figs 130–131; *ppss* median to spiracle opening. Only proepimera, metepisterna, and leg carinae with dark pigmentation. Tergopleurites and sternal plates darkly pigmented, tergopleurites generally darker than sternal plates. Tergopleurite II with 1 fenestra that typically perforates tergopleurite margin (as in Figs 130–131). Tergopleurites III–VIII with 2 fenestrae, 1 around spiracle opening and 1 more median; the median fenestrae may perforate tergopleurite margin medianly (as in tergopleurite III of Fig. 131). Tergopleurites VIII–IX+X rarely continuing onto ventral surface, however this may be an artifact of mounting. Sternal plate II often very small and absent in some specimens.



FIGURES 130–131. *Hecatrishula atherae* (Ansari, 1957b) **n. comb.** ex *Corvus corax laurencei*: **130,** male habitus, dorsal and ventral views. **131,** female habitus, dorsal and ventral views.



FIGURES 132–137. *Hecatrishula atherae* (Ansari, 1957b) **n. comb.** ex *Corvus corax laurencei*: **132,** male head, dorsal and ventral views. **133,** female antenna, ventral view. **134** male genitalia, dorsal view. **135,** Mesosome, ventral view. **136,** paramere, dorsal view. **137,** female subgenital plate and vulval margin, ventral view.

Male. Scape (Fig. 132) about twice as long as that of female (Fig. 133), and slightly swollen. Typically 7 *mms* on each side. Abdominal chaetotaxy as in Table 2 and Fig. 130. Male genitalia typical for genus (Fig. 134). Basal apodeme rounded rectangular. Proximal mesosome small, anterior margin concave. Gonopore (Fig. 135) narrowly open distally, projecting ventrally. Prominent V-shaped thickening on ventral surface anterior to gonopore. Mesosomal lobes extensive, overlapping ventrally with parameres, median margin rugose, with 3 stout *pmes* on each side. Parameral heads trifid (Fig. 135). Parameral blades extremely bent around mesosome, elongated distally; *pst1* sensillus, near distal tip; *pst2* microseta, lateral near distal tip. Measurements ex *Corvus corax laurencei* (n = 24 except n = 22 for AW and n = 23 for HW): TL = 1.62–2.05 (1.82); HL = 0.45–0.54 (0.49); HW = 0.45–0.55 (0.48); PRW = 0.27–0.33 (0.30); PTW = 0.42–0.49 (0.46); AW = 0.59–0.75 (0.70). Ex *C. c. tibetanus* (n = 2): TL = 1.76–1.84; HL = 0.50–0.51; HW = 0.53; PRW = 0.33; PTW = 0.48–0.49; AW = 0.74–0.76.

Female. Scape not swollen (Fig. 133). Typically 6 *mms* setae on each side. Abdominal chaetotaxy as in Table 2 and Fig. 131. Subgenital plate slenderly trapezoidal (Fig. 137), with lateral submarginal bulge, and with only narrow median section reaching vulval margin; in many specimens the plate only approaches the vulval margin but does not reach it. Vulval margin (Fig. 137) gently rounded, with 4–6 slender *vms* on each side, and 3–5 short, thorn-like *vss* on each side; 6–7 slender *vos* on each side; distal 2–3 *vos* median to *vss*. Measurements ex *Corvus corax laurencei* (n = 26 except n = 23 for AW): TL = 1.85–2.35 (2.13); HL = 0.51–0.58 (0.54); HW = 0.50–0.60 (0.55); PRW = 0.29–0.34 (0.32); PTW = 0.45–0.53 (0.49); AW = 0.66–0.84 (0.74). Ex *C. corax tibetanus* (n = 2): TL = 2.13–2.23; HL = 0.54–0.56; HW = 0.58–0.59; PRW = 0.34; PTW = 0.50–0.51; AW = 0.82–0.86.

Type material. Ex *Corvus corax laurencei*: Holotype ♂, Shibar Pass, Afghanistan, Apr. 1937, R. Meinertzhagen, 9765 (NHML). **Allotype** ♀, same data as holotype (NHML). **Paratypes:** 6♂, 5♀, same data as holotype (NHML); 1♀, same data as previous (OSUS); 13♂, 10♀, Kabul, Afghanistan, Apr. 1937, R. Meinertzhagen, 9579 (NHML); 1♂, same data as previous (OSUS); 16♂, 13♀, Afghanistan, Apr. 1937, R. Meinertzhagen, 9697 (NHML); 1♂, 3♀, Kabul, Afghanistan, 5 Aug. 1963, [H.] Klockenhoff, 113, 18249–50 on reverse (OSUS).

Additional material examined (non-types)

Ex ***Corvus corax tibetanus*** [as ***Corvus corax***]**:** 2♂, 2♀, Sankhuwasabha District, Kosi Zone, Eastern Region, Nepal, 26 Jul. 1973, HE0643B (OSUS); 1♀, Makulu Base Camp, elev. 4850 m, Himalayas, Nepal, 20 Oct. 1972, J. Gregori, 11453 (PMSL).

Ex ***Corvus corax corax***: 1♀, Kragujevac, Serbia, 21 Mar. 1948, S. Brelih (OSUS); 1♀, Lublin, Poland, 9 Sep. 1949, UMCS, Freunde Collection, 26/1956 (MFNB).

Remarks. Ansari (1957a: 163) identified lice from *Corvus corax ruficollis* as *Brueelia atherae*, conspecific with those from *C. corax laurencei,* type host but, in our opinion, these populations are specifically distinct and, therefore, we have removed *C. corax ruficollis* as a host of this louse species.

Hecatrishula biguttata (Kellogg & Paine, 1914) n. comb.

(Figs 138–145)

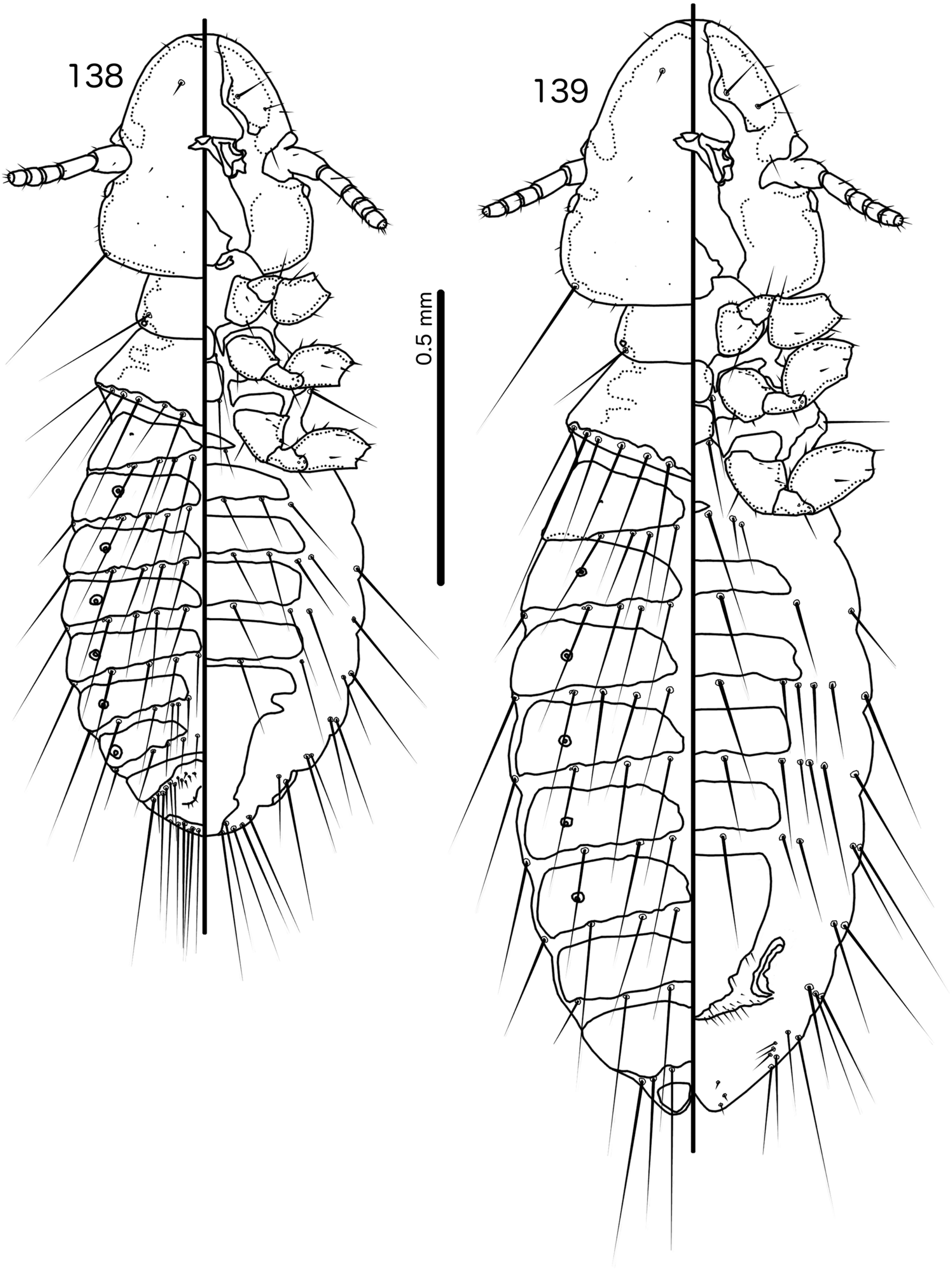
Nirmus biguttatus Kellogg & Paine, 1914: 234.
Degeeriella biguttata (Kellogg & Paine, 1914); Harrison, 1915: 109.
Brueelia biguttata (Kellogg & Paine, 1914); Hopkins & Clay, 1952: 53.
Corvonirmus biguttatus (Kellogg & Paine, 1914); Złotorzycka, 1997: 189.

Type host. *Pyrrhocorax graculus digitatus* Ehrenberg, 1833—yellow-billed chough [as *Pyrrhocorax graculus*].

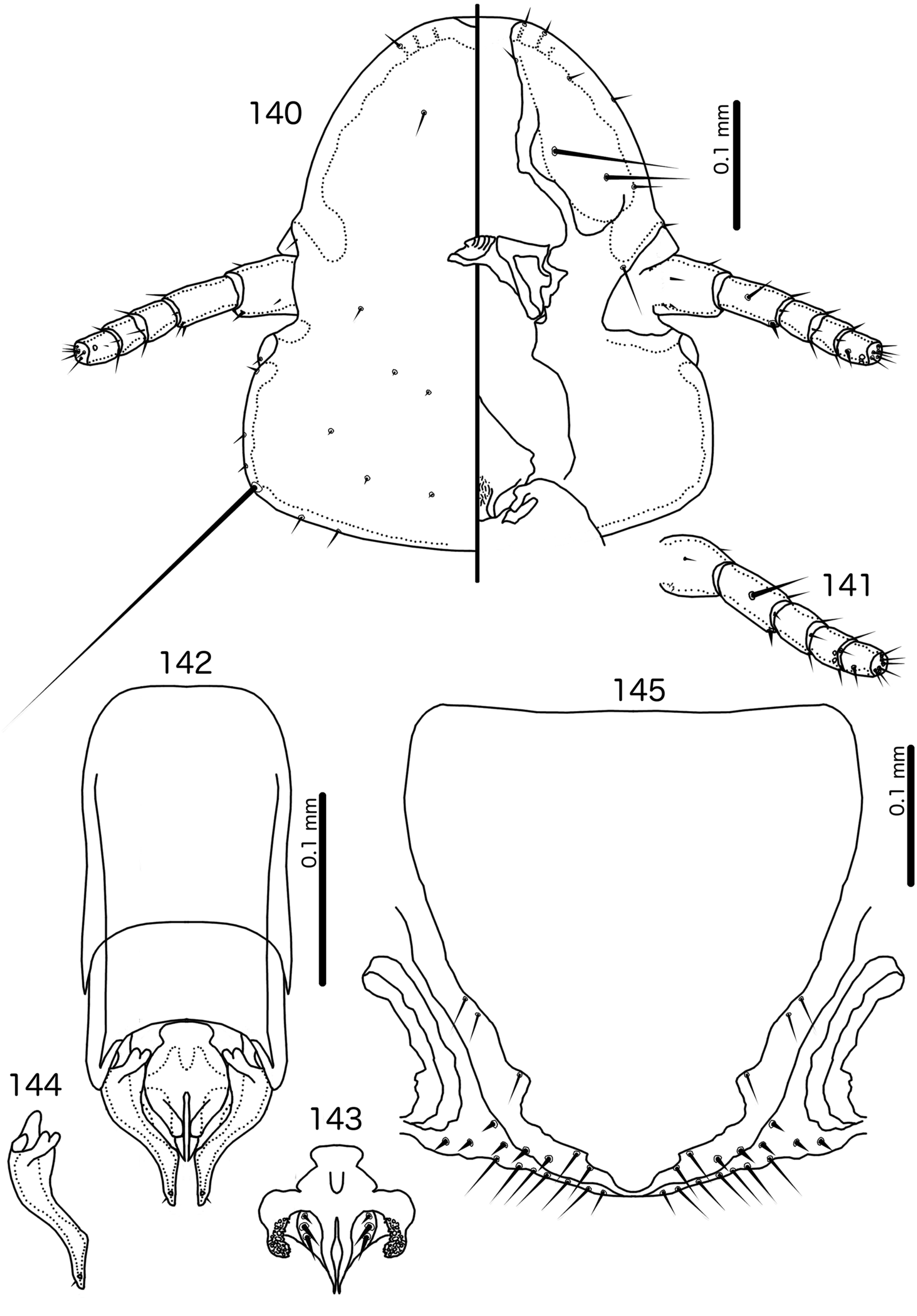
Type locality. Gilgit, Sarhad and Little Pamir, Northwest Frontier of India; Khambajong, Tibet.

Other hosts. *Pyrrhocorax graculus graculus* (Linnaeus, 1758)—yellow-billed chough . ***Pyrrhocorax pyrrhocorax erythroramphos* (Vieillot, 1817)** [Ref.: Ansari 1956d: 392, as ***Pyrrhocorax pyrrhocorax pyrrhocorax***]—red-billed chough. ***Pyrrhocorax pyrrhocorax himalayanus* (Gould, 1862)** [Ref.: Ansari 1956d: 392]—red-billed chough. ***Pyrrhocorax pyrrhocorax docilis* (S.G. Gmelin, 1774)** [Ref.: Ansari 1956d: 302, as ***Pyrrhocorax pyrrhocorax pontif*ex** from Persia and ***Pyrrhocorax pyrrhocorax pyrrhocorax*** from Crete]—red-billed chough.

Description. *Both sexes*. Head shape, structure, and chaetotaxy as in genus description and Fig. 140. Marginal carina wide, irregular. Ventral carina narrow but visible anterior to pulvinus, not clearly continuous with marginal carina. Preantennal nodi slender. Coni wide but short. Pre- and postocular nodi moderate in size; *pos* on anterior margin of postocular nodi. Gular plate large, rugose medianly, with slight lateral projections. Pigmentation almost uniformly brown. Thoracic and abdominal segments as in genus and subgenus descriptions and Figs 138–139; *ppss* on postero-lateral corners. Pigmentation almost uniformly brown.



FIGURES 138–139. *Hecatrishula biguttata* (Kellogg & Paine, 1914) **n. comb.** ex *Pyrrhocorax graculus graculus*: **138,** male habitus, dorsal and ventral views. **139,** female habitus, dorsal and ventral views.



FIGURES 140–145. *Hecatrishula biguttata* (Kellogg & Paine, 1914) **n. comb.** ex *Pyrrhocorax graculus graculus*: **140,** male head, dorsal and ventral views. **141,** female antenna, ventral view. **142,** male genitalia, dorsal view. **143,** mesosome, ventral view. **144,** paramere, dorsal view. **145,** female subgenital plate and vulval margin, ventral view.

Male. Scape (Fig. 140) longer than in female (Fig. 141), slightly swollen. Abdominal chaetotaxy as in Table 2 and Fig. 138. Male genitalia typical for genus (Fig. 142). Basal apodeme rounded rectangular. Proximal mesosome broad, rounded. Gonopore (Fig. 143) much elongated, narrowly open distally. Small U-shaped ventral thickening anterior to gonopore. Mesosomal lobes extended laterally, overlapping parameres. Median margin of lobes heavily papillate (Fig. 143). 3 stout *pmes* on each side of gonopore. Parameral heads 4-fingered (Fig. 144). Parameral blades bent around mesosome, slightly elongated distally; *pst1* sensillus, near distal tip; *pst2* microseta, lateral near distal tip. Measurements ex *Pyrrhocorax graculus graculus* (n = 2): TL = 1.36–1.47; HL = 0.42–0.43; HW = 0.40–0.41; PRW = 0.23–0.25; PTW = 0.35–0.43; AW = 0.49–0.50.

Female. Scape not swollen (Fig. 141). Abdominal chaetotaxy as in Table 2 and Fig. 139. Subgenital plate broadly triangular (Fig. 145), with only narrow median section approaching or reaching vulval margin. Vulval margin (Fig. 145) gently rounded, with 7–8 long, slender *vms* on each side, and 4–6 stout, spine-like *vss* on each side; 4–5 slender *vos* on each side; the distal 2 *vos* median to *vss*. Measurements ex *Pyrrhocorax graculus graculus* (n = 12): TL = 1.51–1.88 (1.71); HL = 0.44–0.48 (0.46); HW = 0.41–0.46 (0.43); PRW = 0.23–0.28 (0.25); PTW = 0.37–0.45 (0.41); AW = 0.49–0.65 (0.57). Ex *P. g. digitatus* (n = 2): TL = 1.65–1.83; HL = 0.46–0.47; HW = 0.42–0.46; PRW = 0.25–0.27; PTW = 0.40–0.44; AW = 0.58–0.65.

Material examined (non-types). Ex ***Pyrrhocorax graculus graculus*:** 5♂, 9♀, "Pyrenées", Apr. 1932, R. Meinertzhagen, 822, 3013–4 (NHML) [one slide contains one female *Hecatrishula docilis*]. 1♂, 4♀, Ibach, Schwyz, Switzerland, 12 Dec. 1965, W. Büttiker, 114-1–2 (NHML); 1♂, 1♀, Andermatt, Uri, Switzerland, Apr. 1942, W. Büttiker, 314, Brit. Mus. 1966-653 (NHML); 1♀, Julijske Alpe, Slovenia, 5 Jul. 1955, S. Brelih, 499 (PMSL); 1♂, 4♀, Kaminske Alpe, Slovenia, 29 Mar. 1953, S. Brelih, 200, 1557–8, 2476–7 (PMSL); 1♀, Julijske Alpe, Slovenia, 5 Jul. 1955, S. Brelih, 2555 (NMNH).

Ex ***Pyrrhocorax graculus digitatus* [as *Pyrrhocorax graculus forsythi*]:** 2♀, Ladakh, Jammu & Kashmir State, India, Apr. 1925, 3015 (NHML) [slide contains one male *Hecatrishula docilis*].

Remarks. Kellogg & Paine (1914: 234) originally described *Brueelia biguttatus* from *Graculus graculus* and *Nucifraga multipunctata* from North-West India. Material from the latter host species was subsequently described as a separate species, *Degeeriella multipunctata* Clay, 1936. The correct subspecies of *Pyrrhocorax graculus* in India is *P. graculus digitatus*, not *P. graculus graculus* as stated by Clay (1936: 906) and followed by Price *et al.* (2003: 153).

Hecatrishula biguttata and *He. docilis* both occur on the same host species, and some slides examined from a single host contain both species, suggesting that they even occur on the same host individual. Although there appears to be no geographical structure to their distributions, our material examined of both species is widely scattered and rarely extensive enough from any locality to draw any definite conclusions. Whether these two morphologically very distinct forms are actually two morphs of the same species, or two different species is not known, and should be established genetically. One possibility is that these taxa are in the early stages of morphological differentiation into different ecomorphs.

Psammonirmus Gustafsson & Bush, new genus

Type species. *Psammonirmus lunatipectus* **new species**

Diagnosis. *Psammonirmus* **n. gen.** does not appear to be closely related to any other genus treated here. *pns* is absent in *Psammonirmus* (Fig. 148) as in *Brueelia* s. str (Fig. 44), and like in *Brueelia* s. str. (Figs 42–43) females of *Psammonirmus* (Fig. 147) have very few abdominal setae, while males (Fig. 146) have few setae in anterior segments and several *tps* in more posterior segments (see Table 2). Moreover, *Brueelia* s. str. lack *as3* (Fig. 44), but *as3* is present in *Psammonirmus* (Fig. 148). With the exception of *Br. phasmasoma* **n. sp.** (Fig. 58), no known *Brueelia* s. str. have a dorsal preantennal suture, but this is present in *Psammonirmus* (Fig. 148), and extends as in some *Acronirmus* (Fig. 85). *Psammonirmus* is separated from species of *Brueelia* s. str. with dorsal preantennal suture and *Acronirmus* by the following characters: *s4* present in *Psammonirmus* (Fig. 148) but absent in *Brueelia* s. str. (Fig. 58) and *Acronirmus* (Fig. 85); *pos* absent in *Psammonirmus* (Fig. 148) and *Acronirmus* (Fig. 85) but present in *Brueelia* s. str. (Fig. 58); female tergopleurites IX+X and XI partially fused in *Psammonirmus* (Fig. 147) but not fused in *Brueelia* s. str. (Fig. 57) and *Acronirmus* (Fig. 84); *ss* present on male tergopleurites II–IV, *psps* present on male tergopleurite IV, and *tps* present on male tergopleurites V–VI in *Psammonirmus* (Fig. 146), but all these sets of setae absent in *Brueelia* s. str. (Fig. 56) and *Acronirmus* (Fig. 83); mesosomal lobes extended laterally overlapping with parameres in *Psammonirmus* (Fig. 149) but not extended in *Brueelia* s. str. (Fig. 59) or *Acronirmus* (Fig. 86).

The male genitalia of *Psammonirmus* (Figs 149–151) are similar only to those of *Hecatrishula* **n. gen.** (e.g. Figs 134–136, 142–144) and *Ceratocista* **n. gen.** (Figs 157–159). As in *Hecatrishula* (Figs 134–135, 142–143), the mesosomal lobes are extended laterally, overlapping the parameres in *Psammornirmus* (Figs 149–150); in both genera the gonopore is slightly elongated distally, the proximal mesosome is small, the parameral heads are at least bifid (Figs 136, 144, 151), and the lateral margins of the mesosomal lobes are pectinate. However, in *Psammonirmus* (Fig. 149) the lateral extensions of the mesosomal lobes are dorsal to the parameres, whereas in *Hecatrishula* they are ventral (Figs 134, 142). In addition, the ventral U- or V-shaped sclerite present in *Hecatrishula* (Figs 135, 143) is absent in *Psammonirmus* (Fig. 150), and while the *pmes* are visible as stout setae positioned on the postero-ventral surface of the lobes in *Hecatrishula* (Figs 135, 143), these are much smaller and positioned on the lobes in *Psammonirmus* (Fig. 150). Abdominal chaetotaxy differs between the two genera (Table 2), with *Hecatrishula* having *psps* and *tps* on all segments in both sexes (Figs 130–131, 138–139), whereas in *Psammonirmus* anterior segments of the male (Fig. 146) have only *ss* and are entirely nude in female (Fig. 147). *as3* is present in both *Hecatrishula* (Figs 132, 140) and *Psammonirmus* (Fig. 148), but *pns* is present in *Hecatrishula* and absent in *Psammonirmus*.

Lateral extensions of the mesosomal lobes are found also in *Ceratocista* (Figs 157–158), and in both this genus and *Psammonirmus* these extensions are dorsal. The abdominal chaetotaxy is remarkably similar in the two genera (Table 2). In both *Ceratocista* (Fig. 154) and *Psammonirmus* (Figs 147) female tergopleurites IX+X and XI are partially fused. The female subgenital plates of both genera are also very similar, however the cross-piece is medianly displaced in *Ceratocista* (Fig. 160) but medianly continuous in *Psammonirmus* (Fig. 152). Antennae are sexually dimorphic in *Ceratocista* (Figs 155–156) but not in *Psammonirmus* (Fig. 148), and the preantennal structure is very different in these two genera. In *Ceratocista* (Fig. 155) the frons is sclerotized dorsally as in *Resartor* **n. gen.** (Fig. 163) or *Turdinirmus* (Fig. 182), but in *Psammonirmus* (Fig. 148) the frons is hyaline, and the dorsal preantennal suture completely separates the dorsal anterior plate from the main head plate.

Description. ***Both sexes***. Head trapezoidal (Fig. 148). Marginal carina interrupted submedianly and laterally; absent at osculum. Dorsal preantennal suture continuous with hyaline margin, reaching *dsms* and *ads*, posteriorly separating dorsal anterior plate from main head plate. Ventral carinae diffuse anterior to pulvinus, and not clearly continuous with marginal carina. Ventral anterior plate absent. Head setae as in Fig. 148; *pos* and *pns* absent. Coni small, pointed. Antennae monomorphic. Temporal carinae not visible; *mts3* only macrosetae. Gular plate broad, pentagonal.

Prothorax rectangular (Figs 146–147); *ppss* on postero-lateral corner. Proepimera with hammer-shaped median ends. Pterothorax pentagonal, with posterior margin convergent to rounded median point, differing slightly in shape between sexes; *mms* widely separated medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna widened medianly. Leg chaetotaxy as in Fig. 25, except *fI-v4, fI-p2, fII-v2, fIII-v2* absent.

Abdomen (Figs 146–147) oval in female, more teardrop-shaped in male. Tergopleurites rectangular, but triangular in more posterior tergopleurites in male; tergopleurites II–IX+X in male and tergopleurites II–VIII in female moderately separated medianly. Tergopleurite IX+X and XI fused in female. Sternal plates rectangular, transversally continuous, not approaching pleurites. Pleural incrassatons moderate. Re-entrant heads prominent. Abdominal chaetotaxy as in Table 2 and Figs 146–147; *pss* cannot be seen in any material examined, and lateral-most seta on all tergopleurites (except pleural setae) here tentatively interpreted as *psps* with shorter seta median to this in females tentatively interpreted as *tps*. Male subgenital plate trapezoidal, reaching posterior margin of abdomen. Female subgenital plate trapezoidal, but diffuse distally. Cross-piece present, but from the material examined it cannot be established whether this is detached or continuous with subgenital plate. Vulval margin (Fig. 152) with slender *vms*, numerous thorn-like *vss*; *vos* follow lateral margins of subgenital plate; distal setae not approaching *vss*.

Basal apodeme rounded rectangular (Fig. 149). Proximal mesosome small, constricted at about midpoint. Gonopore (Fig. 150) prominent, open distally, with lateral extensions in anterior end. Mesosomal lobes large, wing-like, overlapping with parameres. Distal margin of lobes pectinate; 2 *pmes* sensilla visible on each side of gonopore (Fig. 150). Parameral heads bifid (Fig. 151). Parameral blades slender, tapering; *pst1–2* not visible.

Host distribution. *Psammonirmus lunatipectus* **n. sp.** is the first species of *Brueelia*-complex described from the Eurylaimides, and is presently know only from the Eurylaimidae. A pair of specimens (NHML, 1980-40 and 1934-570) from *Psarisomus dalhousiae dalhousiae* (Jameson, 1835) belong to this genus, but the male genitalia are too badly distorted to ascertain whether these are *Ps. lunatipectus*. Notably, the head shape of the material from *P. d. dalhousie* varies from that of *Ps. lunatipectus* from *Serilophus lunatus*.

We have examined material from other Eurylaimidae, including *Eurylaimus steerei mayri* Salomonsen, 1954*,* *Cymbirhynchus macrorhynchus malaccensis* Salvadori, 1874*,* *Corydon sumatranus laoensis* Meyer de Schauensee, 1929, and *Calyptomena viridis caudacuta* Swainson, 1838, but all specimens from these hosts belong to *Guimaraesiella*. We have seen no *Brueelia*-complex lice from the other members of Eurylaimides (Pittidae, Philepittidae, *Sapayoa* Hartert, 1903). The two known hosts of *Psammonirmus* are nested within the Eurylaimidae, but are not closely related within that family (Moyle *et al*. 2006). It is puzzling that these two hosts, but none of the others, are parasitised by *Psammonirmus*; poor sampling may be a factor.

Geographical range. Southeast Asia.

Etymology. The genus name is derived from Greek "*psammos*" for "sand", and refers to the coloration of the only known species. "*Nirmus*" is a common generic suffix in louse taxonomy, referring to Nitzsch (1818) genus of the same name. Gender: masculine.

Remarks. No representative of *Psammonirmus* was included in the phylogeny of Bush *et al*. (2016), and its relationship to other genera treated here is presently unknown.

Included species
**Psammonirmus lunatipectus* new species

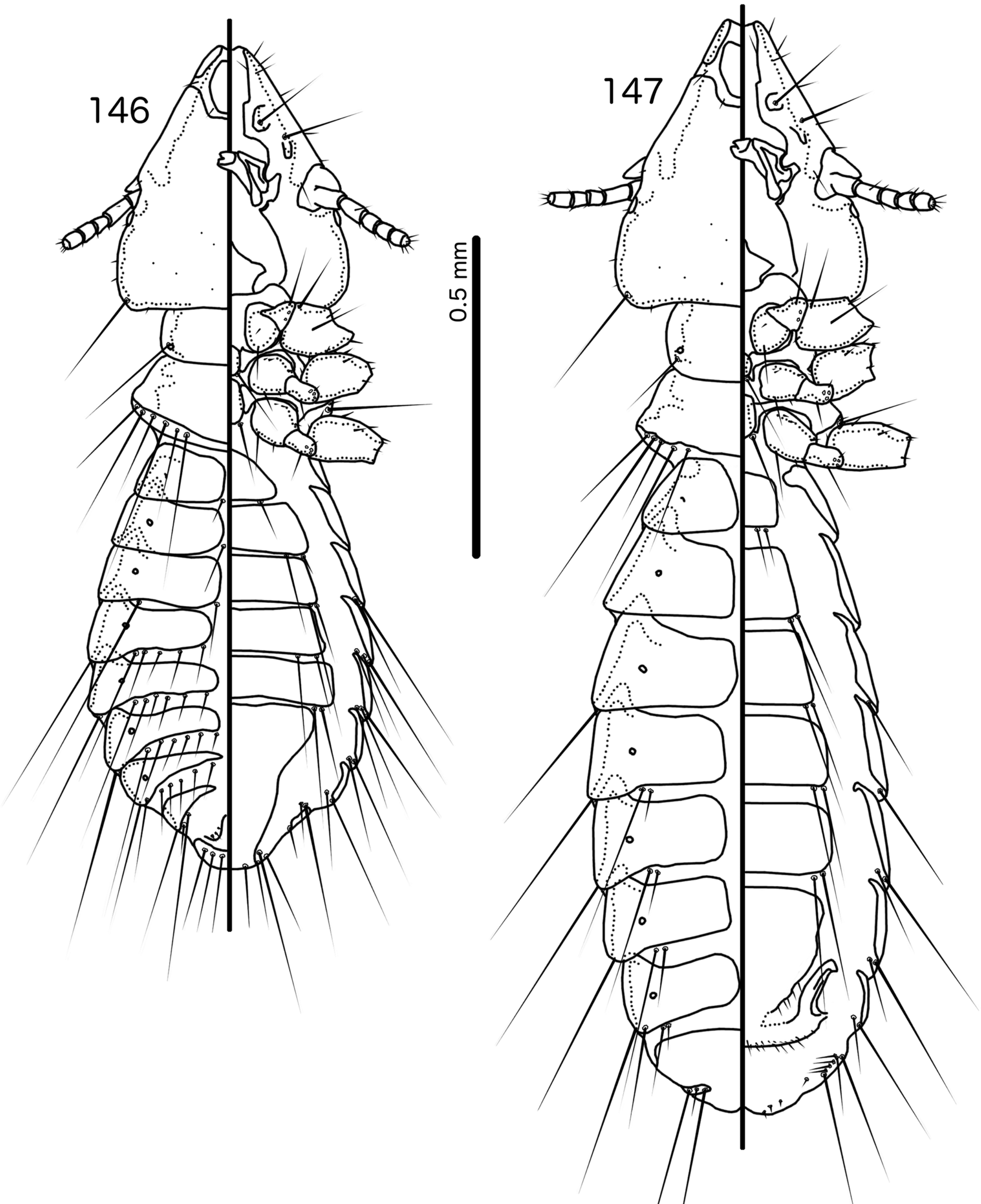
Psammonirmus lunatipectus Gustafsson *et al*. new species
(Figs 146–152)

Type host. *Serilophus lunatus aphobus* Deignan, 1948—silver-breasted broadbill.
Type locality. Phu Phak Khi Nak Mountain, Kok Sathon, Dan Sai District, Loei Province, Thailand.
Other host. *Serilophus lunatus lunatus* (Gould, 1834)—silver-breasted broadbill.

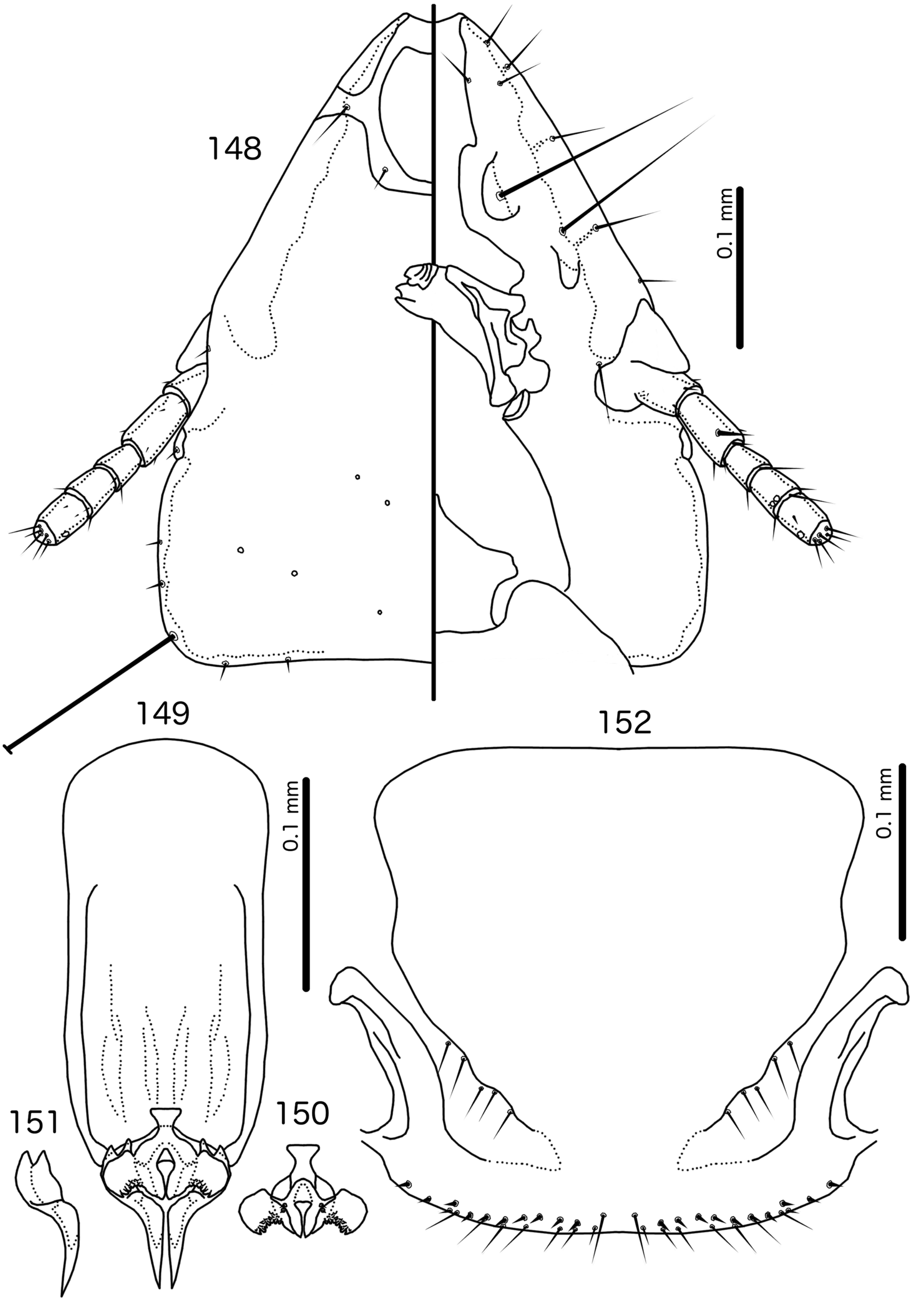
Diagnosis. No member of any other genus treated here appears to be particularly close to *Psammonirmus* **n. gen.** Laterally expanded mesosomes like those of *Psammonirmus* (Fig. 150) are also found in *Hecatrishula* **n. gen.** (Fig. 135) and *Ceratocista* **n. gen.** (Fig. 158), but these expanded sections are dorsal in *Ceratocista* and *Psammonirmus*, but ventral in *Hecatrishula*. In both *Hecatrishula* (Figs 132, 140) and *Ceratocista* (Fig. 155) the antennae are sexually dimorphic, but this is not the case in *Psammonirmus* (Fig. 148). In addition, *Psammonirmus* (Fig. 148) is the only one of these three genera in which the dorsal preantennal suture interruptes the marginal carnina laterally and completely surrounds the dorsal anterior plate. *pns* is absent in several genera treated above, such as *Brueelia* s. str. (Fig. 44) and *Acronirmus* (Fig. 85), and members of both these genera have dorsal preantennal sutures that are similar to that of *Ps. lunatipectus*, but the differences in male genitalia (see above) are extensive, and do not suggest a close relationship with either of these genera.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 148. Female heads generally more pointed anteriorly than male heads (Figs 146–147). Thoracic and abdominal segments as in genus description and Figs 146–147.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 146; *ps* of sternal plates III–VI often absent on one or both sides. Basal apodeme rounded rectangular (Fig. 149). Proximal mesosome fishtail-shaped, slender. Gonopore (Fig. 150) elongated, narrowly open distally. Mesosomal lobes wide, comb-shaped, overlapping considerably with parameres dorsally; distal margin pectinate; 2 *pmes* lateral to gonopore on ventral side (Fig. 150). Parameral heads distinctly bifid (Fig. 151). Parameral blades strongly curved, tapering, with distinct heel just distal to mesosome; *pst1–2* not visible. Measurements ex *Serilophus lunatus aphobus* (n = 3): TL = 1.19–1.23; HL = 0.39–0.42; HW = 0.35–0.36; PRW = 0.20–0.22; PTW = 0.28–0.31; AW = 0.40–0.45. Ex *S. l. lunatus* (n = 2): TL = 1.31–1.34; HL = 0.41–0.42; HW = 0.36; PRW = 0.22–0.23; PTW = 0.29–0.31; AW = 0.43.



FIGURES 146–147. *Psammonirmus lunatipectus* **n. gen. & n. sp.** ex *Serilophus lunatus aphobus*: **146,** male habitus, dorsal and ventral views. **147,** female habitus, dorsal and ventral views.



FIGURES 148–152. *Psammonirmus lunatipectus* **n. gen.** & **n. sp.** ex *Serilophus lunatus aphobus*: **148,** male head, dorsal and ventral views. **149,** male genitalia, dorsal view. **150,** mesosome, ventral view. **151,** paramere, dorsal view. **152** female subgenital plate and vulval margin, ventral view.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 147; *tps* on tergopleurites V–VIII absent in many specimens. One female with an additional *tps* on tergopleurite VII on one side. Subgenital plate broad, almost quadratic (Fig. 152), with distal margin bulging, but indistinct in all specimens examined; probably reaching vulval margin where cross-piece is vaguely visible in some specimens. Vulval margin (Fig. 152) gently rounded almost flat medianly, with 3–7 short, slender *vms* on each side (more lateral setae generally progressively longer than median setae), and 9–12 thorn-like *vss* on each side; 3–6 long, slender *vos*; distal *vos* median to *vss*. Measurements ex *Serilophus lunatus aphobus* (n = 3): TL = 1.39–1.60; HL = 0.40–0.45; HW = 0.35–0.39; PRW = 0.21–0.23; PTW = 0.28–0.30; AW = 0.40–0.46. Ex *S. l. lunatus* (n = 5 except n = 3 for AW): TL = 1.65–1.83; HL = 0.44–0.48; HW = 0.39–0.41; PRW = 0.24–0.25; PTW = 0.31–0.34; AW = 0.46–0.50.

Etymology. The species epithet refers to the host species name, which derives from "*luna*", Latin for "moon", alluding to the thin, silver crescent mark on the chest of the host. The suffix derives from Latin "*pecten*" for "comb", referring to the fringed distal margin of the mesosomal lobes.

Type material. Ex ***Serilophus lunatus aphobus*****: Holotype** ♂, Phu Phak Khi Nak Mountain, Kok Sathon, Dan Sai District, Loei Province, Thailand, 25 Mar. 1955, R.E. Elbel, RE-5112 (NHML). **Paratypes:** 1♀, Ban Muang Khai, Tha Li District, Loei Province, Thailand, 31 Jan. 1955, R.E. Elbel, RE-4610, RT-B-31178 (NHML); 1♂, 1♀, Pho Lom Lo Mountain, Kok Sathon, Dan Sai District, Loei Province, Thailand, 6 Mar. 1955, R.E. Elbel, RE-4901 (NHML); 1♂, 1♀, Nanthaeo Ban Bo, Dan Sai District, Loei Province, Thailand, 14 May 1955, R.E. Elbel, RE-5228 (NHML); 1♀, Nathaeo Ban Bo, Dan Sai District, Loei Province, Thailand, 14 May 1955, R.E. Elbel, RE-5228 (PIPeR); 1♂, 1♀, Ban Muang Khai, Loei Province, Thailand, 31 Jan. 1955, R.E. Elbel, RE-4610, RT-B-31178 (PIPeR); 1♂, 1♀, Phu Lom Lo Mountain, Kok Sathon, Dan Sai District, Loei Province, Thailand, 6 Mar. 1955, R.E. Elbel, RE-4901 (PIPeR).

Ex ***S. l. lunatus*****:** 1♂, 1♀, Muang Ngai, Chiang Dao District, Chiang Mai Province, Thailand, 25 Apr. 1962, K. Thonglongya, SEATO-886 (NHML).

Ceratocista Gustafsson & Bush, new genus

Brueelia Kéler, 1936a: 257 (*in partim*).

Type species. *Brueelia antennatus* Ansari, 1956a: 139

Diagnosis. *Ceratocista* **n. gen.** (Figs 153–160) is most similar to *Resartor* **n. gen.** (Figs 161–167), and these two genera share the following characteristics: *pos* and *pns* absent; *tps* absent in both sexes; marginal carina interrupted only submedianly and displaced section at osculum forms nail-like thickening of dorsal anterior plate; female subgenital plate flares into medianly displaced cross-piece; proximal mesosome slender; parameral blades slenderly triangular, somewhat extended distally; female tergopleurite IX+X fused with tergopleurite XI; sternal plate VI of both sexes with 2 *sts*. However, antennae are sexually dimorphic in *Ceratocista* (Figs 155–156) but not in *Resartor* (Fig. 163), and while *ss* are present on male tergopleurites II–VIII in *Resartor* (Fig. 161), these are present only on tergopleurites VII–VIII in *Ceratocista* (Fig. 153). In both genera the mesosomal lobes are extended laterally to overlap dorsally with the parameres, but *Resartor* (Fig. 165) does not have the large postero-lateral brush-like extensions of these lobes found in *Ceratocista* (Figs 157–158), nor are the antero-lateral triangular sections of the lobes found in *Ceratocista* present in the male genitalia of *Resartor*. The frons is clearly hyaline in *Resartor* (Fig. 163), whereas in *Ceratocista* it is pale but apparently sceloritzed but translucent (Fig. 155). Ventral anterior plate absent in *Resartor* (Fig. 163) but present in *Ceratocista* (Fig. 155).

The lateral extensions of the mesosomal lobes in *Ceratocista* are similar to those found in *Psammonirmus* **n. gen.** (Fig. 150), but the differences between these two genera are substantial, and have been listed under *Psammonirmus*.

Description. ***Both sexes***. Head narrow, concave-dome shaped (Fig. 155). Marginal carina broad, interrupted submedianly. Displaced section forms nail-like marginal carinal plate at osculum, delimited posteriorly by sinuous ridge. Dorsal preantennal suture arises from interruptions of marginal carina, not medianly continuous and not reaching *ads* or *dsms*. Ventral carinae with finger-like median protrusion; carinae diffuse anterior to pulvinus. Ventral anterior plate present. Head setae Fig. 155; *avs2* much shorter than *avs3*; *pos* and *pns* absent. Antennae sexually dimorphic, with male scape (Fig. 155) much elongated and thicker than female scape (Fig. 156). Temporal carinae not visible; *mts3* only macrosetae. Gular plate roughly triangular.

Prothorax rectangular (Figs 153–154); *ppss* on postero-lateral corner. Proepimera hammer-shaped medianly. Pterothorax pentagonal; lateral margins divergent and posterior margin convergent to median point (Figs 153–154). Meso- and metasterna not fused, one seta on postero-lateral corner on each side of each plate. Metepisterna hammer-shaped medianly. *mms* moderately interrupted medianly. Leg chaetotaxy as in Fig. 25, except *fI-p2, fI-v4* absent.

Abdomen (Figs 153–154) broadly oval, much stockier in male than in female. Terminal end of abdomen rounded in male, deeply divided in female. Abdominal chaetotaxy as in Table 2. Tergopleurites II–IX+X in male and tergopleurites II–VIII in females narrowly divided medianly, rectangular, but more posterior tergopleurites in males triangular. Female tergopleurite IX+X fused to tergopleurite XI. Sternal plates medianly continuous, rectangular, approaching but not reaching pleurites. Pleural incrassations with dorsal and ventral median margins. Re-entrant heads moderate to large. Male subgenital plate triangular with lateral indentation on segment IX+X. Female subgenital plate trapezoidal (Fig. 160), reaching vulval margin where it flares into a medianly displaced cross-piece.

Male genitalia as in Figs 157–159. Proximal mesosome slender, elongated. Gonopore open only distally. Mesosomal lobes large, overlapping with parameres dorsally, fringed on distal margin. 3 *ames* anterior to gonopore. Parameral heads blunt, with accessory sclerite. Parameral blades slenderly triangular; *pst1–2* both sensilla, submarginal.

Host distribution. *Ceratocista* is presently known only from a single host species of the genus *Grammatoptila* Reichenbach, 1872, in the family Timaliidae.

Geographical distribution. Presently known only from South Asia.

Etymology. *Ceratocista* is formed by Greek "*kérato*" for "horn" and Latin "*cista*" for "chest", referring both to the box-shaped head and the prominent male antennae (Fig. 155) of the only known species of this genus. Gender: feminine.

Included species

**Ceratocista antennata* (Ansari, 1956a: 139) n. comb. [in *Brueelia*]

Ceratocista antennata (Ansari, 1956a) n. comb.

(Figs 153–160)

Bruelia antennatus Ansari, 1956a: 139.

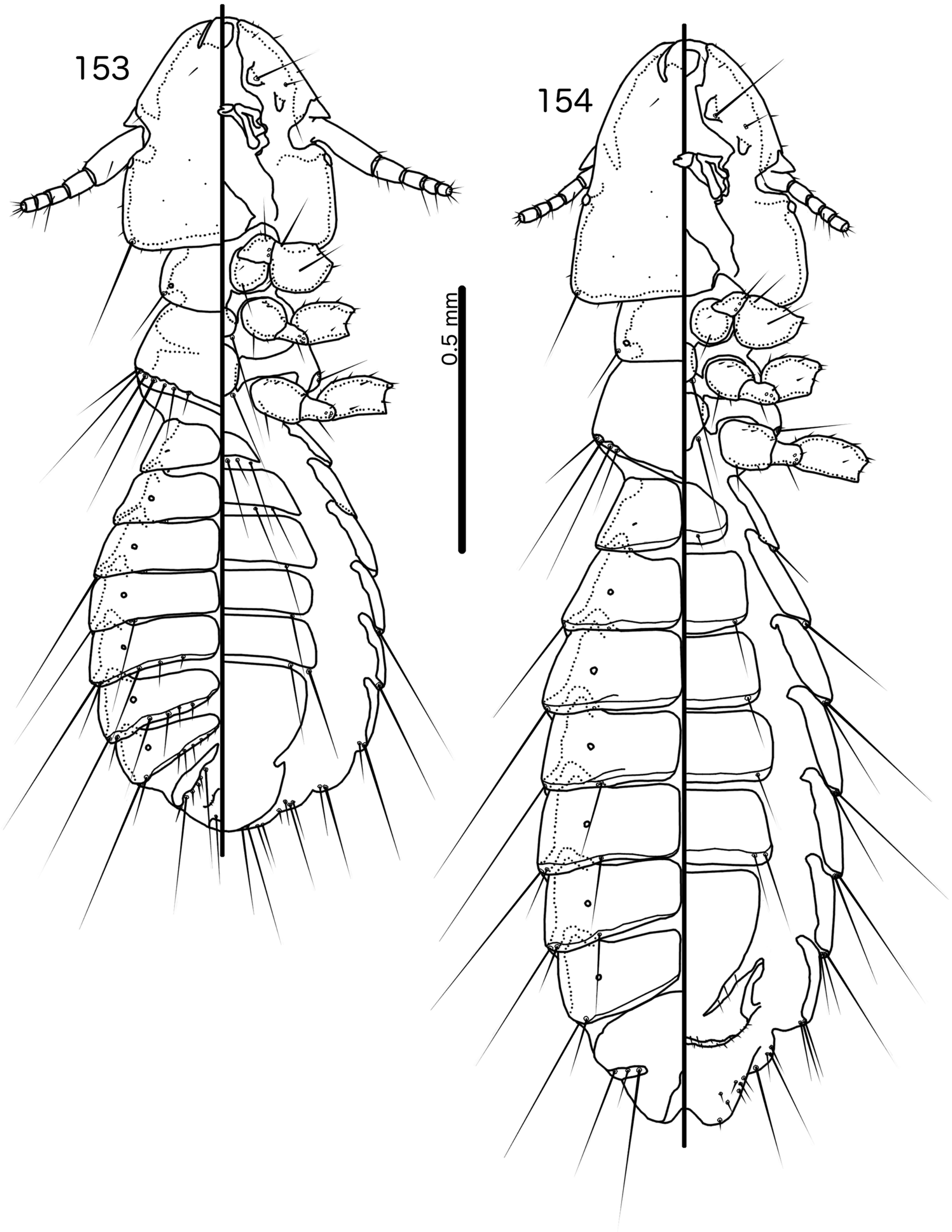
Brueelia antennatus Ansari, 1956a; Price *et al*. 2003: 153.

Type host. *Grammatoptila striata sikkimensis* (Ticehurst, 1924)—striated laughingthrush (*sikkimensis*).

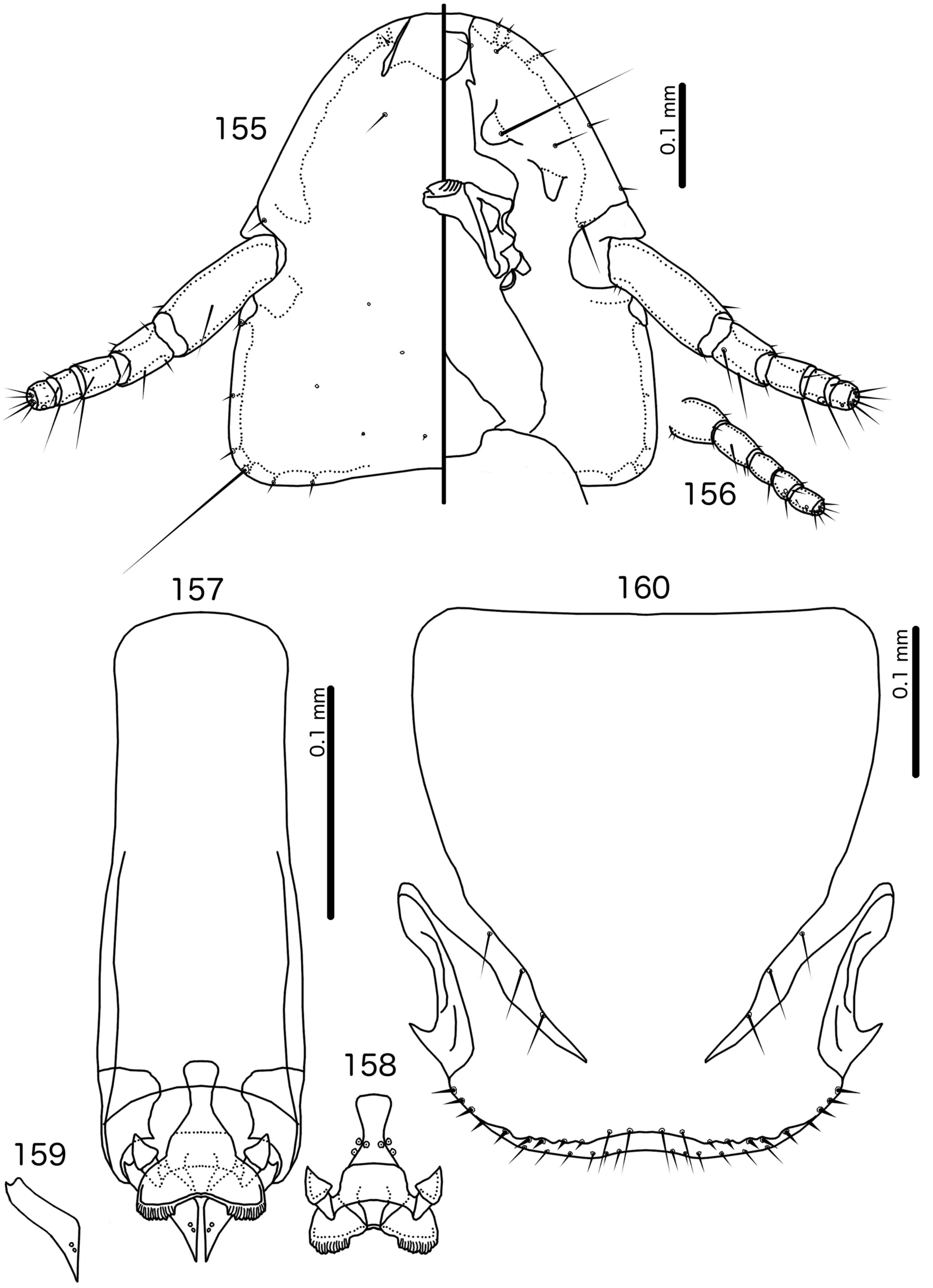
Type locality. Chungtang, Sikkim, India.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 155. Head shape sexually dimorphic (Figs 153–154). *dsms* very short, situated in or lateral to dorsal preantennal suture. Many antennal setae very long (Figs 155–156). Frons translucent, but does not appear to be hyaline. Thoracic and abdominal segments as in genus description and Figs 153–154. Abdominal shape highly sexually dimorphic. Pleural heads rounded, slanted. Tergopleurites and sternal plates with pale brown pigmentation, pleurites moderately brown.

Male. Head short (Fig. 155). Antennae as in Fig. 155. Abdominal chaetotaxy as in Table 2 and Fig. 153. Basal apodeme (Fig. 157) rounded rectangular. Proximal mesosome elongated, overlapping with basal apodeme, slenderly trapezoidal, widening slightly in anterior end. Gonopore (Fig. 158) as convex submedian sclerites, narrowly ope distally. Mesosomal lobes bipartite, with ventral horn-like section in anterior ends (Fig. 158), and dorsal lobe-like section distally; dorsal section of lobes with extensive fringe on distal margin; 2–3 *ames* sensilla visible ventral to proximal mesosome (Fig. 158). Parameral heads (Fig. 159) narrow, bifid. Parameral blades triangular; *pst1–2* sensilla, submarginal near distal tip. Measurements ex *Grammatoptila striata sikkimensis* (n = 1): TL = 1.51; HL = 0.43; HW = 0.39; PRW = 0.26; PTW = 0.36; AW = 0.55.



FIGURES 153–154. *Ceratocista antennatus* (Ansari, 1956a) **n. comb.** ex *Grammatoptila striata sikkimensis*: **153,** male habitus, dorsal and ventral views. **154,** female habitus, dorsal and ventral views.



FIGURES 155–160. *Ceratocista antennatus* (Ansari, 1956a) **n. comb.** ex *Grammatoptila striata sikkimensis*: **155,** male head, dorsal and ventral views. **156,** female antenna, ventral view. **157,** male genitalia, dorsal view. **158,** mesosome, ventral view. **159,** male paramere, dorsal view. **160,** female subgenital plate and vulval margin, ventral view.

Female. Head long (Fig. 154). Antennae as in Fig. 156. Abdominal chaetotaxy as in Table 2 and Fig. 154. Subgenital plate broadly triangular, lateral margins convex (Fig. 160), flaring into cross-piece distally, but not reaching vulval margin medianly. Vulval margin (Fig. 160) concave medianly, with 7–10 short, slender *vms* on each side, and 9–10 short, thorn-like *vss* on each side; lateral *vss* longer, more spool-like; 5–7 long, slender *vos*; distal 2 *vos* median to *vss*. Measurements ex *Grammatoptila striata sikkimensis* (n = 4): TL = 1.86–2.00; HL = 0.47–0.51; HW = 0.43–0.47; PRW = 0.26–0.29; PTW = 0.35–0.38; AW = 0.55–0.58.

Type material. Ex ***Grammatoptila striata sikkimensis*** **[**as ***Garrulax striatus sikkimensis*]: Holotype** ♂, Chungtang, Sikkim, India, 16 Feb. 1952, R. Meinertzhagen, 19942, BM 1952-143 (NHML). **Allotype** ♀, same data as holotype (NHML). **Paratypes:** 1♂, 4♀, same data as holotype (NHML).

Additional material examined (non-types)

Ex ***Grammatoptila striata sikkimensis*** **[**as ***Garrulax striatus sikkimensis*]:** 1♂, 1♀, same data as holotype (NHML).

Resartor **Gustafsson & Bush, new genus**

Brueelia Kéler, 1936a: 257 (*in partim*).

Type species. *Brueelia impressifrons* Ansari, 1956a: 152 ex *Trochalopteron affine affine* Blyth, 1843.

Diagnosis. *Resartor* **n. gen.** is most similar to *Ceratocista* **n. gen.**; for a detailed comparison between these two genera see *Ceratocista*. Lack of *pos* and *pns*, as well as general habitus similar to *Aratricerca* **n. gen.** (Figs 168–174) and *Turdinirmoides* **n. gen.** (Figs 175–181), and members of these two genera also have thumb-like median extensions on the ventral carinae and slender proximal mesosomes. Leg chaetotaxy of *Ceratocista*, *Resartor*, and *Aratricerca*, but not *Turdinirmoides*, is identical, and *aps* are absent in both sexes in all four genera. However, while in *Ceratocista* (Fig. 154) and *Resartor* (Fig. 162) the females lack *ss* entirely, these are found in tergopleurites II–VIII in both *Aratricerca* (Fig. 169) and *Turdinirmoides* (Fig. 176). In both *Aratricerca* (Fig. 170) and *Turdinirmoides* (Fig. 177) the dorsal preantennal suture reaches *dsms*, *ads*, and the lateral margin of the head near the *dsms*, where the marginal carina may be interrupted, and both genera have a ventral anterior plate. In *Resartor* (Fig. 163), as in *Ceratocista* (Fig. 155), the dorsal preantennal suture only interrupts the marginal carina submedianly, and does not reach either the *dsms* nor the *ads*; *Resartor* lacks a ventral anterior plate, but this is present in *Ceratocista*. The female subgenital plate of *Resartor* flares into a mediany interrupted cross-piece (Fig. 167), just like in *Ceratocista* (Fig. 160), but unlike *Aratricerca* which has a gently narrowed subgenital plate without a cross-piece (Fig. 174); the vulval margin in *Turdinirmoides* (Fig. 181) has a detached cross-piece. Parameral heads of *Resartor* are bifid (Fig. 166), as in *Aratricerca* (Fig. 173) and *Ceratocista* (Fig. 159), but unlike *Turdinirmoides* (Fig. 180) in which they are folded into horseshoe-shapes. Parameral blades and mesosome of *Resartor* (Figs 165–166) are also most similar to those of *Ceratocista* (Figs 158–159), but *Resartor* shares the somewhat angular mesosomal lobes and slender proximal mesosome with *Aratricerca* n. gen (Fig. 172); the differences is structure of the male genitalia are considerable between the two genera, however.

Description. ***Both sexes***. Head elongated pentagonal (Fig. 163), frons often concave. Marginal carina interrupted only submarginally. Displaced section of marginal carina present at osculum, forming nail-like marginal carinal plate with sinuous posterior margin. Dorsal preantennal suture arising from interruptions of marginal carina not reaching *ads* or *dsms*; suture not medianly continuous posterior to dorsal anterior plate. Ventral carinae with finger-like median protrusion; carinae diffuse anterior to pulvinus. Ventral anterior plate absent. Head setae as in Fig. 163; *avs2* much shorter than *avs3*; *pns* and *pos* absent. Coni small. Antennae monomorphic. Temporal carinae not visible; *mts3* only macrosetae. Gular plate roughly triangular.

Prothorax roughly rectangular (Figs 161–162), but lateral margins convex; *ppss* on postero-latera corner. Proepimera hammer-shaped medianly. Pterothorax pentagonal; lateral margins divergent and posterior margin convergent to median point (Figs 161–162). Meso- and metasterna not fused, 1 seta on postero-lateral corner on each side of each plate. *mms* widely separated medianly. Leg chaetotaxy as in Fig. 25, except *fI-p2, fI-v4* absent.

Abdomen (Figs 161–162) oblong. Abdominal chaetotaxy differs among species (Table 5). Terminal end of abdomen rounded in male, shallowly divided in female. Tergopleurites II–IX+X in male and tergopleurites II–VIII in females narrowly divided medianly, rectangular. Female tergopleurite IX+X fused with tergopleurite XI. Sternal plates square-shaped, not approaching pleurites. Pleural incrassations prominent. Re-entrant heads moderate to large. Male subgenital plate trapezoidal. Female subgenital plate pentagonal (Fig. 167), reaching vulval margin where it flares into medianly displaced cross-piece.

TABLE 5. Chaetotaxy of abdominal segments II–VIII of males of *Resartor*. Trichoid setae of segment VIII are present in all species, and are not listed. Sets of setae differing from those of *Re. impressifrons* are highlighted in **bold**. Material examined from all species is from their respective type hosts. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	***ps***	***aps***	***psps***	***tps***	***ss***	***sts***
Re. impressifrons	IV–VIII	–	IV–VII	VI–VIII	II–VIII	II–VI
Re. effronte	**III–VIII**	–	**III–VII**	**IV–VIII**	II–VIII	II–VI
Re. novofacies	IV–VIII	–	IV–VII	**IV–VIII**	II–VIII	II–VI

Male genitalia as in Fig. 164. Proximal mesosome slender, roughly trapezoidal, wideing slightly in proximal end. Gonopore (Fig. 165) as convergent ventral thickenings, open distally and proximally or only distally and extended to reach lateral margins of mesosome. Mesosomal lobes small, angular, extending dorsally to slightly overlap with parameres. Parameral heads (Fig. 166) bifid or folded into small heart-shapes. Parameral blades triangular; *pst1–2* not visible, but all examined males with partially everted male genitalia, and these could be overlooked.

Host distribution. All known species are found on members of Leiothrichidae.

Geographical range. Presently know only from South Asia.

Etymology. *Resartor* is formed by Latin "*sartor*", meaning "tailor", with the prefix "*re-*" meaning "back, again"; the full name thus means "The Re-tailor", and is modified from the title of Thomas Carlyle's (1795–1881) "*Sartor Resartus*", first published in Fraser's Magazine between 1833–1834. The name is partially a homage to the idea, first suggested by Hamilton & Zuk (1982), that parasites could be the cause of colorful and extravagant plumages in birds; lice could thus be said to be "re-tailoring" the plumages of their hosts. However, there is also a likeness between the head structure the species of this genus and the structure of the needle plate of many modern sewing machines, reinforcing the "tailoring" impression of these lice. Gender: masculine.

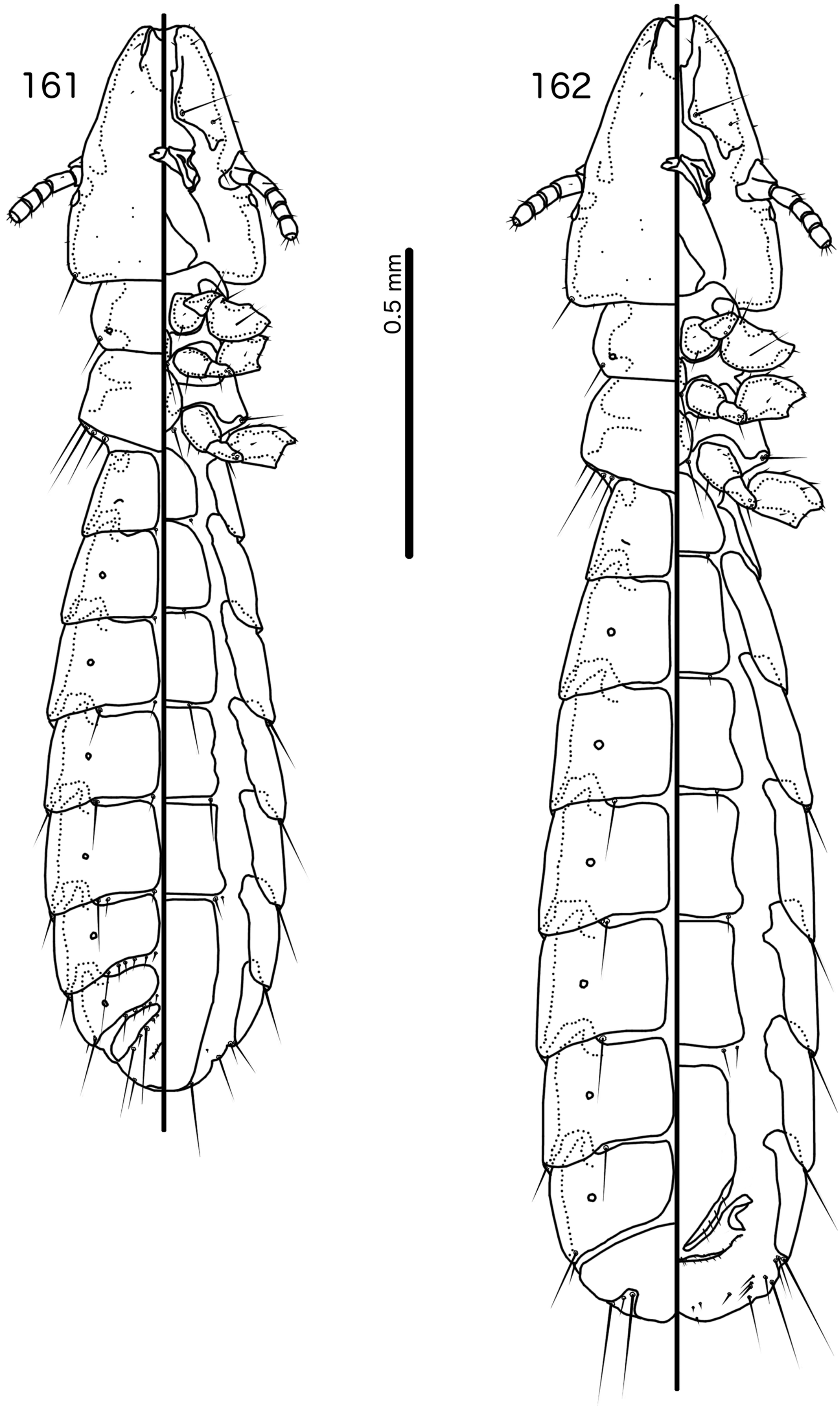
Remarks. The phylogeny of Bush *et al.* (2016) included a single undescribed species of *Resartor* from *Trochalopteron milnei* (David, 1874), which was placed as sister to an undescribed *Aratricerca* from *Randia pseudozosterops* Delacour and Berlioz, 1931. These two in turn were placed close to *Indoceoplanetes* **n. gen.** and *Maculinirmus*, but the placement received low support. However, no representative of several morphologically similar genera were included in that phylogeny, and the relationships among *Resartor* and *Turdinirmus* and *Turdinirmoides* **n. gen.** are unclear.

Included species
Resartor effronte* (Ansari, 1956a: 155) **n. comb. [in *Brueelia*]
****Resartor impressifrons* (Ansari, 1956a: 152) n. comb. [in *Brueelia*]**
Resartor novofacies* (Ansari, 1956a: 154) **n. comb. [in *Brueelia*]

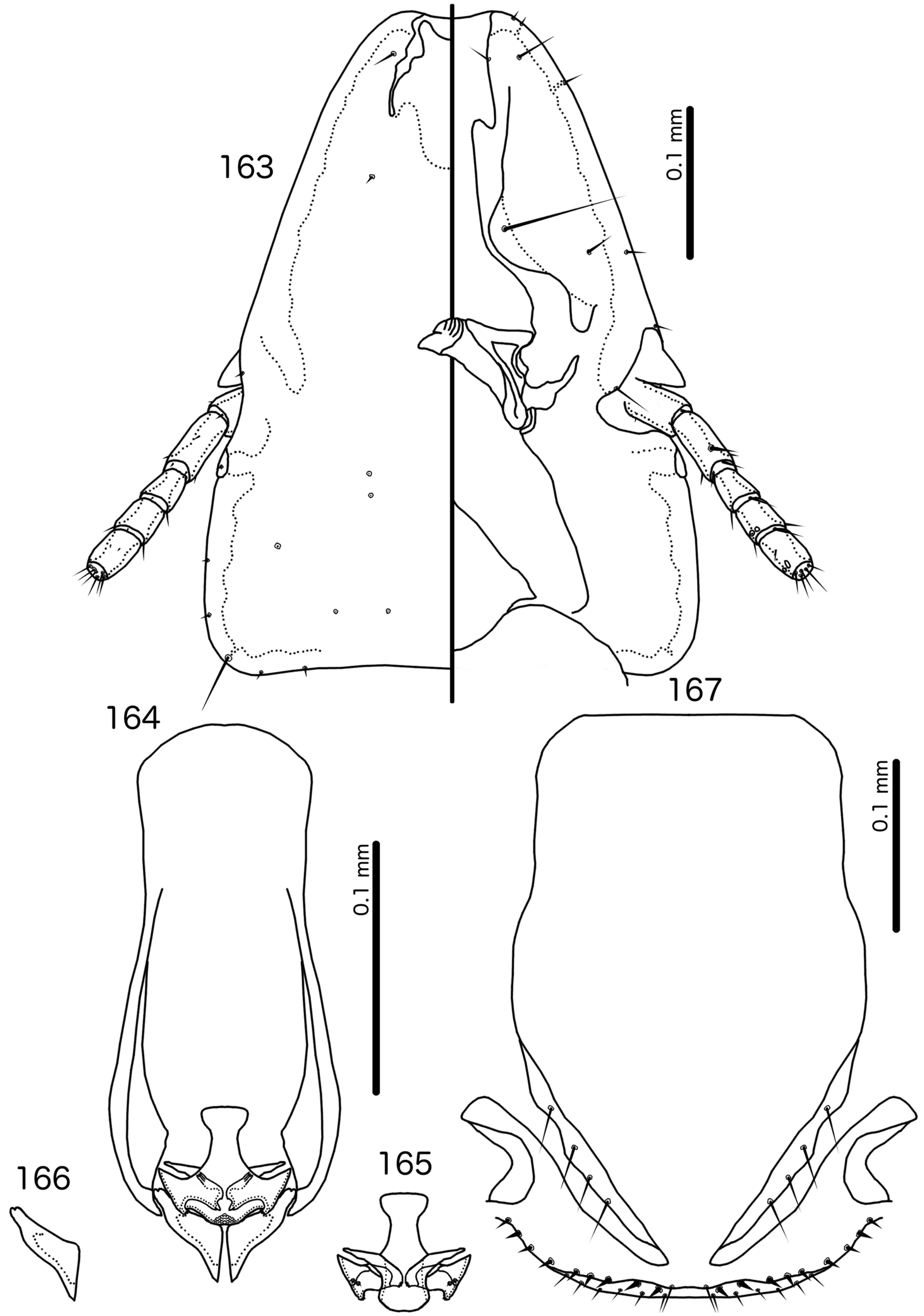
Resartor impressifrons (Ansari, 1956a)
(Figs 161–167)

Bruelia impressifrons Ansari, 1956a: 152.
Brueelia impressifrons Ansari, 1956a; Price *et al*. 2003: 155.

Type host. *Trochalopteron affine affine* (Blyth, 1843)—black-faced laughingthrush.
Type locality. Nepal.
Other host. *Trochalopteron affine bethelae* (Rand & Fleming, 1956)—black-faced laughingthrush.



FIGURES 161–162. *Resartor impressifrons* (Ansari, 1956a) **n. comb.** ex *Trochalopteron affine bethelae*: **161,** male habitus, dorsal and ventral views. **162,** female habitus, dorsal and ventral views.



FIGURES 163–167. *Resartor impressifrons* (Ansari, 1956a) **n. comb.** ex *Trochalopteron affine bethelae*: **163,** male head, dorsal and ventral views. **164,** male genitalia, dorsal view; parameres distorted in the material examined, and may be longer distally than depicted here. **165,** male mesosome, ventral view. **166,** male paramere, dorsal view. **167,** female subgenital plate and vulval margin, ventral view.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 163. Frons flat to shallowly concave; hyaline margin irregular. Dorsal anterior suture irregular, does not reach *dsms*. Gular plate broadly triangular. Thoracic and abdominal segments as in genus description and Figs 161–162. Metepisterna with intensely pigmented nodi sublaterally. Sternal plates translucent or with very pale brown pigmentation. Tergopleurites translucent medianly, but with strong brown pigmentation laterally, surrounding spiracle openings. Re-entrant heads almost square-shaped, but with concave anterior margins.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 161. Basal apodeme (Fig. 164) constricted at mid-length, wider distally. Proximal mesosome slender, widening proximally. Gonopore open proximally and distally (Fig. 165), as lateral ventral angular sclerites; anterior ends of sclerites extended laterally. Mesosomal lobes angular, wider proximally, fused distally; 2 *pmes* sensilla near lateral margins of lobes. Parameral heads (Fig. 166) narrow, bifid. Parameral blades triangular; all examined males with distorted parameres, and these may be longer than depicted in Fig. 121. Measurements ex *Trochalopteron affine bethelae* (n = 1): TL = 1.72; HL = 0.42; HW = 0.32; PRW = 0.23; PTW = 0.28; AW = 0.39.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 162. Subgenital plate (Fig. 167) roughly pentagonal, reaching vulval margin where it flares into medianly displaced cross-piece. Vulval margin (Fig. 167) gently rounded to flat medianly, with 4–6 short, slender *vms* on each side, and 6–9 stout, spool- to thorn-like *vss* on each side; 3–5 long, slender *vos*; distal *vos* median to *vss*. Measurements ex *Trochalopteron affine affine* (n = 6): TL = 1.72–2.18; HL = 0.43–0.49; HW = 0.33–0.38; PRW = 0.23–0.26; PTW = 0.29–0.33; AW = 0.36–0.45. Ex *T. a. bethelae* (n = 2): TL = 1.98–2.09; HL = 0.45–0.47; HW = 0.35; PRW = 0.25–0.26; PTW = 0.30–0.31; AW = 0.43–0.45.

Type material. Ex ***Trochalopteron affine affine*** **[**as ***Garrulax affinis affinis*****]: Holotype** ♂, Nepal, Dec. 1935, R. Meinertzhagen, 4853 (NHML). **Paratypes:** 6♀: same data as holotype [one of these is the allotype, but it is not clear which one it is].

Additional material examined (non-types)

Ex ***Trochalopteron affine bethelae*** **[**as ***Garrulax affinis*****]**: 1♂, 2♀, Sankhuwasabha District, Koshi Zone, Eastern Region, Nepal, 21 Jul. 1973, HE0625–6, 12992 on reverse (OSUS).

Aratricerca Gustafsson & Bush, new genus

Type species. *Aratricerca cirithra* **new species**

Diagnosis. *Aratricerca* **n. gen.** (Figs 168–174) is most similar to *Turdinirmoides* **n. gen.** (Figs 175–181), with which is shares the following characters: marginal carina interrupted only submedianly; dorsal preantennal suture reaches *dsms*, *ads*, and lateral margin of head, but does not cut off dorsal anterior plate from main head plate and does not interrupt marginal carina entirely laterally; *pos* and *pns* absent; females with *ss* on segments II–VIII; male subgenital plate divided into sternal plate VIII and subgenital plate; male sternal plate VII with setae on posterior margin; female subgenital plate does not reach vulval margin; mesosome with distinct distal thickenings; gonopore as parallel thickenings, open distally and proximally.

These genera, however, are distinguished by the following characters: in *Turdinirmoides fII-v2* and *fIII-v2* are absent (Figs 175–176), whereas these are present in *Aratricerca* (Figs 168–169). Male subgenital plate reaches terminal margin of abdomen in *Turdinirmoides* (Fig. 175), and segment XI is not extended into a triangular tail in this genus; in male *Aratricerca* (Fig. 168) segment XI is extended into a tail, and the subgenital plate does not reach the distal margin of this. Female tergopleurite IX+X is fused to tergopleurite XI in *Turdinirmoides* (Fig. 176), but not in *Aratricerca* (Fig. 169). The vulval margin in *Turdinirmoides* (Fig. 181) is sclerotized into a detached cross-piece, whereas *Aratricerca* (Fig. 174) has no cross-piece, and the subgenital plate approaches the vulval margin. The pterothorax of *Turdinirmoides* (Figs 175–176) is conventional for the *Brueelia*-complex, being roughly pentagonal with the *mms* arranged along the posterior margin, whereas in *Aratricerca* (Figs 168–169) the pterothorax has roughly parallel lateral margins, and all *mms* clustered near the postero-lateral corners. The distinct marginal thickenings of the sternal plates found in *Aratricerca* (Figs 168–169) are absent in *Turdinirmoides* (Figs 175–176). Some *tps* are present in male *Turdinirmoides* (Table 2, Fig. 175), clustered near the *ss*, but in *Aratricerca* (Fig. 168) these are absent.

Description. ***Both sexes***. Head trapezoidal (Fig. 170). Marginal carina interrupted submedianly. Dorsal preantennal suture arising from interruptions reaching *ads* and *dsms*, not separating dorsal anterior plate from main head plate medianly; laterally suture reaches margin of head lateral to *dsms* but does not interrupt marginal carina entirely. Displaced section at osculum only visible as slight ridge near lateral margins of dorsal anterior plate. Ventral carinae with finger-like median protrusion; carinae clearly delimited anterior to pulvinus but not continuous with marginal carina. Ventral anterior plate present. Head setae as in Fig. 170; *avs2–3* of similar length; *pos* and *pns* absent. Coni small. Antennae monomorphic. Temporal carinae not visible; *mts3* only macrosetae. Gular plate roughly triangular.

Prothorax rectangular (Figs 168–169); *ppss* on postero-lateral corner. Proepimera hammer-shaped medianly. Pterothorax pentagonal; lateral margins parallel or subparallel and posterior margin convergent to median point (Figs 168–169). Meso- and metasterna not fused, nude. Metepisterna hammer-shaped medianly. Pteronotal chaetotaxy distinct, with *mms* clustered sublaterally and *ptrs* and *pths* on lateral margin of pterothorax. Leg chaetotaxy as in Fig. 25, except *fI-p2, fI-v4* absent.

Abdomen cigar-shaped (Figs 168–169). Abdominal chaetotaxy as in Table 2 and Figs 123–124; *ss* of female segments VII–VIII very short. Terminal end of abdomen extended into triangular tail in male, moderately divided in female. Tergopleurites II–IX+X in male and tergopleurites II–VIII in females narrowly divided medianly, square-shaped. Female tergopleurite IX+X not fused to tergopleurite XI, at least partially divided medianly. Female tergopleurite IX+X with hook-shaped antero-lateral corner. Sternal plates slender, narrower than long; sternal plate II of both sexes and sternal plate III of female with thickened anterior and lateral margins. Pleural incrassations slender. Re-entrant heads moderate to large. Male subgenital plate divided into sternal plate VII and diffuse distal section, which seemingly does not reach distal margin of abdomen. Male sternal plate VII with setae on posterior margin. Female subgenital plate approaches vulval margin, distal *vos* on posterior margin (Fig. 174).

Male genitalia as in Fig. 171–173. Proximal mesosome (Fig. 172) rounded, with sinuous lateral margins. Gonopore as convergent thickenings, open distally and proximally. Mesosomal lobes rounded, with carina at half-length. Parameral heads blunt. Parameral blades lobe-like; *pst1* sensillus positioned centrally on distal paramere; *pst2* absent or too small to see.

Host distribution. Presently only known from the Meliphagidae. However, undescribed species have a much broader host distribution, including Acanthizidae, Bernieridae, Paramythiidae, and Zosteropidae (unpub. data).

Geographical range. Presently known only from New Guinea, but undescribed species are available from Madagascar, mainland Africa, and elsewhere.

Etymology. *Aratricerca* is formed by Latin "*aratrum*" for "plough", referring to the ploughbill-like thickenings of the anterior and lateral margins of sternal plate II, and Greek "*kerkos*" for "tail", referring to the distal extension of the abdomen in males (Figs 168–169). Gender: feminine.

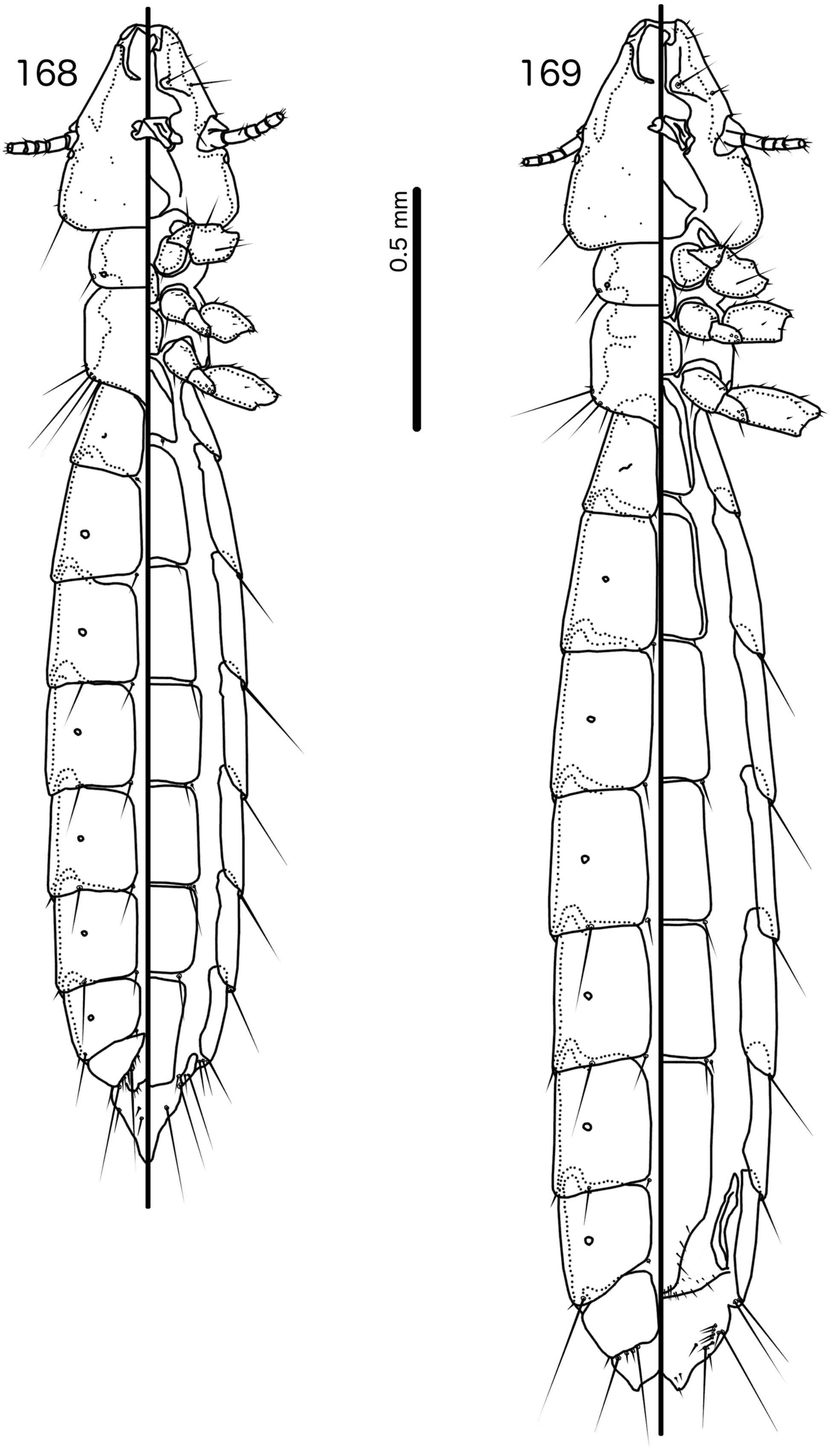
Remarks. One undescribed species of *Aratricerca* from *Randia pseudozosterops* Delacour & Berlioz, 1931 was included in the phylogeny of Bush *et al.* (2016), where it was placed as a sister to *Resartor* **n. gen.** The lack of *pos* and *pns*, as well as this genetic similarity, suggests that *Resartor*, *Aratricerca*, *Ceratocista* **n. gen.**, and *Turdinirmoides* **n. gen.** may be closely related. However, this conclusion may, be premature, as few species are currently known from each of these genera.

Included species
**Aratricerca cirithra* new species

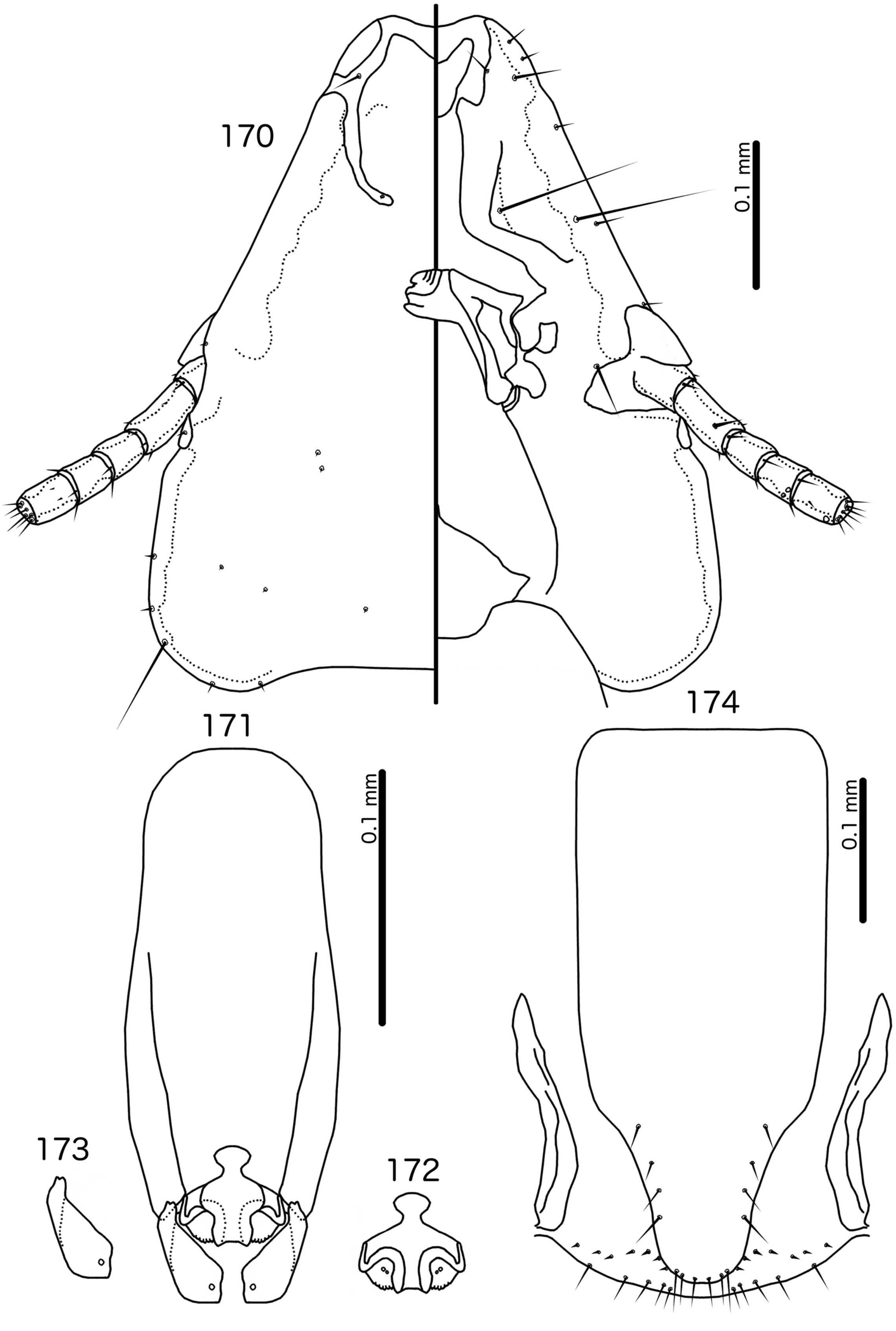
Aratricerca cirithra Gustafsson & Bush, new species
(Figs 168–174)

Type host. *Ptiloprora guisei guisei* (De Vis, 1894)—rufous-backed honeyeater.
Type locality. 12 miles S of Edie Creek, elev. 2405 m, Bulldog Road, Morobe District, Papua New Guinea.

Diagnosis. *Aratricerca cirithra* **n. sp.** is superficially similar to members of *Turdinirmus*, with which it shares the following characters: dorsal preantennal suture reaches *ads* and *dsms*; ventral anterior plate present; parameral blades irregularly oval; female subgenital plate approaches vulval margin, but does not flare. However, *pns* and *pos* are absent in *Aratricerca* **n. gen.** (Fig. 170) but present in *Turdinirmus* (Figs 184, 191), and while the dorsal



FIGURES 168–169. *Aratricerca cirithrus* **n. gen. & n. sp.** ex *Ptiloprora guisei guisei*: **168,** male habitus, dorsal and ventral views. **169,** female habitus, dorsal and ventral views.



FIGURES 170–174. *Aratricerca cirithrus* **n. gen. & n. sp.** ex *Ptiloprora guisei guisei*: **170,** male head, dorsal and ventral views. **171,** male genitalia, dorsal view. **172,** male mesosome, ventral view. **173,** male paramere, dorsal view. **174,** female subgenital plate and vulval margin, ventral view.

preantennal suture interrupts the lateral margin of the head in *Ar. cirithra*, this is not the case in *Turdinirmus*. Abdominal chaetotaxy is similar between the two genera, but *ps* and absent on segment III in *Turdinirmus*, but present in *Ar. cirithra* (Table 2). For differences between *Aratricerca* and the morphologically similar *Turdinirmoides* **n. gen.**, see genus description.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 170. Dorsal preantennal suture in some specimens medianly continuous, but section median to *ads* considerably narrower than lateral sections; this may be a mounting issue. Ventral anterior plate diffuse posteriorly. Ventral carinae with fingers protruding into clypeo-labral suture, in some specimens with distinct thickening medianly. Thickening on lateral section of dorsal anterior plate may be remnants of marginal carina. Preantennal head darker than postantennal head. Thoracic and abdominal segments as in genus description and Figs 168–169. Sternal plates and median section of tergopleurites translucent; lateral tergopleurites and pleurites with dark brown pigmentation. Pleurites interlock to form "rails" along abdominal sides.

Male. Only sternal plate II with antero-lateral thickening (Fig. 168). Abdominal chaetotaxy as in Table 2 and Fig. 168. Dorsal setae on tail absent in some specimens, including holotype. Basal apodeme (Fig. 171) bluntly oval. Proximal mesosome bulbous. Gonopore (Fig. 172) as subparallel, sublateral hook-shaped sclerites, open distally and proximally. Mesosomal lobes with angular process at about half-length; distal to this hyaline discs with diffusely rugose distal margins; 2 *pmes* visible on each lobe lateral to gonopore. Parameral heads (Fig. 173) narrow, bifid. Parameral blades lobe-like; *pst1* sensillus, located centrally in distal part; *pst2* absent. Measurements ex *Ptiloprora guisei guisei* (n = 3 except n = 2 for AW): TL = 2.30–2.40; HL = 0.41–0.43; HW = 0.36–0.37; PRW = 0.25–0.28; PTW = 0.25–0.28; AW = 0.40–0.46.

Female. Sternal plates II–III with antero-lateral thickenings, more prominent on sternal plate II (Fig. 169). Abdominal chaetotaxy as in Table 2 and Fig. 169. Subgenital plate (Fig. 174) rectangular with distal median process that approaches but does not reach vulval margin. Vulval margin (Fig. 174) gently rounded, with 5–6 short, slender *vms* on each side, and 7–9 short, thorn-like *vss* on each side; 5–7 long, slender *vos*; distal 2–3 *vos* median or even distal to *vss*. Measurements ex *Ptiloprora guisei guisei* (n = 9 except n = 7 for TL and n = 6 for AW): TL = 2.56–2.80; HL = 0.41–0.45; HW = 0.36–0.41; PRW = 0.25–0.29; PTW = 0.26–0.30; AW = 0.40–0.51.

Etymology. The species epithet is derived from Greek "*kiríthra*" for "honeycomb", but Latinized. This refers to the shape of the pterothorax.

Type material. Ex ***Ptiloprora guisei guisei***: **Holotype** ♂, 12 miles S of Edie Creek, elev. 2405 m, Bulldog Road, Morobe District, Papua New Guinea, 3 Jul. 1966, J. Wilkes, BBM-NG-52268 (BPBM). **Paratypes:** 1♀, Mount Kaindi, elev. 2300 m, Morobe District, Papua New Guinea, 6 Jul. 1967, A.C. Ziegler, BBM-NG-53460 (BPBM); 2♀, Bulldog Road, elev. 2850 m, Morobe District, Papua New Guinea, 30 May 1962, J.H. Sedlacek, BBM-NG-20131 (BPBM); 3♂, 4♀, 6 miles from Edie Creek, elev. 2200 m, Bulldog Road, Morobe District, Papua New Guinea, 4 Dec. 1970, A.B. Mirza, BBM-NG-99467, 99490, 99492 (BPBM); 1♀, same locality and collector as previous, 6 Dec. 1970, BBM-NG-99511 (BPBM); 1♀, 20 miles SW of Kabwum, elev. 2880 m, Saruwaged Range, Morobe District, Papua New Guinea, 1 Aug. 1966, R.M. Mitchell & J. Wilkes, BBM-NG-52628 (BPBM).

Turdinirmoides Gustafsson & Bush, new genus

Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).

Type species. *Degeeriella grandalae* Clay, 1936: 912

Diagnosis. *Turdinirmoides* **n. gen.** is most similar to *Aratricerca* **n. gen.** The most conspicuous similarity between the two genera is the division of the male subgenital plate into sternal plate VII and a posterior subgenital plate, with *sts* on sterite VII. Within the *Brueelia*-complex, this character is found only in these two genera, suggesting a close relationship. However, in *Aratricerca* (Figs 168–169) the pterothorax has parallel lateral margins, female tergopleurite IX+X is not fused with tergopleurite XI, and the vulval margin does not have a detached cross-piece, whereas in *Turdinirmoides* (Figs 175–176) the pterothorax is pentagonal, female tergopleurite IX+X is fused to tergopleurite XI, and there is a detahced cross-piece. For more details regarding similarities and differences between these two genera, see the diagnosis of *Aratricerca* above.

Preantennal structure and general habitus of *Turdinirmoides* are also similar to those of *Turdinirmus*. As in *Turdinirmus* (Figs 182–183), but unlike in *Aratricerca* (Figs 168–169), both the mesosternum and the metasternum of *Turdinirmoides* (Figs 175–176) have one seta on each side. However, both *pos* and *pns* are present in *Turdinirmus* (Fig. 184), but absent in *Turdinirmoides* (Fig. 177). In both *Turdinirmus* (Figs 182–183) and *Turdinirmoides* (Figs 175–176) sternal plate VI has more than one *sts* in both sexes, but in male *Turdinirmus* (Fig. 182) there is no separation between sternal plate VII and the more distal subgenital plate, and there are no *sts* on segment VII; in *Turdinirmoides* the male subgenital plate is divided at segment VII, and there are *sts* on segment VII (Fig. 175). The female subgenital plate of *Turdinirmus* (Figs 188, 195) reaches or approaches the vulval margin, and there is no cross-piece, whereas the vulval margin in *Turdinirmoides* (Fig. 181) has a detached cross-piece. The male genitalia of *Turdinirmus* (Figs 185–187, 192–194) and *Turdinirmoides* (Figs 178–180) are structurally similar. However, while the parameral heads of both genera are broadly bifid, those of *Turdinirmoides* form U-shaped folds, whereas those of *Turdinirmus* do not. *pst2* is a microseta situated marginally in *Turdinirmus*, but a sensillus situated submedianly in *Turdinirmoides* The distal ridges of the mesosomal lobes are marginal in *Turdinirmus*, but more central in *Turdinirmoides*, and the ventral rugose areas are more extensive on the ventral surface and along the distal margin of the mesosome in *Turdinirmoides* than in *Turdinirmus*.

Description. ***Both sexes***. Head broad, flat-dome shaped (Fig. 177). Marginal carina interrupted submedianly. Dorsal preantennal suture arising from interruptions, reaching *ads* and *dsms*, not separating dorsal anterior plate from main head plate posteriorly; laterally suture reaches margin of head, but does not interrupt marginal carina entirely. No displaced section of marginal carina present at clypeo-labral suture. Ventral anterior plate present. Ventral carinae with finger-like median protrusion; carinae clearly delimited anterior to pulvinus but not continuous with marginal carina. Head setae as in Fig. 177; *avs2–3* of similar length; *pos* and *pns* absent. Coni small. Antennae monomorphic. Temporal carinae not visible; *mts3* only macrosetae. Gular plate roughly triangular.

Prothorax rectangular, lateral margins convex (Figs 175–176); *ppss* on postero-lateral corner. Proepimera hammer-shaped medianly. Pterothorax pentagonal; lateral margins divergent and posterior margin convergent to median point (Figs 175–176). Meso- and metasterna not fused, one seta on postero-lateral corner on each side of each plate. Metepisterna hammer-shaped medianly. *mms* moderately divided medianly. Leg chaetotaxy as in Fig. 25, except *fI-p2, fI-v4, fII-v2, fIII-v2* absent.

Abdomen (Figs 175–176) slender and elongatedly oval. Terminal end of abdomen rounded in male, shallowly divided in female. Abdominal chaetotaxy as in Table 2 and 6. Tergopleurites square-shaped; tergopleurites II–IX+X in male and tergopleurites II–VIII in females narrowly divided medianly. Female tergopleurite IX+X fused with tergopleurite XI. Sternal plates quadratic, not approaching pleurites. Pleural incrassations broad, overlapping and forming "rails" along lateral margins of abdomen. Re-entrant heads moderate to large. Male subgenital plate divided into sternal plate VII and subgenital plate on segments VIII–XI, with setae on posterior margin of sternal plate VII. Female subgenital plate roughly triangular, not approaching vulval margin (Fig. 181). Detached cross-piece present. Vulval margin with broad sclerotized cross-piece not connected to subgenital plate.

Male genitalia as in Figs 178–180. Proximal mesosome trapezoidal. Gonopore (Fig. 179) as convergent thickenings, open distally and proximally. Mesosomal lobes angular or rounded, with ridge across mid-length and distal part rugose; 2 *pmes* sensilla anterior to ridge just lateral to gonopore. Parameral heads (Fig. 180) folded into U-shapes, without accessory sclerite. Parameral blades broad, rounded; *pst1–2* both sensilla.

TABLE 6. Chaetotaxy of abdominal segments II–VIII of males of *Turdinirmoides*. Chaetotaxy of *To. hrabali* taken from original illustrations, although text states (p. 65) that setae are present on male sterna II–VII. Trichoid setae of segment VIII are present in all species, and are not listed. Sets of setae differing from those of *To. grandalae* are highlighted in **bold**. Material examined from all species is from their respective type hosts. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	Sex	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
To. grandalae	M	III–VIII	–	IV–VIII	V–VIII	II–VIII	II–VII
	F	III–VIII	–	IV–VIII	–	II–VIII	II–VI
To. hrabali	M	III–VIII	–	**IV–VII**	**VII–VIII**	II–VIII	**II–VI**
	F	III–VIII	–	IV–VIII	–	–	II–VI

Host distribution. *Turdinirmoides* is widely distributed, and we have seen material from Muscicapidae, Acanthizidae, Rhipiduridae, Prunellidae, and Paramythiidae.

Geographical range. Known only from South Asia.

Etymology. *Turdinirmoides* is a reference to the genus *Turdinirmus* (below), which is superficially similar to this genus, especially in the preantennal area. The ending "*-oides*" from Greek "*eidos*I' for "likeness". Gender: feminine.

Remarks. No member of this genus was included in the phylogeny of Bush *et al*. (2016). Although morphological characters suggest a close relationship with *Aratricerca*, the exact relationship between *Turdinirmoides* and the preceding three genera lacking *pos* is still unclear.

Included species
**Turdinirmoides grandalae* (Clay, 1936: 912) n. comb. [in *Degeeriella*]
Turdinirmoides hrabali (Najer & Sychra [in Najer *et al*.], 2012c: 65) **n. comb.** [in *Brueelia*] **[1]**

[1] The description of this species (Najer *et al*. 2012c: 65) states that male abdominal sterna II–VII have setae laterally, as is the case in *Turdinirmoides* and *Aratricerca*, however the setae of sternum VII are not present in the illustrations of Najer *et al*. (2012). There are considerable differences between this species and *To. grandalae* in the abdominal chaetotaxy of both sexes, and the male subgenital plate does not appear to be divided in *To. hrabali*. Given the small number of species involved, and the interspecific variation in abdominal chaetotaxy seen in the closely related *Resartor* (Table 5) we place *Brueelia hrabali* in *Turdinirmoides* based on non-setal characters and the stated presence of setae on sternal plate VII in males, but recognise that when a larger number of species in this complex are known and have been adequately described and sequenced, the systematics of *Turdinirmoides* and related genera may need further revision.

***Turdinirmoides grandalae* (Clay, 1936)**
(Figs 175–181)

Degeeriella grandalae Clay, 1936: 912.
Brüelia grandalae (Clay), 1936; Hopkins & Clay, 1952: 56.
Brueelia grandalae (Clay, 1936); Price *et al*. 2003: 155.

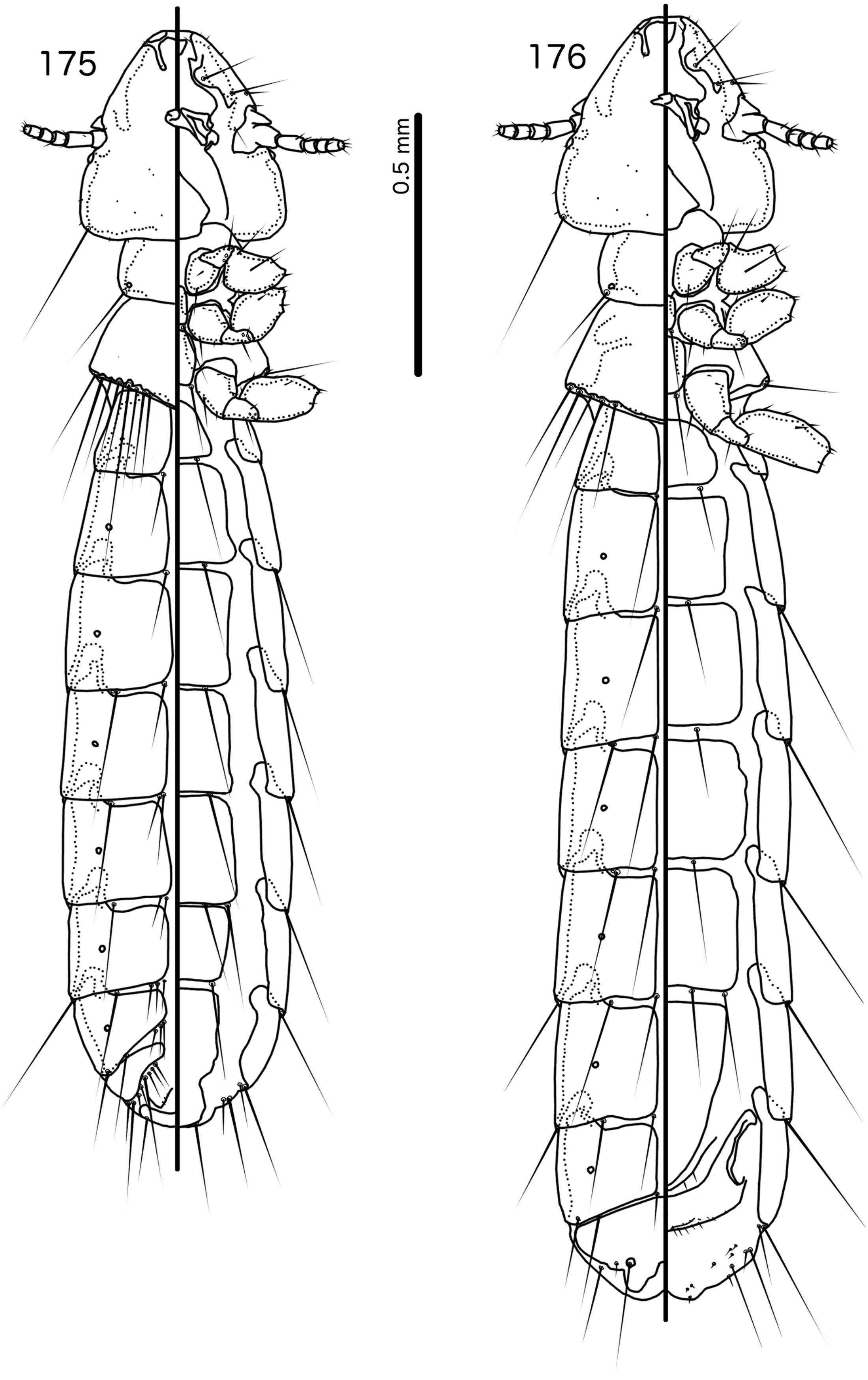
Type host. *Grandala coelicolor* Hodgson, 1843—grandala.
Type locality. Sikkim, India.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 177. Median extent of dorsal preantennal suture near *ads* variable, but suture not medianly continuous. Thoracic and abdominal segments as in genus description and Figs 175–176. Sternal plates and median tergopleurites very pale; tergopleurites progressively darker laterally. Lateral margins of sternal plates hard to see in some specimens.

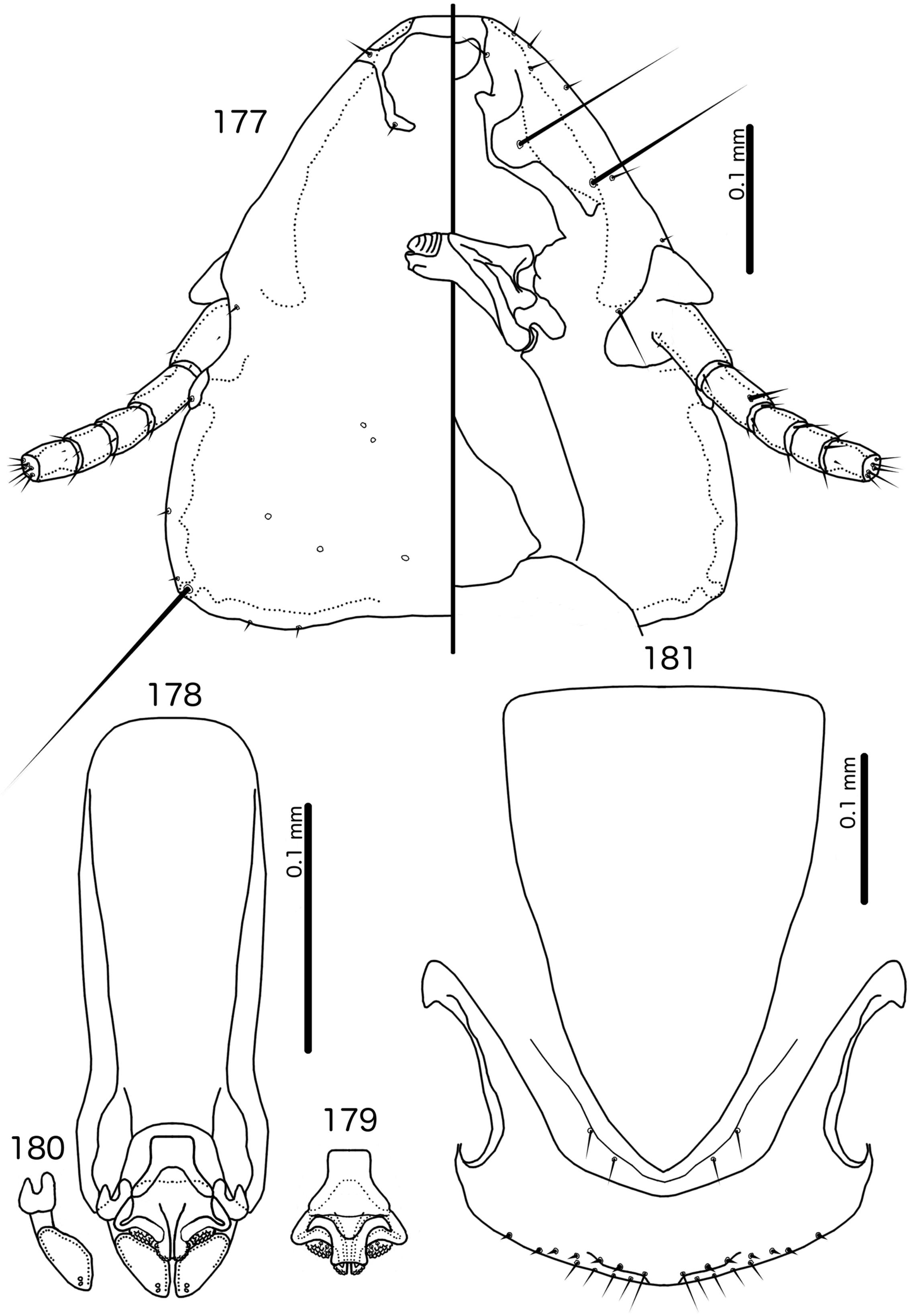
Male. Abdominal chaetotaxy as in Table 2 and Fig. 175. Basal apodeme (Fig. 178) roughly rectangular, but widened distally. Proximal mesosome broadly quadratic, widening distally. Gonopore (Fig. 179) as subparallel, submedian sclerites, open distally and proximally. Mesosomal lobes with distinct thickening at about mid-length; distal part of lobes rugose or papillate; 2 *pmes* barely visible just posterior to thickening of each lobe, lateral to gonopore. Parameral heads (Fig. 180) large, bifid, folded into horseshoe-shapes. Parameral blades short, rounded with distinct thickening just distal to short parameral neck; *pst1–2* sensilla, submarginal on median margin. Measurements ex *Grandala coelicolor* (n = 13 except n = 12 for TL, PRW, PTW): TL = 1.87–2.16 (2.05); HL = 0.38–0.41 (0.40); HW = 0.37–0.40 (0.38); PRW = 0.24–0.26 (0.25); PTW = 0.35–0.39 (0.37); AW = 0.38–0.50 (0.46).

Female. Abdominal chaetotaxy as in Table 2 and Fig. 176. Subgenital plate (Fig, 181) triangular, not approaching vulval margin; distal end pointed. Detached cross-piece broad. Vulval margin gently rounded (Fig. 181), with 4–5 short, slender *vms* on each side, and 6–7 short, thorn-like *vss* on each side; 2–3 long, slender *vos*; distal seta median to *vss*. Measurements ex *Grandala coelicolor* (n = 8): TL = 2.34–2.70; HL = 0.43–0.46; HW = 0.40–0.45; PRW = 0.26–0.29; PTW = 0.38–0.42; AW = 0.44–0.54.

Type material. Ex ***Grandala coelicolor*** **[**some as ***Grandala coelicolor major*****]**: **Holotype** ♀, Sikkim, India, Dec. 1925, R. Meinertzhagen, 40 (NHML). **Paratypes:** 10♂, 9♀, same data as holotype, 40, 3111–2 (NHML); 1♂, same data as holotype (OSUS); 1♀, Szechwan, China, R. Meinertzhagen, 1804 (OSUS).



FIGURES 175–176. *Turdinirmoides grandalae* (Clay, 1936) **n. comb.** ex *Grandala coelicolor*: **175,** male habitus, dorsal and ventral views. **176,** female habitus, dorsal and ventral views.



FIGURES 177–181. *Turdinirmoides grandalae* (Clay, 1936) **n. comb.** ex *Grandala coelicolor*: **177,** male head, dorsal and ventral views. **178,** male genitalia, dorsal view. **179,** male mesosome, ventral view. **180,** male paramere, dorsal view. **181,** female subgenital plate and vulval margin.

Additional material examined (non-types)

Ex ***Grandala coelicolor*** [some as ***Grandala coelicolor major***]: 6♂, 2♀, Lachen, Sikkim, India, 25 Feb. 1952, R. Meinertzhagen, 20008, 20010–1, BM 1952-143 (NHML).

Turdinirmus Eichler, 1951

Nirmus Nitzsch, 1818: 291 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).
Turdinirmus Eichler, 1951b: 41.
Turdinirmus Eichler, 1952: 78.

Type species. *Nirmus merulensis* Denny, 1842: 51, by original designation.

Diagnosis. *Turdinirmus* is superficially similar to *Turdinirmoides* **n. gen.** in general habitus and preantennal structure, but *Turdinirmoides* (Fig. 177) lacks *pos* and *pns*, which are present in *Turdinirmus* (Figs 184, 191). In addition, the marginal carina may be interrupted laterally in *Turdinirmus* (not illustrated) where the dorsal preantennal suture reaches the lateral margin of the head, but this is not the case in *Turdinirmoides* (Fig. 177). In *Turdinirmoides* there is no displaced section of the marginal carina at the osculum, whereas in *Turdinirmus* (Figs 184, 191) this is present as a distinct sinuous thickening of the dorsal anterior plate, similar to *Resartor* **n. gen.** (Fig. 163) or *Ceratocista* **n. gen.** (Fig. 155). Male and female genitalia also differ, as explained in the diagnosis of *Turdinirmoides* (see above).

Turdinirmus is also superficially similar to *Maculinirmus*, and the abdominal chaetotaxy of these two genera (Table 2) is identical. Other characters shared by *Maculinirmus* and *Turdinirmus* include: dorsal preantennal sutures reaches the *ads* in both *Turdinirmus* (Figs 184, 191) and *Maculinirmus* (Figs 198, 205), and reach or nearly reach the *dsms* and the lateral margin of the head, but does not separate the dorsal anterior plate from the main head plate medianly, and does not entirely interrupt the marginal carina laterally; *pos* and *pns* present (Figs 184, 191, 198, 205); female subgenital plate of both *Maculinirmus* (Figs 202, 209) and *Turdinirmus* (Figs 188, 195) approach, but do not reach, the vulval margin, and in neither genus does it form a cross-piece; *fI-v4* is absent in both genera; at least some sternal plates of both sexes have more than one *sts* on each side (Figs 182–183, 189–190, 196–197, 203–204). These two genera can be separated by the following characters: the sinuous ridge of the dorsal anterior plate found in *Turdinirmus* (Figs 182, 189) is absent in *Maculinirmus* (Figs 198, 205); the large, angular temples seen in some *Turdinirmus* (e.g. *Tu. australissimus* **n. sp.**, Fig. 191) are never seen in *Maculinirmus* (Figs 198, 205); marginal temporal carina in *Maculinirmus* is always slender (Figs 198, 205), whereas in *Turdinirmus* it is always wide and irregular (Figs 184, 191); female tergopleurite XI is absent or so small and pale that it cannot be seen in *Maculinirmus* (Figs 197, 204), whereas in *Turdinirmus* (Figs 183, 190) tergopleurite IX+X is fused with tergopleurite XI; parameral heads are folded into U-shapes in *Maculinirmus* (Figs 201, 208), but not in *Turdinirmus* (Figs 187, 194); mesosomal lobes in *Maculinirmus* are rounded and marginal thickenings are either vague (Fig. 199) or absent (Fig. 206), whereas in *Turdinirmus* the lobes are more angular with a distinct marginal thickening (Figs 185, 192).

Description. ***Both sexes***. Head trapezoidal (Fig. 184) to concave-dome shaped (Fig. 191). Marginal carina broad, interrupted at least submedianly, but may be interrupted laterally as well (not illustrated). Hyaline margin continuous with dorsal preantennal suture reaching *ads* and reaching or nearly reaching *dsms*, extending median to *ads* but not completely separating dorsal anterior plate from main head plate. Dorsal anterior plate with sinuous thickening near posterior end, which may be displaced section of marginal carina at osculum. Ventral carinae diffuse anterior to pulvinus, and not clearly continuous with marginal carina. Ventral anterior plate present, crescent-shaped. Head setae as in Figs 184, 191. Preantennal nodi distinct. Coni small. Antennae monomorphic; *mts3* only long setae. Temporal carinae not clearly visible. Marginal temporal carina broad. Gular plate triangular with concave margins.

Prothorax (Figs 182–183, 189–190) rectangular; *ppss* on postero-lateral corner. Proepimera with hook- or hammer-shaped median ends. Pterothorax pentagonal; lateral margins divergent; posterior margin convergent to broadly rounded median point. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna with large, blunt median ends. *mms* widely interrupted medianly. Leg chaetotaxy as in Fig. 25, except *fI-v4, fI-p2* absent.

Abdomen (Figs 182–183, 189–190) oval. Abdominal chaetotaxy as in Table 2. Tergopleurites rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly divided medianly; tergopleurite IX+X fused to tergopleurite XI in female. Sternal plates rectangular, not approaching pleurites. Pleural incrassations wide. Re-entrant heads large, elaborate. Male subgenital plate trapezoidal, reaching posterior end of abdomen. Female subgenital plate pentagonal (Fig. 188) to triangular (Fig. 195), approaching vulval margin. No cross-piece present. Vulval margin (Figs 188, 195) with slender *vms*, numerous thorn-like *vss*; *vos* follows lateral margins of subgenital plate; distal *vos* median to *vss*.

Basal apodeme trapezoidal (Fig. 185) to rounded with mid-length constriction (Fig. 192), distal half with transverse arch. Proximal mesosome flattened, differing in shape among species. Gonopore (Figs 186, 193) open distally and proximally, as parallel or converging thickenings. Mesosomal lobes wide, short, angular or rounded. Marginal thickenings of lobes follow margin for entire length. Up to 3 *pmes* visible lateral to gonopore. Parameral heads (Figs 187, 194) bifid, not folded into horseshoe-shapes. Parameral blades broadly curved; *pst1* sensillus, submarginal or central; *pst2* microseta, on lateral margin near distal tip.

Host distribution. Turdidae.

Geographical range. Throughout Old World.

Remarks. No representative of *Turdinirmus* was included in the phylogeny of Bush *et al*. (2016), but the structure of the preantennal area and the male genitalia suggest that the genus may be close to *Maculinirmus* or *Turdinirmoides*.

Martín-Mateo (2009: 339) claimed that no description or indication was included when Eichler (1951b) named this genus, making the name unavailable until Złotorzycka (1964a) provided a description. Eichler (1951b: 13) did, however, state that the group (the "*viscivori*-Typ sensu meo") have a characteristic head shape and share some other characteristics with the type species, *Tu. merulensis*. Under the entry for this species, Eichler (1951b: 15) states that *Tu. merulensis* has a characteristic "docophorid" head shape, providing an illustration of the head (Eichler 1951b: 16, fig. 15) showing the characteristic angular temples, broad carinae, and hints at the dorsal preantennal suture characteristic of the genus. Złotorzycka (1964a: 267) mentions only the habitus, the size ("enormous" for a "Brueeliinae") and that, like *Penenirmus* s. l., *Turdinirmus* has an interrupted marginal carina. This does not provide a more definite description than Eichler's (1951b); we therefore retain Eichler (1951b) as author of *Turdinirmus*. As an additional note, Eichler (1952: 78) described the genus as new for a second time, but did not provide any additional characters. It is unclear whether this description is based on the same material or not, as Eichler (1952) does not refer to any specimens.

Złotorzycka (1964a, 1997) disagreed with Hopkins & Clay's (1952) synonymization of *Turdinirmus* with *Brueelia*, and Mey (1982b: 179) claimed that the genus was well separated from *Brueelia*, and provided some illustrations, but did not list any diagnostic characters. Most recently, Mey & Barker (2014) and Valim & Palma (2015) have considered this genus to be valid, and both recognise Eichler (1951b) as the author, but neither provides additional arguments in support of their taxonomic conclusions.

Species parasitic on *Zoothera* spp. have more clearly angular temples than species parasitic on *Turdus* spp. (see *Tu. merulensis*, Fig. 184, and *Tu. australissimus*, Fig. 191), but are otherwise similar, and we do not feel this difference is sufficient to erect different species groups.

Included species
Turdinirmus australissimus* **new species
**Turdinirmus daumae* (Clay, 1936: 910) [in *Degeeriella*]
  Turdinirmus eichleri Mey, 1982b: 179
    Brueelia neoeichleri Price, Hellenthal & Palma, 2003: 157, **new synonymy [1]**
**Turdinirmus merulensis* (Denny, 1842: 51) [in *Nirmus*]
    Nirmus merulae Denny, 1852: 18
    Nirmus mandarinus Giglioli, 1864: 23
**Turdinirmus stresemanni* (Clay, 1936: 910) [in *Degeeriella*]
**Turdinirmus zootherae* (Clay, 1936: 909) [in *Degeeriella*]

[1] *Turdinirmus merulensis eichleri* Mey, 1982b (= *Brueelia neoeichleri* Price *et al*. 2003), is homonymous with *Brueelia eichleri* Lakshminarayana, 1969, only when the two species are considered to belong to the same genus. However, we regard *Brueelia eichleri* Lakshminarayana as a junior synonym of *Mirandofures muniae* Eichler, 1957 (see *Mirandofures*), hence we do not consider the two homonymous species congeneric. We follow Article 59.4 (International Commission on Zoological Nomenclature 1999) and reinstate *Turdinirmus eichleri* Mey (1982b) as valid species.

Turdinirmus merulensis (Denny, 1842)
(Figs 182–188)

Nirmus merulensis Denny, 1842: 51.
Nirmus merulae Denny, 1852: 18.
Nirmus mandarinus Giglioli, 1864: 23.
Degeeriella mandarina Giglioli, 1864; Harrison, 1916: 117.
Degeeriella merulae Denny, 1852; Harrison, 1916: 118 [as junior synonym of *D. merulensis*].
Degeeriella merulensis Denny, 1842; Harrison, 1916: 118.
Turdinirmus merulensis (Denny); Eichler, 1951b: 15.
Turdinirmus mandarinus (Giglioli); Eichler, 1951b: 15.
Brueelia mandarina (Giglioli), 1864; Hopkins & Clay, 1952: 58 [as junior synonym of *Bl. merulensis*].
Brueelia merulae (Denny), 1852; Hopkins & Clay, 1952: 58 [as junior synonym of *Bl. merulensis*].
Brueelia merulensis (Denny), 1842; Hopkins & Clay, 1952: 58.
Turdinirmus merulensis s. str. (Denny, 1842); Złotorzycka, 1997: 176.

Type host. *Turdus merula merula* Linnaeus, 1758—Eurasian blackbird.
Type locality. Leeds, United Kingdom.
Other hosts. *Turdus merula aterrimus* (Madarasz, 1903)—Eurasian blackbird [Ref.: Blagoveshchensky 1940]. *Turdus merula mandarinus* Bonaparte, 1850—Eurasian blackbird. *Turdus merula syriacus* Hemprich & Ehrenberg, 1833—Eurasian blackbird. *Turdus pallidus* Gmelin, 1789—pale thrush [Ref.: Eichler 1951: 15].

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 184. In some specimens dorsal preantennal suture reaches lateral margin of head. Thoracic and abdominal segments as in genus description and Figs 183–184.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 183. Basal apodeme elongated trapezoidal (Fig. 185). Proximal mesosome flattened trapezoidal, comparatively large for genus. Gonopore (Fig. 186) as convergent ventral thickenings, open distally and proximally. Mesosomal lobes wide, thickened marginally, with papillate sections submedianly; 2–3 *pmes* clustered very closely together near distal margin of mesosome, often not visible. Parameral heads (Fig. 187) bifid, fingers broad and blunt. Parameral blades broad, roughly triangular; *pst1–2* as in genus description. Measurements ex *Turdus merula merula* (n = 26): TL = 1.78–2.07 (1.96); HL = 0.47–0.52 (0.49); HW = 0.49–0.55 (0.52); PRW = 0.27–0.33 (0.31); PTW = 0.40–0.47 (0.43); AW = 0.52–0.67 (0.60). Ex *T. m. syriacus* (n = 3): TL = 1.95–2.07; HL = 0.49–0.51; HW =0.52–0.56; PRW = 0.31–0.32; PTW = 0.40–0.43; AW = 0.52–0.55. Ex *T. pallidus* (n = 2): TL = 1.95–1.97; HL = 0.50–0.51; HW = 0.52–0.53; PRW = 0.30–0.31; PTW = 0.43–0.44; AW = 0.59–0.63.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 184. Subgenital plate (Fig. 188) roughly pentagonal, with wide median section approaching vulval margin. Vulval margin (Fig. 188) gently rounded, with submarginal fold along most of length; 9–10 short, slender *vms* on each side, and 9–11 short, thorn-like *vss* on each side; 4–5 long, slender *vos* on each side; distal *vos* median to *vss*. Measurements ex *Turdus merula merula* (n = 32): TL = 1.99–2.54 (2.24); HL = 0.47–0.57 (0.52); HW = 0.51–0.63 (0.56); PRW = 0.28–0.36 (0.33); PTW = 0.41–0.53 (0.46); AW = 0.47–0.75 (0.65). Ex *T. m. syriacus* (n = 3): TL = 2.23–2.31; HL = 0.52–0.53; HW = 0.56–0.57; PRW = 0.33–0.34; PTW = 0.45–0.46; AW = 0.55–0.62. Ex *T. pallidus* (n = 4): TL = 2.07–2.32; HL = 0.51–0.56; HW = 0.54–0.61; PRW = 0.31–0.35; PTW = 0.44–0.49; AW = 0.62–0.64.

Type material. Ex ***Turdus merula merula***: **Holotype** ♂, Leeds, England, Denny Collection, BM 1952-98 (NHML). **Paratypes:** 11♀, same data as holotype (NHML).

Additional material examined (non-types)

Ex ***Turdus merula merula***: 6♂, 13♀, Hoy, Orkney Islands, Scotland, United Kingdom, Oct. 1938 (OSUS); 10♂, 10♀, same locality as previous, Aug. 1938, G.H.E. Hopkins (NHML); 3♂, 12♀, Orkney Islands, Scotland, United Kingdom, Aug. 1936, R. Meinertzhagen, 11644 (NHML); 26♂, 50♀, same locality as previous, Aug. 1938,

R. Meinertzhagen, 11279–80, 11421 (NHML); 1♂, 1♀, South Uist, Outer Hebrides, Scotland, United Kingdom, Jan. 1934, R. Meinertzhagen, 89 (NHML); 4♀, Scotland, United Kingdom, Jun. 1938, P.A. Clancey, BM 1980-40 (NHML); 4♂, 1♀, Arran, Scotland, United Kingdom, Oct. 1943, R. Meinertzhagen, 14876, 14895 (NHML); 1♂, 1♀, Perthshire, Scotland, United Kingdom, Oct. 1935, R. Meinertzhagen, 4330 (NHML); 1♂, 1♀, Fair Isle, Shetlands, Scotland, United Kingdom, 27 May 1955, Brit. Mus. 1955-785 (NHML); 2♂, 1♀, same locality as previous, 18 Jun. 1954, 29693, Brit. Mus. 1954-566 (NHML); 1♂, Thibisten [?], Shetlands, Scotland, United Kingdom, 20 oct. 1910, J. W[aterston?], BM 1930-232. 1♀, Skokholm, Pembrokeshire, Scotland, United Kingdom, 287 (NHML); 1♂, 8♀, Llandulas, Denbighshire, Wales, United Kingdom, 6 Apr. 1936, M. Mitchell, BM 1980-40 (NHML) [marked "compared with type"]. 1♂, 4♀, Bed Colwyn, Denbighshire, Wales, United Kingdom, 6 Apr. 1936, M. Mitchell, BM 1989-40 (NHML); 1♀, Bardsey Island, Wales, United Kingdom, 14 Nov. 1952, G.B. T[hompson?], BM-1980-40 (NHML); 1♀, same data as previous, except 17 Nov. 1952 (NHML); 1♂, 1♀, "Northern Norfolk", Norfolk, England, United Kingdom, 30 Jun. 1969, M. Payne, Brit. Mus. 1970-259 (NHML); 3♂, 1♀, Norfolk, England, United Kingdom, Jan. 1940, R Meinertzhagen, 14040 (NHML); 8♂, 20♀, Kent, England, United Kingdom, Feb. 1937, R. Meinertzhagen, 8333 (NHML); 2♀, The Thorn, Baltham[?], Kent, England, United Kingdom, 11 Jul. 1931, G.B. Thompson, BM 1980-40 (NHML); 5♂, 5♀, Bowan[?], Cambridgeshire, England, United Kingdom, 29 May 1952, G.B. Thompson, BM 1980-40 (NHML); 1♂, 1♀, Hereford [Herefordshire], England, United Kingdom, 31 Oct. 1963, Eskgrove Lab, Brit. Mus. 1964-102 (NHML); 2♂, 6♀, Suffolk, England, United Kingdom, Aug. 1936, R. Meinertzhagen, 4918 (NHML); 4♀, Suffolk, England, United Kingdom, May 1935, R. Meinertzhagen, 3456 (NHML); 5♂, 3♀, Gibraltar Point Bird Observatory, Lincolnshire, England, United Kingdom, 17 Jun. 1950, L. Ottaway, BM 1980-40 (NHML); 4♀, Somerset, England, United Kingdom, May 1934, R. Meinertzhagen, 910 (NHML); 2♂, 2♀, Surrey, England, United Kingdom, 16 Jun. 1966, Lasswade Veterinary Lab, Brit. Mus. 1967-154 (NHML); 4♂, 4♀, Lundy Bird Observatory, England, United Kingdom, 28 Jul. 1952, BM 1980-40 (NHML); 1♂, 1♀, Gloucestershire, England, United Kingdom, R.S. George, Brit. Mus. 1957-297 (NHML); 3♀, Blois [Loir-et-Cher], France, May 1934, R. Meinertzhagen, 1046 (NHML); 1♂, 2♀, "NE Poland", Poland, Aug. 1935, R. Meinertzhagen, 4136 (NHML); 1♂, 1♀, Ljubljana, Slovenia, 30 Oct. 1954, S. Brelih, 1568–70 (NHML); 1♂, Ljubljana, Slovenia, 5 Aug. 1958, S. Brelih, 424 (NHML); 1♂, 1♀, Senj [as "Zengg"], Croatia, 10 Jan. 1912, F. Dobiasch (NHML); 3♂, 3♀, Raoul Island, Kermadec Islands, New Zealand, 29 Oct. 1962, G.A. Samuelson, 207A, Brit. Mus. 1966-201 (NHML); 1♂, 1♀, same locality as previous, 24 Dec. 1966, D.S.I.R., N.Z., Brit. Mus. 1968-401 (NHML); 22♀, Tharandt, Germany[?], 29 May 1948, H. Richter, IN1296/4/2 (MFNB) [stomachs of these lice are on a separate slide]. 1♀, Seidelbadsee, Germany[?], 5 Jul. 1952 (MFNB) [taken from *Ornithomyia avicularia*]. 1♂, 2♀, Kent, England, United Kingdom, May 1937, R. Meinertzhagen, 10689 [Meinertzhagen No.], 930 [Eichler No.] (MFNB); 1♀, Zelistnewo, Poland, 17 Sep. 1962, Gromadzki, 14/e/33 (MFNB); 4♂, 5♀, Zawiercie, Poland, 4 Aug. 1955, J. Złotorzycka, 8451, 8453–60 (PMSL); 1♂, 5♀, Tolmin, Slovenia, 18 Jun. 1958, S. Brelih, 332, 1560–2, 6272–3 (PMSL); 1♀, Most na Soci, Slovenia, 17 Jun. 1958, S. Brelih, 429 (PMSL); 2♀, Ljubljana, Slovenia, 30 Oct. 1951, S. Brelih, 426, 1569 (PMSL); 4♂, 2♀, Dolenjsko, Slovenia, 30 Mar. 1955, S. Brelih, 493–8 (PMSL); 1♂, Slovenia, 30 May 1955, S. Brelih, 6274 (PMSL); 1♀, Dubrovnik, Croatia, 1 Feb. 1977, A. Lesinger, 13103 (PMSL).

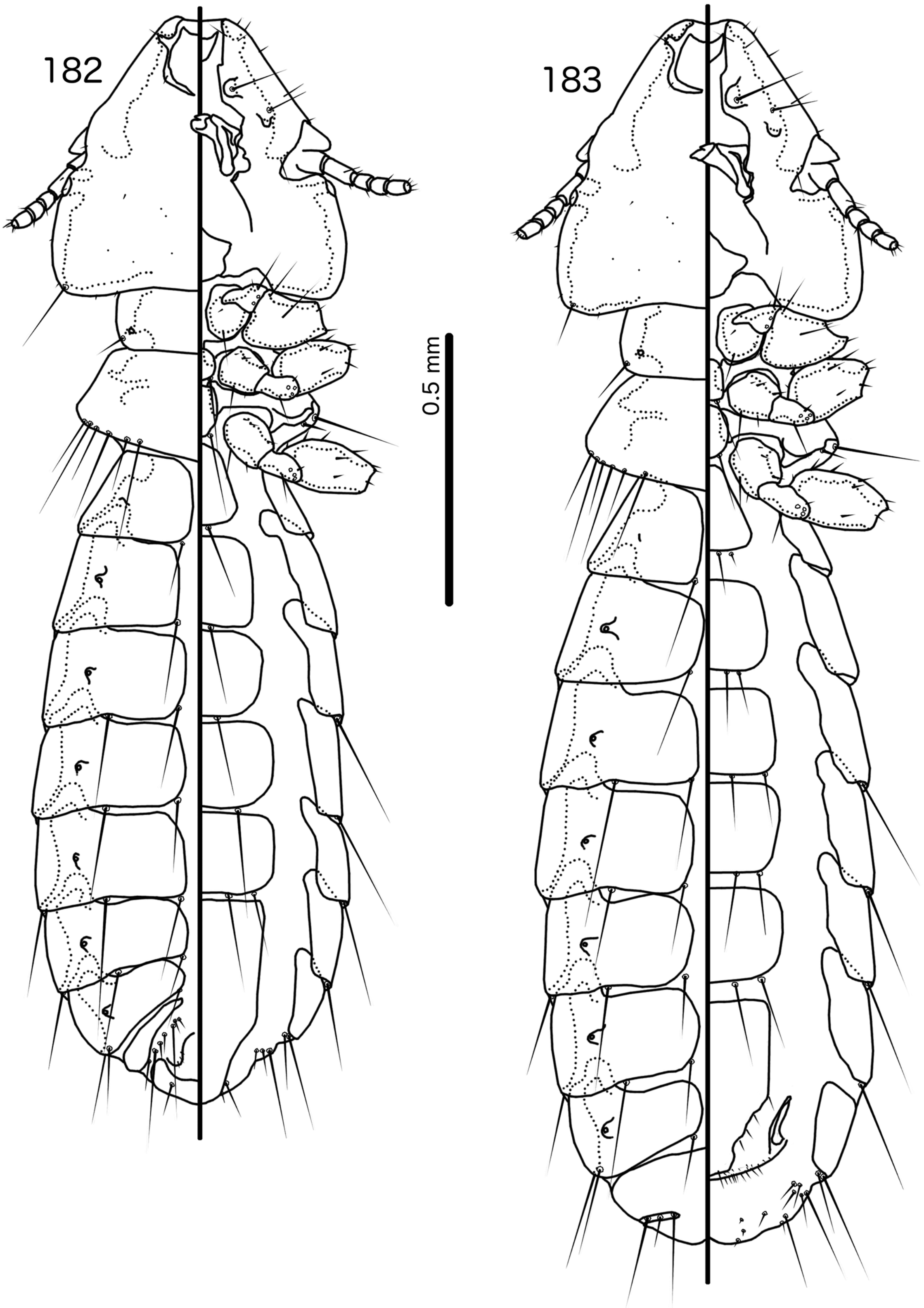
Ex ***Turdus merula mandarinus*:** 4♂, 2♀, China, Aug. 1913, R. Meinertzhagen, 3714 (NHML).

Ex ***Turdus merula syriacus*:** 3♂, 3♀, "Eastern Entrance of Tange-eh-Rah", Iran, 26 Jun. 1969, 126 (OSUS); 2♂, 4♀, Palestine, Apr. 1953, R. Meinertzhagen, BM 1953-225 (NHML).

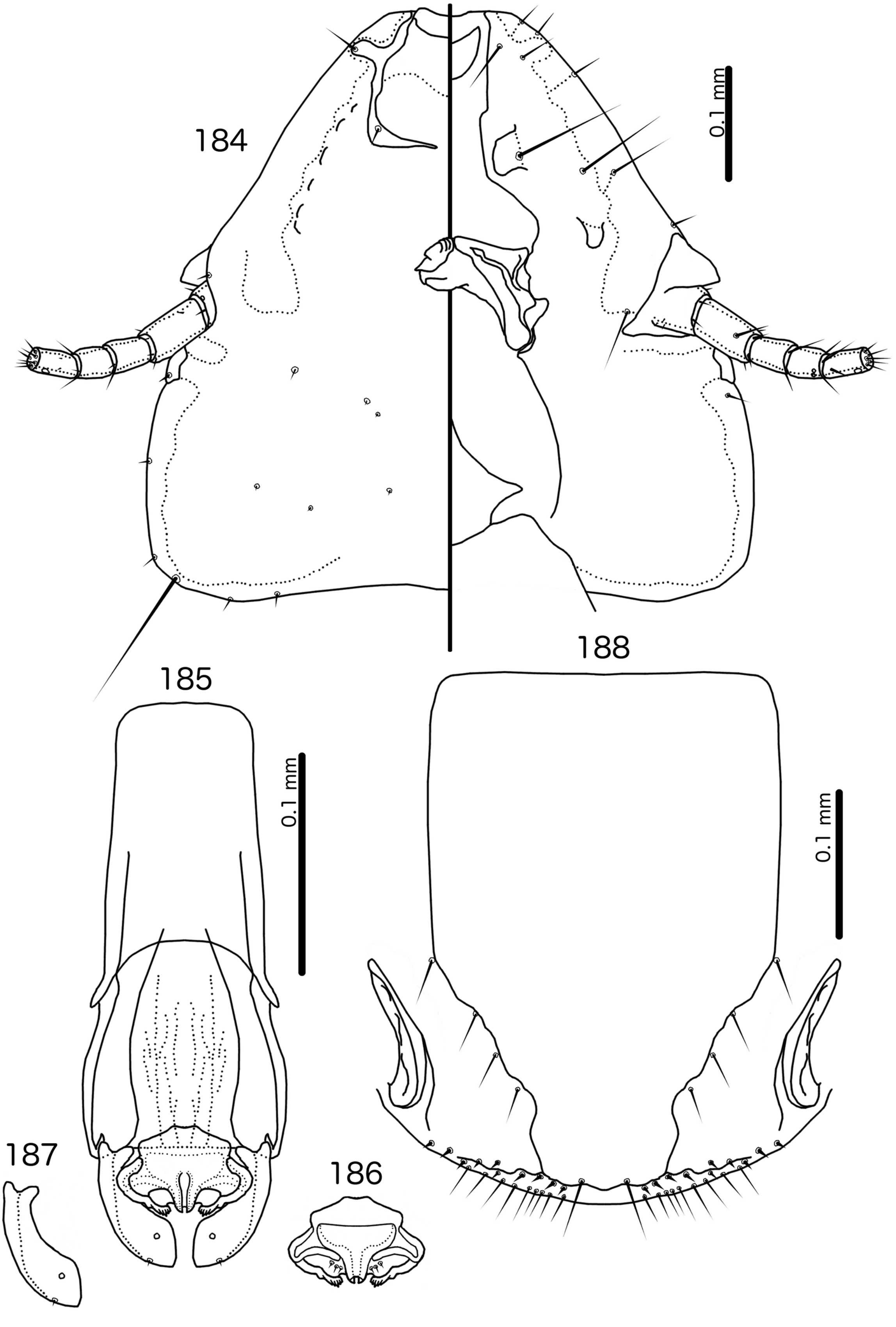
Ex ***Turdus merula* ssp.:** 6♀, unknown locality, marked "Entomology Mallophaga Louse of Blackbird", BM 1980-40 (NHML); 1♀, unknown locality, 1914 (NHML); 3♂, 6♀, unknown locality, Eichler Collection, 1932 (MFNB); 1♂, unknown locality, Wolffhügel, IN1278/64 (MFNB).

Ex ***Turdus philomelos*** [as ***Turdus musicus*]:** 2♂, unknown locality (NHML).

Remarks. Złotorzycka's (1997: 177) illustration of the male genitalia is based on an individual with distorted mesosomal lobes and parameres that are largely hidden behind the mesosome, and are not representative. We tentatively include in *Turdinirmus merulensis* the two male lice we examined from *Turdus philomelos*, because they are are similar to males from *Turdus merula* ssp. but, unfortunately, the genitalia of both specimens are distorted. Additional material from *T. philomelos* is needed to determine more accurately the taxonomic placement of these lice.



FIGURES 182–183. *Turdinirmus merulensis* (Denny, 1842) ex *Turdus merula*: **182,** male habitus, dorsal and ventral views. **183,** female habitus, dorsal and ventral views.

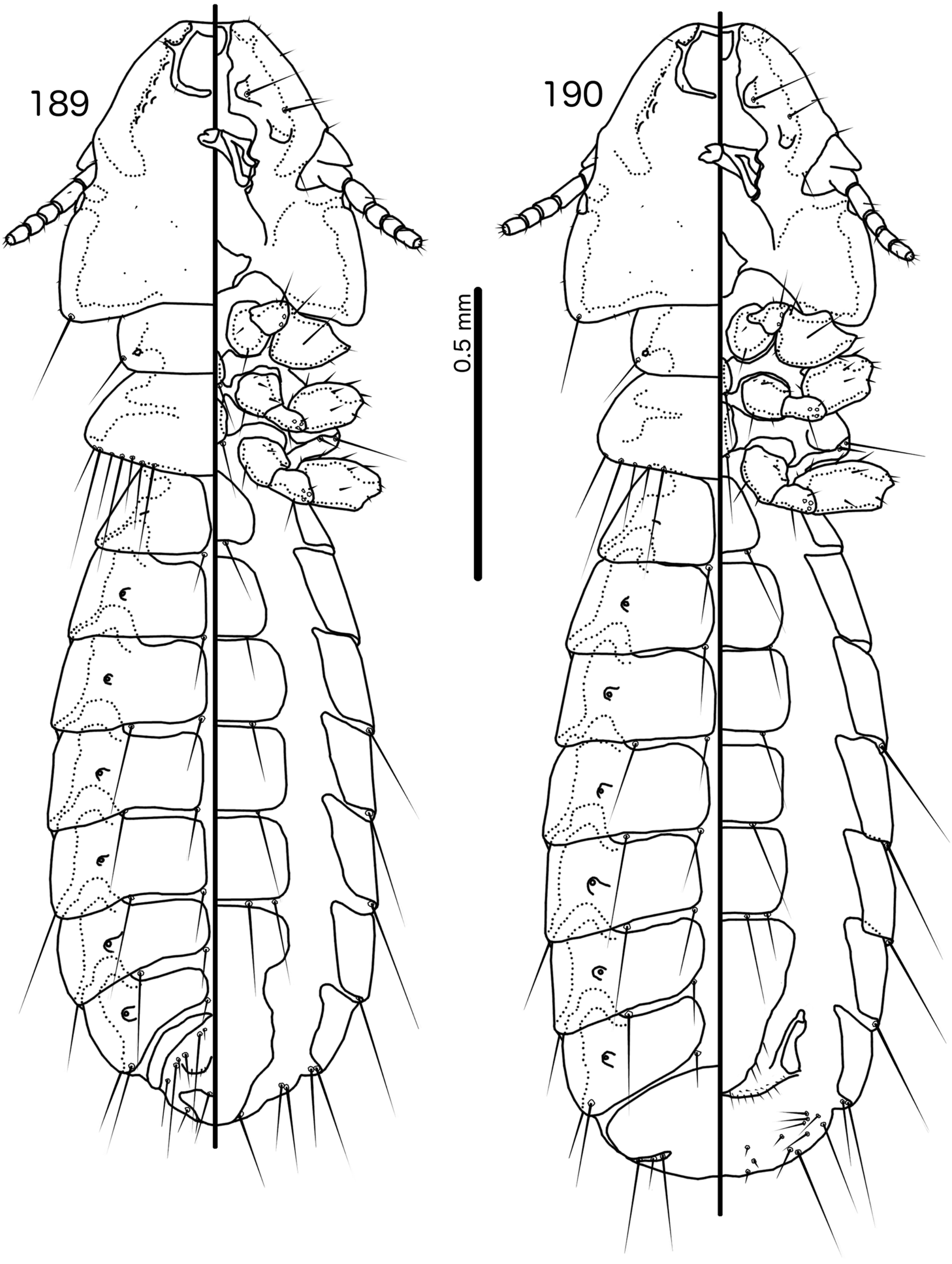


FIGURES 184–188. *Turdinirmus merulensis* (Denny, 1842) ex *Turdus merula*: **184,** male head, dorsal and ventral views. **185,** male genitalia, dorsal view. **186,** male mesosome, ventral view. **187,** male paramere, dorsal view. **188,** female subgenital plate and vulval margin, ventral view.

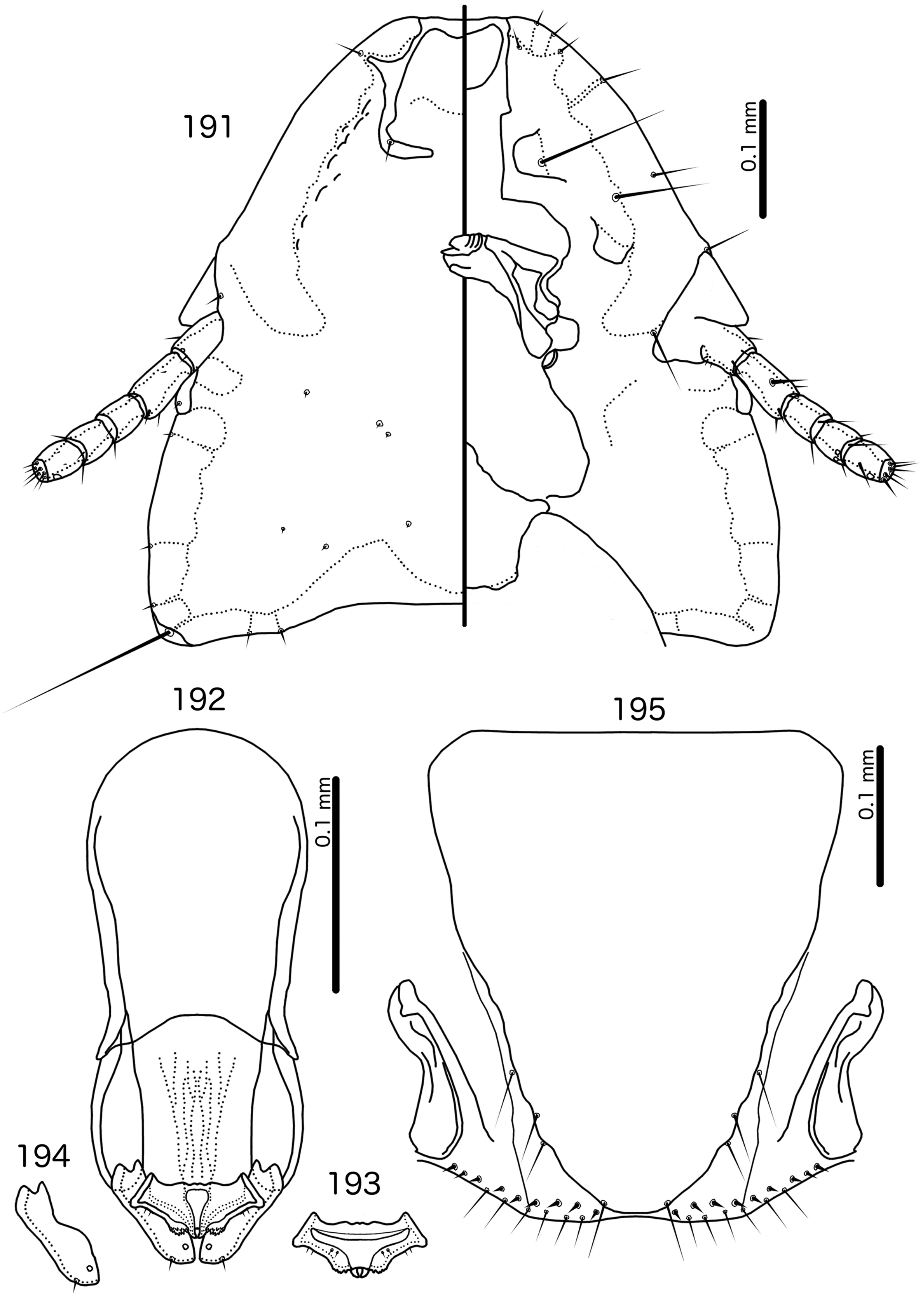
Turdinirmus australissimus Gustafsson & Bush, new species
(Figs 189–195)

Brueelia daumae (Clay, 1936); Green & Munday 1971: 8 (*partim*).

Type host. *Zoothera lunulata lunulata* (Latham, 1802)—olive-tailed thrush.
Type locality. Pass River, King island, Tasmania, Australia.



FIGURES 189–190. *Turdinirmus australissimus* **n. sp.** ex *Zoothera lunulata lunulata*: **189,** male habitus, dorsal and ventral views. **190,** female habitus, dorsal and ventral views.



FIGURES 191–195. *Turdinirmus australissimus* **n. sp.** ex *Zoothera lunulata lunulata*: **191,** male head, dorsal and ventral views. **192,** male genitalia, dorsal view. **193,** male mesosome, ventral view. **194,** male paramere, dorsal view. **195** female subgenital plate and vulval margin, ventral view.

Diagnosis. *Turdinirmus australissimus* **n. sp.** is similar to other *Turdinirmus* species from *Zoothera* spp., particularly *Tu. daumae*, with which it shares the broad head carinae and large head nodi. However, in *Tu. daumae* the marginal carina is narrowly and obliquely interrupted lateral to the *dsms*, whereas in *Tu. australissimus* (Fig. 191) the dorsal preantennal suture does not reach either *dsms* or the lateral margin of the head. The dorsal anterior plate of *Tu. daumae* is shorter and more oval than in *Tu. australissimus*, and the frons of *Tu. daumae* is more gently rounded, and not flattened as in *Tu. australissimus* (Fig. 191). Vulval chaetotaxy is overlapping between the two species, but *Tu. daumae* generally have 7–9 marginal setae on each side (5–7 in *Tu. australissimus*, Fig. 195). The male genitalia of *Tu. daumae* are similar to those of *Tu. australissimus* (Fig. 192), with the proximal mesosome being more or less flat in both species, but the mesosome is even shorter in *Tu. daumae*, with posterior margin being more or less parallel to anterior margin, and not strongly convergent as in *Tu. australissimus* (Fig. 193). The lateral corners of the lobes are even more acutely angular in *Tu. daumae* than in *Tu. australissimus*, and the papillate submedian section is more extensive, and reaches more than half of the width of the lobe (not less than a third as in *Tu. australissimus*). Parameres distorted in all specimens examined of *Tu. daumae*, but appear to be similar to those of *Tu. australissimus* (Fig. 194).

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 191. Dorsal preantennal suture does not reach *dsms*. All head carinae and nodi very broad. Thoracic and abdominal segments as in genus description and Figs 189–190.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 189. Basal apodeme somewhat constricted at mid-length (Fig. 192). Proximal mesosome concave to flat; whole mesosome very short. Gonopore (Fig. 193) as a wide, angular thickening that converge medianly; open distally and proximally. Mesosomal lobes much wider than long, angular, with thickened margins and papillate section submedianly; 2 *pmes* near distal end of each lobe, at least 1 typically submarginal. Parameral heads (Fig. 194) bluntly bifid. Parameral blades small; *pst1–2* as in genus description. Measurements ex *Zoothera lunulata lunulata* (n = 2): TL = 1.89; HL = 0.48–0.50; HW = 0.52–0.54; PRW = 0.32; PTW = 0.43–0.45; AW = 0.57.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 190. Subgenital plate roundedly triangular, with narrow median section approaching vulval margin (Fig. 195). Vulval margin gently rounded, median section concave (Fig. 195); 5–7 short, slender *vms* on each side, and 7–11 short, thorn-like *vss* on each side; 3–5 long, slender *vos* on each side; distal seta median to *vss*. Measurements ex *Zoothera lunulata lunulata* (n = 4): TL = 1.96–2.21; HL = 0.49–0.55; HW = 0.53–0.61; PRW = 0.31–0.35; PTW = 0.44–0.48; AW = 0.61–0.68.

Etymology. The species epithet is derived from Latin "*australis*" for "South", with the superlative ending "-*issimus*", and refers to the southern type locality of the species, the most southern of all species in the *Brueelia*-complex to date (with the exception of species introduced by human agency), and one of very few known from Australia.

Type material. Ex *Zoothera lunulata lunulata*: Holotype ♂, Pass River, King Island, Tasmania, Australia, 21 Feb. 1968, R.H. Green, Brit. Mus. 1975-81 (NHML). **Paratypes:** 1♂, 3♀, same data as holotype (NHML); 2♂, 3♀, Flinders Island, Tasmania, Australia, 21 Mar. 1966, R.H. Green, Brit. Mus. 1968-752 (NHML).

Maculinirmus Złotorzycka, 1964

Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).
Maculinirmus Złotorzycka, 1964a: 247.

Type species. *Nirmus mundus* Nitzsch [in Giebel], 1866: 366, by original designation.

Diagnosis. *Maculinirmus* is most similar to *Turdinirmus*; for a comparison with this genus, see the diagnosis of *Turdinirmus*. *Maculinirmus* also resembles *Titanomessor* **n. gen.**, and, superficially, *Indoceoplanetes* **n. gen.**

Apart from *Turdinirmus*, *Maculinirmus* is most similar to *Titanomessor*. Both genera contain pale species with roughly rectangular female subgenital plates that do not approach the vulval margin, short *mts3*, slender marginal temporal carinae, and the presence of both *pos* and *pns*. Abdominal chaetotaxy (Table 2) is largely identical between the two genera, but male *Titanomessor* (Fig. 210) have *tps* on tergopleurites VII–VIII, but these are absent in *Maculinirmus* (Figs 196, 203). In *Maculinirmus* (Figs 196–197, 203–204), all sternal plates have more than one *sts* on each side in both sexes, but these are absent on male sternal plates II–V (Fig. 210) and female sternal plates II–IV (Fig. 211) in *Titanomessor* . In *Titanomessor* (Fig. 212), the dorsal preantennal suture does not reach the margin of the head either submedianly or laterally, and often does not reach either *dsms* or *ads*; in *Maculinirmus* (Figs 198, 205) the suture always reaches *ads, dsms*, and both the lateral margin of the head and the hyaline margin. The marginal carina is uninterrupted in *Titanomessor* (Fig. 212), but interrupted submedianly in *Maculinirmus* (Figs 198, 205). In both *Maculinirmus* (Figs 198, 205) and *Titanomessor* n. gen (Fig. 212), *mts3* is shorter than in most other genera in the *Brueelia*-complex; however, in *Titanomessor mts4–5* of males and *mts4* of females are mesosetae, but in *Maculinirmus* these are microsetae in both sexes. There are also large differences between *Titanomessor* (Figs 213–215) and *Maculinirmus* (Figs 199–201, 206–208) in the male genitalia. In *Titanomessor* the parameres are rounded and highly convergent, whereas in *Maculinirmus* they are broad and curved.

The pigmentation patterns of *Maculinirmus* are similar to those of *Indoceoplanetes*, and the male genitalia of both genera are structurally similar. *Maculinirmus* can be separated from members of the *Indoceoplanetes* by the following characters: dorsal preantennal suture is absent entirely in *In.* (*Indoceoplanetes*) (Fig. 219), and in *In.* (*Capnodella*) (Figs 226, 233) the suture is present but does not reach either the lateral margin of the head or median of *ads*, whereas in *Maculinirmus* (Figs 198, 205) the suture reaches both the lateral margin of the head and much median to the *ads*; *pns* are mesosetae in both subgenera of *Indoceoplanetes* (Figs 219, 226, 233), but sensilla in *Maculinirmus* (Figs 198, 205); *mts3* are macrosetae in *Indoceoplanetes* (Figs 219, 226, 233), but mesosetae in *Maculinirmus* (Figs 198, 205); *tps* are present on some tergopleurites of males in the *In.* (*Indoceoplanetes*) (Fig. 217) but absent in *In.* (*Capnodella*) (Figs 224, 231) and *Maculinirmus* (Figs 196, 203); female tergopleurite IX+X is fused with tergopleurite XI in *In.* (*Capnodella*) (Figs 225, 232), but this is not the case in *Maculinirmus* (Figs 197, 204) or *In.* (*Indoceoplanetes*) (Fig. 218); mesosomal lobes have a substantial papillate section in *In.* (*Indoceoplanetes*) (Figs 220–221), but mesosomes have no papillate section in *Maculinirmus* (Figs 199–200, 206–207); *ames* are visible as microsetae in *In.* (*Indoceoplanetes*) (Figs 220–221), but sensilla in *Maculinirmus* (Figs 199–200, 206–207); the dorsal submedian fingers of the mesosomal lobes found in *In.* (*Indoceoplanetes*) (Figs 220–221) are absent in *Maculinirmus* (Figs 199–200, 206–207).

Description. ***Both sexes***. Head trapezoidal (Figs 198, 205). Marginal carina interrupted submedianly. Hyaline margin continuous with dorsal preantennal suture; suture reaches *dsms* and *ads*; separating dorsal anterior plate partially, in some undescribed species entirely, from main head plate. Suture reaches lateral margins of head but does not completely interrupt marginal carina. Ventral anterior plate present, roughly triangular. Ventral carinae diffuse anteriorly, not clearly continuous with marginal carina. Head setae as in Figs 198, 205. Coni short, stout. Antennae monomorphic. Temporal carinae not visible; *mts3* longer than other *mts* but not macrosetae. Gular plate broadly triangular. Typically, only mandibles, head nodi and gular plate pigmented.

Prothorax rectangular to square-shaped (Figs 196–197, 203–204). *ppss* on postero-lateral corner. Proepimera variable. Pterothorax pentagonal; lateral margins widely divergent; posterior margin convergent to median point; *mms* widely interrupted medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna slender, median ends widened, blunt. Typically, only proepimera and metepisterna darkly pigmented. Leg chaetotaxy as in Fig. 25, except *fI-v4, fI-p2* absent.

Abdomen elongated oval (Figs 196–197, 203–204). Abdominal chaetotaxy as in Table 2. Tergopleurites rounded rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female moderately interrupted medianly. Sternal plates translucent and margins cannot be seen clearly, not approaching pleurites. Pleural incrassations moderate. Re-entrant heads slight. Typically, only incrassations darkly pigmented. Male subgenital plate slender, elongated, reaching distal margin of abdomen. Female subgenital plate translucent, anterior and lateral margins hard to see, not approaching vulval margin (Figs 202, 209). There is no cross-piece. Vulval margin (Figs 202, 209) with slender *vms*, thorn-like *vss*; *vos* follows lateral margins of subgenital plate, with distal setae approaching or median to *vss*.

Basal apodeme roughly rectangular (Figs 199, 206) Proximal mesosome of varying shape, may overlap with distal basal apodeme. Gonopore (Figs 200, 207) as pair of subparallel or distally convergent thickenings protruding beyond distal margin of mesosome. Mesosomal lobes of varying shape, generally rounded, wide, overlapping with parameres laterally; distal margin smooth or serrated, often with sublateral hook; 2–3 *pmes* sensilla visible lateral to gonopore. Distal sensillus typically separated from anterior sensilla, and sometimes with visible microseta. Parameral heads (Figs 201, 208) with U-shaped folds. Parameral blades large, roughly oval; *pst1* sensillus, central, aperture often large; *pst2* microseta, lateral near distal tip.

Host distribution. *Maculinirmus* is presently known from the host family Oriolidae, and we have examined material from several additional host species [*Oriolus auratus* Lichtenstein, 1823; *O. flavocinctus* (King, 1826); *O. larvatus* Lichtenstein, 1823; *O. tenuirostris* Blyth, 1846; *O. xanthonotus* Horsfield, 1821; *Specotheres vieilloti flaviventris* Gould, 1850], suggesting that the genus is prevalent throughout members of the Oriolidae. In the phylogeny of Bush *et al*. (2016), material from *Cinclocoma punctatum* (Shaw, 1784)—a member of the host family Cinclosomatidae—was nested within *Maculinirmus*. This material is very aberrant, but recognizably as a member of *Maculinirmus.* The relationship between the Oriolidae and *Cinclosoma* is not clear (Norman *et al.* 2009).

Geographical range. Africa, Eurasia, and Oceania.

Remarks. Złotorzycka's (1964a) original description of *Maculinirmus* is not useful, focusing almost entirely on pigmentation patterns rather than morphological structures. Apart from photos, the only illustration is of the male genitalia, and these are unrecognizable. While pigmentation patterns are a good indicator of species differences within *Maculinirmus* and many other genera treated here, they are generally poor genus-level traits.

Mey & Barker (2014: 108) gave four morphological characters to separate *Maculinirmus* from other genera in the *Brueelia*-complex. Two of them—lack of sexual dimorphism in size and lack of pigmentation—are less useful than the other two, as all species examined by us (including the type species and several undescribed species) are sexually dimorphic in size (see Figs 196–197, 203–204), and similar pigmentation patterns can be found also in *Indoceoplanetes* and *Guimaraesiella.*

Several species of the Oriolidae are hosts to one species of *Maculinirmus* and one of *Guimaraesiella* together, both of which are more or less translucent, and have similar preantennal structures. Hence, a study of the male genitalia, chaetotaxy, and other characters is necessary to distinguish them.

Included species
Maculinirmus ljosalfar* **new species
***Maculinirmus mundus* (Nitzsch [in Giebel], 1866: 366) [in *Nirmus*]**

***Maculinirmus mundus* (Nitzsch [in Giebel], 1866)**

(Figs 196–202)

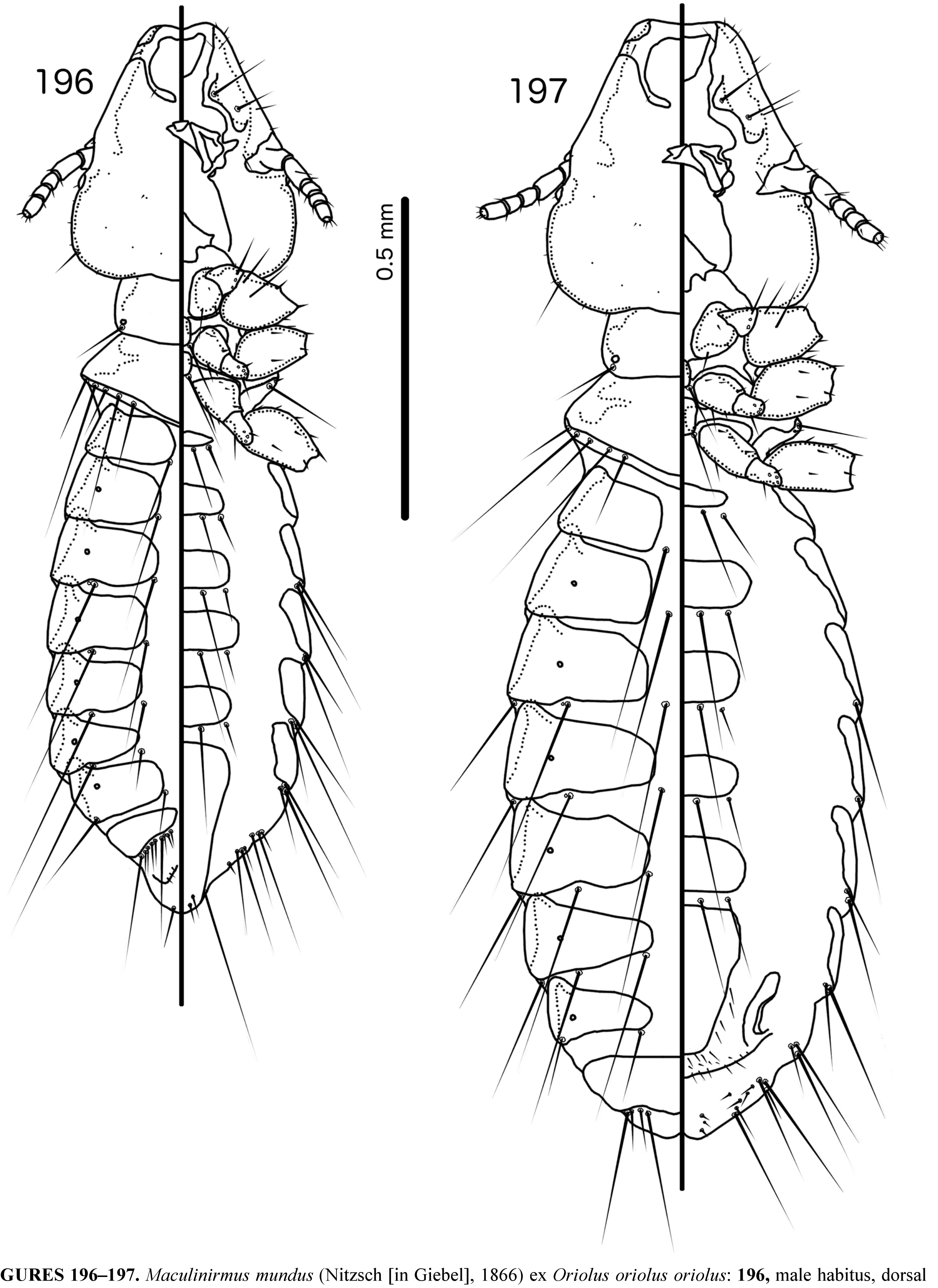
Nirmus mundus Nitzsch [in Giebel], 1866: 366.
Degeeriella munda (Nitzsch [in Giebel], 1866); Harrison, 1916: 118.
Brueelia munda (Nitzsch [in Giebel], 1866); Hopkins & Clay, 1952: 58.
Maculinirmus mundus (Nitzsch [in Giebel], 1866); Złotorzycka, 1964a: 248.

Type host. *Oriolus oriolus* (Linnaeus, 1758)—Eurasian golden oriole.
Type locality. None given, probably Germany.

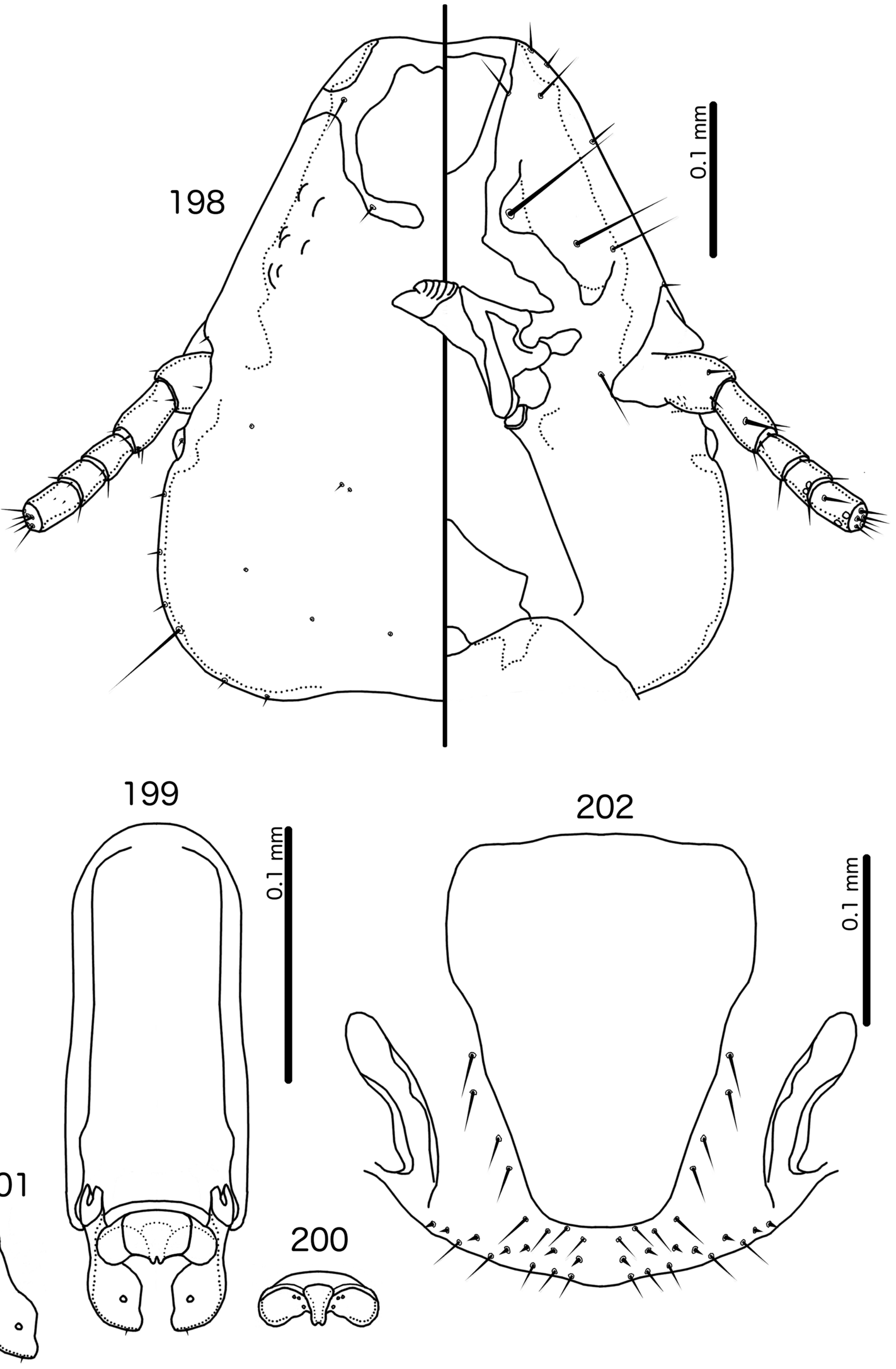
Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 198. Ventral anterior plate somewhat elongate. Preantennal nodi slender. Gular plate broad, short, with prominent median point. Head largely translucent, except preantennal, pre- and postocular nodi, gular plate, and parts of mandibles with dark pigmentation. Thoracic and abdominal segments as in genus description and Figs 196–197. Body almost entirely translucent, except proepimera, metepisterna; lateral tergopleurites III–VIII with dark pigmentation. Tergopleurite II in some specimens with slight dark pigmentation laterally.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 196. Male genitalia typical for genus (Fig. 199). Basal apodeme rounded rectangular. Proximal mesosome gently rounded, short. Gonopore (Fig. 200) as subparallel convergent submedian thickenings, widely open proximally and moderately open distally. Mesosomal lobes wide, short, rounded; 2 *pmes* sensilla visible on each lobe proximally and 1 *pmes* visible distally; distal *pmes* may be microseta. Parameral heads (Fig. 201) folded into distinct U-shape, overlapping with basal apodeme. Parameral blades wide, blunt; *pst1–2* as in genus description. Measurements ex *Oriolus oriolus* (n = 7): TL = 1.30–1.42; HL = 0.37–0.40; HW = 0.34–0.37; PRW = 0.21–0.24; PTW = 0.31–0.34; AW = 0.43–0.48.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 197. Subgenital plate vaguely pigmented, gently rounded distally (Fig. 202). Vulval margin (Fig. 202) gently rounded, with 5–6 short, slender *vms* on each side, and



FIGURES 196–197. *Maculinirmus mundus* (Nitzsch [in Giebel], 1866) ex *Oriolus oriolus oriolus*: **196,** male habitus, dorsal and ventral views. **197,** female habitus, dorsal and ventral views.



FIGURES 198–202. *Maculinirmus mundus* (Nitzsch [in Giebel], 1866) ex *Oriolus oriolus oriolus*: **198,** male head, dorsal and ventral views. **199,** male genitalia, dorsal view. **200,** male mesosome, ventral view. **201,** male paramere, dorsal view. **202,** female subgenital plate and vulval margin, ventral view.

7–8 (one specimen with 12–14) short, thorn-like *vss* on each side; 7–8 long, slender *vos* on each side; distal 3–4 *vos* form transverse row just proximal of *vss*. Measurements ex *Oriolus oriolus* (n = 15): TL = 1.54–1.69 (1.60); HL = 0.38–0.43 (0.41); HW = 0.37–0.42 (0.39); PRW = 0.22–0.27 (0.24); PTW = 0.35–0.40 (0.37); AW = 0.49–0.59 (0.53).

Material examined. (non-types). **Ex *Oriolus oriolus*:** 1♂, 1♀, Zawiercie, [Zawiercie County, Silesian Voivodeship,] Poland, Aug. 1955, Dybrowski, 3/a/2-4 or 3/a/2-12 (OSUS); 1♀, Egypt, Apr. 1948, R. Meinertzhagen, 17655 (NHML); 1♂, 1♀, Seltufjordur [?], Faroe Islands, Denmark, 4 May 1997, J.V. Jensen, AI.015749 (MONZ); 1♂, 1♀, Zawiercie, [Zawiercie County, Silesian Voivodeship,] Poland, Aug. 1955, Dybrowski, 3/a/2-7 or 3/a/2-9 (MFNB); 1♂, 1♀, Eichler Collection, 1474 (MFNB); 2♂, 1♀, Medvode, Slovenia, 18 Jul. 1955, S. Brelih, 30, 201, 1575 (PMSL); 1♂, 4♀, Sentjur, Celje, Slovenia, 18 Jun. 1951, S. Brelih, 2677–81 (PMSL); 1♂, 3♀, Borovicna, Slovenia, 8 Jul. 1953, S. Brelih, 2673–6 (PMSL); 1♂, Okolica, Ljubljana, Slovenia, 25 Aug. 1953, S. Brelih, 2683 (PMSL); 1♀, Ribnica, Slovenia, 10 May 1954, S. Brelih, 6324 (PMSL); 1♂, Zawiercie, [Zawiercie County, Silesian Voivodeship,] Poland, 4 Aug. 1955, J. Złotorzycka, 8452 (PMSL); 1♀, Ribnica, Slovenia, 10 May 1954, S. Brelih, 6323 (PMSL); 1♀, Ribnica, Slovenia, 10 May 1954, S. Brelih, 6322 (NMNH); 1♂, Okolica, Ljubljana, Slovenia, 25 Aug. 1953, S. Brelih, 2682 (NMNH); 1♂, 1♀, Faroe Islands, 4 May 1996, J.-K. Jensen (MONZ).

Remarks. Due to the lack of pigmentation of this species, the exact extent of sternal plates is very difficult to ascertain, and have been illustrated here as accurately as possible.

Maculinirmus ljosalfar Gustafsson & Bush, new species

(Figs 203–209)

Type host. *Oriolus chinensis diffusus* Sharpe, 1877—black-naped oriole.
Type locality. Muang Kluang, Kapoe District, Ranong Province, Thailand.

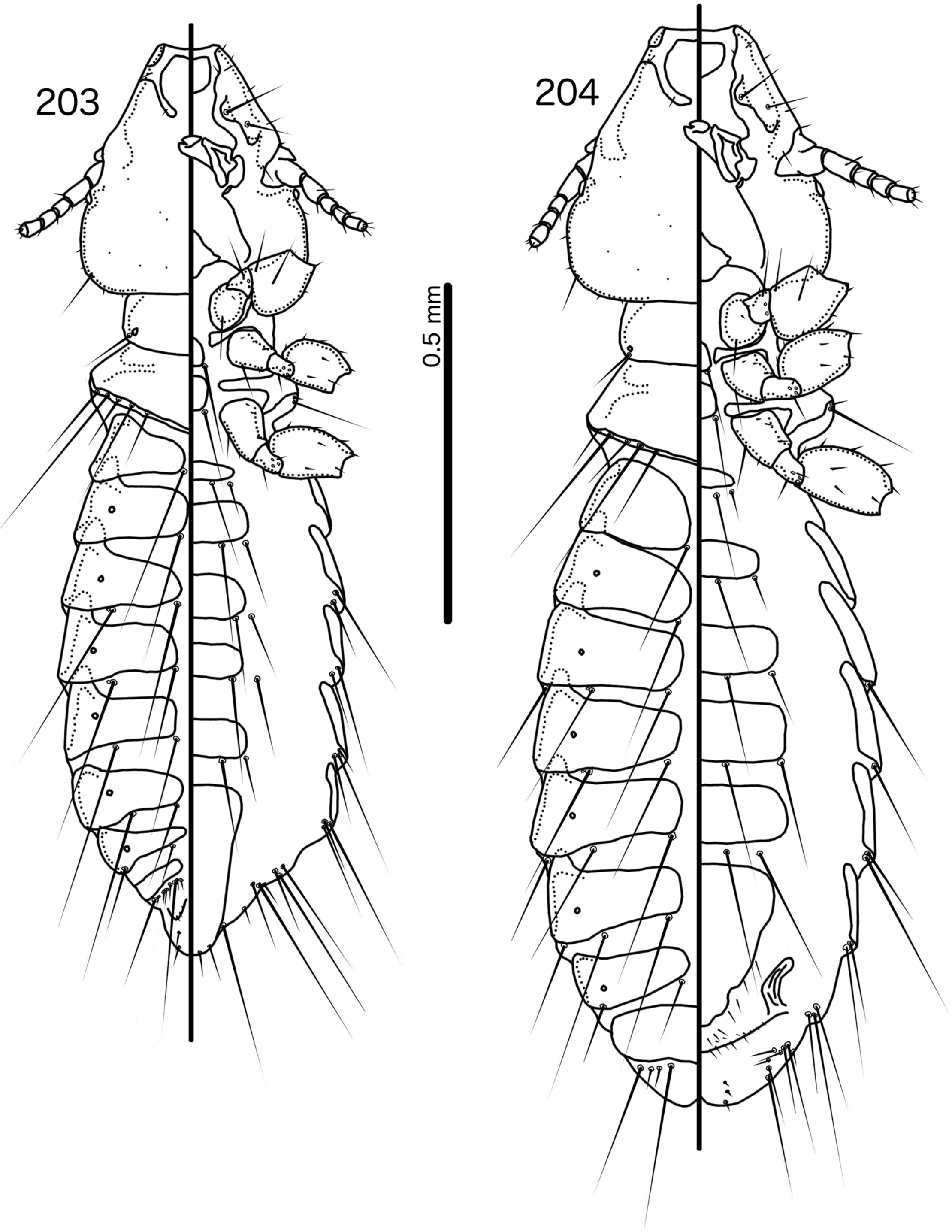
Diagnosis. *Maculinirmus ljosalfar* **n. sp.** is separated from *Ma. mundus* by the following characters: frons wider and more deeply concave in *Ma. ljosalfar* (Fig. 205) than in *Ma. mundus* (Fig. 198); anterior margin of dorsal anterior plate narrow, irregular in *Ma. mundus*, wide and concave in *Ma. ljosalfar*; proximal mesosome long, narrowed anteriorly in *Ma. ljosalfar* (Fig. 207) but short and gently rounded in *Ma. mundus* (Fig. 200); mesosomal lobes with hook on distal margin in *Ma. ljosalfar*, but gently rounded in *Ma. mundus*; female subgenital plate of *Ma. mundus* (Fig. 202) trapezoidal, about half as wide distally as proximally, whereas in *Ma. ljosalfar* the plate is more triangular (Fig. 209), and distal margin is less than a fourth as wide as proximal margin. Vulval chaetotaxy overlaps.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and similar to Fig. 205. Ventral anterior plate short, rounded. Gular plate short, with prominent median point. Head largely translucent, except preantennal nodi with dark pigmentation, and posterior section of marginal carina, pre-and postocular nodi, gular plate, and parts of mandibles with moderate pigmentation. Thoracic and abdominal segments as in genus description and Figs 203–204. Body almost entirely translucent, except proepimera, metepisterna, and parts of pleurites with moderate pigmentation.

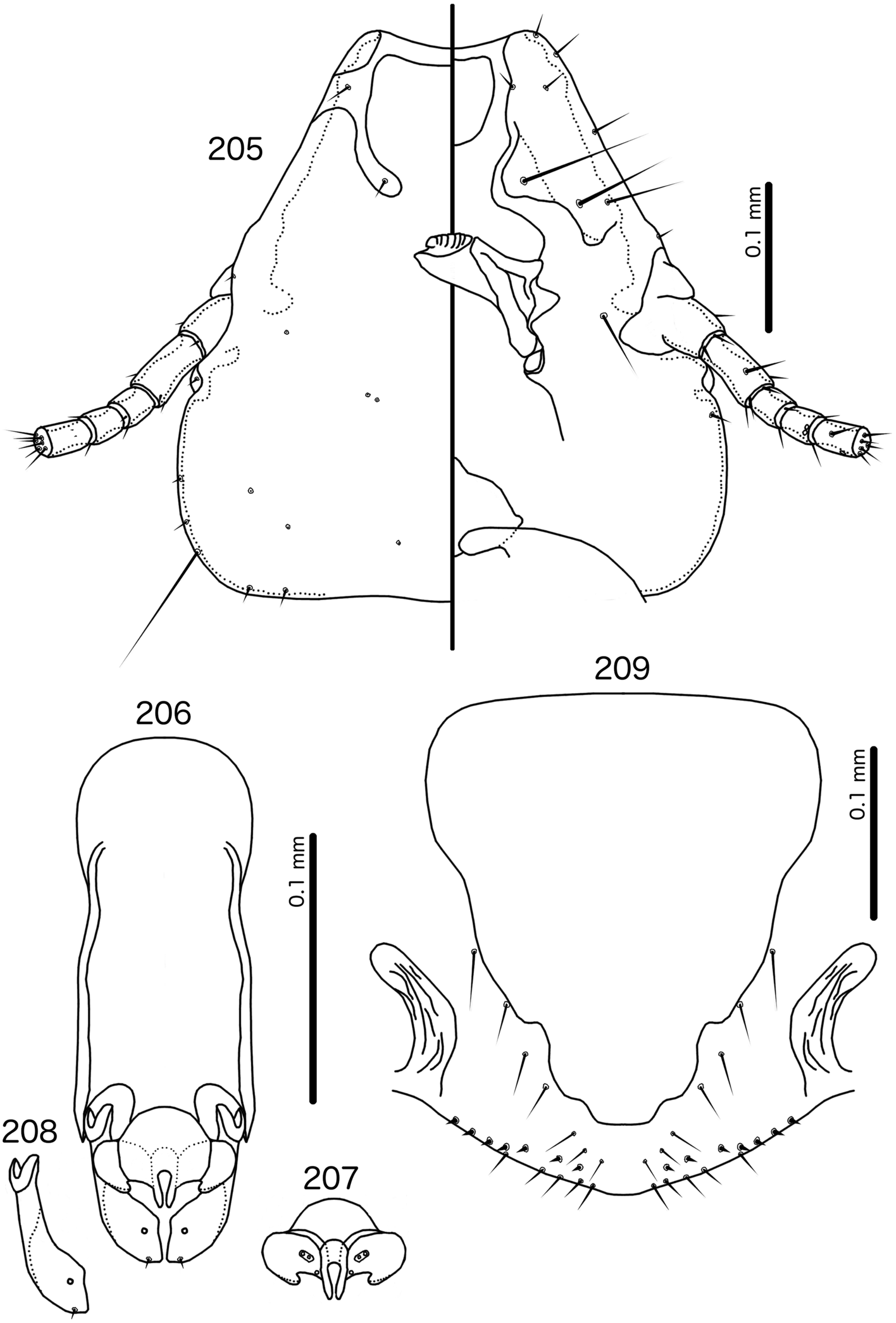
Male. Pleurites III–VIII with moderate pigmentation in at least anterior end, more extensive in more posterior segments. Abdominal chaetotaxy as in Table 2 and Fig. 203. Male genitalia typical for genus (Fig. 206). Basal apodeme rounded rectangular. Proximal mesosome comparatively long, rounded. Gonopore (Fig. 207) as subparallel sclerites, open distally and proximally, but with ventral connecting ridge proximally. Mesosomal lobes wide, short, rounded, with distinct hook at distal margin; 2 *pmes* sensilla visible lateral to gonopore and 1 *pmes* sensillus visible distally on each side; distal *pmes* may be microseta. Parameral heads (Fig. 208) folded into distinct U-shape, overlapping with basal apodeme. Parameral blades wide, blunt; *pst1–2* as in genus description. Measurements ex *Oriolus chinensis diffusus* (n = 8, except n = 7 for TL): TL = 1.31–1.56; HL = 0.37–0.42; HW = 0.35–0.41; PRW = 0.21–0.25; PTW = 0.31–0.36; AW = 0.41–0.53.

Female. Pigmentation of pleurites paler, less extensive than in male, and entirely absent on segments III–IV in some specimens. Abdominal chaetotaxy as in Table 2 and Fig. 204. Subgenital plate narrows distally (Fig. 209). Vulval margin (Fig. 209) gently rounded, with 4–6 short, slender *vms* on each side, and 7–8 short, thorn-like *vss* on each side; 5–6 slender *vos* on each side; distal 2–3 *vos* just proximal to *vss*. Measurements ex *Oriolus chinensis* *diffusus* (n = 10 except n = 9 for HW): TL = 1.43–1.88 (1.61); HL = 0.41–0.47 (0.43); HW = 0.37–0.46 (0.40); PRW = 0.23–0.27 (0.25); PTW = 0.34–0.40 (0.37); AW = 0.43–0.61 (0.51).

Etymology. The species epithet is derived from Old Norse "*ljósálfar*", meaning "light-elves". These, according to the *Prose Edda* (Sturluson ca. 1220), are "fairer than the sun to look at", and are traditionally small, light creatures that are ambiguous as to "good" or "evil". Elves are generally depicted, in the Nordic tradition, as white, almost translucent creatures [see, for instance, the painting "Elfplay" (1866) by August Malmström (1829–1901)], and this seems a fitting attribute for this, the least pigmented of the *Maculinirmus* species examined by us, including several undescribed species. It is a noun in apposition.



FIGURES 203–204. *Maculinirmus ljosalfar* **n. sp.** ex *Oriolus chinensis diffusus*: **203,** male habitus, dorsal and ventral views. **204,** female habitus, dorsal and ventral views.



FIGURES 205–209. *Maculinirmus ljosalfar* **n. sp.** ex *Oriolus chinensis diffusus*: **205,** male head, dorsal and ventral views. **206,** male genitalia, dorsal view. **207,** male mesosome, ventral view. **208,** male paramere, dorsal view. **209,** female subgenital plate and vulval margin, ventral view.

Type material. Ex ***Oriolus chinensis diffusus***: **Holotype** ♂, Muang Kluang, Kapoe District, Ranong Province, Thailand, 19 Jan. 1963, W. Songprakob, RE-7023–4 (NHML). **Paratypes:** 1♀, same data as holotype (NHML); 6♂, 10♀, same data as holotype, RE-7023 on most slides (PIPeR)

Titanomessor Gustafsson & Bush, new genus

Type species. *Titanomessor sexloba* **new species**

Diagnosis. *Titanomessor* **n. gen.** is separated from all other genera treated here by the unique male genitalia and the fact that *mts3–4* in both sexes, as well as *mts5* in males, are all of equal length, and much longer than *mts1–2*. Within the *Brueelia*-complex, *Harpactrox* **n. gen.** (Figs 248, 255, 260) is the only other genus that has a transversal dorsal preantennal suture, but these two genera are otherwise not similar in head chaetotaxy or structure, abdominal chaetotaxy, or the structure of the male genitalia.

Overall, the genus most similar to *Titanomessor* is *Indoceoplanetes* **n. gen.**, particularly *In.* (*Indoceoplanetes*) **n. subgen.** These two genera have similar abdominal chaetotaxy (Table 2), except that *tps* are present in more anterior segments in males of *In.* (*Indoceoplanetes*) (Fig. 217) than in males of *Titanomessor* (Fig. 210). In both *In.* (*Indoceoplanetes*) (Fig. 219) and *Titanomessor* (Fig. 212), the marginal carina is uninterrupted but displaced at osculum, the female submarginal plate is broad distally, and approaches but does not reach the vulval margin (Figs 216, 223). In both genera, *mts5* and sometimes *mts4* are typically clearly dorsal, rather than marginal. However, there are large differences between the two groups. There is no dorsal preantennal suture in *In.* (*Indoceoplanetes*) (Fig. 219), but there is in *Titanomessor* (Fig. 212). In *Titanomessor* (Figs 210–211) *mts3–5* in male and *mts3–4* in female are mesosetae, whereas *mts3* is a macroseta and *mts4–5* in both sexes are microsetae in *In.* (*Indoceoplanetes*) (Figs 217–218). In females of *In.* (*Indoceoplanetes*) (Fig. 218) tergopleurite XI is not fused to tergopleurite IX+X, but these plates are fused in *Titanomessor* (Fig. 211). Finally, the male genitalia are very different between these two groups. The parameres in *In.* (*Indoceoplanetes*) (Fig. 222) are curved, wheras in *Titanomessor* (Fig. 215) the parameres are straight and convergent, and the structure of the mesosome of both genera are very different (*cf.* Fig. 214 with Fig. 221).

In *Indoceoplanetes* (*Capnodella*) **n. gen. et n. subgen.** female tergopleurite IX+X is fused to tergopleurite XI (Figs 225, 232) as in *Titanomessor* (Fig. 211), but unlike in *Titanomessor* (Fig. 212), the dorsal preantennal suture of *In.* (*Capnodella*) (Figs 226, 233) is longitudinal rather than latitudinal, and does interrupt the marginal carina submedianly. Male *In.* (*Capnodella*) also lack *tps* (Figs 224, 231), which are present in male *Titanomessor* (Fig. 210), and while both *In.* (*Indoceoplanetes*) (Fig. 219) and *Titanomessor* (Fig. 212) lack a ventral anterior plate, this is present in *In.* (*Capnodella*) (Fig. 226).

The large size (see Measurements below) and the shape of the mesomere (Fig. 214) suggests that *Titanomessor* could be closely related to *Turdinirmus* (Fig. 186). Abdominal chaetotaxy is identical between the two genera (Table 2), except for the presence of *tps* on male tergopleurites VII–VIII in *Titanomessor* (Fig. 210), which are absent in all *Turdinirmus*. The marginal thickening of the mesosomal lobes of both genera do not deviate from the margin (Figs 186, 214), and in both genera the gonopore consists of a pair of convergent ventral thickenings. However, parameral shape differs between these two genera, and while *pst1* is present in *Turdinirmus* (Fig. 186), it is absent in *Titanomessor* (Fig. 214). Preantennal structure also differs between the two, as the marginal carina is interrupted at least submedianly in *Turdinirmus* (Fig. 184), but not in *Titanomessor* (Fig. 212), and the dorsal preantennal suture is structured differently in the two genera.

For differences between *Titanomessor* and *Maculinirmus*, see the diagnosis of *Maculinirmus* above.

Description. ***Both sexes***. Head rounded pentagonal, very broad (Fig. 212). Marginal carina broad, narrowing anteriorly, not interrupted, but displaced posteriorly and dorsally at osculum. Frons hyaline. Ventral carinae broad, diffuse anterior to pulvinus and not clearly continuous with marginal carina. Dorsal preantennal suture transversal, seemingly reaching *dsms* and maybe *ads*, but this cannot be established with certainty due to the state of examine dmaterial. Suture does not reach lateral margins of head. Dorsal anterior plate connected to main head plate laterally. Ventral anterior plate absent. Head chaetotaxy as in Fig. 212; *as3* present; *pns, pts,* and *s1–4* not visible in the material examined; *pos* posterior to eye, ventral. Ventral anterior plate absent. Coni short, blunt. Antennae monomorphic. Marginal and occipital carinae not visible. Marginal temporal carina very narrow. Uniquely in complex, *mts* are sexually dimorphic: in males *mts3–5* long, of roughly equal length, in females *mts3–4* long, of roughly equal length, and *mts5* thorn-like; in both sexes *mts4–5* often clearly dorsal. Gular plate broad, diamond-shaped.

Prothorax (Figs 210–211) rectangular; *ppss* on postero-lateral corner. Proepimera and metepisterna with blunt median ends. Pterothorax roughly trapezoidal; lateral margins divergent, posterior margin gently rounded; *mms* widely separated medianly. Meso- and metasterna not fused, 1 seta on postero-lateral corner on each side of each plate. Leg chaetotaxy as in Fig. 25, except *fI-p2, fI-v4* absent; *fII-a2, fIII-a2* dorsal.

Abdomen (Figs 210–211) oval. Distal end of abdomen bulging in male. Tergopleurites rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly separated medianly. Female tergopleurites IX+X and XI fused medianly. Sternal plates narrow, lateral margins rounded. Sternal plates II–IV translucent and illustrated approximately. Pleural incrassations moderate to large. Re-entrant heads large, blunt, translucent. Abdominal chaetotaxy as in Table 2. Male subgenital plate oblong, narrowing distally, and reaching distal part of abdomen. Female subgenital plate slender, roughly rectangular, narrowing only slightly posteriorly, approaching vulval margin. Vulval margin (Fig. 216) gently rounded, with slender *vms*, thorn-like *vss*; slender *vos* follow lateral margins of subgenital plate, *vos* typically in two parallel rows; distal *vos* median to *vss*.

Male genitalia (Fig. 213–215) unique within *Brueelia*-complex. Basal apodeme (Fig. 213) slender, roughly rectangular, anterior margin rounded. Proximal mesosome (Fig. 214) broadly flattened. Gonopore open distally and proximally, as broad convergent thickenings; protruding distally to lobes. Mesosomal lobes angular, in some specimens slightly rugose distally; 2 *pmes* sensilla visible on mesosome lateral to gonopore and near lateral margins. Parameral heads (Fig. 215) blunt. Parameral blades as fleshy lobes, converging distal to mesosome. Parameral blades rounded distally; *pst1* not visible; *pst2* as microseta on distal end of paramere.

Host distribution. Presently know only from the type host, *Laniarius erythrogaster*, belonging to the Malaconotidae. We have examined lice from the following malaconotid hosts: *Dryoscopus cubla hamatus* Hartlaub, 1863, *Dryoscopus gambensis gambensis* (Lichtenstein, 1832), *Laniarius major major* (Hartlaub, 1848), *Laniarius major mossambicus* (Fischer and Reichenow, 1880), *Malaconotus blanchoti hypopyrrhus* Hartlaub, 1844, *Malaconotus cruentus* (Lesson, 1831), *Malaconotus blanchoti blanchoti* Stephens, 1826, *Tchagra senegalus armenus* (Oberholser, 1906), *Tchagra senegalus cucullatus* (Temminck, 1840), *Telophorus nigrifrons sandgroundi* (Bangs, 1931), *Telophorus sulfureopectus similis* (Smith, A., 1936). However, all this material belongs to *Guimaraesiella* rather than *Titanomessor*, making the occurrence of *Ti. sexloba* unique within the host family. The material we have examined is from two different collection events, suggesting that *L. erythrogaster* is the correct host.

Geographical range. Known only from Uganda, but the host genus Laniarius occurs across most of Sub-Saharan Africa (Harris & Franklin, 2000).

Etymology. The genus name derived from Greek "*titan*" for the large size of these lice, combined with Latin "*messor*" for "harvester". Gender: masculine.

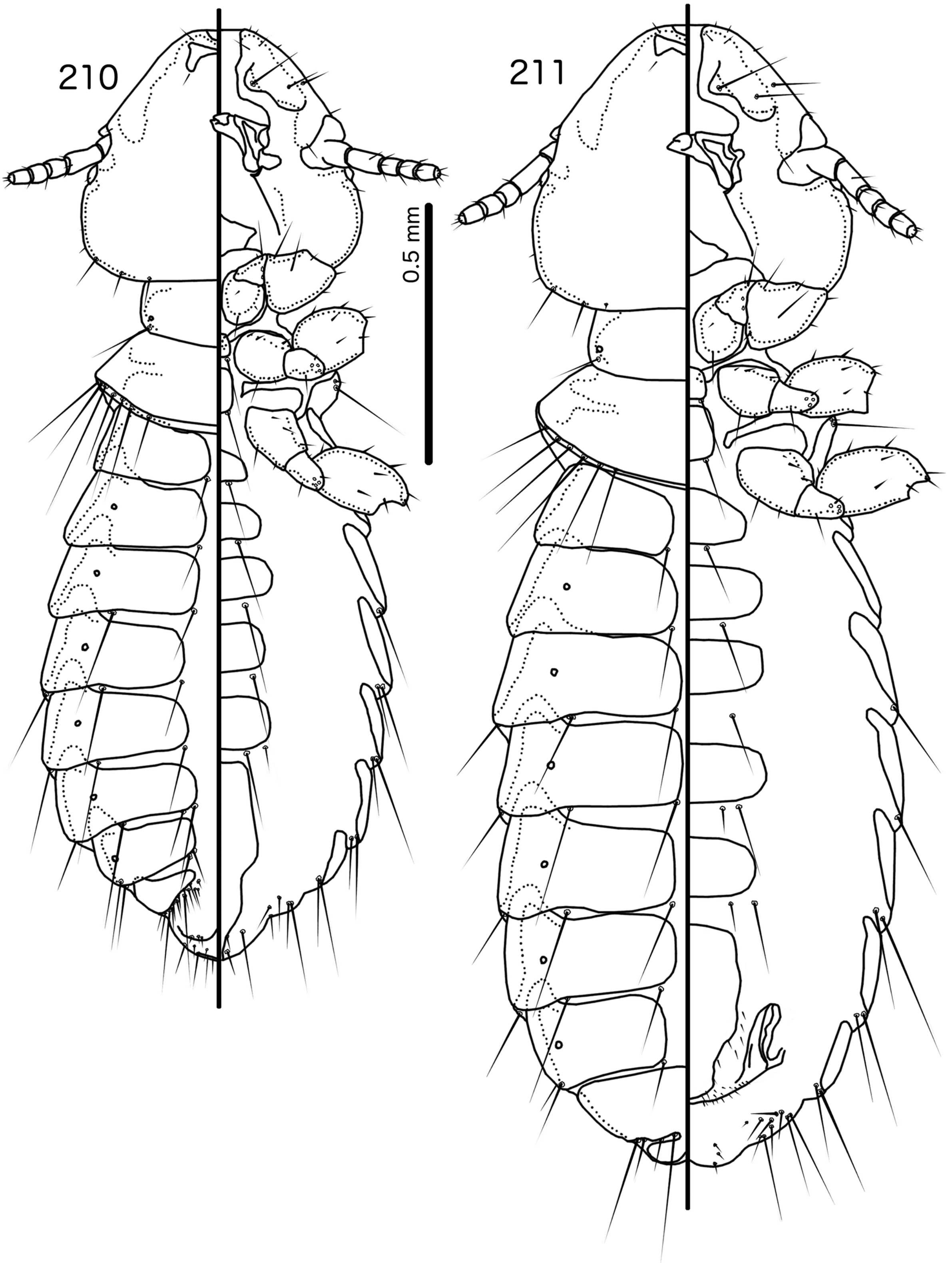
Remarks. *Titanomessor sexloba* **n. sp.** was not included in the phylogeny of Bush *et al.* (2016), and its affinities within the *Brueelia*-complex are unknown. The great differences in the male genitalia between *Titanimessor* and all other genera treated here makes the genus hard to place, but abdominal chaetotaxy and overall pigmentation patterns are very similar to those of *Maculinirmus*, *Turdinirmus*, and *Indoceoplanetes*.

Included species
**Titanomessor sexloba* n. sp.

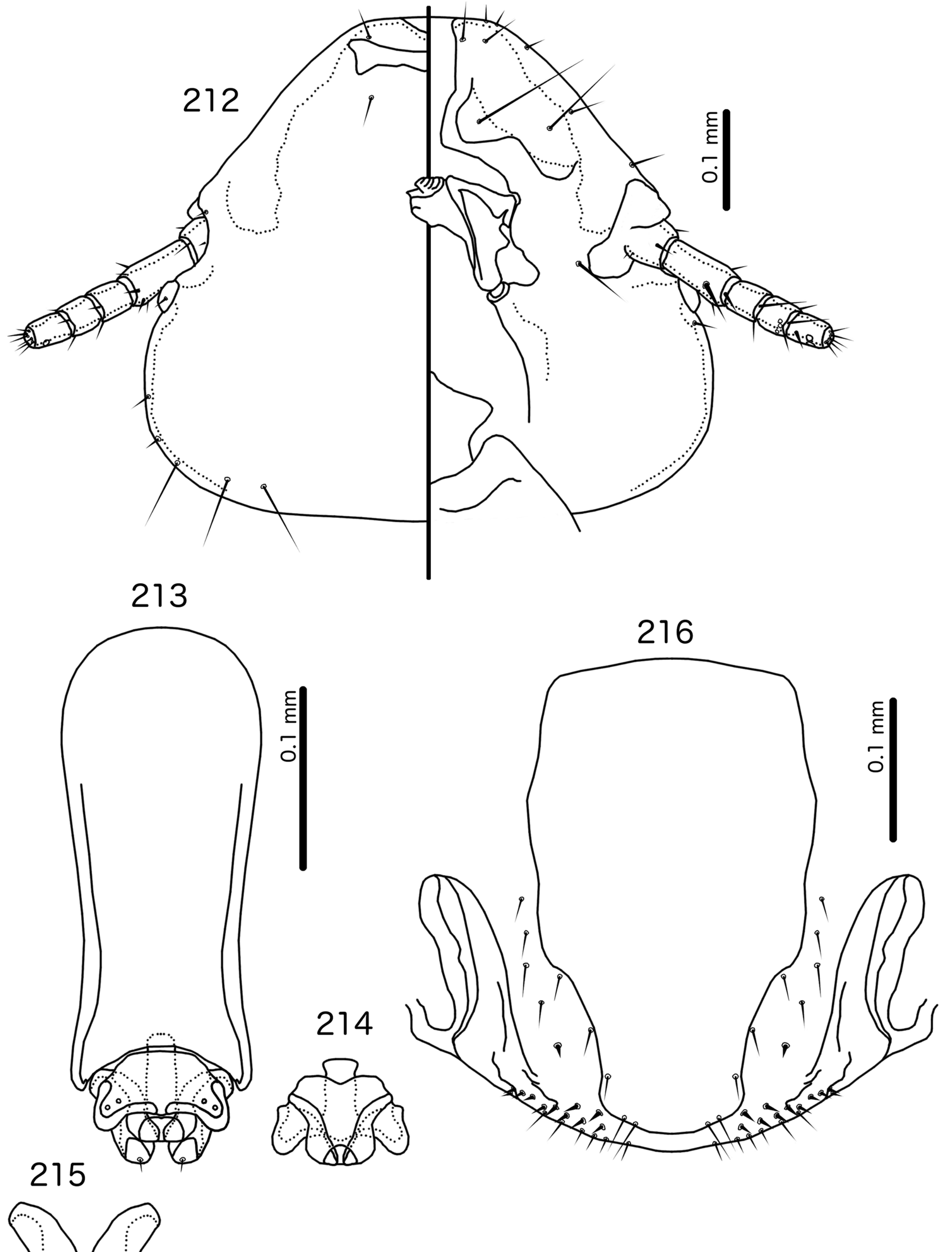
Titanomessor sexloba Gustafsson & Bush, new species
(Figs 210–216)

Type host. *Laniarius erythrogaster* (Cretzschmar, 1829)—black-headed gonolek.
Type locality. Uganda.

Diagnosis. *Titanomessor sexloba* **n. sp.** is separated from all other known species of the *Brueelia*-complex by the shape and structure of the male parameres (Fig. 215), the transversally continuous dorsal preantennal suture that does not reach the margin of the head (Fig. 212), and the sexually dimorphic *mts* (see below).



FIGURES 210–211. *Titanomessor sexloba* **n. gen. & n. sp.** ex *Laniarius erythrogaster*: **210,** male habitus, dorsal and ventral views. **211,** female habitus, dorsal and ventral views.



FIGURES 212–216. *Titanomessor sexloba* **n. gen. & n. sp.** ex *Laniarius erythrogaster*: **212,** male head, dorsal and ventral views. **213,** male genitalia, dorsal view. **214,** mesosome, ventral view. **215,** parameres, dorsal view. **216,** female subgenital plate and vulval margin, ventral view. Scale for parameres same as for male genitalia.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 212. Dorsal preantennal suture irregular, often with diffuse margins, but does not seem to reach either *ads* or *dsms*. We have examined both male and female specimens in which the *mts* chaetotaxy is different from that given in the genus description. Specifically, in some female specimens *mts5* is as long as *mts3–4*, and in some male specimens either *mts4* or *mts5* are spine-like, but these specimens are aberrant only on one side of the head. Head largely pale, except median margin of marginal carina, parts of mandibular framework, preocular nodi, occipital carinae, and gular plate with medium-brown pigmentation. Pedicel and flagellomeres I–II with light brown pigmentation. Thoracic and abdominal segments as in genus description and Figs 210–211. Thorax with only proepimera and metepisterna with brown pigmentation, otherwise translucent. Tergopleurites translucent. Sternal plates, pleurites, and subgenital plates of both sexes with light brown pigmentation.

Male. Distal part of subgenital plate translucent. Abdominal chaetotaxy as in Table 2 and Fig. 210. Male genitalia as in genus description and Figs 213–215. Proximal mesosome somewhat variable between specimens, rounded to flat; *pmes* not visible in all specimens, including holotype. Measurements ex *Laniarius erythrogaster* (n = 6 except n = 5 for TL): TL = 1.75–1.92; HL = 0.47–0.50; HW = 0.53–0.56; PRW = 0.30–0.32; PTW = 0.48–0.51; AW = 0.65–0.72.

Female. Posterior and median sections of tergopleurite IX+X with pale brown pigmentation. Abdominal chaetotaxy as in Table 2 and Fig. 211. Subgenital plate irregularly rectangular, not reaching vulval marin (Fig. 216). Vulval margin gently rounded (Fig. 216), with 5–8 short, slender *vms* on each side, and 12–16 short, thorn-like *vss* on each side. 6–10 long, slender *vos*; distal 1–2 *vos* median to *vss*. Some examined females (3 of 7) with 1–2 thorn-like setae lateral to *vos* on one side as in Fig. 216; these thorn-like setae are missing entirely in the remaining 4 females. Measurements ex *Laniarius erythrogaster* (n = 7): TL = 1.92–2.20; HL = 0.52–0.56; HW = 0.58–0.62; PRW = 0.34–0.38; PTW = 0.52–0.57; AW = 0.69–0.80.

Etymology. The species epithet is formed by Latin "*sex*" for "six" and "*lobus*" for "lobes", referring to the six lobes of the male genitalia (Figs 213–215).

Type material. Ex ***Laniarius erythrogaster*****: Holotype** ♂, Uganda, Apr. 1936, R. Meinertzhagen, 7736 (NHML). **Paratypes:** 5♂, 6♀, same data as holotype, 7735–6 (NHML).

Indoceoplanetes Gustafsson & Bush, new genus

Brueelia Kéler, 1936a: 257 (*in partim*).

Type species. *Brueelia indonesiana* Eichler, 1947: 8

Diagnosis. The head of *Indoceoplanetes* **n. gen.** (Figs 219, 226, 233) is superficially similar to that of *Brueelia* s. str. (Fig. 44) and *Sychraella* **n. gen.** (Fig. 108); these genera all share the uninterrupted marginal carina displaced at osculum that widens into a marginal carinal plate, a narrow hyaline margin, and a similar general head shape. However, these three genera differ in other characteristics. For instance, while *as3* and *pns* are absent in *Brueelia* s. str. (Fig. 44) and *Sychraella* **n. gen.** (Fig. 108), both are present in *Indoceoplanetes* (Figs 219, 226, 233), and the abdominal chaetotaxy of the three genera are very dissimilar (Table 2). The female subgenital plate of *Brueelia* s. str. (Fig. 48) reaches the vulval margin and flares into a cross-piece, but this is not the case in *Indoceoplanetes* (Figs 223, 230, 237). The female subgenital plate does not reach the vulval margin in *Sychraella* either (Fig. 113), but in this genus there is a detached laterally submarginal cross-piece that is absent in *Indoceoplanetes* (Figs 223, 230, 237).

Despite these similarities, genetic (Bush *et al*. 2016) and morphological evidence places *Indoceoplanetes* closer to *Maculinirmus, Turdinirmus*, and *Titanomessor* **n. gen.** These four genera share the following characters: *aps* absent in both sexes; antennae monomorphic; *fII-v2* and *fIII-v2* present; female subgenital plate does not flare into cross-piece; mesosomes with pronounced mesosomal lobes and gonopores that are open both distally and proximally; *as3* present.

Indoceoplanetes can be separated from *Maculinirmus* by the following characters: *pns* mesosetae in *Indoceoplanetes* (Figs 219, 226, 233), but microsetae in *Maculinirmus* (Fig. 198); parameral heads folded into U-shaped in *Maculinirmus* (Fig. 201) but blunt in *Indoceoplanetes* (Figs 222, 229, 236); abdominal segment II with multiple *sts* on each side in both sexes of *Maculinirmus* (Figs 196–197), but with only one seta on each side in *Indoceoplanetes* (Figs 217–218, 224–225, 231–232).

Indoceoplanetes can be separated from *Turdinirmus* by the following characters: temples rounded in *Indoceoplanetes* (Figs 219, 226, 233), but angular in *Turdinirmus* (Figs 184, 191); *pns* mesosetae in *Indoceoplanetes* (Figs 219, 226, 233), but microsetae in *Turdinirmus* (Figs 184, 191); dorsal preantennal suture, if present, does not extend median to *ads* in *Indoceoplanetes* (Figs 219, 226, 233), but extends median to *ads* in *Turdinirmus* (Figs 184, 191); parameral heads bifid in *Turdinirmus* (Figs 187, 194), but blunt in *Indoceoplanetes* (Figs 222, 229, 236).

Indoceoplanetes can be separated from *Titanomessor* by the following characters: dorsal preantennal suture, if present, not medianly continuous, and dorsal anterior plate continuous posteriorly with main head plate in *Indoceoplanetes* (Figs 219, 226, 233), but medianly continuous and cutting off dorsal anterior plate posteriorly in *Titanomessor* (Fig. 212); *mts4–5* in male and *mts4* in female mesosetae in *Titanomessor* (Fig. 212), but microsetae in *Indoceoplanetes* (Figs 219, 226, 233); *pos* clearly ventral in *Titanomessor* (Fig. 212), but marginal in *Indoceoplanetes* (Figs 219, 226, 233); parameres of *Indoceoplanetes* (Figs 222, 229, 236) not shaped as those of *Titanomessor* (Fig. 215); gonopore does not flare proximally in *Indoceoplanetes* (Figs 221, 228, 235) as it does in *Titanomessor* (Fig. 214).

Description. ***Both sexes***. Head largely translucent, flat- to convex-dome shape (Figs 219, 226, 233). Frons may be slightly concave. Marginal and ventral carinae prominent. Marginal carina uninterrupted in *Indoceoplanetes* (*Indoceoplanetes*) (Fig. 219), but interrupted submedianly in *In.* (*Capnodella*) (Figs 226, 233). In both subgenera median section is displaced dorsally and posteriorly at osculum. Dorsal preantennal suture absent in *In.* (*Indoceoplanetes*) but present in *In.* (*Capnodella*), reaching *dsms* and *ads* but not medianly continuous, and not interrupting marginal carina laterally. Ventral anterior plate present, crescent-shaped. Ventral carinae may be diffuse anterior to pulvinus, but in *In.* (*Capnodella*) *loboccupatrix* **n. sp.** clearly continuous with marginal carina. Head setae as in Figs 219, 226, 233; *pns* long; *s3* absent. Coni small. Antennae monomorphic. Temporal carinae not visible; *mts3* only long setae. Gular plate broadly triangular.

Prothorax rectangular, largely translucent (Figs 217–218, 224–224, 231–232); *ppss* on poster-lateral corner. Proepimera slender, median ends hook-shaped. Pterothorax pentagonal; lateral margins moderately divergent; posterior margin convergent to median point; *mms* widely interrupted medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna slender, median ends blunt. Metepimera large, rounded, forming node, more median and obvious in *In.* (*Capnodella*) than in *In.* (*Indoceoplanetes*). Leg chaetotaxy as in Fig. 25, except *fI-p2, fI-v4* absent.

Abdomen elongated oval (Figs 217–218, 224–224, 231–232). Tergopleurites bluntly rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly divided medianly; tergopleurites IX+X and XI fused in females of *In.* (*Capnodella*). Sternal plates medianly continuous, not approaching pleurites. Pleural incrassations slender in *In.* (*Indoceoplanetes*), but moderate to wide in *In.* (*Capnodella*). Re-entrant heads modest [*In.* (*Indoceoplanetes*)] to large [*In.* (*Capnodella*)]. Male subgenital plate trapezoidal, reaching terminal end of abdomen. Female subgenital plate (Figs 223, 230, 237) roughly pentagonal, approaching vulval margin. Vulval margin (Figs 223, 230, 237) with few slender *vms*, thorn-like *vss*, typically located lateral to *vss*; *vos* follow lateral margins of subgenital plate; distal *vos* approaching or median to *vss*.

Basal apodeme (Figs 220, 227, 234) roughly rectangular. Proximal mesosome broadly rounded [*In.* (*Indoceoplanetes*)] or small, inconspicuous [*In.* (*Capnodella*)]. Gonopore (Figs 221, 228, 235) as convergent or subparallel thickenings on distal mesosome, open distally and proximally. Mesosomal lobes wide, overlapping slightly with parameres, rounded; distal margins serrated or papillate in *In.* (*Indoceoplanetes*); 1–2 *ames* sensilla ventrally near lateral margin of each mesosomal lobe; 1–2 thorn-like *pmes* dorsally on each side lateral to gonopore, often hidden below median extension of mesosomal lobes; 2 *pmes* microsetae [*In.* (*Indoceoplanetes*)] or 2 *pmes* sensilla [*In.* (*Capnodella*)] on each side, lateral to gonopore. Parameral heads (Figs 222, 229, 236) indistinct, bluntly rounded. Parameral blades broad, translucent; *pst1* sensillus; *pst2* microseta, laterally near distal tip.

Host distribution. Members of this genus are limited to the Campephagidae and widely distributed across species of *Coracina* Vieillot, 1816 and *Edolisoma* Pucheran, 1853. In addition, we have identified as *Indoceoplanetes* material from species of *Lobotos* Reichenbach, 1850 and *Lalage* Boie, 1826. Morphological variation among specimens of *Indoceoplanetes* from different host species within each subgenus is often small.

Geographical distribution. The distribution of *Indoceoplanetes* forms an arch around the Indian Ocean, with (described and undescribed) material from both subgenera known from South-West Africa to the Solomon Islands.

Very little material is known from mainland Asia, but we have seen specimens from Nepal and Thailand, and this apparent gap in the known distribution of *Indoceoplanetes* is likely due to unevenness of sampling.

Etymology. *Indoceoplanetes* is formed by a contraction of the Indian Ocean, and Greek "*planetoi*" for "wanderer". This is meant to convey that the members of this genus appear to occur all around the Indian Ocean. Gender: feminine.

Included subgenera
Indoceoplanetes (*Indoceoplanetes*) **n. subgen.**
Indoceoplanetes (*Capnodella*) **n. subgen.**

Remarks. The two subgenera described here were placed as sister groups in the phylogeny of Bush *et al.* (2016). Individuals of both subgenera are occasionally found in samples from the same host individual, suggesting that there is likely some degree of niche differentiation. These samples also often contain *Guimaraesiella* that has a head shape similar to that of *In.* (*Capnodella*). These can be separated from *In.* (*Capnodella*) by head and abdominal chaetotaxy, male genitalia, and the structure of the preantennal head (see *Guimaraesiella*).

Included species
****Indoceoplanetes* (*Indoceoplanetes*) *indonesiana* (Eichler, 1947: 8) n. comb. [in *Brueelia*]**
Indoceoplanetes* (*Capnodella*) *laurocorythes* **new species
Indoceoplanetes* (*Capnodella*) *loboccupatrix* **new species

Subgenus *Indoceoplanetes* Gustafsson & Bush, new subgenus

Type species. Same as for genus.

Diagnosis. Apart from the characters listed above, members of the subgenus *In.* (*Indoceoplanetes*) can be separated from members of *Maculinirmus, Turdinirmus*, *Titanomessor* and *Indoceoplanetes* (*Capnodella*) as follows:

From *Maculinirmus* by the dorsal preantennal suture present and interrupting marginal carina at least submedianly in *Maculinirmus* (Figs 198, 205), but suture absent and marginal carina uninterrupted in *In.* (*Indoceoplanetes*) (Fig. 219); male *In.* (*Indoceoplanetes*) (Fig. 217) with *tps* on tergopleurites IV–VIII, but no *tps* on any segment in *Maculinirmus* (Figs 196, 203); mesosomal lobes with rugose nodi in *In.* (*Indoceoplanetes*) (Fig. 221), but without rugose nodi in *Maculinirmus* (Figs 200; 207).

From *Turdinirmus* by the dorsal preantennal suture present and interrupting marginal carina at least submedianly in *Turdinirmus* (Figs 184, 191), but suture absent and marginal carina uninterrupted in *In.* (*Indoceoplanetes*) (Fig. 219); male *In.* (*Indoceoplanetes*) (Fig. 217) with *tps* on tergopleurites IV–VIII, but no *tps* on any segment in *Turdinirmus* (Figs 182, 189); mesosomal lobes with median dorsal point in *In.* (*Indoceoplanetes*) (Fig. 220), but without such point in *Turdinirmus* (Figs 185, 192); rugose area of the distal mesosome is not restricted to the submedian section in *In.* (*Indoceoplanetes*) (Fig. 221) as it is in *Turdinirmus* (Figs 186, 193); gonopore flares proximally in *Turdinirmus* (Figs 186, 193), but not in *In.* (*Indoceoplanetes*) (Fig. 221).

From *Titanomessor* by the dorsal preantennal suture absent in *In.* (*Indoceoplanetes*) (Fig. 219), but present in *Titanomessor* (Fig. 212); mesosome with median dorsal points in *In.* (*Indoceoplanetes*) (Fig. 220), but without such points in *Titanomessor* (Fig. 213); rugose nodi present on mesosome in *In.* (*Indoceoplanetes*) (Fig. 221), but absent in *Titanomessor* (Fig. 214); multiple *sts* and *tps* present on male abdominal segments IV–V in *In.* (*Indoceoplanetes*) (Fig. 217), but absent in *Titanomessor* (Fig. 210).

From *In.* (*Capnodella*) by the dorsal preantennal suture absent in *In.* (*Indoceoplanetes*) (Fig. 219), but present in *In.* (*Capnodella*) (Figs 226, 233); marginal carina uninterrupted in *In.* (*Indoceoplanetes*) (Fig. 219), but interrupted submedianly in *In.* (*Capnodella*) (Figs 226, 233); *tps* present on at least some male tergopleurites in *In.* (*Indoceoplanetes*) (Fig. 217), but absent on all tergopleurites in *In.* (*Capnodella*) (Figs 224, 231); both sexes with multiple *sts* on each side on at least segments IV–V in *In.* (*Indoceoplanetes*) (Figs 217–218), but with multiple *sts* only on segment VI in *In.* (*Capnodella*) (Figs 224–225, 231–232).

Description. ***Both sexes***. Approximately 1.5 times as long as *Guimaraesiella* and *In.* (*Capnodella*) on same hosts. Head flat-dome shaped (Fig. 219) with flattened or (in undescribed species) slightly concave frons. Marginal carina uninterrupted, often widened at osculum. Dorsal preantennal suture and dorsal anterior plate absent. Preantennal nodi slender, pointed. Ventral anterior plate absent. Thoracic and abdominal segments as in genus description (Figs 217–218). Re-entrant heads moderate. Abdominal chaetotaxy as in Table 2; *tps* present on male tergopleurites IV–VIII. Both sexes with multiple *sts* on each side on at least some abdominal segments.

Male. Mesosomal lobes with serrated or papillate posterior margins, 2 *pmes* microsetae on each side (Fig. 221).

Female. Vulval margin with very few or no *vss* (Fig. 223).

***Indoceoplanetes* (*Indoceoplanetes*) *indonesiana* (Eichler, 1947)**

(Figs 217–223)

Brueelia indonesiana Eichler, 1947: 8.

Type host. *Coracina striata sumatrensis* (Müller, 1843)—bar-bellied cuckoo-shrike.

Type locality. Laboran [?], Sumatra, Indonesia.

Other hosts. *Coracina striata panayensis* (Steere, 1890)—bar-bellied cuckoo-shrike **new host record.** *Coracina striata difficilis* (Hartert, 1895)—bar-bellied cukoo-shrike **new host record.**

Description. *Both sexes*. Head shape, structure, and chaetotaxy as in genus and subgenus descriptions and as in Fig. 219. Marginal carina widened into marginal carinal plate at osculum. Ventral carinae diffuse anterior to pulvinus. Pre-and postocular nodi connected both dorsally and ventrally. Gular plate bluntly triangular. Head almost entirely translucent, but preantennal, pre-, and postocular nodi, parts of mandibular framework, and gular plate medium brown. Posterior half of marginal carina and at least pedicel and flagellomeres 1–2 pale brown. Thoracic and abdominal segments as in genus and subgenus descriptions and Figs 217–218. Proepimera, metepisterna, and sternal plates pale to medium brown, the rest of body more or less translucent. Pigmentation typically stronger in females than in males.

Male. Sternal plates IV–VI and subgenital plate with medium brown pigmentation, sternal plate III sometimes with very pale brown pigmentation. Abdominal chaetotaxy as in Table 2 and Fig. 217. Genitalia as in Figs 220–222. Basal apodeme slender. Proximal mesosome widely rounded. Gonopore (Fig. 221) as thick, convergent sclerites, open distally and proximally. Mesosomal lobes wide, overlapping partially with parameres dorsally. Distal margin of lobes papillate, with 2 *pmes* microsetae on each side submedianly; these setae are often very hard to see. Parameral heads (Fig. 222) pointed. Parameral blades slender blunt; *pst1* sensillus; *pst2* microseta, lateral near distal tip. Measurements ex *Coracina striata sumatrensis* (n = 1): TL = 1.51; HL = 0.40; HW = 0.36; PRW = 0.21; PTW = 0.32; AW = 0.45. Ex *C. s. difficilis* (n = 4): TL = 1.54–1.69; HL = 0.41–0.42; HW = 0.37–0.40; PRW = 0.23–0.24; PTW = 0.31–0.36; AW = 0.44–0.50.

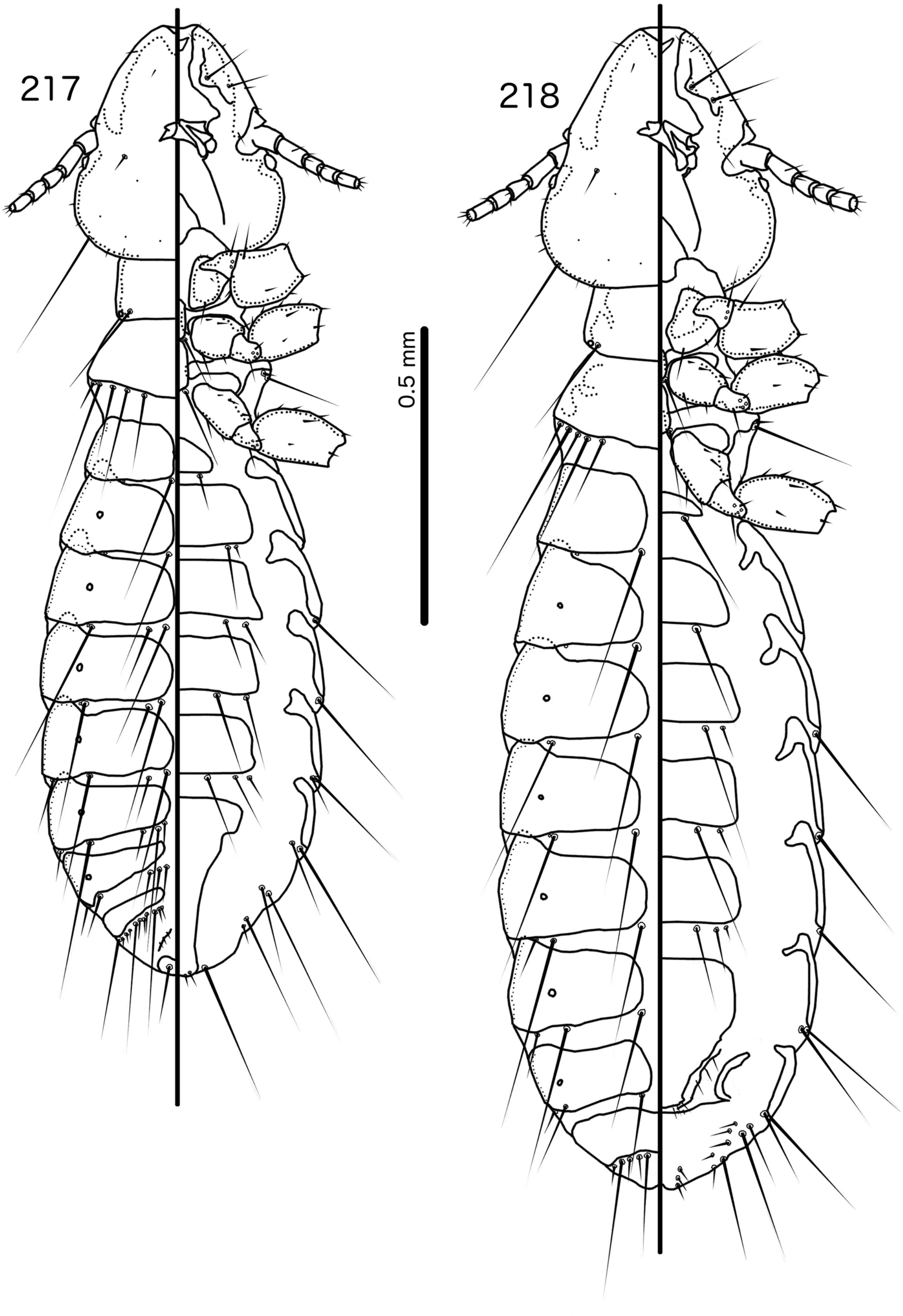
Female. Sternal plates IV–VI and subgenital plate with medium brown pigmentation, sternal plate III with pale brown pigmentation, darker than in male. Abdominal chaetotaxy as in Table 2 and Fig. 218. Subgenital plate broadly pentagonal, but distal margin flat, not reaching vulval margin (Fig. 223). Vulval margin gently rounded (Fig. 223), with 2 (rarely 3) minute *vms* on each side, and 0–1 thorn-like *vss* on each side; 5–6 long, slender *vos*; distal 2–3 *vos* distal to *vss*. Measurements ex *Coracina striata panayensis* (n = 1): TL = 2.02; HL = 0.45; HW = 0.44; PRW = 0.27; PTW = 0.42; AW = 0.56. Ex *C. s. difficilis* (n = 4): TL = 1.89–1.95; HL = 0.42–0.44; HW = 0.38–0.42; PRW = 0.24–0.26; PTW = 0.33–0.37; AW = 0.49–0.56.

Type material. Ex *Coracina striata sumatrensis*: Holotype ♂, Laboran [?], Sumatra, Indonesia, Jul. 1923, [E. Mjöberg], 770 (MFNB).

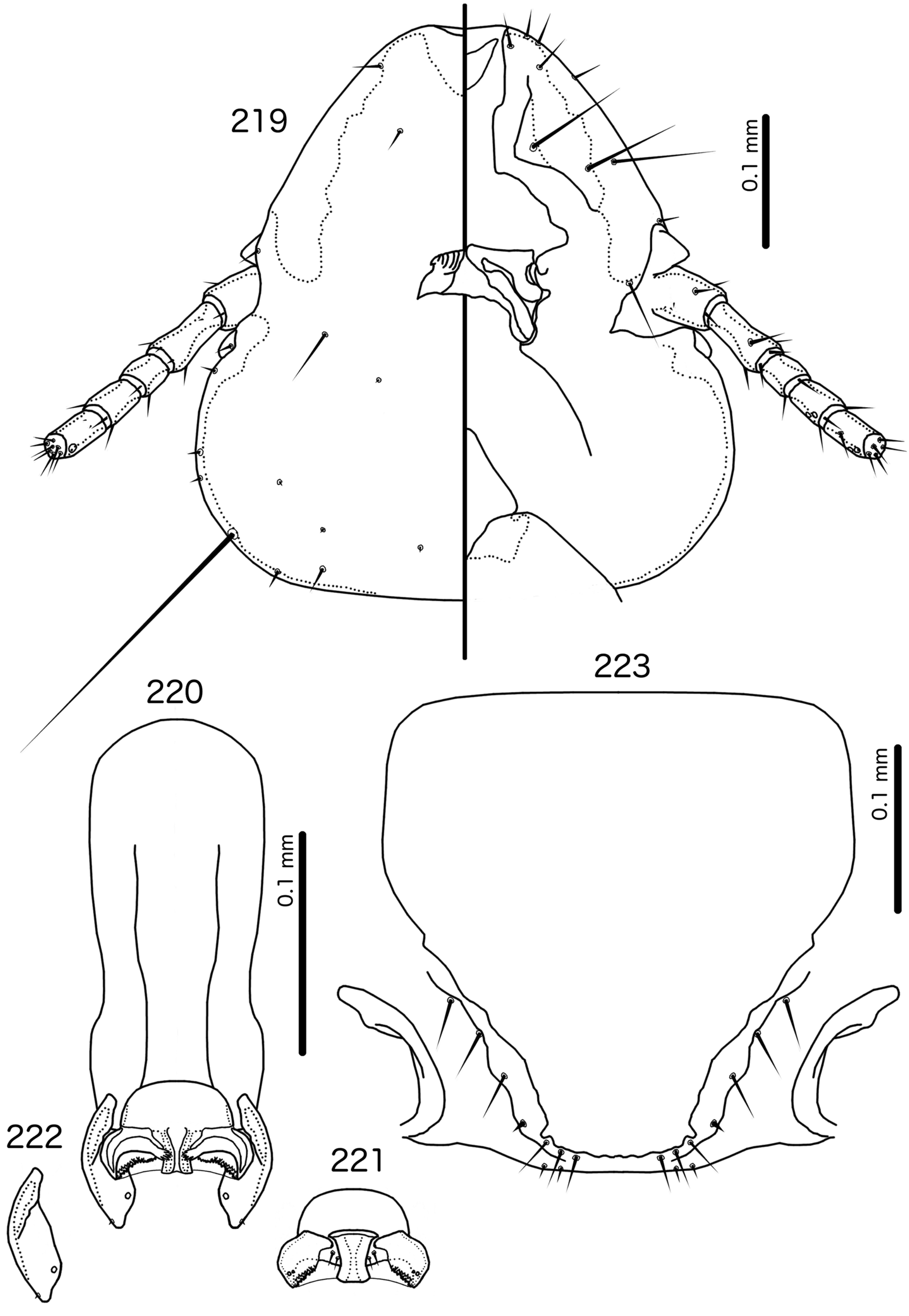
Additional material examined (non-types)

Ex ***Coracina striata panayensis***: 1♀, 8 km N of Siaton, Oriental, Negros, Philippines, 24 Jul. 1964, N. Wilson, BBM-6038 (BPBM).

Ex ***Coracina striata difficilis*** [some as ***Coracina striata***]: 2♂, 2♀, Brooke's Point, Palawan, Philippines, 31 Mar. 1962, Max Thompson, BBM-PI-785 (OSUS); 1♂, 1♀, Palawan, Philippines, 1947 (OSUS); 1♂, 1♀, Puerto Princesa, Palawan, Philippines, 16 Oct. 1941, Hoogstraal, 2662 (OSUS) [slide contains unidentified *Guimaraesiella*].



FIGURES 217–218. *Indoceoplanetes* (*Indoceoplanetes*) *indonesiana* (Eichler, 1947) **n. comb.** ex *Coracina striata difficilis*: **217,** male habitus, dorsal and ventral views. **218,** female habitus, dorsal and ventral views.



FIGURES 219–223. *Indoceoplanetes* (*Indoceoplanetes*) *indonesiana* (Eichler, 1947) **n. comb.** ex *Coracina striata difficilis*: **219,** male head, dorsal and ventral views. **220,** male genitalia, dorsal view. **221,** male mesosome, ventral view. **222,** male paramere, dorsal view. **223,** female subgenital plate and vulval margin, ventral view.

Remarks. *Brueelia indonesiana* was first described by Eichler (1947: 8), who separated it from "other *Brueelia* species (sens. strict.)" by its "completely rounded" temples and the brown sternal plates on abdominal segments III–VI. This description is accompanied by a drawing of some features of the ventral side of the head and the right half of the pro- and pterothorax, as well as some measurements.

We have examined material from three *Coracina striata* subspecies, and we identify the material as the same species. In the phylogeny of Bush *et al*. (2016), material from *Coracina novaehollandiae* (Gmelin, 1789) and *C. pectoralis* (Jardine and Selby, 1828) was genetically very similar to material from *C. striata*, as well as other specimens from other *Coracina* and *Edolisoma* spp. Although, these specimens are morphologically very similar, there are some differences in pigmentation patterns and the shape of the head and male genitalia. More specimens need to be studied to determine the host and geographic limits of *Indoceoplanetes indonesiana*.

Subgenus *Capnodella* Gustafsson & Bush, new subgenus

Type species. *Indoceoplanetes* (*Capnodella*) *laurocorythes* new species

Diagnosis. Apart from the characters listed above, members of the subgenus *In.* (*Capnodella*) can be separated from members of *Maculinirmus, Turdinirmus*, *Titanomessor*, and *Indoceoplanetes* (*Indoceoplanetes*) as follows:

From *Maculinirmus* by the dorsal preantennal suture not extending medianly to *ads* in *In.* (*Capnodella*) (Figs 226, 233), but extending medianly to *ads* in *Maculinirmus* (Figs 198, 205); hyaline margin present anterior to dorsal anterior plate in *Maculinirmus* (Figs 198, 205), but not in *In.* (*Capnodella*) (Figs 226, 233); abdominal segments III–V with multiple *sts* on both sides in both sexes of *Maculinirmus* (Figs 196–197, 203–204), but with one *sts* on each side in *In.* (*Capnodella*) (Figs 224–225, 231–232); female tergopleurite IX+X fused with tergopleurite XI in *In.* (*Capnodella*) (Figs 225, 232), but separate in *Maculinirmus* (Figs 197, 204).

From *Turdinirmus* by the dorsal preantennal suture not extending medianly to *ads* in *In.* (*Capnodella*) (Figs 226, 233), but extending medianly to *ads* in *Turdinirmus* (Figs 184, 191).

From *Titanomessor* by the dorsal preantennal suture reaching the anterior margin of the head in *In.* (*Capnodella*) (Figs 226, 233), but not in *Titanomessor* (Fig. 212); ventral anterior plate present in *In.* (*Capnodella*) (Figs 226, 233), but absent in *Titanomessor* (Fig. 212); male tergopleurites VI–VII with *tps* in *Titanomessor* (Fig. 210), but without *tps* in *In.* (*Capnodella*) (Figs 224, 231); and mesosomal lobes rounded in *In.* (*Capnodella*) (Figs 228, 235), but angular in *Titanomessor* (Fig. 214).

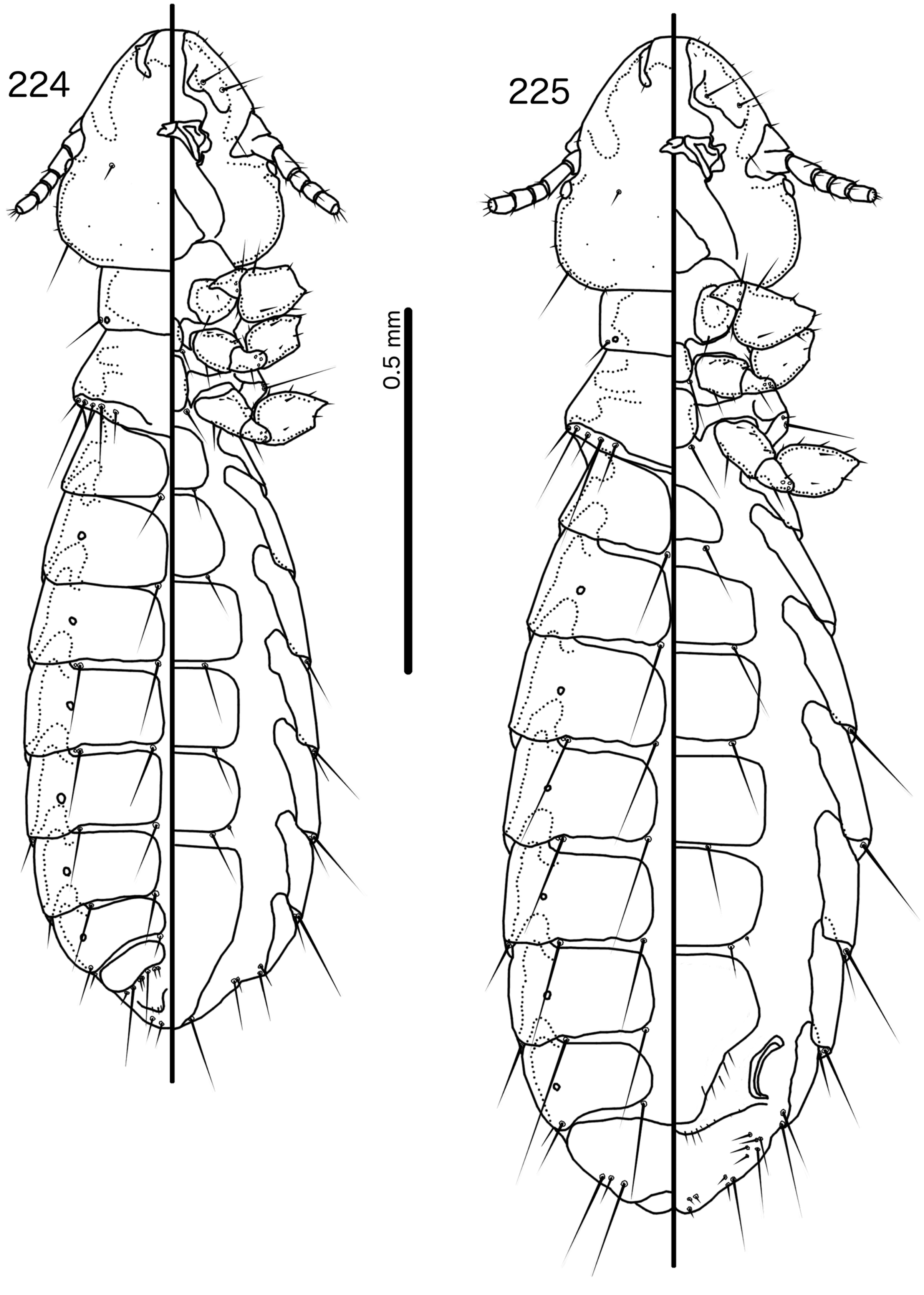
From *In.* (*Indoceoplanetes*) by the dorsal preantennal suture present in *In.* (*Capnodella*) (Figs 226, 233), but absent in *In.* (*Indoceoplanetes*) (Fig. 219); marginal carina interrupted submedianly in *In.* (*Capnodella*) (Figs 226, 233), but uninterrupted in *In.* (*Indoceoplanetes*) (Fig. 219); *tps* absent on all tergopleurites in *In.* (*Capnodella*) (Figs 224, 231), but present on at least some male tergopleurites in *In.* (*Indoceoplanetes*) (Fig. 217); both sexes with multiple *sts* on each side on at least segments IV–V in *In.* (*Indoceoplanetes*) (Figs 217–218), but with multiple *sts* only on segment VI in *In.* (*Capnodella*) (Figs 224–225, 231–232).

Description. ***Both sexes***. Head flat to convex dome shape (Figs 226, 233). Frons rounded or slightly concave. Marginal carina interrupted submedianly. Dorsal preantennal suture reaches *dsms* and *ads*. Dorsal anterior plate with distinct sinuous thickening on posterior end, between *ads* on each side. Ventral anterior plate present. Preantennal nodi large, rounded. Head chaetotaxy as in Figs 226 233. Thoracic and abdominal segments as in genus description (Figs 224–225, 231–232). Re-entrant heads elaborate, large. Pleural incrassation II extended medianly. Abdominal chaetotaxy as in Table 2; *tps* absent. Neither sex with more than one *sts* on either side on segments II–V.

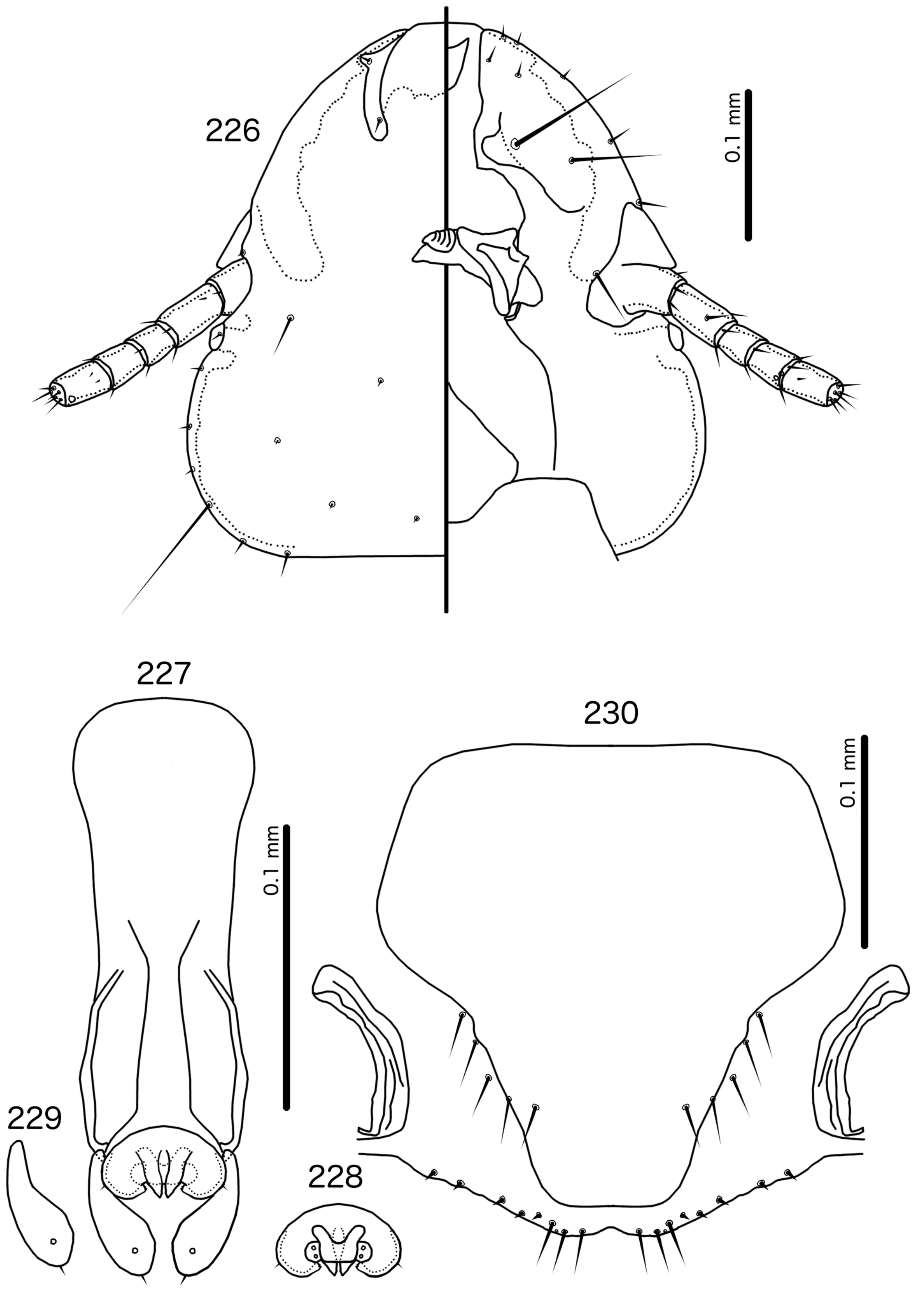
Male. Mesosomal lobes (Figs 228, 235) with smooth posterior margins, 2 *pmes* sensilla on each side lateral to gonopore.

Female. Vulval margin with many *vss* (Figs 230, 237).

Etymology. The subgeneric name *Capnodella* is formed by Greek "*kapnódis*" for "smoky", latinized, and with the diminutive suffix "*-ella*". This is a reference to the smoky colour of many of its hosts.



FIGURES 224–225. *Indoceoplanetes* (*Capnodella*) *laurocorythes* **n. gen., n. subgen. & n. sp.** ex *Edolisoma holopolium holopolium*: **224,** male habitus, dorsal and ventral views. **225,** female habitus, dorsal and ventral views.



FIGURES 226–230. *Indoceoplanetes* (*Capnodella*) *laurocorythes* **n. gen., n. subgen. & n. sp.** ex *Edolisoma holopolium holopolium*: **226,** male head, dorsal and ventral views. **227,** male genitalia, dorsal view. **228,** male mesosome, ventral view. **229,** male paramere, dorsal view. **230,** female subgenital plate and vulval margin, ventral view.

Indoceoplanetes (*Capnodella*) *laurocorythes* Gustafsson & Bush, new species
(Figs 224–230)

Type host. *Edolisoma holopolium holopolium* (Sharpe, 1888)—Solomons cuckoo-shrike.
Type locality. Malagona, elev. 10 m, Choiseul Island, Solomon Islands.

Diagnosis. *Indoceoplanetes* (*Capnodella*) *laurocorythes* **n. sp.** is separated from *In.* (*Cp.*) *loboccupatrix* **n. sp.** by the following characters: sternal plates III–VI and subgenital plates of both sexes with brown pigmentation in *In.* (*Cp.*) *loboccupatrix,* but sternal plates III–VI and subgenital plate are unpigmented in male *In.* (*Cp.*) *laurocorythes* and only the subgenital plate has pale brown pigmentation in female *In.* (*Cp.*) *laurocorythes*; gonopore slender with narrow, V-shaped anterior grove in *In.* (*Cp.*) *loboccupatrix* (Fig. 235) but broad with broad, U-shaped anterior grove in *In.* (*Cp.*) *laurocorythes* (Fig. 228); distal margin of primary mesomeral lobes with serrated or with sublateral hook in *In.* (*Cp.*) *loboccupatrix*, but lobes of *In.* (*Cp.*) *laurocorythes* smooth; female subgenital plate slender in *In.* (*Cp.*) *loboccupatrix* (Fig. 237), but broad in *In.* (*Cp.*) *laurocorythes* (Fig. 230); 2–3 *vsm* in *In.* (*Cp.*) *loboccupatrix* (Fig. 237), but 0–1 *vsm* in *In.* (*Cp.*) *laurocorythes* (Fig. 230); female tergopleurites IX+X completely fused with tergopleurites XI in *In.* (*Cp.*) *laurocorythes* (Fig. 225), but only partially fused in *In.* (*Cp.*) *loboccupatrix* (Fig. 232).

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus and subgenus descriptions and Fig. 226. Dorsal anterior plate without pale brown band, and submedian interruption of marginal carina clear. Pre- and postocular nodi approximately equal in size. Gular plate with prominent, slender anterior point. Pigmentation pale brown, with nodi, temporal marginal carina, and parts of mandibles darker. Thoracic and abdominal segments as in genus and subgenus descriptions and Figs 224–225. Pigmentation pale brown, with proepimera and metepisterna darker. Sublateral nodi of pterothorax very dark. Abdomen largely translucent, but lateral tergopleurites of both sexes dark brown.

Male. Subgenital plate translucent. Abdominal chaetotaxy as in Table 2 and Fig. 224. Basal apodeme (Fig. 227) slender. Proximal mesosome short, broadly rounded. Gonopore (Fig. 228) as convergent sclerites, open distally and proximally; anterior grove of gonopore broad, U-shaped. Mesosomal lobes wide, rounded, with smooth distal margin; 1 *ames* microseta on lateral margin of mesosomal lobes on each side; 2 *pmes* sensilla on each side of gonopore. Parameral heads (Fig. 229) blunt, small. Parameral blades widely rounded posteriorly; *pst1* sensillus; *pst2* microseta, lateral near distal tip. Measurements ex *Edolisoma holopolium holopolium* (n = 13 except n = 12 for AW and n = 11 for TL): TL = 1.24–1.38 (1.31); HL = 0.30–0.36 (0.33); HW = 0.29–0.33 (0.31); PRW = 0.18–0.20 (0.19); PTW = 0.26–0.30 (0.28); AW = 0.33–0.45 (0.39).

Female. Subgenital plate with pale brown pigmentation. Abdominal chaetotaxy as in Table 2 and Fig. 225. Subgenital plate almost pentagonal, but with blunt distal margin (Fig. 230) that does not reach vulval margin. Vulval margin (Fig. 230) with distinctly concave median section; 1 *vms* microseta on each side, often absent, 4–5 short, thorn-like *vss* on each side; 6–8 long, slender *vos* on each side; distal 2–3 *vos* median or distal to *vss*. Measurements ex *Edolisoma holopolium holopolium* (n = 20 except n = 18 for TL and n = 17 for AW): TL = 1.45–1.62 (1.55); HL = 0.33–0.37 (0.35); HW = 0.32–0.36 (0.34); PRW = 0.19–0.25 (0.22); PTW = 0.28–0.37 (0.33); AW = 0.41–0.50 (0.45).

Etymology. The species epithet is formed by "*Lauru*", the indigenous name for the type locality, Choiseul Island, and Greek "*korythos*", for "helmet", referring to the helmet-like shape of the re-entrant heads of the pleurites (Figs 224–225).

Type material. Ex ***Edolisoma holopolium holopolium***: **Holotype** ♂, Malagona, elev. 10 m, Choiseul Island, Solomon Islands, 6 Mar. 1964, BBM-SI-23609 (BPBM). **Paratypes:** 2♂, 3♀, same data as holotype (BPBM); 5♂, 12♀, 1 unknown, Malagona, Choiseul Island, Solomon Islands, 1 Jun. 1964, BBM-SI-23929, BBM-SI-23609 (BPBM); 2♂, 6♀, Tabalia, elev. 20 m, Guadalcanal Island, Solomon Islands, 5 Jun. 1964, P.J. Shanahan, BBM-SI-23963 (BPBM); 1♀, Tabalia, elev. 20 m, Guadalcanal Island, Solomon Islands, 29 May 1964, P.J. Shanahan, BBM-SI-23911 (BPBM).

Remarks. As with subgenus *In.* (*Indoceoplanetes*) **n. subgen.**, specimens examined of the subgenus *In.* (*Capnodella*) **n. subgen.** from various host species appear to be very similar, or identical [apart from that described as *In.* (*Cp.*) *loboccupatrix* below]. There are slight, but consistent, differences between material from different host species in head shape and size, pigmentation patterns, details of the male genitalia, and the abdominal and vulval chaetotaxy. A more thorough study of these specimens is needed to ascertain whether these all are a single non-host-specific species or a group of very similar species. In the phylogeny of Bush *et al.* (2016), samples from *Coracina striata* and *C. caerulescens* were genetically very similar, whereas a sample from *Cyanograculus azureus* was more distantly related.

***Indoceoplanetes* (*Capnodella*) *loboccupatrix* Gustafsson & Bush, new species**

(Figs 231–237)

Type host. *Lobotos oriolinus* Bates, 1909—oriole cuckoo-shrike.
Type locality. "Congo".

Diagnosis. *Indoceoplanetes* (*Capnodella*) *loboccupatrix* **n. sp.** is separated from *In.* (*Cp.*) *laurocorythes* **n. sp.** by the following characters: frons convex in *In.* (*Cp.*) *laurocorythes* (Fig. 226) but flat or concave in *In.* (*Cp.*) *loboccupatrix* (Fig. 233); submedian interruptions of marginal carina clear in *In.* (*Cp.*) *laurocorythes*, but diffuse, and marginal carina may be only partially interrupted in *In.* (*Cp.*) *loboccupatrix*; sternal plates III–VI and male subgenital plate translucent in *In.* (*Cp.*) *laurocorythes*, but with pale brown pigmentation in *In.* (*Cp.*) *loboccupatrix*; distal margin of mesosomal lobes smooth in *In.* (*Cp.*) *laurocorythes* (Fig. 228), but serrated at least partially in *In.* (*Cp.*) *loboccupatrix* (Fig. 235); gonopore broad and with U-shaped anterior grove in *In.* (*Cp.*) *laurocorythes* (Fig. 228), but slender with V-shaped grove in *In.* (*Cp.*) *loboccupatrix* (Fig. 235); female subgenital plate broad in *In.* (*Cp.*) *laurocorythes* (Fig. 230), but slender in *In.* (*Cp.*) *loboccupatrix* (Fig. 237); 0–1 *vsm* in *In.* (*Cp.*) *laurocorythes* (Fig. 230), but 2–3 *vsm* in *In.* (*Cp.*) *loboccupatrix* (Fig. 237).

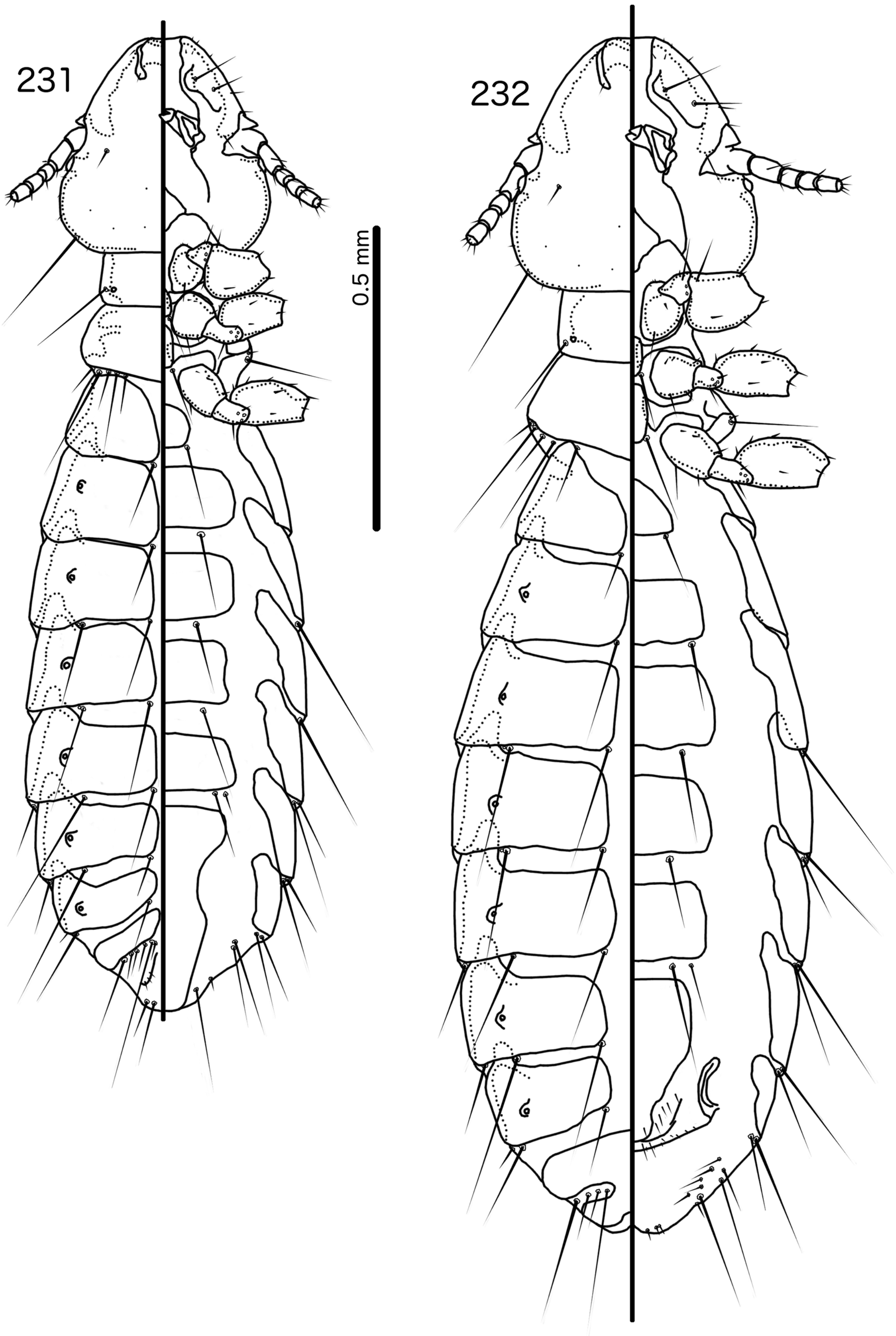
Description. *Both sexes*. Head shape, structure, and chaetotaxy as in genus and subgenus descriptions, and Fig. 233. Dorsal anterior plate with pale brown band which may be weak marginal carina in anterior end; submarginal interruptions of marginal carina not clear. Postocular nodi generally slightly larger than preocular nodi. Gular plate with prominent median point. Head pigmentation pale brown, with only preocular nodi and parts of mandibles much darker than rest. Thoracic and abdominal segments as in genus and subgenus descriptions, and as in Figs 231–232. Thorax very pale, only proepimera and metepisterna with medium brown pigmentation. Sublateral nodi of pterothorax not conspicuously pigmented. Lateral section of tergopleurites and sternal plates III–VI and subgenital plate with medium brown pigmentation.

***Male*.** Abdominal chaetotaxy as in Table 2 and Fig. 231. Basal apodeme (Fig. 234) slender, bulging distally. Proximal mesosome diffuse, small, rounded. Gonopore (Fig. 235) as slender convergent sclerites, widely open proximally and narrowly open distally; anterior groove narrow, V-shaped. Mesosomal lobes wide, overlapping dorsally with parameres, with irregular, in some specimens slightly serrated, distal margin; 2 *ames* microsetae on lateral margin of mesosomal lobes; 2 *pmes* sensilla on each side of gonopore. Parameral heads (Fig. 236) broad, blunt. Parameral blades long, broad; *pst1* sensillus; *pst2* microseta, lateral near distal tip. Measurements ex *Lobotos oriolinus* (n = 7): TL = 1.35–1.47; HL = 0.34–0.36; HW = 0.32–0.35; PRW = 0.20–0.21; PTW = 0.27–0.29; AW = 0.35–0.42.

***Female*.** Abdominal chaetotaxy as in Table 2 and Fig. 232. Subgenital plate slenderly pentagonal (Fig. 237). Vulval margin gently rounded (Fig. 237); 2–3 minute *vsm* on each side, and 4–6 short, thorn-like *vss* on each side; 6–8 long, slender *vos*; distal 2–3 *vos* median to *vss*. Measurements ex *Lobotos oriolinus* (n = 20): TL = 1.48–1.87 (1.62); HL = 0.37–0.41 (0.39); HW = 0.34–0.39 (0.36); PRW = 0.21–0.25 (0.23); PTW = 0.27–0.34 (0.30); AW = 0.37–0.56 (0.46).

Etymology. The species epithet refers to the genus name of the host, *Lobotos*, combined with Latin "*occupo*", meaning "seize, invade, take possession of", and the corresponding feminine suffix "*atrix*".

Type material. Ex ***Lobotos oriolinus*** **[as *Lobotos lobatos oriolinus*]: Holotype** ♂, "Congo", Jul. 1937, R. Meinertzhagen, 10622 (NHML) [marked with black dot on slide]. **Paratypes:** 7♂, 19♀, same data as holotype (NHML).



FIGURES 231–232. *Indoceoplanetes* (*Capnodella*) *loboccupatrix* **n. gen., n. subgen. & n. sp.** ex *Lobotos oriolinus*: **231,** male habitus, dorsal and ventral views. **232,** female habitus, dorsal and ventral views.

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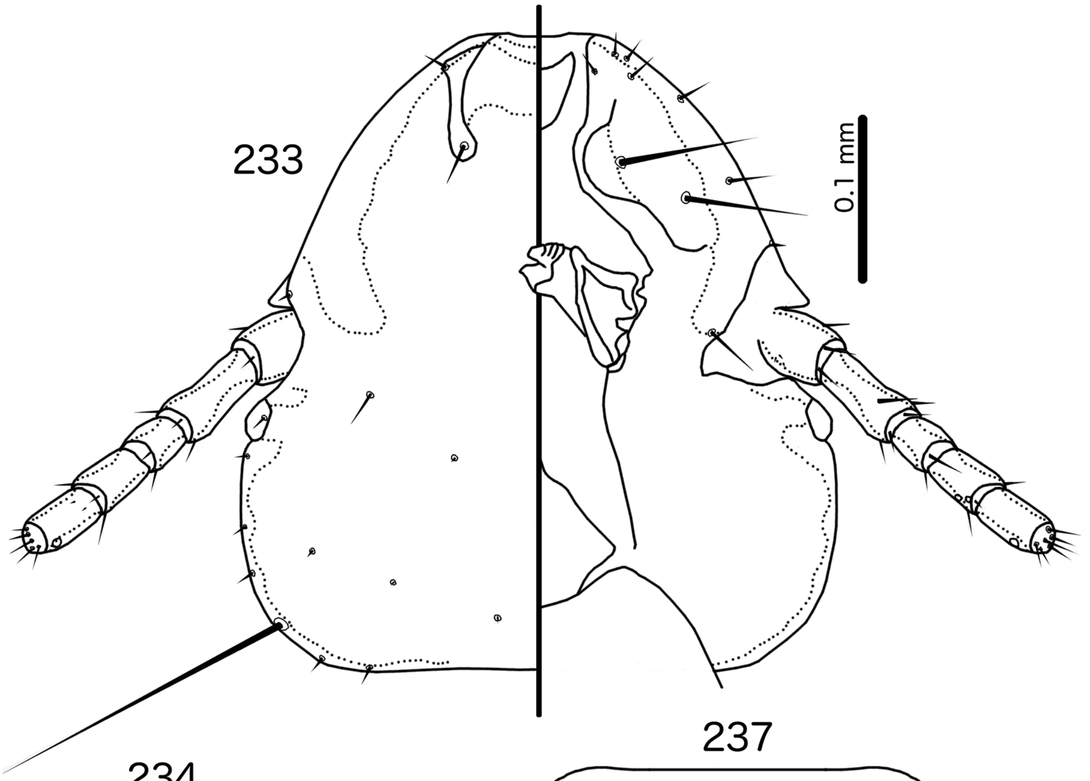

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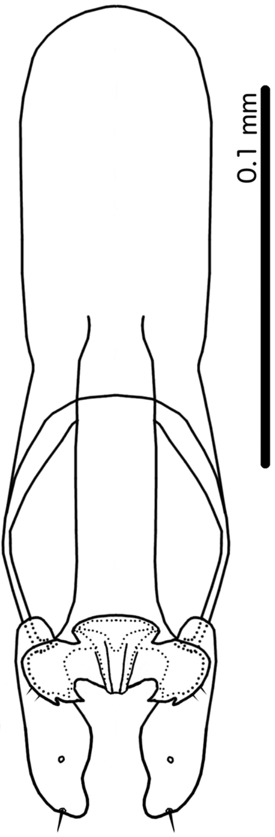

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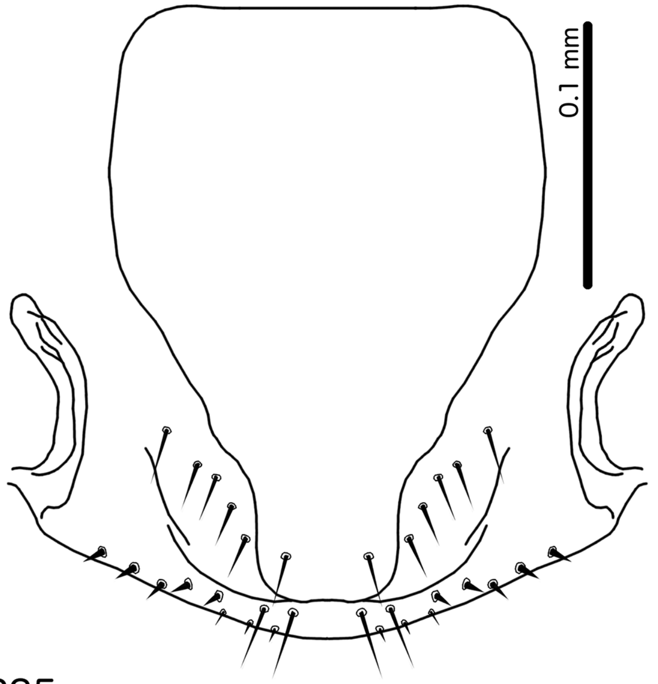

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FIGURES 233–237. *Indoceoplanetes* (*Capnodella*) *loboccupatrix* **n. gen., n. subgen. & n. sp.** ex *Lobotos oriolinus*: **233,** male head, dorsal and ventral views. **234,** male genitalia, dorsal view. **235,** male mesosome, ventral view. **236,** male paramere, dorsal view. **237,** female subgenital plate and vulval margin, ventral view.

Saepocephalum Gustafsson & Bush, new genus

Type species. *Saepocephalum stephenfryi* **new species**

Diagnosis. *Saepocephalum* **n. gen.** does not appear to be morphologically close to any other genus treated here. The fused ventral anterior plate, undisplaced marginal carina (Fig. 240), and clypeo-labral suture that does not reach the anterior margin of the head is shared by only two other genera in the *Brueelia*-complex: *Harpactrox* **n. gen.** (Figs 248, 255, 260) and *Anarchonirmus* **n. gen.** (Fig. 116). Other than these characters, neither of these genera appear to be close to *Saepocephalum*.

Both *Anarchonirmus* (Figs 116–117) and *Saepocephalum* n. gen (Figs 240–241) have sexually dimorphic antennae, and *as3* is absent in both genera (Figs 116, 240). Both genera also lack dorsal preantennal sutures, apart from the isolated suture around the *ads* in *Saepocephalum* (Fig. 240). In both *Anarchonirmus* (Figs 114–115) and *Saepocephalum* (Figs 238–239) the tergopleurites do not reach the lateral margins of the abdomen. However, abdominal chaetotaxy is very different in these two genera (Table 2), and the modifications of the male flagellomeres seen in *Anarchonirmus* (Fig. 116) are not seen in *Saepocephalum* (Fig. 240). In both genera there is sclerotization of the vulval margin, but in *Anarchonirmus* (Fig. 121) this cross-piece medianly displaced, but complete, whereas in *Saepocephalum* (Fig. 245) these sclerotized plates are laterally detached. The proximal mesosome of *Anarchonirmus* (Fig. 118) does not overlap with the basal apodeme, and is not thickened anteriorly; in *Saepocephalum* (Fig. 242) the mesosome overlaps with the basal apodeme and is thickened anteriorly. Gonopore is terminal in *Anarchonirmus* (Fig. 119), but ventral in *Saepocephalum* (Fig. 243), and the mesosomal lobes are fused distally in *Saepocephalum*, but separate distally in *Anarchonirmus*. Parameral heads are blunt and simple in *Anarchonirmus* (Fig. 120), but folded medianly and with complex ornamentations in *Saepocephalum* (Fig. 244).

Similarities between *Saepocephalum* and *Harpactrox* are slightly larger, as in both genera *as3* are absent (Figs 240, 248), parameral heads are folded medianly (Figs 244, 251), and proximal mesosome overlaps with basal apodeme (Figs 242, 249). In addition, in both *Harpactrox* (Figs 246–247) and *Saepocephalum* (Fig. 238–239) *psps* are absent on female tergopleurites II–III and male tergopleurite II; these are present in in *Anarchonirmus* (Figs 114–115). A dorsal preantennal suture is typically present in both *Saepocephalum* (Fig. 240) and *Harpactrox* (Figs 248, 255, 260), this suture is medianly continuous in *Harpactrox*, but, when present, isolated around the *ads* in *Saepocephalum*. All *mts* are microsetae in *Harpactrox* (Figs 248, 255, 260), but *mts3* is a macroseta in *Saepocephalum* (Fig. 240). The subgenital plate does not form a cross-piece in *Harpactrox* (Figs 252, 259, 262), unlike in *Saepocephalum* (Fig. 245) which has a laterally detached cross-piece. Parameral heads are folded medianly in both genera, but those of *Harpactrox* (Figs 251, 258) are much simpler than those of *Saepocephalum* (Fig. 244), and the parameral blades are more elongated and angular in *Saepocephalum* than in *Harpactrox*. *pst1–2* are both sensilla in *Saepocephalum* (Fig. 244), but *pst2* are microsetae in *Harpactrox* (Figs 251, 258). Gonopore is terminal in *Harpactrox* (Figs 250, 257), but ventral in *Saepocephalum* (Fig. 243). No *ames* are visible in *Saepocephalum*; these are microsetae in *Harpactrox* (Figs 250, 257).

Description. ***Both sexes***. Head broad, convex-dome shaped (Fig. 240). Marginal carina uninterrupted. Clypeo-labral suture does not reach anterior margin of head. Dorsal preantennal suture present only around apertures of *ads* in some specimens. Ventral carinae diffuse anterior to pulvinus and not clearly continuous with marginal carina. Ventral anterior plate present, continuous with marginal carina. Head setae as in Fig. 240; *as3* absent. Coni small. Antennae sexually dimorphic, with male scapes (Fig. 240) about twice the length of that of female (Fig. 241), and slightly swollen. Temporal carinae not visible; *mts3* only macrosetae. Gular plate spade-shaped.

Prothorax small, rectangular (Figs 238–239); *ppss* on postero-lateral corner. Proepimera slender, hook-shaped, curling around coxae II. Pterothorax trapezoidal to pentagonal; lateral margins divergent; posterior margin either roughly flat or vaguely convergent to median point. Meso- and metasterna not fused; setae only on postero-lateral corners of mesosternum; metasternum nude. Metepisterna broad, median ends blunt. *mms* moderately interrupted medianly. Leg chaetotaxy as in Fig. 25, except *fI-p2, fII-v2, fIII-v2* absent; *fI-v4* absent in males, but present, spike-like in females.

Abdomen (Figs 238–239) oblong in female, more oval in male. Abdominal chaetotaxy as in Table 2 and Figs 238–239. Tergopleurites rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly separated medianly. Tergopleurites do not reach lateral margins of abdomen. Sternal plates rectangular, not approaching lateral margins of abdomen. Pleural incrassations of segments II–VIII in both sexes as latitudinal thickenings on antero-lateral margin of tergopleurites. Male subgenital plate roughly triangular, with sinuous lateral margin, reaching posterior margin of abdomen. Female subgenital plate roughly pentagonal, distal lateral margins concave. Lateral marginal plates present, detached from subgenital plate (Fig. 245). Vulval margin (Fig. 245) with slender *vms*, thorn-like *vss*; *vos* follow lateral margins of subgenital plate; distal *vos* median to *vss*.

Male genitalia (Figs 242–244) distinct. Basal apodeme roughly rectangular, anterior margin diffuse, flaring. Proximal mesosome slender, elongated, overlapping with basal apodeme, and with proximal margin thickened. Gonopore (Fig. 243) ventral, open distally, continuous with subparallel ventral ridges. Mesosomal lobes rounded, fused distal to gonopore; 2 *pmes* microsetae visible on lateral margin of lobes on either side. Parameral heads (Fig. 244) folded, rectangular, with serrated posterior margins and several ridges on dorsal side. Parameral blades slender and elongated; *pst1–2* sensilla, central, near distal tip of paramere.

Host distribution. *Saepocephalum* is monotypic, restricted to *Corcorax melanoramphos* (Vieillot, 1817). No lice of the *Brueelia*-complex are known from the only other species in the family Corcoracidae: *Struthidea cinerea* Gould, 1837.

Geographical range. Australia.

Etymology. The genus name is derived from the Latin "*saepes*" for "fence", and Greek "*kefali*", meaning "head". This refers to the dorsally and ventrally complete marginal carina (Fig. 240), a condition that is rare within the *Brueelia*-complex. Gender: neuter.

Remarks. In the phylogeny of Bush *et al.* (2016), *Saepocephalum* was placed inside a clade containing *Traihoriella* and *Bizarrifrons,* neither of which resembles *Saepocephalum* morphologically. The support values for all deeper association in this clade were low, and the association of *Saepocephalum* with *Traihoriella* and *Bizarrifrons* is not supported.

Included species

***Saepocephalum stephenfryi* new species**

Saepocephalum stephenfryi Gustafsson & Bush, new species

(Figs 238–245)

Type host. *Corcorax melanoramphos* (Vieillot, 1817)—white-winged chough.
Type locality. 10 km S of Wyalong, New South Wales, Australia.

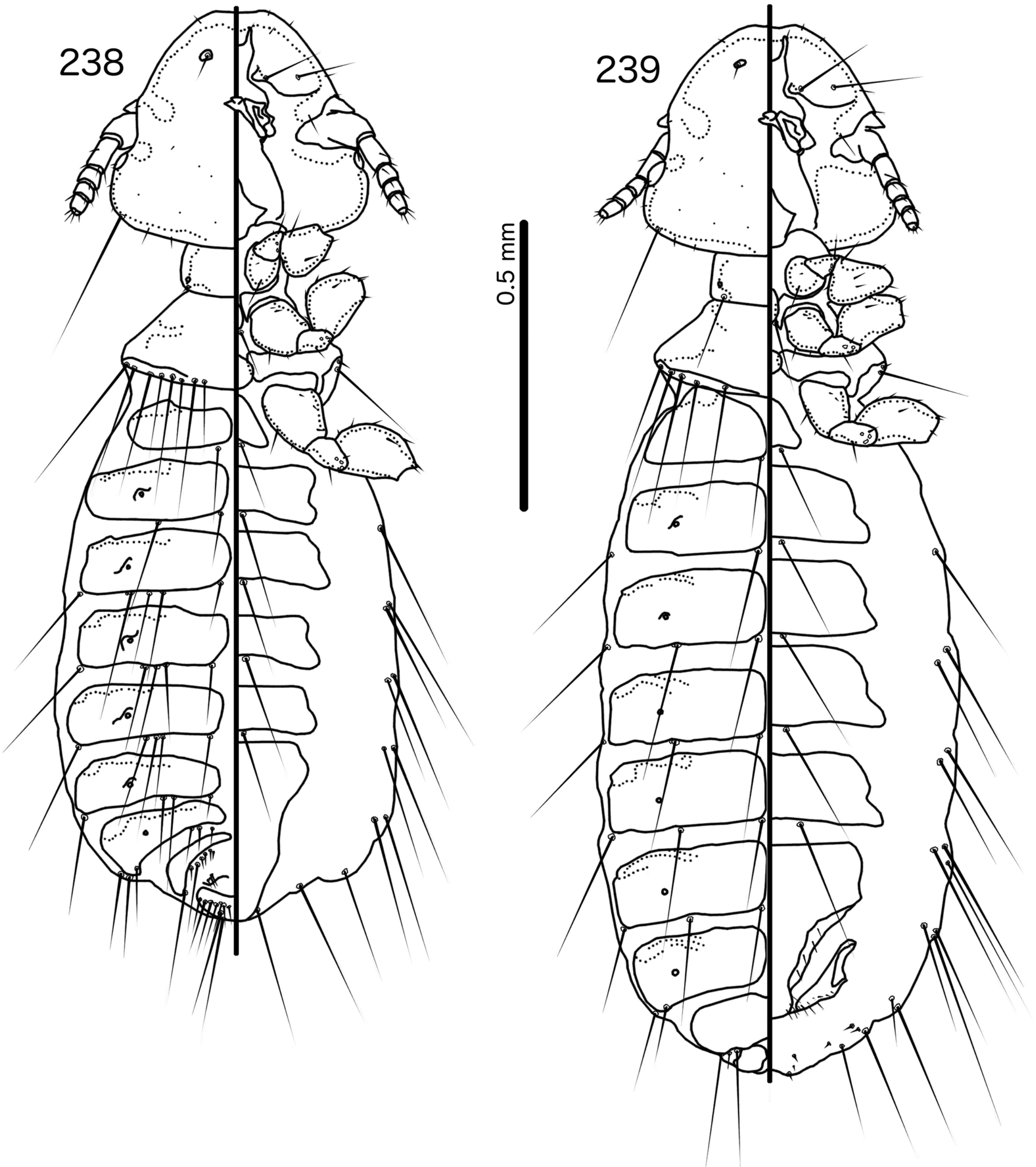
Diagnosis. *Saepocephalum stephenfryi* **n. sp.** is separated from all other known *Brueelia*-complex species by the combination of the following unique characters: tergopleurites do not reach lateral margins of abdomen and pleural incrassations run only along anterior margin of tergopleurites (Figs 238–239); cross-piece laterally detached from female subgenital plate (Fig. 245); parameral heads with ridges anteriorly (Fig. 244). In addition, the following characters set *Sa. stephenfryi* apart from most other species of the complex: clypeo-labral suture does not reach the frons and ventral anterior plate is continuous with marginal carina (Fig. 240) as in *Harpactrox* **n. gen.** (Fig. 248) and *Anarchonirmus* **n. gen.** (Fig. 116); mesosomal lobes fused distally (Fig. 243); *pst1–2* both sensilla; dorsal preantennal suture absent or present only around *ads* (Fig. 240) as in some *Priceiella* **n. gen.** (Fig. 279); antennae sexually dimorphic (Figs 240–241). The differences between *Saepocephalum* and these genera are outlined in the genus description above.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 240; *pts* and *pns* very short, not visible in all specimens examined. Dorsal anterior suture surrounding *ads* not present in all specimens examined. Thoracic and abdominal segments as in genus description and Figs 238–239. Antero-lateral thickenings of tergopleurites variable between specimens, typically arched.

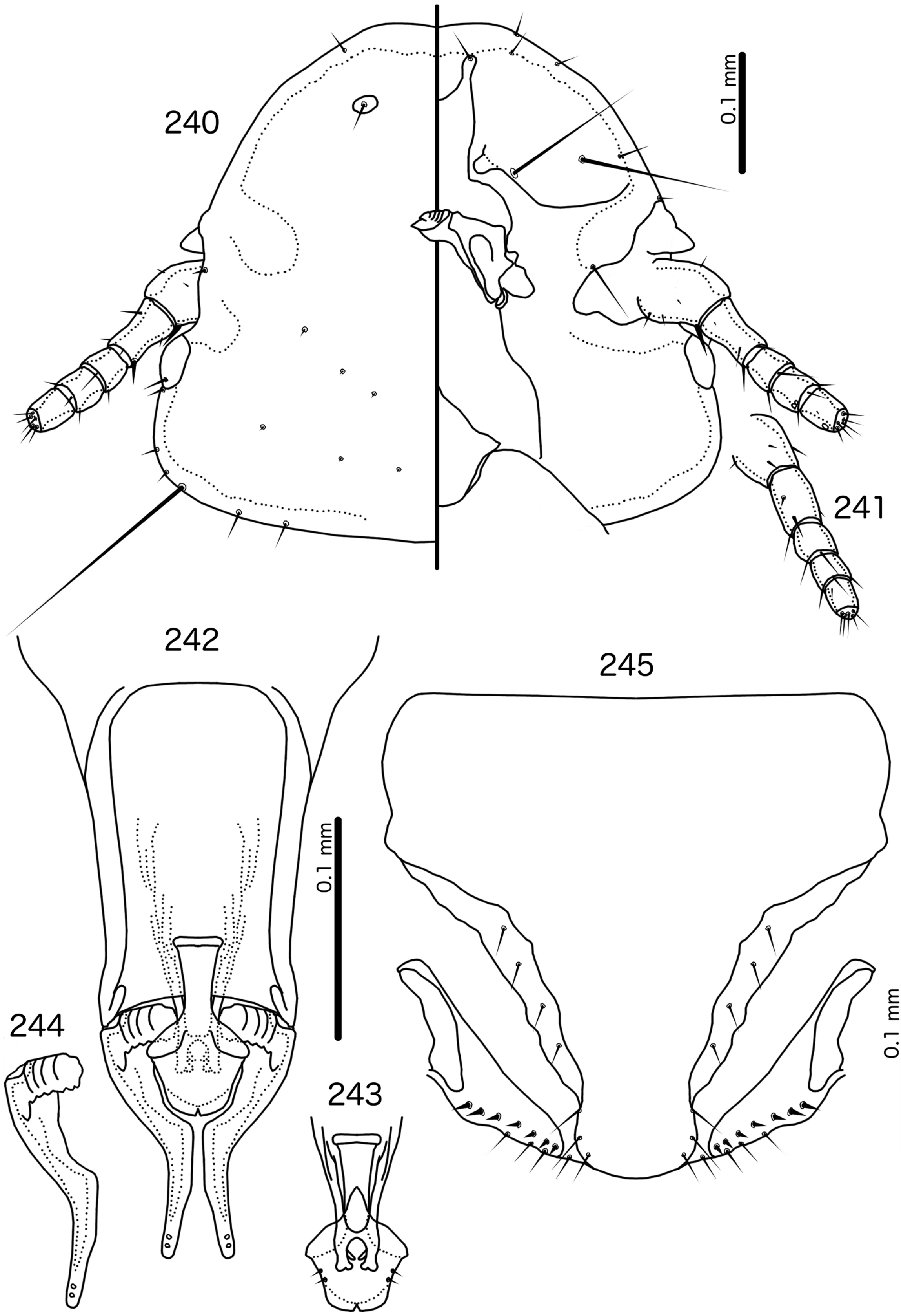
Male. Antennae as in Fig. 240, scape swollen and elongated. Abdominal chaetotaxy as in Table 2 and Fig. 238. Basal apodeme (Fig. 242) with diffuse anterior end, much widened. Proximal mesosome slender, elongated, overlapping with basal apodeme; anterior margin thickened. Gonopore ventral (Fig. 243), widely open distally, with bifurcate distal ends (Fig. 180). Mesosomal lobes fused distally, slender; 2 *pmes* on lateral margins of each lobe. Parameral heads (Fig. 244) roughly rectangular, with serrated posterior margin and prominent ridges. Parameral blades much elongated, slender, with distinct heel just distal to mesosome; *pst1–2* both sensilla. Measurements ex *Corcorax melanorhamphos* (n = 1, due to mounting of specimen HL and TL cannot be measured): HW = 0.40; PRW = 0.20; PTW = 0.40; AW = 0.64.

Female. Antennae as in Fig. 241. Abdominal chaetotaxy as in Table 2 and Fig. 239. Subgenital plate (Fig. 245) funnel-shaped, reaching vulval margin. Vulval margin (Fig. 245) with lateral marginal plates unconnected to subgenital plate (except on one side in one specimen). Vulval margin (Fig. 245) gently rounded, bulging somewhat medianly, with 3–4 short, slender *vms* on each side, and 4–7 (in one specimen 3) thorn-like *vss* on each side, lateral *vss* progressively more spool-like; 4–7 long, slender *vos*; distal 1–3 *vos* median to *vss*. Measurements ex *Corcorax melanorhamphos* (n = 5): TL = 1.80–2.04; HL = 0.39–0.42; HW = 0.43–0.46; PRW = 0.21–0.23; PTW = 0.39–0.45; AW = 0.61–0.70.

Etymology. The species epithet is in honour of the actor, comedian, writer, and unique intellectual Stephen Fry (b. 1957), whose productions have delighted, entertained, provoked, and educated DG during the writing of this revision. Just as this is a revision of one, often misunderstood, complex of lice, Stephen Fry's quiz show "*QI*" can be seen as a revision of the complexity of human knowledge, one misunderstanding at the time.



FIGURES 238–239. *Saepocephalum stephenfryi* **n. gen. & n. sp.** ex *Corcorax melanoramphos*: **238,** male habitus, dorsal and ventral views. **239,** female body, dorsal and ventral views.



FIGURES 240–245. *Saepocephalum stephenfryi* **n. gen. & n. sp.** ex *Corcorax melanoramphos*: **240,** male head, dorsal and ventral views. **241,** female antenna, ventral view. **242,** male genitalia, dorsal view. **243,** male mesosome, ventral view. **244,** male paramere, dorsal view. **245,** female subgenital plate and vulval margin, ventral view.

Type material. Ex ***Corcorax melanoramphos***: **Holotype** ♂, 10 km S of Wyalong, New South Wales, Australia, 23 Jul. 2001, K.P. Johnson (NHML). **Paratypes:** 1♀, same data as holotype (PIPeR); 2♀, Queensland, Australia, R. Balter, Brit. Mus. 1969-113 (NHML); 1♀, Wellington, New South Wales, Australia, Brit. Mus. 1969-443 (NHML); 1♀, 10 miles NW of Albury, New South Wales, Australia, 1964, Harold Hall Expedition, 1964.17.139.B.15, Brit. Mus. 1969-113 (NHML).

Harpactrox Gustafsson & Bush, new genus

Type species. *Harpactrox loeiensis* new species

Diagnosis. No other genus treated here is particularly close to *Harpactrox* **n. gen.** All other genera with medianly folded parameres, proximal mesomeres that overlap with basal apodeme, and visible *ames* also have *aps* on at least some male tergopleurites (with the exception of some *Priceiella* (*Thescelovora*) **n. subgen.**, Figs 300–301), and no other genus in the *Brueelia*-complex have the accessory preantennal nodi found in *Harpactrox* (Fig. 248). Only *Titanomessor* **n. gen.** (Fig. 212) has a medianly continuous dorsal preantennal suture that does not interrupt the marginal carina as in *Harpactrox* (Fig. 248), and only *Traihoriella* (Figs 266–268) have male genitalia similar to those of *Harpactrox* (Figs 250–252, 256–258). Like *Harpactrox*, *Anarchonirmus* **n. gen.** (Fig. 116) and *Saepocephalum* **n. gen.** (Fig. 240) both have a marginal carina that is fused to the ventral anterior plate and is not displaced or interrupted by the clypeo-labral suture. For additional comparisons, see the description of *Saepocephalum* (above).

Harpactrox is separated from *Titanomessor* by the following characters: marginal carina displaced at osculum and clypeo-labral suture reaches anterior margin of head in *Titanomessor* (Fig. 212), but not in *Harpactrox* (Figs 248, 255, 260). In *Titanomessor mts3–5* in males and *mts3–4* in females are mesosetae (Figs 210–211), whereas in *Harpactrox* (Figs 248, 260) all *mts* are microsetae in both sexes [except *Ha. geminodus* **n. sp.** (Fig. 255) in which *mts3* is slightly longer than other *mts*]. Parameral heads are blunt and not folded medianly in *Titanomessor* (Fig. 215), but parameral heads are folded medianly in *Harpactrox* (Figs 251, 258). Mesosomal lobes are wide and gonopore is ventral and open both distally and proximally in *Titanomessor* (Fig. 214), whereas in *Harpactrox* (Figs 250, 257) the lobes are slender and the gonopore is terminal, and closed at least proximally.

Harpactrox and *Traihoriella* can be separated by the following non-genitalic characters: *aps* present on at least some segments in male *Traihoriella* (Figs 263, 270; Table 2), but never in *Harpactrox* (Figs 246, 253); clypeo-labral suture reaches anterior margin of head and marginal carina is displaced dorsally and ventrally at osculum in *Traihoriella* (Figs 265, 272), but not in *Harpactrox* (Figs 248, 255, 260); dorsal preantennal suture is absent in *Traihoriella* (Figs 265, 272), but present in *Harpactrox* (Fig. 184); *mts3* are macrosetae in *Traihoriella* (Fig. 197), but microsetae in *Harpactrox* (Figs 248, 255, 260). Male genitalia of *Harpactrox* (Figs 249–251, 256–258) and *Traihoriella* (Figs 266–268, 273–275) are very similar, and as more species of each genus are discovered, it may be impossible to separate these two genera on male genitalia alone, however they are separable on the following characters: *ames* microsetae are present in *Harpactrox* (Figs 250, 257), but absent in *Traihoriella* (Figs 267, 274); *pst2* microsetae in *Harpactrox* (Figs 251, 258), but sensilla in *Traihoriella* (Figs 268, 275). Neither *Traihoriella* (Figs 269, 276) nor *Harpactrox* (Figs 252, 259, 262) have cross-pieces, and in both genera the *vos* are at least partly situated on the subgenital plate.

The ventral preantennal structure of *Harpactrox* (Figs 248, 255, 260) is similar to that of *Anarchonirmus* (Fig. 116), but there are few other similarities. Female subgenital plate flares into a medianly displaced cross-piece in *Anarchonirmus* (Fig. 121) but not in *Harpactrox* (Figs 252, 259, 262); antennae are sexually dimorphic and dorsal preantennal suture is absent in *Anarchonirmus* (Figs 115-117), but antennae are monomorphic and suture is present in *Harpactrox* (Figs 248, 255, 260); parameral heads are blunt and parameral blades are slender with a distinct heel distal to mesosome in *Anarchonirmus* (Fig. 120), but parameral heads are folded medianly and parameral blades are broad with no such heel in *Harpactrox* (Figs 251, 258). In both genera the gonopore is terminal, but in *Anarchonirmus* (Fig. 119) the mesosomal lobes are large and serrated, and extend distal to gonopore, whereas in *Harpactrox* (Figs 250, 257) the lobes are small and smooth, and do not extend distal to gonopore. No *ames* are visible in *Anarchonirmus* (Fig. 119), but these are visible in *Harpactrox* (Figs 250, 257).

Description. ***Both sexes***. Head indented-dome shaped, often broader than long (Figs 248, 255, 260). Marginal carina not interrupted laterally or medianly, continuous with ventral anterior plate, not displaced at osculum.

Clypeo-labral suture does not reach anterior margin of head. Ventral carinae not clearly continuous with marginal carina in all species. Dorsal preantennal suture transversal, encompassing *ads* and, in some species, the *dsms* (Fig. 255). Head setae as in Figs 248, 255, 260; *as3* and *pns* absent. Preantennal nodi very large; small accessory nodus median to the main nodus, only connected ventrally. Coni short. Antennae monomorphic. Eye protruding. Temporal carinae not visible. All *mts* of roughly equal size, short. Gular plate large, indistinct.

Prothorax rectangular (Figs 246–247, 253–254, 261); *ppss* on postero-lateral corner. Proepimera variable. Pterothorax pentagonal; lateral margins widely divergent; posterior margin convergent to rounded median point; *mms* widely separated medianly. Meso- and metasterna not fused, nude. Leg chaetotaxy as in Fig. 25, except *fI-p2* absent.

Abdomen slenderly oval (Figs 246–247, 253–254, 261). Abdominal chaetotaxy as in Table 2. *aps* absent on all segments. Tergopleurites rectangular; tergopleurites II–IX+X in male, and in segments II–VIII in female narrowly to moderately separated medianly. Sternal plates rectangular, not approaching pleurites. Pleural incrassations wide, with ornate anterior ends. Re-entrant heads variable. Male subgenital plate indistinct in *Harpactrox geminodus*, but trapezoidal in *Ha. loeiensis* **n. sp.**, reaching distal end of abdomen. Female subgenital plate indistinct anteriorly, approaching vulval margin, with no cross-piece. Vulval margin (Figs 252, 259, 262) with short *vms*, thorn-like *vss*; *vos* located on subgenital plate (in *Ha. pontifrons* **n. sp.** both on and along lateral margin of plate, Fig. 262); distal setae longer, situated median to *vss*.

Basal apodeme slightly convergent distally (Figs 249, 256). Proximal mesosome oval to rounded trapezoidal, overlapping basal apodeme. Gonopore (Figs 250, 257) distinct, different between species, but very broad, dominating the terminal end of the mesosome, closed distally and proximally. Ventral ridges vague. Mesosomal lobes small, triangular; 1–2 *ames* sensilla submedianly anterior to gonopore; 1–2 *pmes* submedianly just lateral to gonopore; *pmes* may be microsetae or sensilla. Parameral heads (Figs 251, 258) folded medianly. Parameral blades lobe-like; *pst1* sensillus, central; *pst2* microseta, lateral or sublateral near distal tip.

Host distribution. Known only from two species of Asian trogons of the genus *Harpactes* Swainson, 1833. Hosner *et al*. (2010) showed that *Apalharpactes* Bonaparte, 1854 is best treated as a separate genus from *Harpactes*. We have not seen any material from the two host species in *Apalharpactes*, but note that in the phylogeny of Hosner *et al*. (2010), *Apalharpactes* is more closely related to the African *Apaloderma* Swainson, 1833, which is parasitised by the louse genus *Trogoniella* Tendeiro, 1960, which does not belong to the *Brueelia*-complex.

Geographical range. The three species described here occur in Thailand and on the Philippines, but the genus may range throughout the distribution of *Harpactes* trogons, which includes most of South-East Asia, Indonesia, and southern India.

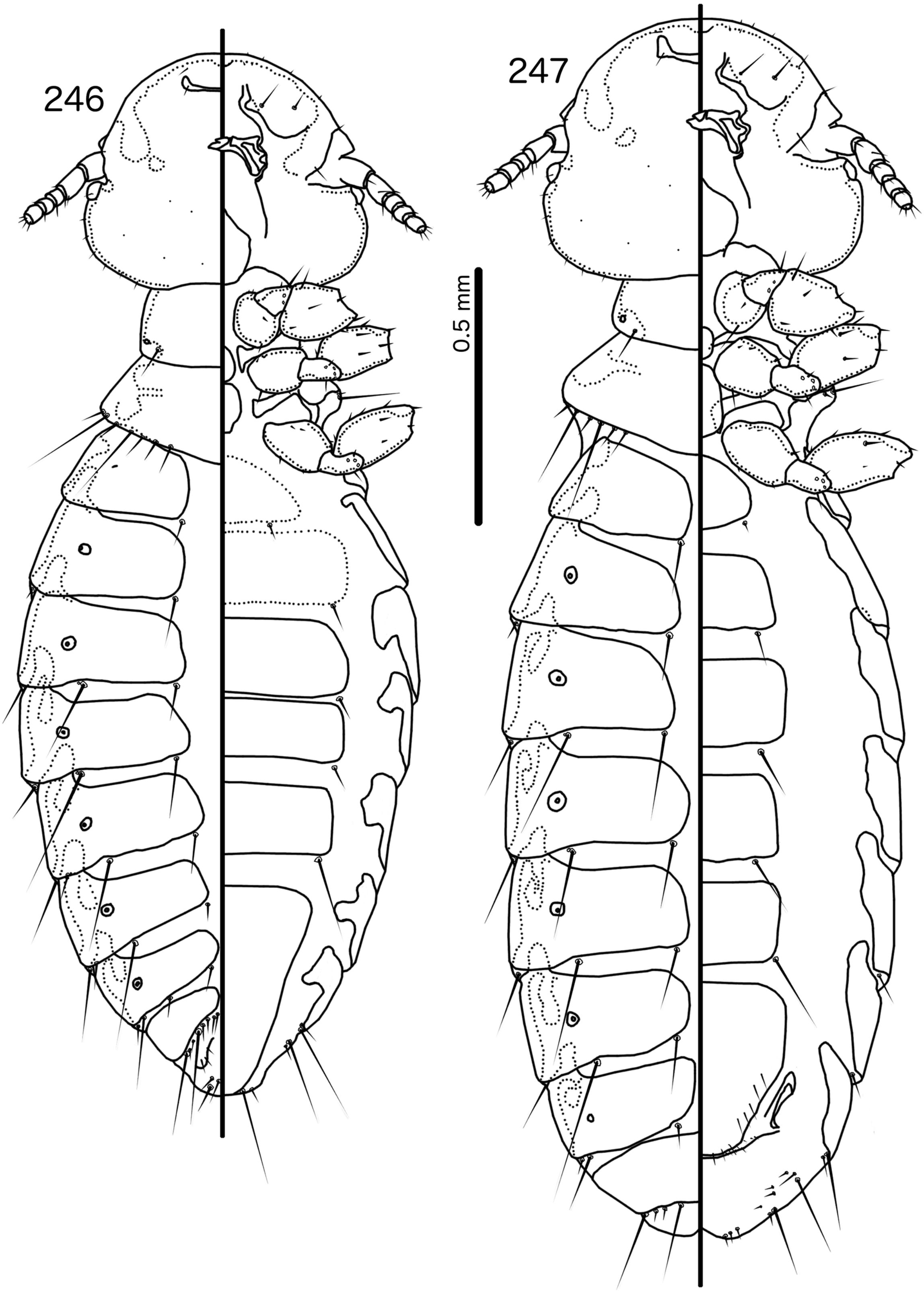
Etymology. *Harpactrox* is formed by the host genus of the type species, *Harpactes* Swainson, 1833, and the Greek "*-trox*" for "gnawer" or "nibbler". The generic name of the hosts, *Harpactes* is derved from Greek "*harpaktes*" for "robber". Gender: masculine.

Remarks. With the description of *Harpactrox*, four different genera of ischnoceran lice have been described from members of the Trogoniformes (Price *et al.* 2003). Based on their phylogenetic position in Bush *et al*. (2016), and some aspects of morphology, we here place *Brueelia*-complex lice from New World trogons in *Guimaraesiella*. This placement, however, is tenuous, as there are also morphological similarities between *Guimaraesiella* from trogons and *Harpactrox*, especially in the preantennal area; future studies with additional material may find that these lice are more closely related than is presently assumed.

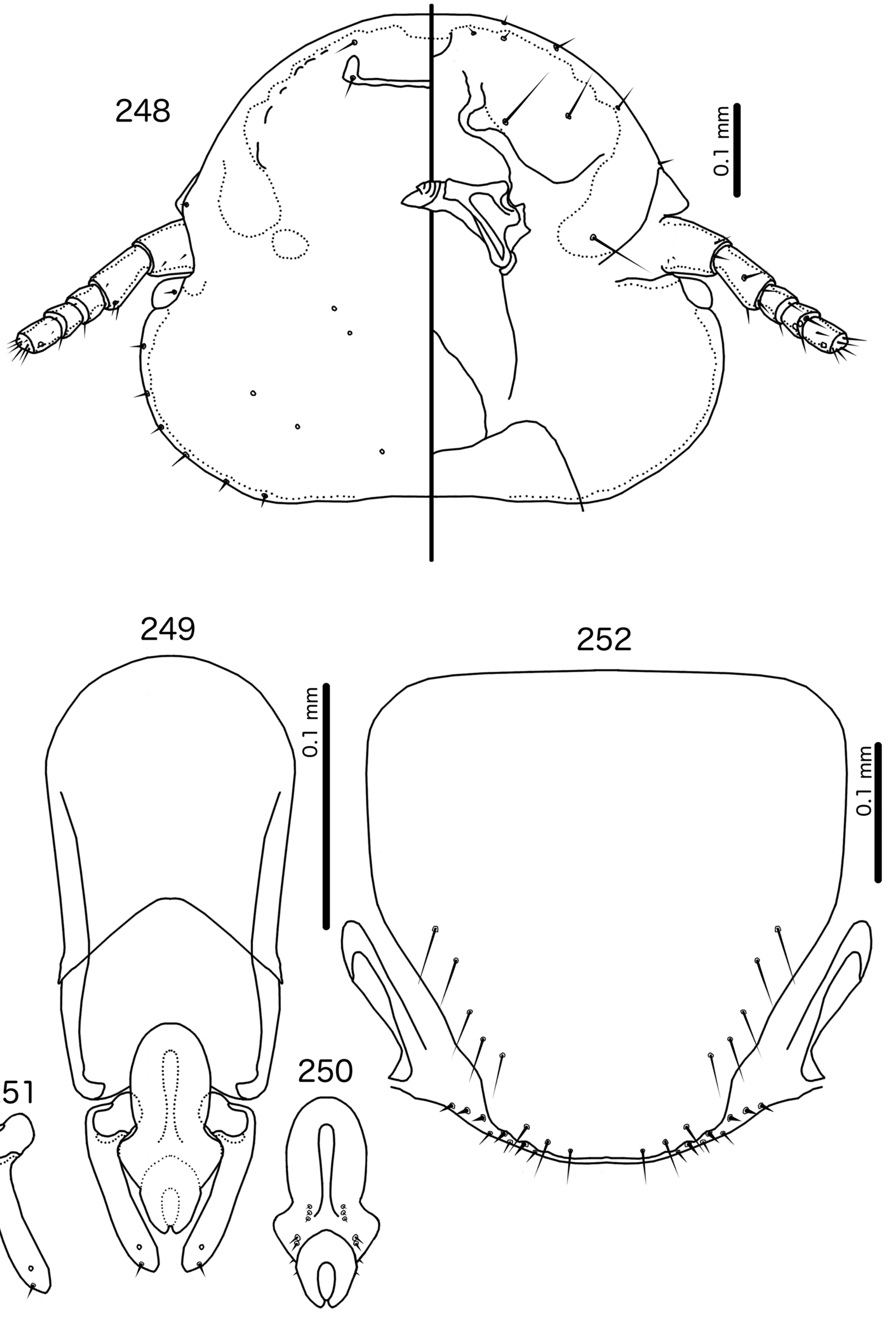
Included species
Harpactrox geminodus* **new species
**Harpactrox loeiensis* new species
Harpactrox pontifrons* **new species

Harpactrox loeiensis Gustafsson & Bush, new species
(Figs 246–252)

Type host. *Harpactes erythrocephalus annamensis* (Robinson & Kloss, 1919)—red-headed trogon.
Type locality. Krading Mountain, Srithan, Wang Saphung District, Loei Province, Thailand.



FIGURES 246–247. *Harpactrox loeiensis* **n. gen. & n. sp.** ex *Harpactes erythrocephalus annamensis*: **246,** male habitus, dorsal and ventral views; only examined male with distorted abdomen, and shape of abdomen here reproduced as closely as possible; anterior sternites and some ventral setae missing in only available male specimen, and here included tentatively. **247,** female habitus, dorsal and ventral views.



FIGURES 248–252. *Harpactrox loeiensis* **n. gen. & n. sp.** ex *Harpactes erythrocephalus annamensis*: **248,** male head, dorsal and ventral views. **249,** male genitalia, dorsal view. **250,** male mesosome, ventral view. **251,** male paramere, dorsal view. **252,** female subgenital plate and vulval margin, ventral view.

Diagnosis. *Harpactrox loeiensis* **n. sp.** most similar to *Ha. pontifrons* **n. sp.**, with which it shares the following characters: head broader than long in both species (Figs 248, 260) (approximately as broad as long in *Ha. geminodus* **n. sp.**, Fig. 255); dorsal preantennal suture does not reach *dsms* (suture reaches *dsms* in *Ha. geminodus*); *mts3* the same length as *mts1–2* and *mts4–5* (*mts3* slightly longer than other *mts* in *Ha. geminodus* n. sp). However, *Ha. loeiensis* (Fig. 248) lacks the dorsal ridge at the osculum found in *Ha. pontifrons* (Fig. 260). *Harpactrox pontifrons* has 2 *vms*, 3 *vss*, and 7–8 *vos* (Fig. 262), whereas *Ha. loeiensis* (Fig. 252) has 4 *vms*, 5–6 *vss*, and 5–8 *vos*. The ventral anterior plate of *Ha. loeiensis* (Fig. 248) is smaller than that of the other two species (Figs 255, 260). Males of *Ha. loeiensis* (Figs 249–251) are separated from those of *Ha. geminodus* by the shape of the male genitalia(Figs 256–258), but males of *Ha. pontifrons* are unknown. In *Ha. loeiensis* the proximal mesosome is slender (Fig. 250), with a narrowly rounded anterior margin, whereas in *Ha. geminodus* it is broad (Fig. 257), with a largely flat anterior margin. In addition, the gonopore is extended distally in *Ha. loeiensis* (Fig. 250), but not in *Ha. geminodus* (Fig. 257).

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in Fig. 248. Ventral anterior plate slightly longer than marginal carina. Ventral carinae diffuse anterior to pulvinus. Dorsal preantennal suture encompasses *ads*, and bends anteriorly at *ads*, but does not reach *dsms*. Preantennal nodi large. All *mts* of roughly equal length. Gular plate indistinct, but anterior end pointed. Thoracic and abdominal segments as in genus description and Figs 246–247. Pleurites broad anteriorly and irregular in male, more slender and regular in female.

Male. Subgenital plate trapezoidal (Fig. 246). Abdominal chaetotaxy as in Table 2 and Fig. 246. Basal apodeme (Fig. 249) roughly as wide distally as proximally. Proximal mesosome (Fig. 250) slender, elongated, anterior margin rounded, narrow. Gonopore narrowly open distally, elongated. Mesosomal lobes slight, rounded; 3 *ames* microsetae submedianly on each side anterior to gonopore; 2 *pmes* microsetae on each side lateral to gonopore. Parameral heads (Fig. 251) rounded. Parameral blades blunt, slender; *pst1–2* as in genus description. Measurements ex *Harpactes erythrocephalus annamensis* (n = 12 except n = 10 for TL): TL = 1.77–2.06 (1.85); HL = 0.41–0.45 (0.43); HW = 0.52–0.55 (0.53); PRW = 0.28–0.32 (0.30); PTW = 0.45–0.48 (0.46); AW = 0.51–0.72 (0.59).

Female. Abdominal chaetotaxy as in Table 2 and Fig. 247. Subgenital plate broadly trapezoidal (Fig. 252), reaching vulval margin. Vulval margin (Fig. 252) gently rounded, with 4 short, slender *vms* on each side, and 5–6 short, thorn-like *vss* on each side; 5–8 *vos* on each side; distal 3 *vos* median to *vss*. Measurements ex *Harpactes erythrocephalus annamensis* (n = 15 except n = 14 for TL and PTW and n = 13 for AW): TL = 1.91–2.37 (2.09); HL = 0.46–0.51 (0.48); HW = 0.59–0.64 (0.60); PRW = 0.32–0.37 (0.34); PTW = 0.51–0.55 (0.52); AW = 0.60–0.76 (0.68).

Remarks. We have specimens examined from the host subspecies *H. e. erythrocephalus* (Gould, 1834) collected in Myanmar which do not belong to *Harpactrox geminodus*, but are more similar in head shape to *Ha. loeiensis* They differ from *Ha. loeiensis* in the shape of the male genitalia and the extent of the dorsal preantennal suture. We presently cannot assess whether this material is conspecific with *Ha. loeiensis* or not, and leave this material undescribed.

Etymology. The species epithet is derived from the type locality, Loei Province in Thailand.

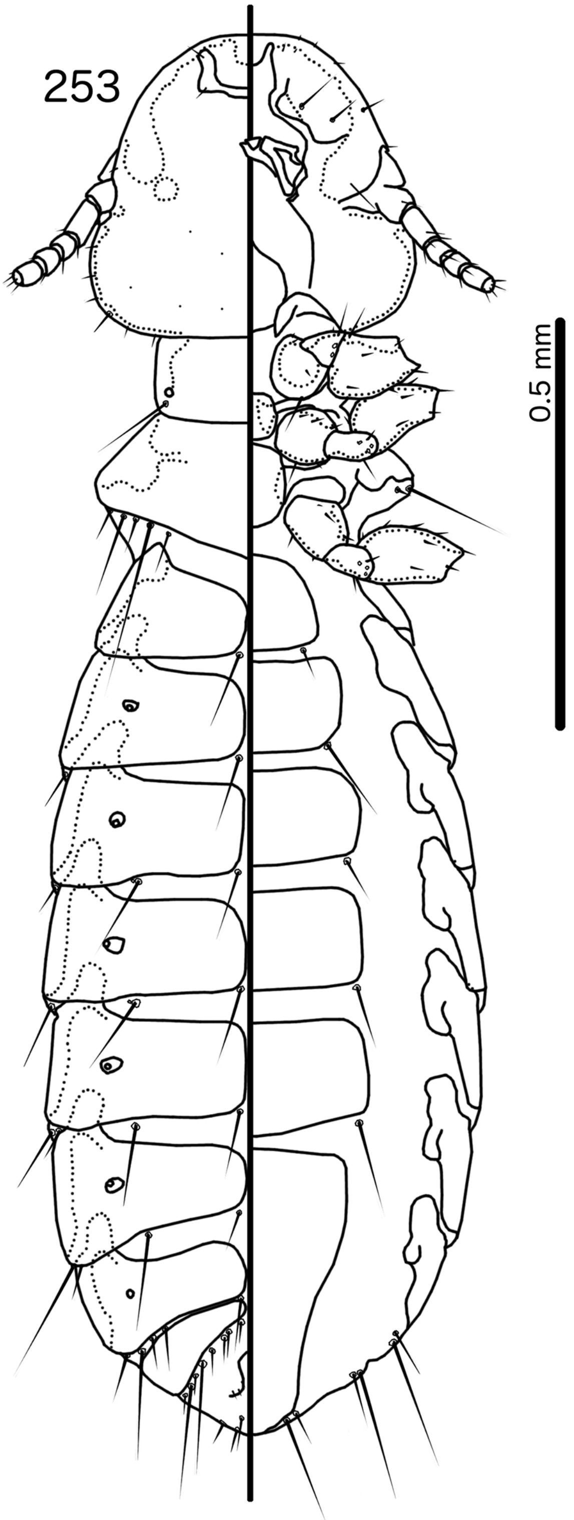
Type material. Ex *Harpactes erythrocephalus annamensis*: Holotype ♂, Krading Mountain, Srithan, Wang Saphung District, Loei Province, Thailand, 1, Jan. 1954, R.E. Elbel & B. LeKagul, RE-3252, B-22640 (OSUS). **Paratypes:** 1♀ same data as holotype (OSUS); 2♀, same data as holotype (PIPeR).

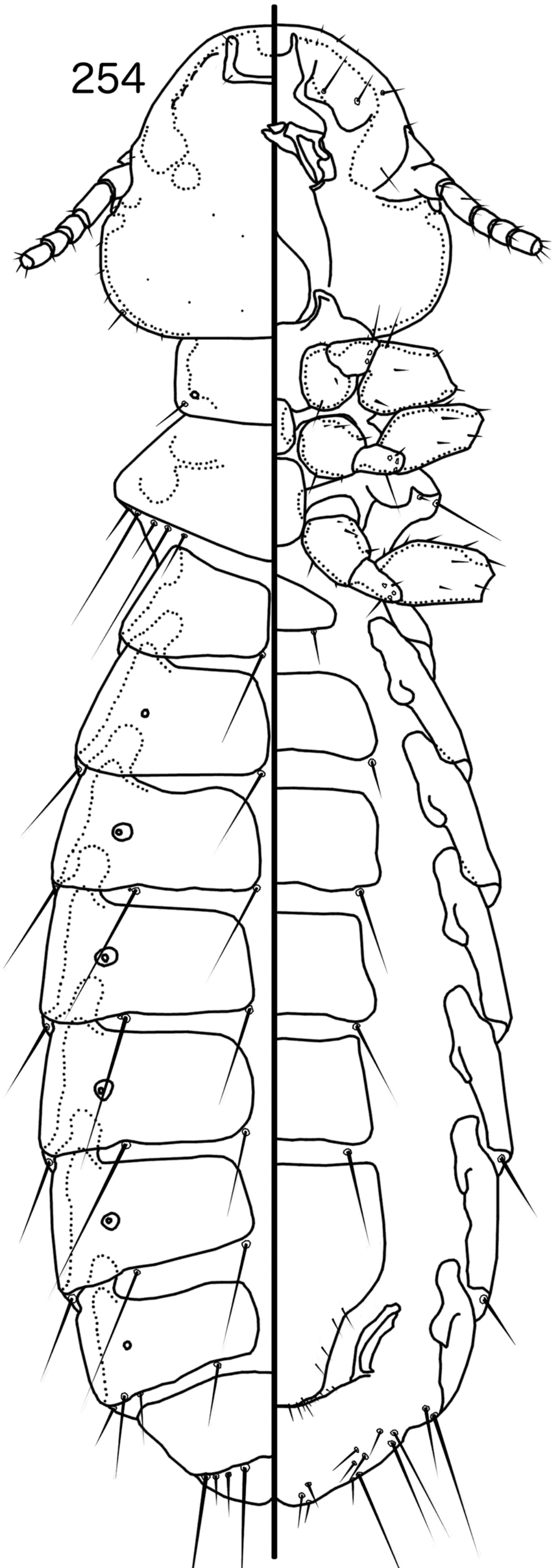
Harpactrox geminodus Gustafsson & Bush, new species

(Figs 253–259)

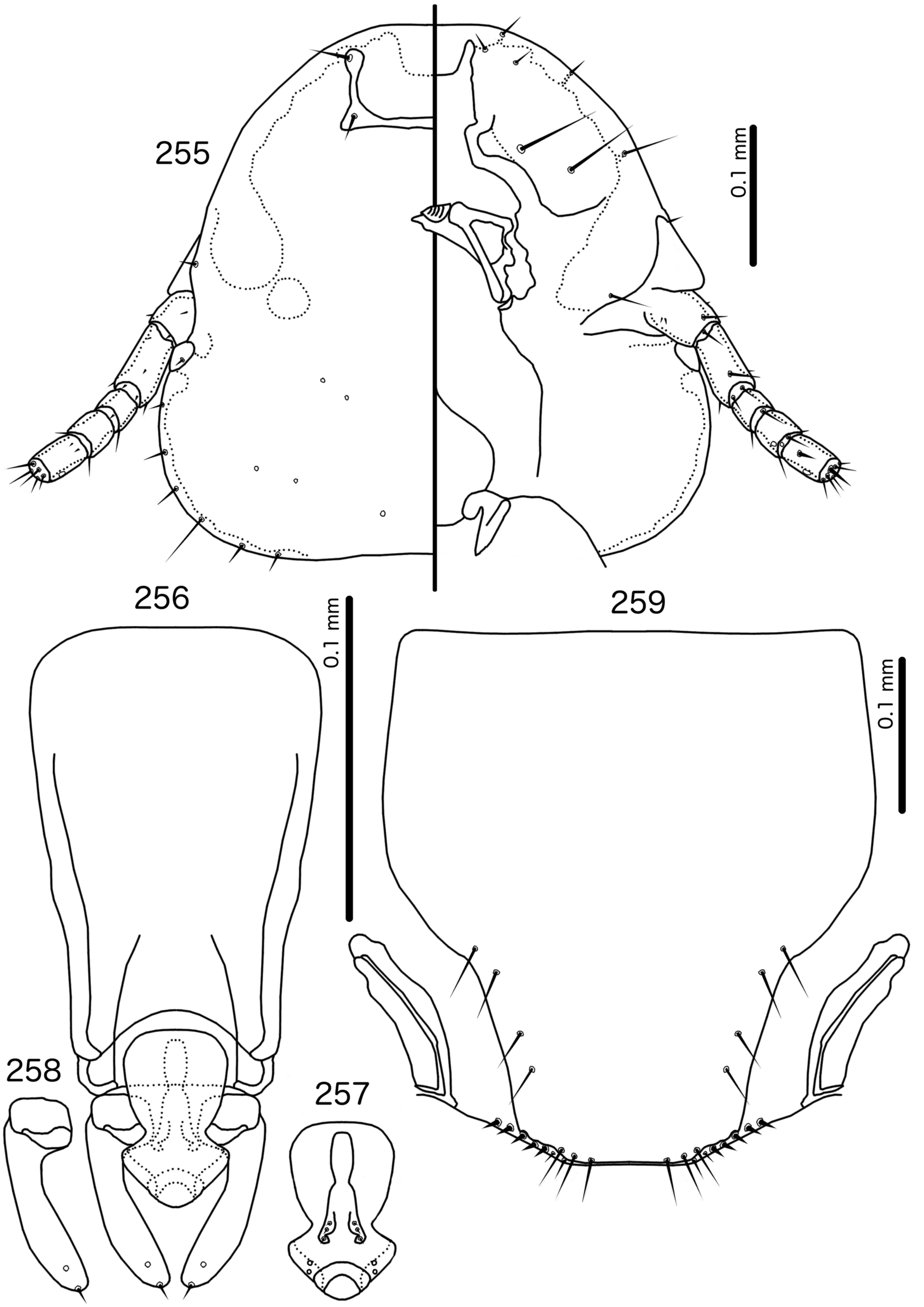
Type host. *Harpactes erythrocephalus erythrocephalus* (Gould, 1834)—red-headed trogon.
Type locality. Chiang Saen Kao, Chiang Rai Province, Thailand.

Diagnosis. *Harpactrox geminodus* **n. sp.** is separated from the two other species in the genus by head shape; the head is proportionately narrower in *Ha. geminodus* (Fig. 255) than in either *Ha. loeiensis* **n. sp.** (Fig. 248) or *Ha. pontifrons* **n. sp.** (Fig. 260). As in *Ha. loeiensis* (Fig. 248) the dorsal preantennal suture extends anteriorly from the *ads* in *Ha. geminodus* (Fig. 255), but only in *Ha. geminodus* does it reach the *dsms*; the dorsal preantennal suture does not extend anteriorlyin *Ha. pontifrons* (Fig. 260). The proximal mesomere of *Ha. geminodus* (Fig. 257) is





FIGURES 253–254. *Harpactrox geminodus* **n. gen. & n. sp.** ex *Harpactes erythrocephalus erythrocephalus*: **253,** male habitus, dorsal and ventral views. **254,** female habitus, dorsal and ventral views.



FIBURES 255–259. *Harpactrox geminodus* **n. gen. & n. sp.** ex *Harpactes erythrocephalus erythrocephalus*: **255** male head, dorsal and ventral views. **256,** male genitalia, dorsal view. **257,** male mesosome, ventral view. **258,** male paramere, dorsal view. **259,** female subgenital plate and vulval margin.

broad and flattened, whereas that of *Ha. loeiensis* (Fig. 250) is narrow and rounded. Vulval chaetotaxy of *Ha. geminodus* intermediate between that of the other two species, and female best identified on non-genitalic characters.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in Fig. 255. Ventral anterior plate much wider than marginal carina. Ventral carinae clearly defined anterior to pulvinus. Dorsal preantennal suture reaches *ads* and *dsms*. Preantennal nodi large. All *mts* of about equal length, except *mts3* about twice as long as other *mts*. Gular plate spade-shaped. Thoracic and abdominal segments as in genus description and Figs 253–254. Sternal plates and subgenital plates very pale, and illustrated only tentatively.

Male. Subgenital plate sinuously trapezoidal (Fig. 253). Abdominal chaetotaxy as in Table 2 and Fig. 253; 1 *tps* present on tergopleurite VIII in one examined male, absent in the other. Basal apodeme broad (Fig. 256). Proximal mesosome broad, anterior margin roughly flat. Gonopore (Fig. 257) terminal, not extended distally. Mesosomal lobes angular; 3 *ames* microsetae submedianly on each side anterior to gonopore; 2 *pmes* microsetae laterally to gonopore on each side. Parameral heads rounded rectangular. Parameral blades (Fig. 258) blunt, slender; *pst1–2* as in genus decsription. Measurements ex *Harpactes erythrocephalus erythrocephalus* (n = 2, TL and AW cannot be measured due to mounting): HL = 0.35–0.37; HW = 0.36–0.39; PRW = 0.23–0.24; PTW = 0.36–0.39.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 254. Subgenital plate sinuously trapezoidal, reaching vulval margin (Fig. 259). Vulval margin (Fig. 259) somewhat angular, with 2 short, slender *vms* on each side, and 3–5 short, thorn-like *vss* on each side; 5–7 long, slender *vos*; the 2–3 distal *vos* median to *vss*. Measurements ex *Harpactes erythrocephalus erythrocephalus* (n = 3): TL = 1.86–2.01; HL = 0.40–0.41; HW = 0.44–0.45; PRW = 0.26–0.27; PTW = 0.41–0.42; AW = 0.59–0.68.

Etymology. The species epithet is derived from Latin "*gemini*" for "twins" and "*nodus*" for "knot".

Type material. Ex *Harpactes erythrocephalus erythrocephalus*: Holotype ♂, Chiang Saen Kao, Chiang Rai Province, Thailand, 4 Mar. 1953, R.E. Elbel, RE-2348, B-14848 (NHML). **Paratypes:** 1♀ same data as holotype (NHML); 1♂, 2♀, same data as holotype (PIPeR).

Harpactrox pontifrons Gustafsson & Bush, new species

(Figs 260–262)

Type host. *Harpactes ardens ardens* (Temminck, 1826)—Philippine trogon.
Type locality. "Tucay E-el", Mindanao, Philippines.

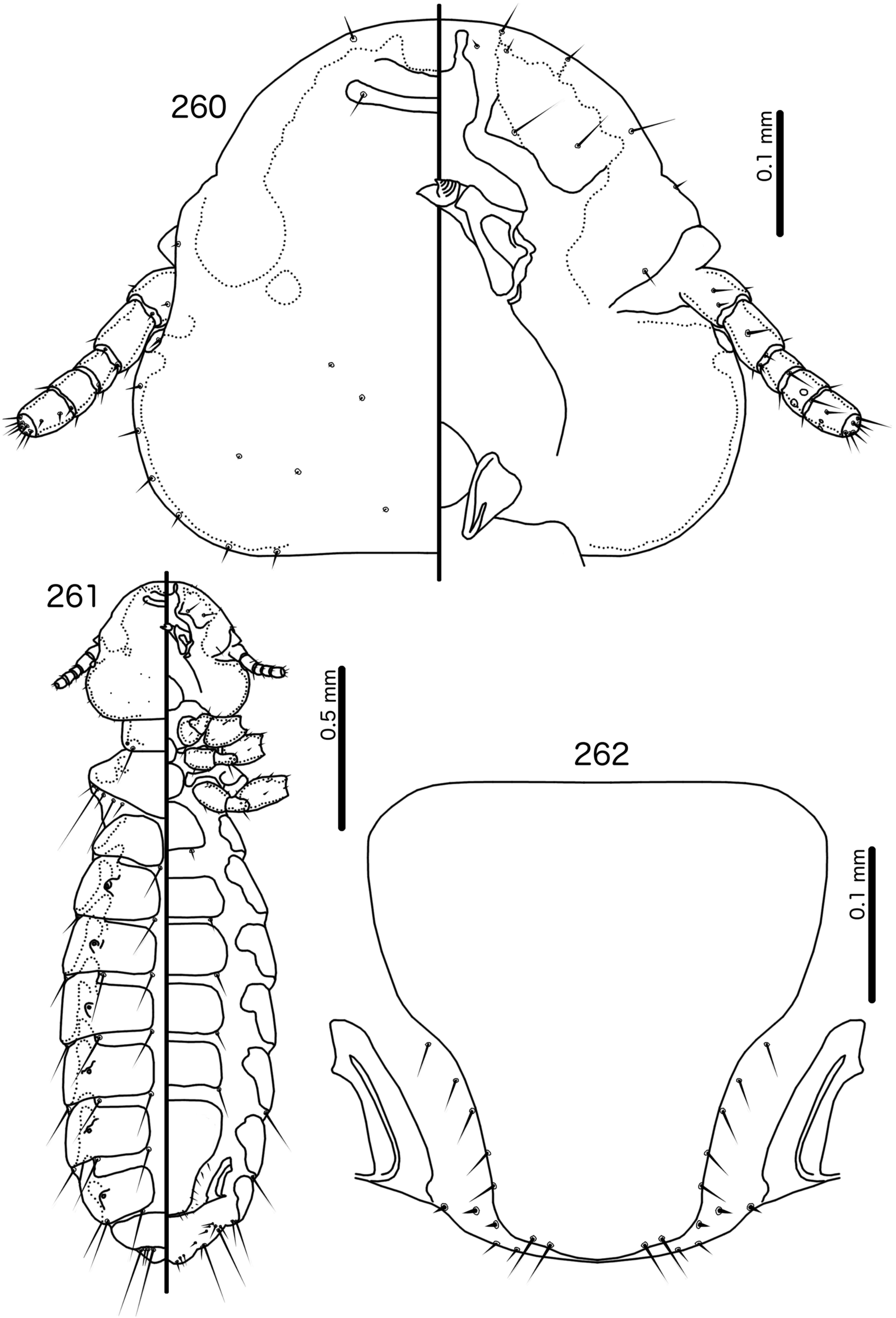
Diagnosis. Head shape of *Harpactrox pontifrons* **n. sp.** (Fig. 260) intermediate between the other two species in the genus, but as in *Ha. loeiensis* **n. sp.** (Fig. 248) the head is slightly wider than long. As in *Ha. loeiensis*, all *mts* are of roughly equal length, and the dorsal preantennal suture does not reach *dsms*. Dorsal sinuous ridge at the osculum found in *Ha. pontifrons* (Fig. 260) is not present in *Ha. loeiensis* (Fig. 248). Like in *Ha. geminodus* **n. sp.** (Fig. 255), the lateral margins of the clypeo-labral suture are clearly delimited anterior to the pulvinus in *Ha. pontifrons*, and the ventral anterior plate is much wider than the marginal carina.

Description. Head shape, structure, and chaetotaxy as in genus description and Fig. 260. Ventral anterior plate much wider than marginal carina. Ventral carinae clearly defined anterior to pulvinus. Dorsal preantennal suture reaches *ads* but not *dsms*. Clear dorsal thickening present anterior to suture. Preantennal nodi wide and rounded, distorting the lateral head margin just anterior to antennae. All *mts* of roughly equal length. Gular plate short, indistinct. Thoracic and abdominal segments as in genus description and Fig. 261. Posterior margin of pterothorax strikingly more convergent than in other two species.

Male. Unknown.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 261. Subgenital plate sinuously trapezoidal (Fig. 262). Vulval margin (Fig. 262) gently rounded, with 2 short, slender *vms* on each side, and 3 short, thorn-like *vss* on each side; 7–8 long, slender *vos* on each side; 2 distal *vos* median to *vss*. Measurements ex *Harpactes ardens ardens* (n = 3): TL = 1.79–2.01; HL = 0.38–0.42; HW = 0.44–0.49; PRW = 0.26–0.28; PTW = 0.44–0.48; AW = 0.56 –0.67.

Etymology. The species epithet is derived from Latin "*pontis*" for "bridge" and "*frons*" for "forehead". This refers to the thickening of the dorsal head plate across the clypeo-labral suture, which forms a "bridge" from one side of the head to the other (Fig. 260).



FIGURES 260–262. *Harpactrox pontifrons* **n. gen. & n. sp.** ex *Harpactes ardens ardens*: **260,** female head, dorsal and ventral views. **261,** female habitus, dorsal and ventral views. **262,** female subgenital plate and vulval margin, ventral view.

Type material. Ex ***Harpactes ardens ardens***: **Holotype** ♀, "Tucay E-el", Mindanao, Philippines, SUBBM-1507 (BPBM). **Paratypes:** 2♀, same data as holotype (PIPeR) [one slide contains unidentified *Philopterus* s. lat.].

Remarks. Despite not having any male, we describe *Harpactrox pontifrons* **n. sp.** as a new species on the basis of the unique preantennal area of the females. Several genera of the *Brueelia*-complex have species with relatively well-defined dorsal thickenings near the frons (e.g. *Indoceoplanetes laurocorythes* **n. sp.**; Fig. 226). We here interpret these thickenings as part of the marginal carina displaced posteriorly, as suggested by the shape of this feature in e.g. *Aratricerca cirithra* **n. sp.** (Fig. 170). This is not the case in *Ha. pontifrons*, where the marginal carina is clearly continuous across the osculum (Fig. 260). No similar structure is found in either of the other two species of *Harpactrox* (Figs 248, 255) nor, to our knowledge, in any other ischnoceran louse. Females of *H. pontifrons* are well separated from their congenerics, as described above. The type host of *Ha. pontifrons* is not uncommon, but decreasing (BirdLife International 2016), and collecting in the Philippines may not be possible in the foreseeable future; hence additional fresh material to find, describe and compare the male with the other two species in the genus may take a long time to become available.

Traihoriella Ansari, 1947

Nirmus Nitzsch, 1818: 291 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).
Traihoriella Ansari, 1947: 290.

Type species. *Traihoriella punjabensis* Ansari, 1947: 290, by original designation.

Diagnosis. The male genitalia of *Traihoriella* (Figs 266–268, 273–275) are similar to those of *Harpactrox* **n. gen.** (Figs 249–251, 256–258), and may not be separable when more species of both genera have been examined and described. However, species in these genera are readily separated by non-genitalic characters; see *Harpactrox* (above) for a more detailed comparison of unique non-genitalic characters in these two genera.

Traihoriella share the following set of characters with *Corvonirmus*, *Priceiella* **n. gen.**, and *Olivinirmus*: parameral heads folded medianly; marginal carina uninterrupted but displaced at osculum and frons hyaline. These genera, however, differ in several characteristics.

In *Priceiella* (Figs 284, 291, 306, 314) the female subgenital plate flares into a cross-piece at vulval margin, which is not present in *Traihoriella* (Figs 269, 276). Furthermore, in *Priceiella* (Figs 282, 289, 304, 312) the gonopore is located in the central part of the ventral side, whereas in *Traihoriella* it is subterminal (Figs 267, 274).

In *Olivinirmus* (Figs 327–328), *tps* are absent and *aps* are present in roughly the same segments as in *Traihoriella*, and the preantennal structure is largely the same in both genera, including the absence of dorsal preantennal sutures (Figs 265, 272, 329). The female subgenital plate does not flare into a cross-piece in either genus (Figs 269, 276, 333). The mesosome is more complex in *Olivinirmus* (Figs 334–337) than in *Traihoriella* (Figs 266–268, 273–275); gonopore is terminal in *Traihoriella* but central in *Olivinirmus*; rugose nodi are typically present in *Olivinirmus* but absent in *Traihoriella*.

Corvonirmus is similar to *Traihoriella* in the preantennal area, but there are few similarities elsewhere. In most *Corvonirmus* (Fig. 321) the antennae are sexually dimorphic, but this is never the case in *Traihoriella* (Figs 265, 272). Both *ps, aps, psps*, and *ss* occur in more anterior segments in *Corvonirmus* than in *Traihoriella* (Table 2), and *tps* are present in male *Corvonirmus* (Fig. 319) but absent in male *Traihoriella* (Figs 263, 270); in addition, both sexes of *Corvonirmus* have multiple *sts* on at least segments IV–VI, whereas no segments have more than one *sts* in *Traihoriella*. Pleurites continue to ventral side of abdomen, and are associated with broad pleural incrassations in *Traihoriella* (Figs 263–264, 270–271) but do not or only barely reach lateral margins, but not the ventral side, and are much reduced, generally without incrassations, in *Corvonirmus* (Figs 319–320). The female subgenital plate of *Corvonirmus* flares into a cross-piece or have lateral submarginal extensions (Fig. 326), but this is not the case in *Traihoriella* (Figs 269, 276). The male genitalia of both genera (Figs 266–268, 273–275, 323–325) have medianly folded parameral heads, *pst1–2* as sensilla, and relatively simple mesosomes. Parameral blades in *Corvonirmus* (Fig. 325) are much elongated, and connected to parameral heads by a narrow neck, whereas in *Traihoriella* (Figs 268, 275) the parameral blades do not narrow near the parameral heads, and are not as elongated.

Description. ***Both sexes***. Head trapezoidal (*Traihoriella punjabensis* species-group, Fig. 265) or indented-dome shaped (*Tr. laticeps* species-group, Fig. 272). Marginal carina uninterrupted, deeply displaced dorsally and posteriorly at osculum. Dorsal preantennal suture, dorsal anterior plate, and ventral anterior plate absent. Ventral carinae diffuse anterior to pulvinus, and not clearly continuous with marginal carina. Head setae as in Figs 265, 272; *as3* absent; *pns* sensillus, often hard to see. Preantennal nodi conspicuous in *Tr. laticeps* species-group, less so in *Tr. punjabensis* species-group. Coni short, slender. Antennae monomorphic. Temporal carinae not visible; *mts3* only macrosetae. Gular plate broadly spade-shaped.

Prothorax rounded rectangular (Figs 263–264, 270–271); *ppss* on postero-lateral corner. Proepimera with hammer-shaped median ends. Pterothorax pentagonal; lateral margins divergent; posterior margin convergent to median point or rounded; *mms* widely interrupted medianly. Meso- and metasterna not fused; mesosternum with 1 seta on postero-lateral corner on each side; metasternum with 1–2 setae on each postero-lateral corner. Metepisterna with large, blunt median ends. Leg chaetotaxy as in Fig. 25, except *fI-v4, fI-p2* absent, except in *Traihoriella latifrons*; *tI-v2* and *tIp1–2* dorsal.

Abdomen (Figs 263–264, 270–271) oval, more rounded in *Traihoriella laticeps* species-group than in *Tr. punjabensis* species-group. Abdominal chaetotaxy as in Tables 2 and 7. Tergopleurites and sternal plates generally weakly pigmented, rounded rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly to moderately divide medianly. Sternal plates rectangular, not approaching pleurites. Pleural incrassations broad, in some species reaching median to spiracle openings (Figs 270–271). Re-entrant heads large in *Tr. punjabensis* species-group (Figs 263–264), but small in *Tr. laticeps* species-group (Figs 270–271). Male subgenital plate roughly triangular, reaching posterior margin of abdomen. Female subgenital plate pentagonal, reaching vulval margin but not flaring into cross-piece (Figs 269, 276). Vulval margin (Figs 269, 276) with slender *vms*, thorn-like *vss*; *vos* situated on subgenital plate, following lateral margins; distal *vos* median to *vss*.

Basal apodeme (Figs 266, 273) rounded trapezoidal, narrowing distally. Shape of proximal mesosome varies between species. Gonopore (Figs 267, 274) terminal, prominent, either closed or only narrowly open distally. Mesosomal lobes slight, rounded or angular; 2–3 *pmes* microsetae lateral to gonopore on each side. Parameral heads (Figs 268, 275) large, irregularly shaped. Parameral blades slender; *pst1–2* sensilla, near distal tip.

TABLE 7. Chaetotaxy of abdominal segments II–VIII of the three species of *Traihoriella*. Trichoid setae of segment VIII are present in all species, and are not listed. Sets of setae differing from those of *Tr. punjabensis* are highlighted in **bold**. Material examined from all species is from their respective type hosts. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	Sex	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
Tr. punjabensis	M	IV–VIII	V–VII	IV–VII	–	V–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	VII–VIII	II–VI
Tr. binhchauensis	M	IV–VIII	–	IV–VII	–	**VI–VIII**	II–VI
	F	IV–VIII	–	IV–VII	–	**VI–VIII**	II–VI
Tr. laticeps	M	IV–VIII	–	IV–VII	–	**II–VIII**	II–VI
	F	IV–VIII	–	IV–VII	–	**II–VIII**	II–VI

Species-group characters: Two species groups are recognised based on abdominal chaetotaxy, head shape, and host relationships, as follows:

***Traihoriella punjabensis* species-group** (Figs 263–269). Head trapezoidal; *fI-v4* absent; *ss* absent on abdominal segments II–IV in both sexes; re-entrant heads of pleurites present. Hosts: Asian Megalaimidae.

***Traihoriella latifrons* species-group** (Figs 270–276). Head indented-dome shaped; *fI-v4* present; *ss* present on abdominal segments II–IV in both sexes; re-entrant heads of pleurites absent. Hosts: Neotropical Ramphastidae.

Host distribution. Occurs disjunctly on two families of tropical Piciformes, the South American Ramphastidae on the genera *Aulacorhynchus* and *Andigena* and the Asian Megalaimidae on the genus *Psilopogon* [given as *Megalaima* in Bush *et al.* (2016)]. There are no known records of this genus—or any other genus in the *Brueelia*-complex—from South American Barbets (Capitonidae) or African Barbets (Lybiidae).

Geographical range. Disjunctly in South America and South-East Asia.

Remarks. Three species of *Traihoriella* were included in the phylogeny of Bush *et al*. (2016). Two other genera (*Saepocephalum* **n. gen.** and *Bizarrifrons* Eichler, 1938) appeared within the clade containing *Traihoriella* in the phylogeny of Bush *et al*. (2016). However, these phylogenetic relationships were not statistically supported, and they are not supported by morphological characters. All three genera have very different abdominal chaetotaxy, preantennal structure, male genitalia, and other characters. Within *Traihoriella* there is substantial variation in head shape and abdominal chaetotaxy, yet the species in this genus are strongly allied by similarities in the male genitalia and structural similarities in their preantennal areas. A more comprehensive understanding of the relationships of these three genera will require additional material and research.

Included species
Traihoriella punjabensis species-group
Traihoriella binhchauensis* (Najer & Sychra [in Najer *et al*.], 2014): 423 **n. comb. [in *Brueelia*]
**Traihoriella punjabensis* Ansari, 1947: 290

Traihoriella laticeps species-group
Traihoriella carrikeri (Ansari, 1955a: 51) **n. comb.** [in *Brueelia*] **[1]**
Traihoriella laticeps* (Piaget, 1888: 152) **n. comb. [in *Nirmus*]
Brueelia laticeps prasinus Carriker, 1954: 199

[1] Mey & Barker (2014) suggested that *Brueelia carrikeri* Ansari, 1955b, may be a member of *Traihoriella*. The illustrations that Ansari (1955b) provided indicate that the species belongs in *Traihoriella*, and in the *laticeps* species group. However, the illustration of the full-body and vulval margin are from a different host species than the holotype of *Br. carrikeri*, and Ansari (1955a: 52) was himself not certain that the two samples were the same species. His illustrations of the male genitalia (Ansari, 1955a, figs 1b–d) are very similar to those of *Tr. laticeps*, but as no clear illustration of the male was provided. Therefore, we do not presently place the name *Br. carrikeri* as a synonym of *Tr. laticeps*. The illustrated female [ex *Turdus olivater sanctaemartae* (Todd, 1913)] is indistinguishable from *Tr. laticeps* in abdominal and vulval chaetotaxy, head shape, and the wide pleural incrassations, but has a cross-piece at the vulval margin, which is not seen in *Traihoriella*. We have not examined any material of *Br. carrikeri*, and cannot confirm whether this cross-piece exists in the material Ansari studied, nor can we confirm to which genus the holotype belongs. We tentatively agree with Mey & Barker (2014) and place *Br. carrikeri* in *Traihoriella* based on the original description and illustrations, as well as Ansari's (1955a) statement that the illustrated female "closely resembles" the male.

Traihoriella punjabensis **Ansari, 1947**
(Figs 263–269)

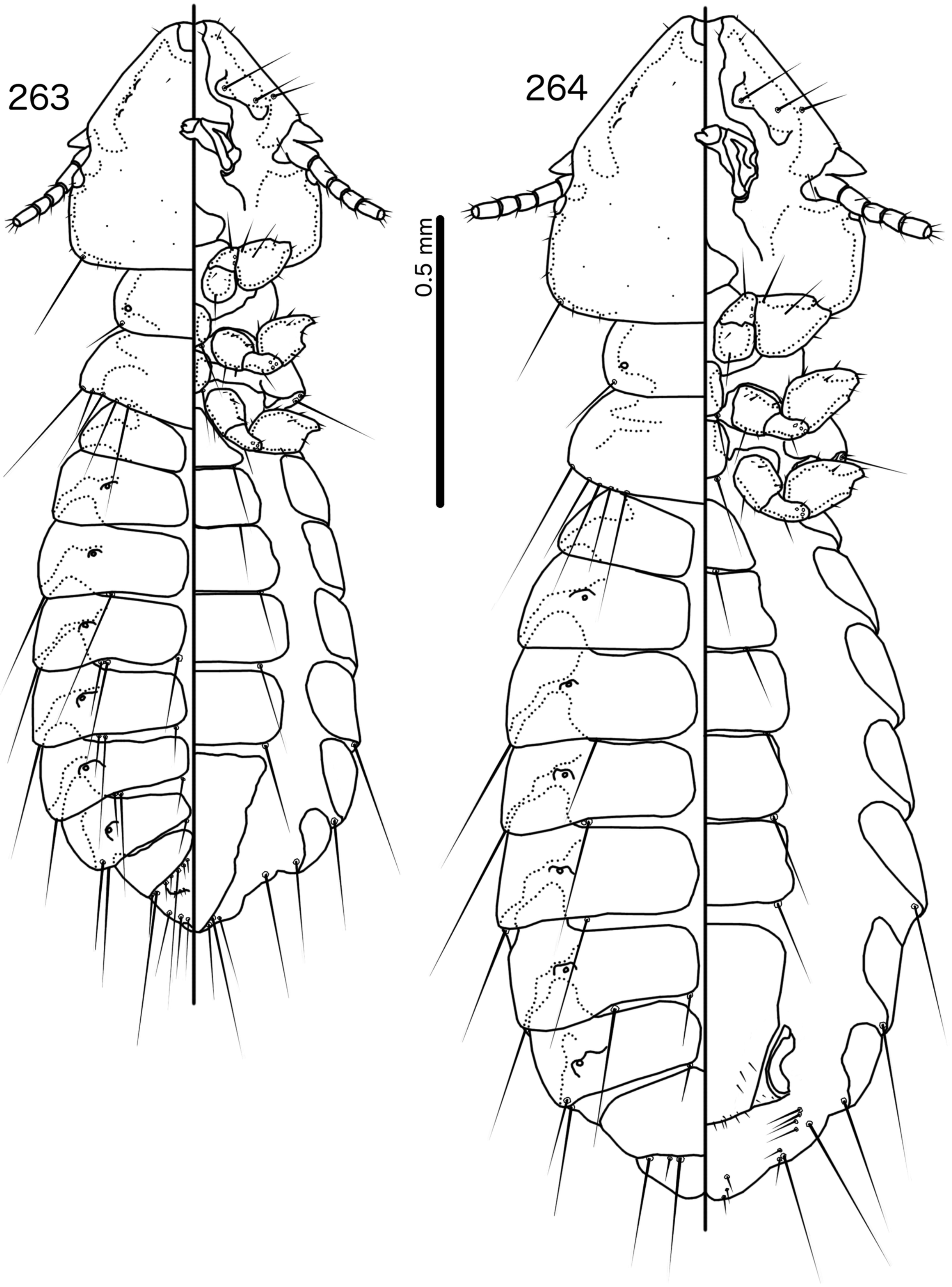
Traihoriella punjabensis Ansari, 1947: 290.
Brueelia punjabensis (Ansari), 1947; Hopkins & Clay, 1952: 60.

Type host. *Psilopogon virens marshallorum* Swinhoe, 1870—great barbet.
Type locality. Kulu, Punjab, India.
Other host. *Psilopogon virens virens* (Boddaert, 1783)—great barbet.

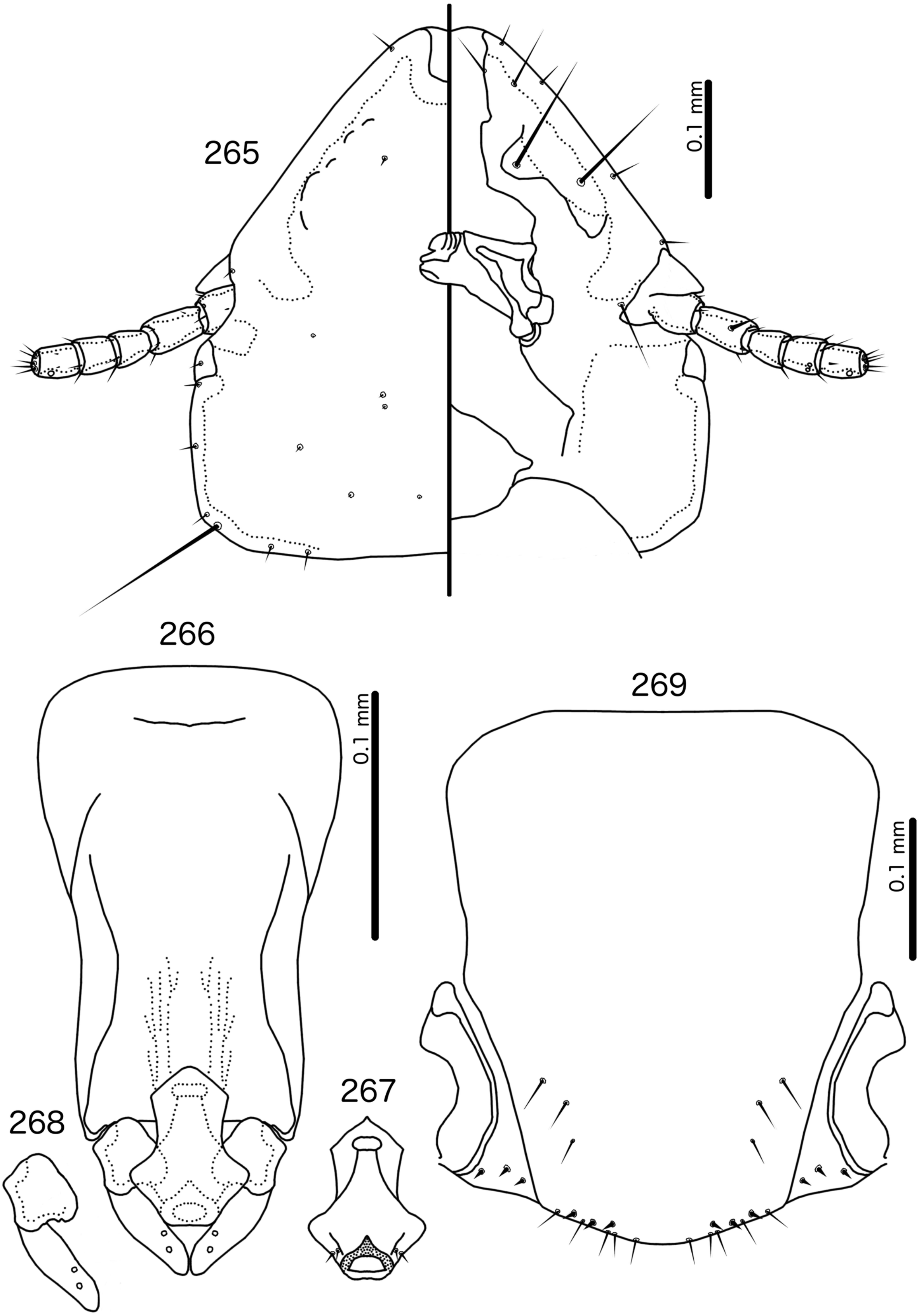
Description. Head shape, structure, and chaetotaxy as in genus description and Fig. 265. Displaced section of marginal carina not widened. Coni long and slender, reaching to distal margin of scapes. Preocular nodi large, quadratic. Postocular nodi large, rounded; *pos* located immediately posterior to eye. Thoracic and abdominal segments as in genus description and Figs 263–264. Pleural incrassations extensive, lateral to spiracle openings.

Male. Abdominal chaetotaxy as in Table 7 and Fig. 263; *aps* present on segments V–VII. Basal apodeme constricted at mid-length (Fig. 266), much wider proximally than distally. Proximal mesosome broad, anterior margin convergent. Gonopore (Fig. 267) closed distally, terminal, with rugose proximal margin. Mesosomal lobes small, angular; 2 *pmes* microsetae on distal margin of lobes. Parameral heads (Fig. 268) roughly quadratic. Parameral blades short, lobe-like, blunt; *pst1–2* as in genus description. Measurements ex *Psilopogon virens marshallorum* (n = 8): TL = 1.51–1.70; HL = 0.42–0.45; HW = 0.44–0.47; PRW = 0.27–0.30; PTW = 0.39–0.42; AW = 0.54–0.63.

Female. Abdominal chaetotaxy as in Table 7 and Fig. 264. Subgenital plate roughly trapezoidal, with wide median section reaching vulval margin (Fig. 269). Vulval margin (Fig. 269) bulging medianly, with 3–4 short, slender *vms* on each side, and 4–6 short, thorn-like *vss* on each side; 4–5 short, slender *vos*; distal *vos* median to *vss*. Measurements ex *Psilopogon virens marshallorum* (n = 17): TL = 1.74–2.03 (1.88); HL = 0.43–0.49 (0.47); HW = 0.45–0.51 (0.48); PRW = 0.29–0.33 (0.31); PTW = 0.40–0.46 (0.43); AW = 0.61–0.73 (0.68).



FIGURES 263–264. *Traihoriella punjabensis* Ansari, 1947 ex *Psilopogon virens marshallorum*: **263,** male habitus, dorsal and ventral views. **264,** female habitus, dorsal and ventral views.



FIGURES 265–269. *Traihoriella punjabensis* Ansari, 1947 ex *Psilopogon virens marshallorum*: **265,** male head, dorsal and ventral views. **266,** male genitalia, dorsal view. **267,** male mesosome, ventral view. **268,** male paramere, dorsal view. **269,** female subgenital plate and vulval margin, ventral view.

Type material. Ex ***Psilopogon virens marshallorum*****: Holotype** ♀, Kulu, Punjab, India, Sep. 1928, Brit. Mus. 1953-2 (NHML).

Additional material examined (non-types)

Ex ***Psilopogon virens marshallorum***: 2♀, same data as holotype (NHML); 8♂, 18♀, Nepal, May 1935, R. Meinertzhagen, 4436 (NHML) [slide contains a female of the *Degeeriella*-complex].

Traihoriella laticeps (Piaget, 1888), new combination

(Figs 270–276)

Nirmus laticeps Piaget, 1888: 152.
Degeeriella laticeps Piaget, 1888; Harrison, 1916: 116.
Brueelia laticeps (Piaget), 1888; Hopkins & Clay, 1952: 57.
Brueelia laticeps prasina Carriker, 1954: 193, [Legends to figs 16b, 17b].
Brueelia laticeps prasinus Carriker, 1954: 199.

Type host. *Aulacorhynchus prasinus atrogularis* (Sturm & Sturm, 1841)—emerald toucanet.

Type locality. None given.

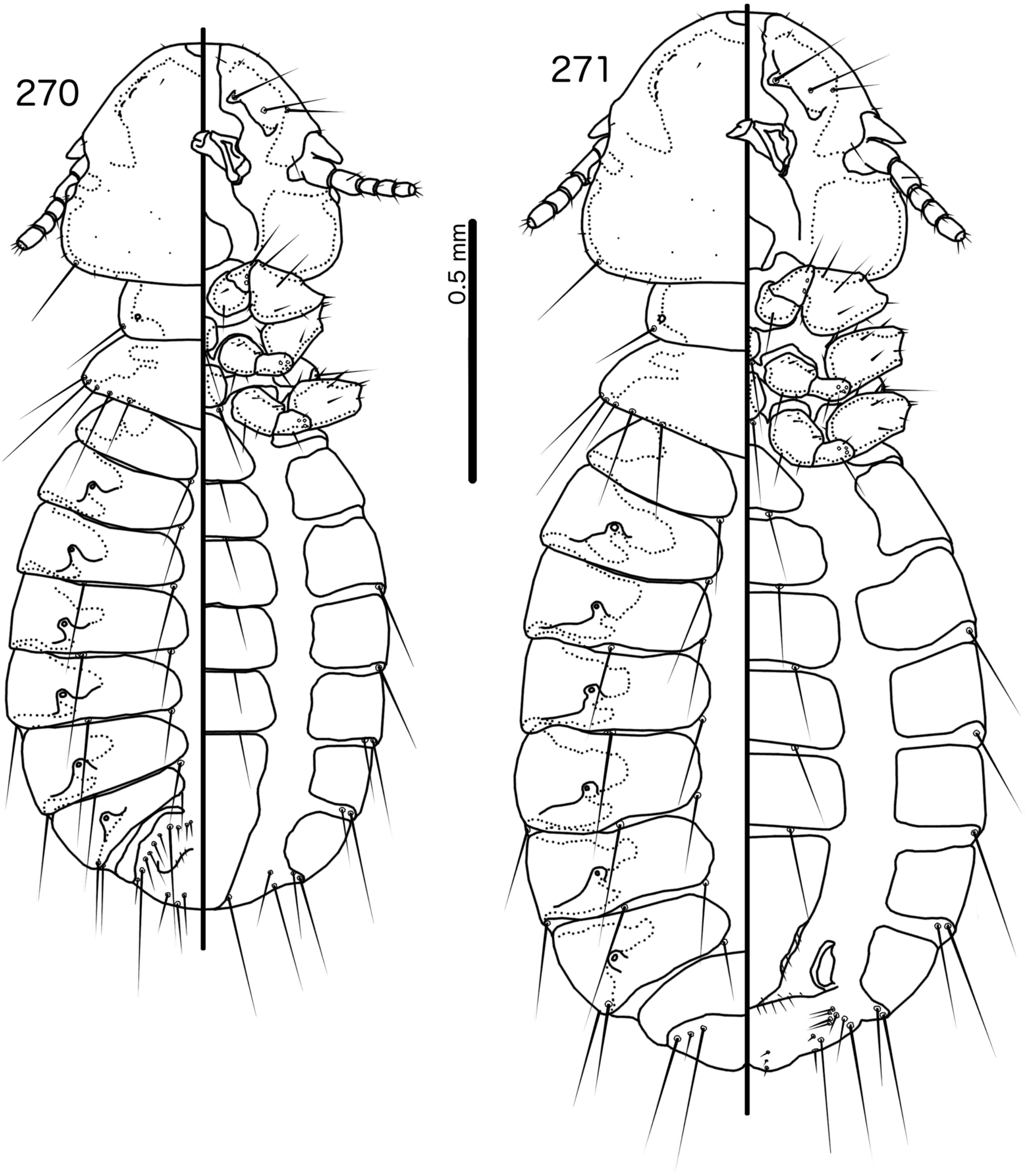
Other hosts. *Andigena nigrirostris occidentalis* Chapman, 1915—black-billed mountain-toucan **new host record**. *Andigena nigrirostris spilorhynchus* Gould, 1858—black-billed mountain-toucan **new host record**. *Aulacorhynchus coeruleicinctis* Orbigny, 1840—blue-banded toucanet. *Aulacorhynchus haematopygus* (Gould, 1835)—crimson-rumped toucanet. *Aulacorhynchus prasinus prasinus* (Gould, 1833)—emerald toucanet. *Aulacorhynchus prasinus albovittata* (Boissoneau, 1840)—emerald toucanet **new host record**. *Aulacorhynchus prasinus caeruleogularis* (Gould, 1835)—emerald toucanet **new host record**. *Aulacorhynchus prasinus maxillaris* Griscom, 1924—emerald toucanet **new host record**. *Aulacorhynchus derbianus* Gould, 1835—chestnut-tipped toucanet **new host record**. *Aulacorhynchus sulcatus sulcatus* (Swainson, 1820)—groove-billed toucanet **new host record**. *Aulacorhynchus sulcatus erythrognathus* (Gould, 1874)—groove-billed toucanet **new host record**.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 272. Displaced section of marginal carina widened slightly. Coni reaching beyond distal margin of scape. Preocular nodi large, rectangular. Post-ocular nodi large, rounded; *pos* located on posterior margin of eye. Thoracic and abdominal segments as in genus description and Figs 270–271. Pleural incrassations extending median to spiracle openings.

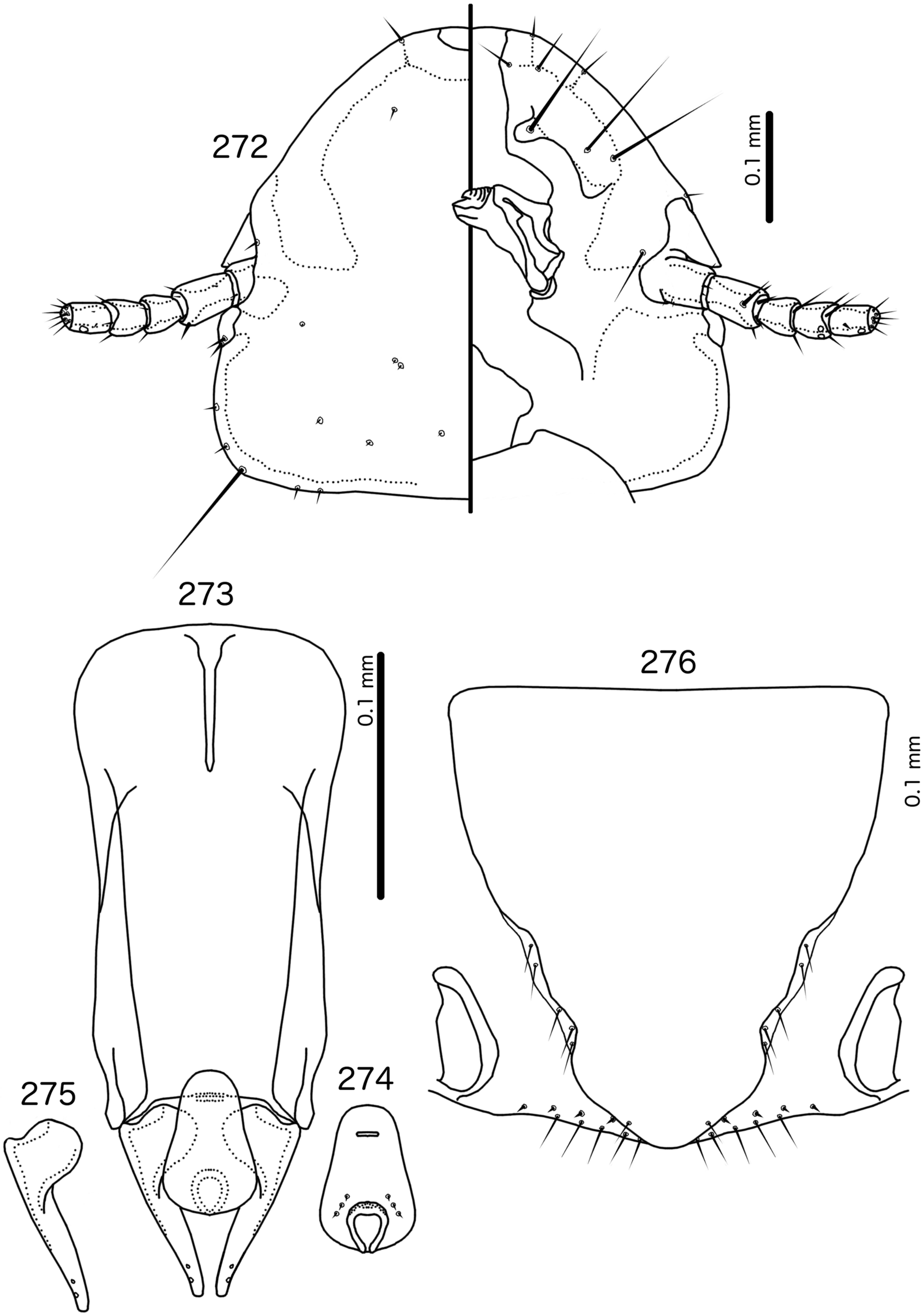
Male. Abdominal chaetotaxy as in Table 7 and Fig. 270; *aps* absent on all segments. Basal apodeme roughly rectangular (Fig. 273). Proximal mesosome rounded. Gonopore (Fig. 274) terminal, longer than wide, narrowing distally. Mesosomal lobes slender, rounded; 3 *pmes* microsetae antero-lateral to gonopore on each side. Parameral heads (Fig. 275) rounded triangular. Parameral lobes slender, somewhat elongated; *pst1–2* as in genus description. Measurements ex *Aulacorhynchus* [= *Au.* below]*prasinus atrogularis* (n = 3 except n = 2 for TL): TL = 1.51–1.53; HL = 0.40–0.43; HW = 0.45–0.49; PRW = 0.28–0.29; PTW = 0.42–0.43; AW = 0.60–0.68. Ex *Au. p. albivitta* (n = 5 except n = 3 for TL): TL = 1.39–1.52; HL = 0.41–0.42; HW = 0.46–0.50; PRW = 0.28–0.31; PTW = 0.42–0.45; AW = 0.60–0.70. Ex *Au. p. dimidiatus* (n = 1): TL = 1.77; HL = 0.43; HW = 0.49; PRW = 0.29; PTW = 0.46; AW = 0.81. Ex *Au. p. maxillaris* (n = 1): TL = 1.51; HL = 0.41; HW = 0.47; PRW = 0.28; PTW = 0.42; AW = 0.69. Ex *Au. hematopygus* (n = 4): TL = 1.52–1.66; HL = 0.42–0.43; HW = 0.48–0.49; PRW = 0.29–0.30; PTW = 0.38–0.44; AW = 0.63–0.74. Ex *Au. sulcatus erythrognathus* (n = 1, AW cannot be measured): TL = 1.58; HL = 0.38; HW = 0.47; PRW = 0.27; PTW = 0.41. Ex *Au. s. sulcatus* (n = 3): TL = 1.46–1.58; HL = 0.39–0.40; HW = 0.47; PRW = 0.27–0.29; PTW = 0.38–0.42; AW = 0.61–0.69. Ex *Andigena* [= *Ag.* below] *nigrirostris occidentalis* (n = 1): TL = 1.73; HL = 0.44; HW = 0.49; PRW = 0.31; PTW = 0.47; AW = 0.70. Ex *Ag. n. spilorhynchus* (n = 3 except n = 3 for HL, HW, PTW, AW and n = 1 for TL): TL = 1.64; HL = 0.42–0.43; HW = 0.49; PRW = 0.27–0.30; PTW = 0.43–0.44; AW = 0.69–0.75.

Female. Abdominal chaetotaxy as in Table 7 and Fig. 271. Subgenital plate roughly triangular, with narrow median section reaching vulval margin (Fig. 276). Vulval margin slightly rounded (Fig. 276), with 3–5 long, slender *vms* on each side, and 3–5 short, thorn-like *vss* on each side; 5–6 short, slender *vos* on each side; distal *vos* median to *vss*. Measurements ex *Au. prasinus atrogularis* (n = 4): TL = 1.74–1.89; HL = 0.43–0.47; HW = 0.51–0.57; PRW = 0.30–0.34; PTW = 0.45–0.52; AW = 0.74–0.83. Ex *Au. p. albivitta* (n = 12): TL = 1.66–1.90 (1.81); HL = 0.44–0.48 (0.45); HW = 0.51–0.56 (0.53); PRW = 0.31–0.33 (0.31); PTW = 0.44–0.50 (0.47); AW = 0.69–0.84 (0.77). Ex *Au. p. dimidiatus* (n = 1): TL = 1.86; HL = 0.41; HW = 0.47; PRW = 0.28; PTW = 0.43; AW = 0.83.

Ex *Au. p. maxillaris* (n = 9): TL = 1.70–1.93; HL = 0.44–0.46; HW = 0.50–0.54; PRW = 0.30–0.32; PTW = 0.44–0.47; AW = 0.74–0.87. Ex *Au. p. prasinus* (n = 1): TL = 1.78; HL = 0.44; HW = 0.52; PRW = 0.29; PTW = 0.46; AW = 0.73. Ex *Au. coeruleicinctus* (n = 4 except n = 3 for PTW): TL = 1.83–1.92; HL = 0.43–0.44; HW = 0.52–0.53; PRW = 0.30; PTW = 0.45–0.47; AW = 0.73–0.80. Ex *Au. derbianus* (n = 1): TL = 1.97; HL = 0.46; HW = 0.56; PRW = 0.33; PTW = 0.47; AW = 0.89. Ex *Au. hematopygus* (n = 1, AW cannot be measured): TL = 2.02; HL = 0.48; HW = 0.58; PRW = 0.33; PTW = 0.53. Ex *Au. sulcatus erythrognathus* (n = 2): TL = 1.77–1.81; HL = 0.41–0.44; HW = 0.50–0.51; PRW = 0.29; PTW = 0.43–0.44; AW = 0.71–0.74. Ex *Au. s. sulcatus* (n = 4): TL = 1.71–1.91; HL = 0.39–0.45; HW = 0.49–0.55; PRW = 0.29–0.31; PTW = 0.44–0.48; AW = 0.68–0.81. Ex *Andigena nigrirostris occidentalis* (n = 1): TL = 1.82; HL = 0.47; HW = 0.54; PRW = 0.33; PTW = 0.50; AW = 0.71. Ex *Ag. n. spilorhynchus* (n = 10): TL = 1.76–1.95 (1.87); HL = 0.43–0.46 (0.44); HW = 0.51–0.55 (0.53); PRW = 0.29–0.33 (0.31); PTW = 0.45–0.51 (0.48); AW = 0.78–0.87 (0.80).



FIGURES 270–271 . *Traihoriella laticeps* (Piaget, 1880) **n. comb.** ex *Aulacorhynchus prasinus atrogularis*: **270** male habitus, dorsal and ventral views. **271,** female habitus, dorsal and ventral views.



FIGURES 272–276. *Traihoriella laticeps* (Piaget, 1880) **n. comb.** ex *Aulacorhynchus prasinus atrogularis*: **272,** male head, dorsal and ventral views. **273,** male genitalia, dorsal view. **274,** male mesosome, ventral view. **275,** male paramere, dorsal view. **276,** female subgenital plate and vulval margin, ventral view.

Type material. Ex *Aulacorhynchus prasinus prasinus*: **Paratype** of ***Brueelia laticeps prasinus***: 1♀, Xilitila, San Luis Potosi State, Mexico, 7 Feb. 1947, R. Newman, Brit. Mus. 1968-455, 476 (NHML).

Additional material examined (non-types)

Ex ***Andigena nigrirostris occidentalis***: 1♂, 1♀, Bitaco, [Valle de Cauca Department,] Colombia, 3 Jul. 1918, M.A. C[arriker] Jr., 25345 (NHML) [slide also contains *Austrophilopterus*].

Ex ***Andigena nigrirostris spilorhynchus*** **[**as ***Aulacorhynchus nigrirostris*****]**: 1♂, 5♀, Gualea [as Guilea], [Pichincha Province,], Ecuador, 20 Nov. 1938 (NHML); 1♀, 5° 41.2' S, 79° 15.0' W, ca. 8 km ESE of Sallique, Quebrada lanchal, Cajamarca, Peru, 22 Jul. 1998, J.P. O'Neill, JPO7890, FMNH-INS 000 029 959 (FMNH); 1♀, 4° 53' 42" S, 78° 53' 43" W, 1 km S Hito Jesus, Cajamarca, Peru, 22 Jul. 2006, S. Claramunt, CJS046, FMNH-INS 0000 029 025 (FMNH); 1♀, 5° 40.4' S, 12° 2' W, ca. 13 km WNW Chontali, Quebrada Las Palmas, Cajamarca, Peru, 27 Jul. 1999, R.C. Faucett, RCF809, FMNH-INS 0000 029 693 (FMNH).

Ex ***Aulacorhynchus coeruleicinctus***: 1♀, 18° 22.9' S, 63° 37.2' W, ca. 37 km SE Samaipata, Chuchial, Santa Cruz, Bolivia, 17 Aug. 1999, D.F. Lane, DFL1198, FMNH-INS 0000 029 960 (FMNH); 1♀, same data as previous except J.D. Weckstein, JDW492, FMNH-INS 0000 029 967 (FMNH); 1♀, same locality and collector as previous, 15 Aug. 1999, JDW491, FMNH-INS 0000 029 964 (FMNH); 1♀, same locality and collector as previous, 16 Aug. 1999, JDW432, FMNH-INS 0000 029 961 (FMNH); 1♀, 18° 23.8' S, 63° 49.7' W, ca. 28 km S Samaipata, La Pajcha, Santa Cruz, Bolivia, J.D. Weckstein, DLD6966, FMNH-INS 0000 029 965 (FMNH).

Ex ***Aulacorhynchus debianus***: 1♀, Peru, D.F. Lane, DFL1036, FMNH INS 0000 029 026 (FMNH).

Ex ***Aulacorhynchus haematopygus*** **[**as ***Aulacorhynchus haematopygius*****]**: 3♂, Colombia, R. Meinertzhagen, 10927 (NHML); 1♂, 1♀, Gualea [as Guilea], [Pichincha Province,] Ecuador, 11 Jun. 1938 (NHML).

Ex ***Aulacorhynchus prasinus albivittata*** **[**as ***Aulacorhynchus albivittatus*****]**: 6♂, 15♀, Bogota, [Distrito Capital,] Colombia, R. Meinertzhagen, 10926, Brit. Mus. 1951-171 (NHML).

Ex ***Aulacorhynchus prasinus atrogularis*** **[**as ***Aulacorhynchus atrogularis*****]**: 1♂, Eneñas, [Junin Region,] Peru, 3 Mar. 1930, M.A. C[arriker] Jr., 1237 (NHML).

Ex ***Aulacorhynchus prasinus caeruleogularis***: 1♂, 1♀, unknown locality, Piaget Collection (NHML).

Ex ***Aulacorhynchus prasinus dimidiatus***: 1♂, Huamanpata camp, 5 km N Rodriguez de Mendoza, Amazonas, Peru, 26 Nov. 2008, A. Savit, FMNH 000 029 027 (FMNH); 1♀, 4° 59.5' S, 78° 54.3' W, Picorana, Cordillera de Condor, Cajamarca, Peru, 15 Mar. 1999, C.C. Witt, FMNH-INS 000 029 962 (FMNH).

Ex ***Aulacorhynchus prasinus maxillaris*** **[**as ***Aulacorhynchus atrogularis, Aulacorhynchus prasinus***, or ***Aulacorhynchus caeruleigularis*****]**: 3♂, 11♀, Costa Rica, R. Meinertzhagen, 4579, 10925 (NHML); 2♀, Cerri Abarca, Cartago Province, Costa Rica, 7 Apr. 1976, M. Martin, 1056, 23586–7 (OSUS); 1♀, Monteverde, Puntarenas Province, Costa Rica, 21 Jan. 1981, N. Wheelwright (OSUS).

Ex ***Aulacorhynchus sulcatus erythrognathus***: 1♂, 2♀, 10° 41' 06" N, 62° 37' 19" W, Las Melenas, Parque Nacional Peninsula de Pária, Sucré, Venezuela, 24 May 2006, E. Bonaccorso, EB-01–3, EBRG 12235–6, FMNH-INS 0000 029 028–30 (FMNH).

Ex ***Aulacorhynchus sulcatus sulcatus***: 3♂, 3♀, "Los Minos", Venezuela, 4 Jan. 1944, Correro, 12373, 12376 (OSUS); 2♀, 10° 21' 35" N, 67° 41' 8" W, Rancho Grande, Parque Nacional Henri Pittier, Aragua, Venezuela, 2 Jun. 2006, E. Bonaccorso, EB-06–6, EBRG12230, EBRG12237, FMNH-INS 0000 029 031–2 (FMNH).

Remarks. Carriker's (1954: 193) illustration of the male genitalia of *Brueelia laticeps prasinus* appears to have been drawn from a specimen with partially everted genitalia, and is not representative. While we have seen no males of *Br. laticeps prasinus*, we have seen several male *Traihoriella* from other host species with partially everted male genitalia, which are indistinguishable from those illustrated by Carriker (1954: fig. 17b). We agree with Cicchino (1983: 301) that the two subspecies are synonymous.

Traihoriella binhchauensis **(Najer & Sychra [in Najer *et al.*], 2014), n. comb.**

Brueelia binhchauensis Najer & Sychra [in Najer *et al.*], 2014: 423.

Type host. *Psilopogon lineatus hodgsoni* (Bonaparte, 1850)—lineated barbet.

Type locality. "surroundings of the ranger station in the central part of the park [Phuoc Buu National Park]", Binh Chau, Vung Tau Province, Dong Nam Bo Region, Vietnam.

Other hosts. *Psilopogon asiaticus asiaticus* (Latham, 1790)—blue-throated barbet **new host record**. *Psilopogon asiaticus* *davisoni* (Hume, 1877) blue-throated barbet **new host record**. *Psilopogon faiostrictus praeternissus* (Kloss, 1918)—green-eared barbet **new host record**. *Psilopogon franklinii franklinii* (Blyth, 1842)—golden-throated barbet **new host record**. *Psilopogon haemocephalus indicus* (Latham, 1790)—coppersmith barbet **new host record.** *Psilopogon incognitus elbeli* (Deignan, 1956)—moustached barbet **new host record**. *Psilopogon monticola* (Sharpe, 1889)—mountain barbet [Ref.: Bush *et al*. 2015]. *Psilopogon mystacophanos mystacophanos* (Temminck, 1824)—red-throated barbet [Ref.: Bush *et al*. 2015]. *Psilopogon nuchalis* (Gould, 1863)—Taiwan barbet **new host record**. *Psilopogon oorti* (Muller, 1836)—black-browed barbet **new host record**.

Material examined (non-types). Ex ***Psilopogon asiaticus asiaticus*** **[**as ***Megalaima asiatica*]:** 2♂, 3♀, Naga Hills, Kohima, Assam, India, 29 Jan. 1952, R. Meinertzhagen, 19884, BM 1952-143 (NHML); 1♂, 5♀, "captive bird", India, 1965, R.S. Balter, Brit. Mus. 1969-101 (NHML).

Ex ***Psilopogon asiaticus davisoni*** **[**as ***Megalaima asiatica laurentii*]:** 1♂, Ban Khok Phu Nam Lang Mountains, Na Phung, Dan Sai District, Loei Province, Thailand, 28 May 1955, R.E. Elbel, RE-5386, 25759 (NHML).

Ex ***Psilopogon faiostrictus praeternissus*** **[**as ***Megalaima faiostricta praeternissa*]:** 2♂, Ban Nong Wai, Na Phung, Dan Sai District, Loei Province, Thailand, 16 Nov. 1954, R.E. Elbel, RE-4266, RT-B-31026, 24760 (NHML).

Ex ***Psilopogon franklinii franklinii*** **[**as ***Megalaima franklinii*]:** 2♂, 2♀, Shiwandashan National Park, Guanxi Province, China, 6 May 2005, [S.E.] Bush & [D.H.] Clayton, Host MBR-6770, lice P-1045 (PIPeR). 2♂, 2♀, same locality and collectors, 1 May 2005, host MBR-6743, lice P-752 (PIPeR).

Ex ***Psilopogon haemocephalus indicus*** **[**as ***Megalaima haemocephala indica*]:** 1♀, Chiang Saen Kao, Chiang Rai Province, Thailand, 16 Feb. 1953, R.E. Elbel & H.G. Deignan, RE-2275, RT-B-17782 (NHML).

Ex ***Psilopogon incognitus elbeli*** **[**as ***Megalaima incognita elbeli*]:** 1♀, Ban Muang Khai, Tha Li District, Loei Province, Thailand, 7 Jan. 1955, [R.E. Elbel?,] RE-4399, RT-B-31063, 24758 (NHML).

Ex ***Psilopogon lineatus hodgsoni*** **[**as ***Cyanops lineata hodgsoni*** or ***Megalaima zeylanica hodgsoni*]:** 1♂, 2♀, Myitkyina, [Kachin State,], Myanmar, 22 Dec. 1944, H.S. Fuller, 129, Brit. Mus. 1947-321 (NHML); 3♂, 2♀, Myitkyina, [Kachin State,] Myanmar, 2 Feb. 1945, USA Typhus Comm[and?] (NHML); 1♂, 1♀, same locality and collector as previous, 10 Apr. 1945 (NHML); 4♂, 3♀, Slok Bat, Khong Phai, Kamphaeng-Phet Province, Thailand, 19 Jun. 1953, R.E. Elbel, RE-2681, RT-B-21626, 24762–3 on reverse (NHML).

Ex ***Psilopogon nuchalis*:** 6♂, 9♀, "Liukuei", Taiwan, T.C. Maa, TMT-1599, 1634, 1964, 1978–80, 2107–8 (UMSP); 1♀, Tzepeng Taitung Hsien, Taiwan, Jan–Feb 1964, T.C. Maa, TMT-982 (UMSP).

Ex ***Psilopogon oorti*:** 3♂, 2♀, Gunong Benom, elev. 3600 ft, Pahang State, Malaysia, 14 Mar. 1967, BN-342, Brit. Mus. 1967-400 (NHML).

Remarks. We have examined material of *Traihoriella* from a large number of barbets across South-East Asia, and find these to be *Traihoriella binhchauensis* (Najer & Sychra [in Najer *et al*.], 2014). The phylogenetic reconstruction of Bush *et al*. (2016) showed that material of *Tr. binhchauensis* from three different host species were genetically similar. Bush *et al*. (2016) also showed that *Tr. binhchauensis* was genetically distinct from *Tr. punjabensis*, although these species are morphologically very similar. There is considerable morphological variation within *Tr. binhchauensis*, e.g. lice from southern hosts generally have smaller heads than material from northern hosts (paralleling the case in *Acronirmus gracilis*). The hosts are all relatively closely related (Tex & Leonard 2013). The apparent lack of divergence between *Tr. binhchauensis* populations on different *Psilopgon* hosts may suggest ongoing geneflow between lice on different hosts, possibly through shared nest holes or through phoresy.

Contrary to the taxonomic relationships proposed by Najer *et al*. (2014), *Traihoriella binhchauensis* is not closely related to other Vietnamese species of the *Brueelia*-complex. *Brueelia alophoixi* Sychra [in Sychra *et al*.], 2009, and *Brueelia elbeli* Ansari, 1957b [= *Br. acutangulata* (Piaget, 1880)], are here retained in *Brueelia* s. str., whereas *Brueelia glandarii* (Denny, 1842) is placed in *Olivinirmus*.

In addition to the characters given by Najer *et al*. (2014), *Traihoriella binhchauensis* (Najer & Sychra [in Najer *et al*.], 2014) is most easily separated from *Tr. punjabensis* by the lack of *aps* on male tergopleurites V–VII in *Tr. binhchauensis*, the much smaller head of *Tr. binhchauensis*, and differences in the shape of the proximal mesosome. *Tr. punjabensis* is most easily separated from *Tr. latifrons* by head shape. In most of the material we have examined from *Psilopogon lineata hodgsoni* female *Tr. punjabensis* do not have any *psps* on abdominal segment IV, but are otherwise similar; this character may or may not be taxonomically informative.

Priceiella Gustafsson & Bush, new genus

Brueelia Kéler, 1936a: 257 (*in partim*).
Allobrueelia Eichler, 1951b: 36 (*in partim*).

Type species. *Brueelia sternotypica* Ansari, 1956a: 148

Diagnosis. The phylogenetic reconstruction of Bush *et al.* 2016 placed *Priceiella* **n. gen.** close to *Guimaraesiella* s. str., and *Priceiella* was nested inside *Guimaraesiella* s. lat. (see below). Although there is variation in the abdominal chaetotaxy between different groups of *Guimaraesiella* (Table 10) and between the subgenera of *Priceiella* (Table 8), there are similarities between these two genera: *tps* are absent in both genera, both sexes of both genera have *psps* on tergopleurite IV–VII, and *ps* are present only on segments IV–VIII in both sexes [except for females of subgenus *Pr.* (*Priceiella*) **n. subgen.** (Fig. 278)]. There are several differences between these two genera in non-setal characters: in *Guimaraesiella* the dorsal preantennal suture interrupts the marginal carina at least submedianly (Figs 361–364, 372) [except *Gu. cicchinoi* (Valim & Weckstein, 2011) and relatives], whereas in *Priceiella* the dorsal preantennal suture, when present, does not interrupt the marginal carina (e.g. *Pr. alliocephala* **n. sp.**, Fig. 302). The female subgenital plate flares into a cross-piece at vulval margin in *Priceiella* (Figs 284, 291, 306, 314) but not in *Guimaraesiella* (Figs 360, 376) [except in the *Gu. sehri* species group; not illustrated]. The mesosome differs within *Guimaraesiella* s. lat. (Figs 358, 365–369, 374) and within *Priceiella* (Figs 282, 289, 304, 312), which makes it difficult to identify distinct genitalic characters that distinguish between these two genera. A comparison between the male genitalia of *Guimaraesiella* s. str. (here represented by the type species, Figs 357–359) and *Priceiella* (Figs 282–284, 289–291, 304–306, 311–313) reveals the following consistent differences: gonopore terminal in *Guimaraesiella* s. str. (Fig. 358), but ventral in *Priceiella* (Figs 283, 290, 305, 312); mesosomal lobes small and not extending distal to gonopore in *Guimaraesiella* s. str. (Fig. 358), but large and wide in *Priceiella*, fused distal to gonopore (Figs 283, 290, 305, 312); distal margin without thickening or ornamentation found in *Guimaraesiella* s. str. (Fig. 358; thickening present in other groups of *Guimaraesiella* s. lat.), but with thickening on at least part of the distal margin in *Priceiella* (Figs 283, 290, 305, 312); parameral heads with simple, small median folds in *Guimaraesiella* s. str. (Fig. 359), but large, complex median folds in *Priceiella* (Figs 284, 291, 306, 313). Antennae may be sexually dimorphic in both genera (see e.g. *Gu. menuraelyrae* Coinde, 1859), but this is rare in *Guimaraesiella* s. str., and not found in *Pr.* (*Thescelovora*) **n. subgen.** (Fig. 302) or many *Pr.* (*Camurnirmus*) **n. subgen.** (Fig. 287).

TABLE 8. Chaetotaxy of abdominal segments II–VIII of some *Priceiella*. Trichoid setae of segment VIII are present in all species, and are not listed. Sets of setae differing from those of *Pr. sternotypica* are highlighted in **bold**. Some undescribed species have slightly different patterns. Material examined from all species is from their respective type hosts. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	Sex	ps	aps	psps	tps	ss	sts
Pr. (*Priceiella*) *sternotypica*)	M	III–VIII	III–VII	IV–VIII	–	II–VIII	II–VI
	F	III–VIII	–	IV–VIII	–	II–VIII	II–VI
Pr. (*Camurnirmus*) *hwameicola*	M	**IV–VIII**	**IV–VIII**	IV–VIII	–	II–VIII	II–VI
	F	**IV–VIII**	–	IV–VIII	–	II–VIII	II–VI
Pr. (*Thescelovora*) *alliocephala*	M	**IV–VIII**	–	IV–VIII	–	II–VIII	II–VI
	F	**IV–VIII**	–	**IV–VII**	–	II–VIII	II–VI
Pr. (*Torosinirmus*) *koka*	M	III–VIII	IV–VII	**IV–VIII**	–	II–VIII	II–VI
	F	III–VIII	–	IV–VIII	–	II–VIII	II–VI

Description. ***Both sexes***. Head shape variable (Figs 279, 287, 294, 302, 309). Frons often concave. Marginal carina uninterrupted, deeply displaced posteriorly and dorsally at osculum; displaced section filled by hyaline margin. Dorsal preantennal suture absent, or in a few species present as a small dot around *dsms* (Fig. 287), rarely reaching farther posterior, or *ads* (Fig. 279). In some *Priceiella* (*Thescelovora*) (Fig. 302) dorsal preantennal suture reaches both *dsms* and *ads*, but does not reach margin of head, and oes not interrupt marginal carina. Ventral carinae diffuse anterior to pulvinus, and not clearly connected to marginal carina. Ventral anterior plate absent. Head setae as in Figs 279, 287, 302, 309, similar between subgenera. *as3* absent. Coni small, blunt. Antennae sexually dimorphic in some species, with male scapes larger than female scapes. Temporal carinae not visible; *mts3* only macrosetae. Gular plate spade-shaped.

Prothorax rectangular (Figs 277–278, 285–286, 292–293, 300–301, 307–308); *ppss* on postero-lateral corner. Proepimera hook- or hammer-shaped medianly, curling around coxae II. Pterothorax pentagonal; lateral margins widely divergent; posterior margin converging on rounded median point; *mms* moderately to widely separated medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna blunt, widening medianly. Leg chaetotaxy as in Fig. 25, except *fI-p2* absent.

Abdomen (Figs 277–278, 285–286, 292–293, 300–301, 307–308) oblong in female, more oval in male. Terminal segment of male typically protruding. Abdominal chaetotaxy as in Tables 2 and 8, differing between subgenera. Tergopleurites rectangular in both sexes, but more posterior tergopleurites of male triangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female moderately divided medianly. Tergopleurites typically with pre-spiracular ridges (*psr* in Fig. 285), but these are less conspicuous in *Priceiella* (*Priceiella*) (Figs 277–278) and *Pr.* (*Torosinirmus*) **n. subgen.** (Figs 307–308) compared to *Pr.* (*Camurnirmus*) (Figs 285–286); ridges absent in *Pr. alliocephala* (Figs 300–301), but are present in other members of *Pr.* (*Thescelovora*), including undescribed species. Sternal plates medianly continuous, but do not reach pleurites. Lateral margins of sternal plates concave, in *Pr.* (*Priceiella*) with elongated, thickened antero-lateral corners (Figs 277–278). Pleural incrassations complex, differing between subgenera (Figs 315–318). Reentrant heads typically slight or absent (Figs 315, 317), but pronounced in *Pr.* (*Torosinirmus*) (Fig. 318). Male subgenital plate roughly triangular distally, but anterior end often expanded laterally (Fig. 285); in *Pr.* (*Priceiella*) (Fig. 277) with anterior corners as preceding sternal plates. Female subgenital plate triangular, reaching vulval margin, where it flares into cross-piece (Figs 284, 291, 299, 306, 314). Vulval margin (Figs 284, 291, 299, 306, 314) with slender *vms*, numerous thorn-like *vss*; *vos* follows lateral margins of subgenital plate; distal *vos* situated near *vss*.

Basal apodeme (Figs 281, 288, 296, 303, 311) generally rounded, more or less constricted at mid-length, in some species with anterior end much expanded laterally. Details of male genitalia differ between subgenera (see below). Proximal mesosome overlaps with distal basal apodeme. Gonopore (Figs 282, 289, 297, 304, 312) open distally, diffuse or open proximally in some *Priceiella* (*Thescelovora*) (Fig. 304). Mesosomal lobes fused distally. Distal margin of mesosomal lobes thickened; *pmes* and *ames* variable between subgenera. Parameral heads folded medianly, rectangular or irregularly shaped. Parameral blades (Figs 283, 290, 298, 305, 313) variable between subgenera; *pst1–2* sensilla, central, near distal tip of parameres.

Host distribution. Species of *Priceiella* partasitise mainly "babblers" of the families Leiotrichidae, Pellorneidae and Timaliidae, with the exception of *Priceiella* (*Th.*) *alliocephala* **n. sp.** which occurs on a host species that is not closely related to babblers: *Platylophus galericulatus ardesiacus* (Bonaparte, 1850) and traditionally considered a member of the family Corvidae (e.g. Madge & Burn 1999; Clements *et al.* 2015). However, this placement has been questioned (e.g. Ericson *et al.* 2005; Manegold, 2008), and genetic data places this species closer to shrikes (Laniidae) (Jønsson *et al.* 2008). No data known to us suggests that this host species is particularly close to the "babbler" families.

Geographical range. Old World Tropics, from Indonesia to Sub-Saharan Africa.

Etymology. *Priceiella* is named in honour of the phthirapterist Roger D. Price, in recognition of his countless contributions to louse taxonomy. Gender: feminine.

Included subgenera
***Priceiella* sensu stricto**
Camurnirmus **n. subgen.**
Thescelovora **n. subgen.**
Torosinirmus **n. subgen.**

Remarks. In the phylogeny of Bush *et al*. (2016; Clade B, fig. 3c), *Priceiella* was represented only by members of *Pr.* (*Thescelovora*). These were placed inside *Guimaraesiella* s. lat., but this relationship had low statistical support. The morphological differences between *Priceiella* and *Guimaraesiella* are substantial (see above), and we therefore propose *Priceiella* as a separate genus. Based solely on morphology, it seems probably that *Pr.* (*Camurnirmus*) and *Pr.* (*Torosinirmus*) are sister groups, with *Pr.* (*Priceiella*) the sister to both of these subgenera combined, and *Pr.* (*Thescelovora*) the sister of the rest of *Priceiella*. A phylogenetic study with more complete taxon sampling is needed to sort out the relationships within this genus.

Included species
Priceiella* (*Camurnirmus*) *hwameicola* **new species
Priceiella* (*Camurnirmus*) *nipalensis* (Ansari, 1956a: 143) **n. comb. [in *Brueelia*]
Priceiella* (*Camurnirmus*) *paulbrowni* **new species
Priceiella* (*Camurnirmus*) *rhinocichlae* (Eichler, 1957: 579) **n. comb. [in *Allobrueelia*] **[1]**
Priceiella* (*Priceiella*) *longisterna* (Ansari, 1956a: 146) **n. comb. [in *Brueelia*]
Priceiella* (*Priceiella*) *mahrastan* (Ansari, 1956a: 164) **n. comb. [in *Brueelia*]
Priceiella* (*Priceiella*) *sternotransversa* (Ansari, 1956a: 147) **n. comb. [in *Brueelia*]
****Priceiella* (*Priceiella*) *sternotypica* (Ansari, 1956a: 148) n. comb. [in *Brueelia*]**
Priceiella* (*Priceiella*) *ventrata* (Ansari, 1956a: 150) **n. comb. [in *Brueelia*]
Priceiella* (*Thescelovora*) *alliocephala* **new species
Priceiella (*Thescelovora*) *malacocincla* (Najer & Sychra [in Najer *et al.*], 2014) **n. comb.** [in *Brueelia*] **[2]**
Priceiella* (*Torosinirmus*) *brueliodes* (Ansari, 1956a: 164) **n. comb. [in *Brueelia*]
Priceiella* (*Torosinirmus*) *koka* **new species
Priceiella* (*Torosinirmus*) *nivea* (Ansari, 1956a: 162) **n. comb. [in *Brueelia*]

[1] We tentatively place *Allobrueelia rhinocichlae* Eichler, 1957, in *Pr.* (*Camurnirmus*) based on the close similarity of the poorly preserved holotype, with additional material from another host subspecies [*Ianthocichla mitrata major* (Robinson & Kloss, 1919)] examined by us.

[2] In the original illustrations by Najer *et al*. (2014), *as3* is present, but appears to be located in the same spot as *dsms*, and may be an unintended inclusion of a dorsal seta on the ventral side. In addition, a sixth *mts* is illustrated, which is likely one of the *pmas* (*sensu* Mey 1994a).

Priceiella (*Priceiella*) Gustafsson & Bush, new subgenus

Type species. Same as for genus.

Diagnosis. The male genitalia of *Priceiella* (*Priceiella*) **n. subgen.** (Figs 281–283) are similar to those of *Melibrueelia* Valim & Palma, 2015 (not illustrated), and the abdominal chaetotaxy of both sexes are almost identical in these two groups. However, the marginal carina is interrupted laterally and submedianly in *Melibrueelia*, but entire in *Pr.* (*Priceiella*) (Fig. 279), and the antero-lateral modifications of the sternal plates in *Pr.* (*Priceiella*) (Figs 277–278) are not found in *Melibrueelia*. In *Melibrueelia* the female tergopleurite IX+X is fused with tergopleurite XI, but this is not the case in *Pr.* (*Priceiella*) (Fig. 278), and while in both groups the antennae are sexually dimorphic, the flagellomeres are not modified in the male *Pr.* (*Priceiella*) (Fig. 279) as they are in male *Melibrueelia*.

Priceiella (*Priceiella*) is similar to *Pr.* (*Camurnirmus*) **n. subgen.** and *Pr.* (*Torosinirmus*) **n. subgen.,** and these three subgenera share the following characters not found in *Pr.* (*Thescelovora*) **n. subgen.**: dorsal preantennal suture, if present, only around either *dsms* or *ads* in the first three subgenera, (Figs 279, 287, 294, 309), never both or extending toward both as in *Pr.* (*Thescelovora*) (Fig. 302); *aps* present on male tergopleurites IV in *Pr.* (*Priceiella*) (Fig. 277), *Pr.* (*Torosinirmus*) (Fig. 307), and *Pr.* (*Camurnirmus*) (Figs 285, 292), but absent in *Pr.* (*Thescelovora*) [(Fig. 300; *aps* are present in more posterior segments in males of some undescribed *Pr.* (*Thescelovora*)]. *Priceiella* (*Priceiella*) is separated from the other three subgenera by the following characters: sternal and subgenital plates of both sexes with strongly modified antero-lateral ends [Figs 277–278; except *Pr.* (*Pr.*) *mahrastan* (Ansari, 1956a)] unlike in the other three subgenera (Figs 285–286, 300–301, 307–308); mesosome small, triangular with narrow proximal mesosome and ventral rugose nodi in *Pr.* (*Priceiella*) (Fig. 282), but broader and generally more rounded, with wide proximal mesosomes and without rugose nodi in the other three subgenera [Figs 289, 304, 312; minute rugose nodi are present in a few undescribed *Pr.* (*Thescelovora*), but the rugose areas are never as extensive in *Pr.* (*Thescelovora*) as in *Pr.* (*Priceiella*)]; accessory sternal plates present lateral to male subgenital plate in *Pr.* (*Priceiella*) (Fig. 277) but absent in the other three subgenera (Figs 285, 292, 300, 307).

Description. ***Both sexes***. Abdominal chaetotaxy as in Table 2 and 8, and with *ps* on segment III. Antero-lateral corners of sternal plates thickened and modified, with anterior margin in some species with small hook [Figs 277–278; except in *Priceiella* (*Priceiella*) *mahrastan*; not illustrated].

Male. Males with *aps* on tergopleurite III. Small, round accessory sternal plates lateral to male subgenital plate at segment VIII. Proximal mesosome slender, flaring anteriorly (Fig. 282). Mesosomal lobes slender, triangular. Ventral rugose nodi present (Fig. 282); 2 *ames* sensilla near anterior margin of mesosomal lobes; 2 *pmes* sensilla sublaterally, distal to gonopore. Parameres (Fig. 283) generally parallel distally.

***Priceiella* (*Priceiella*) *sternotypica* (Ansari, 1956a), new combination**

(Figs 277–284, 315)

Bruelia sternotypicus Ansari, 1956a: 148.
Brueelia sternotypicus Ansari, 1956a; Price *et al*. 2003: 158.

Type host. *Ianthocincla pectoralis pectoralis* (Gould, 1836)—greater necklaced laughingthrush (*pectoralis*).
Type locality. Kangpokpi [originally given as Kangpokoi], Manipur State, India.
Other host. *Ianthocincla pectoralis subfusa* Kinnear, 1924—greater necklaced laughingthrush.

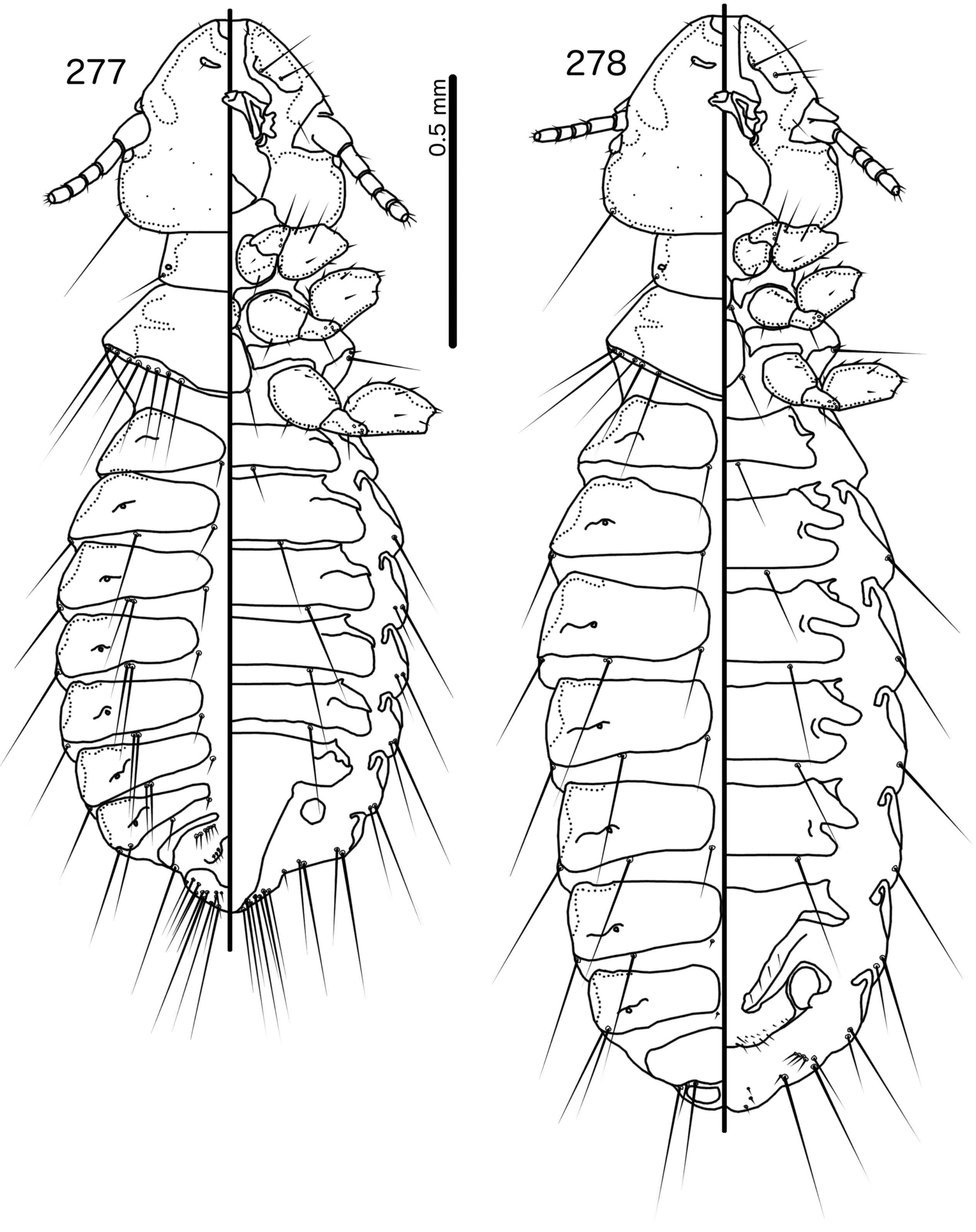
Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 279. Antennae slightly sexually dimorphic (Figs 279–280). Small dorsal preantennal suture surrounding *ads* present, generally more prominent in males than in females, but often absent. Dark pigmentation on marginal carina (paler in displaced section), mandibular framework, ventral carinae, preantennal, preocular, and postocular nodi, marginal temporal carina, and gular plate. Thoracic and abdominal segments as in genus and subgenus descriptions and Figs 277–278. Lateral tergopleurites and pleural incrassations as in Fig. 315. Sternal plates III–VII in males and III–VIII in females with a small hook on anterior margin; hook more pronounced in females than in males.

Male. Scape elongated and slightly swollen (Fig. 279). Lateral margins of sternal plates flat or slightly concave (Fig. 277). Abdominal chaetotaxy as in Table 8 and Fig. 277. Proximal end of basal apodeme widened laterally (Fig. 281); extensions more or less translucent. Proximal mesosome fishtail-shaped, with rugose dorsal surface. Gonopore (Fig. 282) ventral, narrowly open distally. Mesosomal lobes slenderly triangular, fused distally, with wide ventral rugose nodi at about half-length (Fig. 282); 2 *ames* on each side near anterior margin of lobes; 2 *pmes* on each side near postero-lateral margins of lobes. Parameral heads (Fig. 283) of irregular shape. Parameral blades slender, not much elongated distally, with distal ends parallel or subparallel; *pst1–2* sensilla. Measurements ex *Ianthocincla pectoralis pectoralis* (n = 2): TL = 1.51–1.60; HL = 0.38–0.40; HW = 0.39–0.41; PRW = 0.25–0.26; PTW = 0.42–0.45; AW = 0.61–0.63. Ex *I. p. subfusa* (n = 2): TL = 1.40–1.58; HL = 0.36–0.37; HW = 0.39–0.40; PRW = 0.25; PTW = 0.43–0.44; AW = 0.63–0.64.

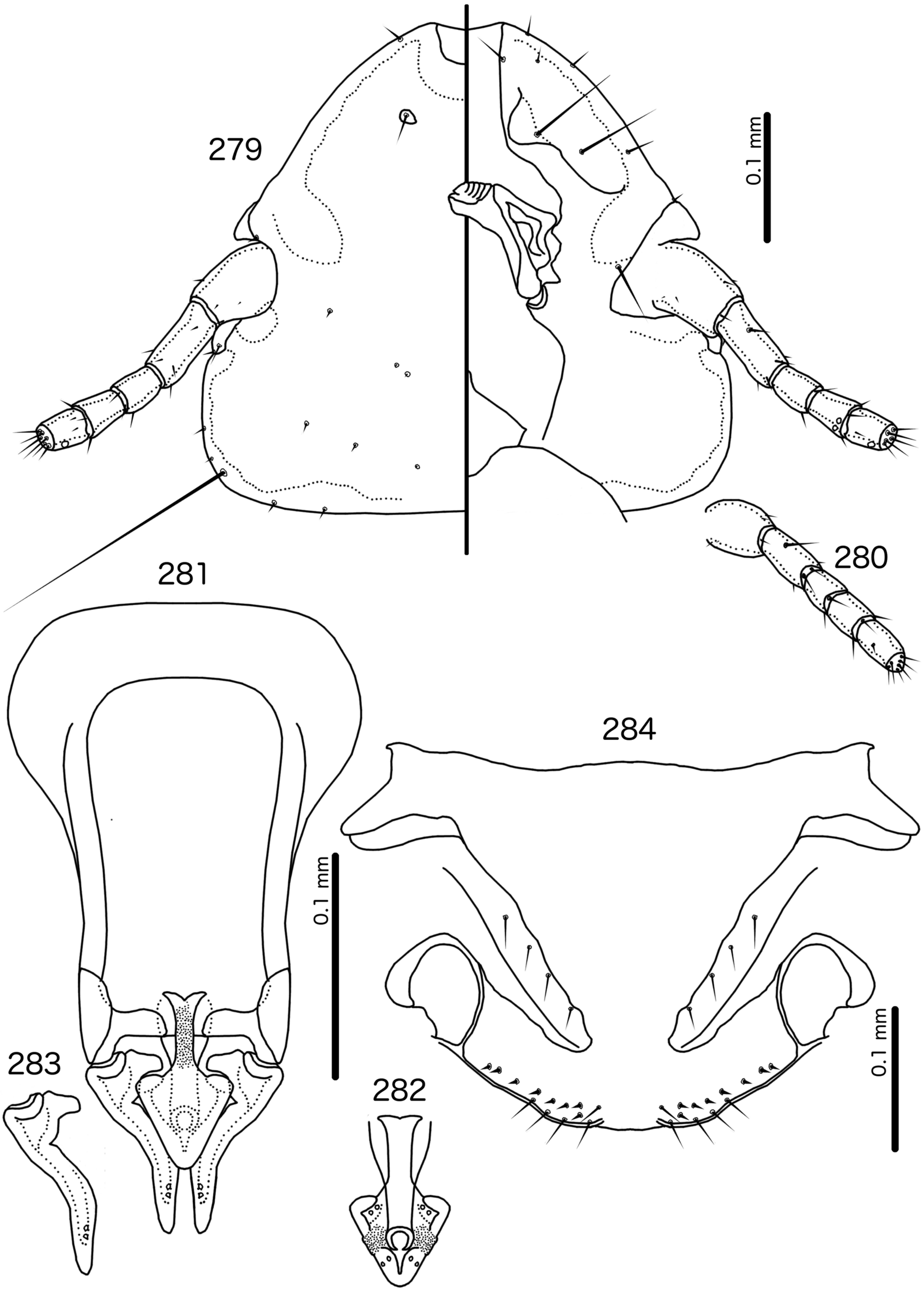
Female. Scape not modified (Fig. 280). Lateral margins of sternal plates deeply concave (Fig. 278). Abdominal chaetotaxy as in Table 8 and Fig. 278. Subgenital plate roughly triangular, with conspicuous antero-lateral formations (Fig. 284) that are similar to those of sternal plates (Fig. 278); plate flares into cross-piece distally, with slender distal thickening for most of length. Vulval margin (Fig. 284) gently rounded, with 3–4 long, slender *vms* on each side, and 6–9 moderate, thorn-like *vss* on each side; 4–5 long, slender *vos* on each side; distal seta median to *vss*. Measurements ex *Ianthocincla pectoralis pectoralis* (n = 5): TL = 1.86–1.99; HL = 0.40–0.41; HW = 0.41–0.43; PRW = 0.24; PTW = 0.40–0.42; AW = 0.60–0.65. Ex *I. p. subfusa* (n = 7): TL = 1.71–1.91; HL = 0.38–0.39; HW = 0.40–0.42; PRW = 0.25–0.26; PTW = 0.40–0.42; AW = 0.63–0.69.

Remarks. Specimens from *Ianthocincla pectoralis subfusa* do not differ substantially from specimens from the type host, but tend to have more *vss* (8–10 on specimens from *I. p. subfusa* and 6–9 on specimens from *I. p. pectoralis*), and the preantennal head tends to be slightly narrower in material from *I. p. subfusa* than in specimens from the type host. We do not believe these differences are significant enough to separate the material from the two host subspecies into two different taxa.

Type material. Ex ***Ianthocincla pectoralis pectoralis*** **[**as ***Garrulax pectoralis pectoralis*****]: Holotype** ♂, Kangpokpi, Manipur, India, 26 Jan. 1952, R. Meinertzhagen, 19864, BM1952-143 (NHML). **Allotype** ♀, same data as holotype (NHML).



FIGURES 277–278. *Priceiella* (*Priceiella*) *sternotypica* (Ansari, 1956a) **n. comb.** ex *Garrulax pectoralis subfuscus*: **277,** male habitus, dorsal and ventral views. **278,** female habitus, dorsal and ventral views.



FIGURES 279–284. *Priceiella* (*Priceiella*) *sternotypica* (Ansari, 1956a) **n. comb.** ex *Garrulax pectoralis subfuscus*: **279,** male head, dorsal and ventral views. **280,** female antenna, ventral side. **281,** male genitalia, dorsal view. **282,** male mesosome, ventral view. **283,** male paramere, dorsal view. **284,** female subgenital plate and vulval margin, ventral view.

Additional material examined (non-types)

Ex ***Ianthocincla pectoralis pectoralis*** [as ***Garrulax pectoralis pectoralis***]: 2♂, 5♀, same data as holotype (NHML).

Ex ***Ianthocincla pectoralis subfusa***: 1♂, 4♀, Hin Laem, Tha Khanun, Kanchanaburi Province, Thailand, 16 Nov. 1952, R.E. Elbel & H.G. Deignan, RE-1518, RT-B-17052, 12479–80 on reverse (OSUS).

Priceiella (*Camurnirmus*) Gustafsson & Bush, new subgenus

Type species. *Priceiella* (*Camurnirmus*) *hwameicola* **new species**

Diagnosis. *Priceiella* (*Camurnirmus*) **n. subgen.** is most similar to *Pr.* (*Torosinirmus*) **n. subgen.**, with which it shares the following characters: parameres widely divergent (Figs 290, 298, 313); sternal plates and subgenital plates of both sexes (Figs 285–286, 292–293, 307–308) without antero-lateral modifications, and male subgenital plate without accessory lateral plates; mesosomes (Figs 289, 297, 313) broad, generally irregularly oval or shield-shaped, without rugose nodi. In both subgenera the antennae may be sexually dimorphic (Figs 294–295, 309–310) but this is not the case for all *Pr.* (*Camurnirmus*) (Fig. 287) and not all *Pr.* (*Torosinirmus*) (not illustrated). Dorsal preantennal suture is absent in *Pr.* (*Torosinirmus*) (Fig. 309) and may be absent (Fig. 294) or present around *dsms* (Fig. 287) in *Pr.* (*Camurnirmus*). The two subgenera differ in the following characters: tergopleurites III without *aps* in both sexes in *Pr.* (*Camurnirmus*) (Figs 285–286, 292–293), but *aps* are present on tergopleurites III in males of *Pr.* (*Torosinirmus*) (Figs 307–308); ventral side of mesosome more ornate in *Pr.* (*Camurnirmus*) (Figs 289, 297) than in *Pr.* (*Torosinirmus*) (Fig. 312), with sinuous marginal thickening and more elaborate gonopores in the former than in the latter; proximal mesosome overlaps with basal apodeme in *Pr.* (*Camurnirmus*) (Figs 288–289, 296–287) but not in *Pr.* (*Torosinirmus*) (Figs 311–312).

Description. ***Both sexes***. As the genus description except: abdominal chaetotaxy as in Tables 2 and 8; both sexes without *ps* on segment III (Figs 285–286, 292–293); antero-lateral corners of sternal plates not thickened (Figs 285–286, 292–293).

Male. Male without *aps* on tergopleurite III. No accessory sternal plates lateral to male subgenital plate. Proximal mesosome broad, roughly rounded (Figs 289, 297). Mesosomal lobes broad, rounded or triangular. Gonopore with antero-lateral extensions. Ventral rugose nodi absent (Figs 289, 297); 1 *ames* sensilla on each side antero-lateral of gonopore; 2 *pmes* microseta antero-lateral to gonopore. Parameres typically widely divergent distally (except *Priceiella* (*Camurnirmus*) *nipalensis*).

Etymology. The subgeneric name *Camurnirmus* is formed by Latin "*camur*" for "bent" or "crooked", referring to the peculiar shape of the parameres of members of this subgenus (Fig. 288). The ending "*Nirmus*" is a common generic suffix in louse taxonomy, referring to the genus of the same name erected by Nitzsch (1818).

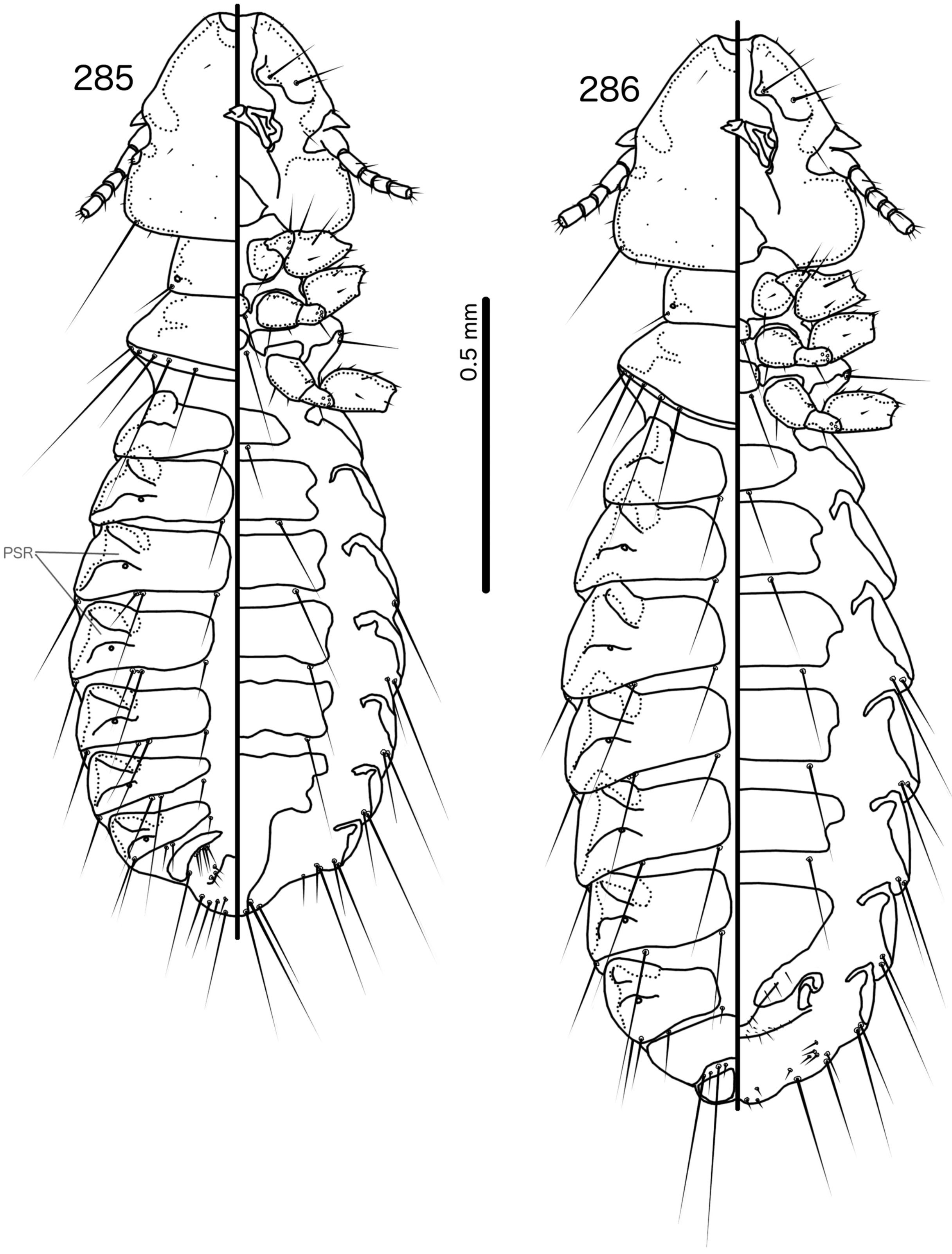
Priceiella (*Camurnirmus*) *hwameicola* Gustafsson & Bush, new species

(Figs 285–291, 316)

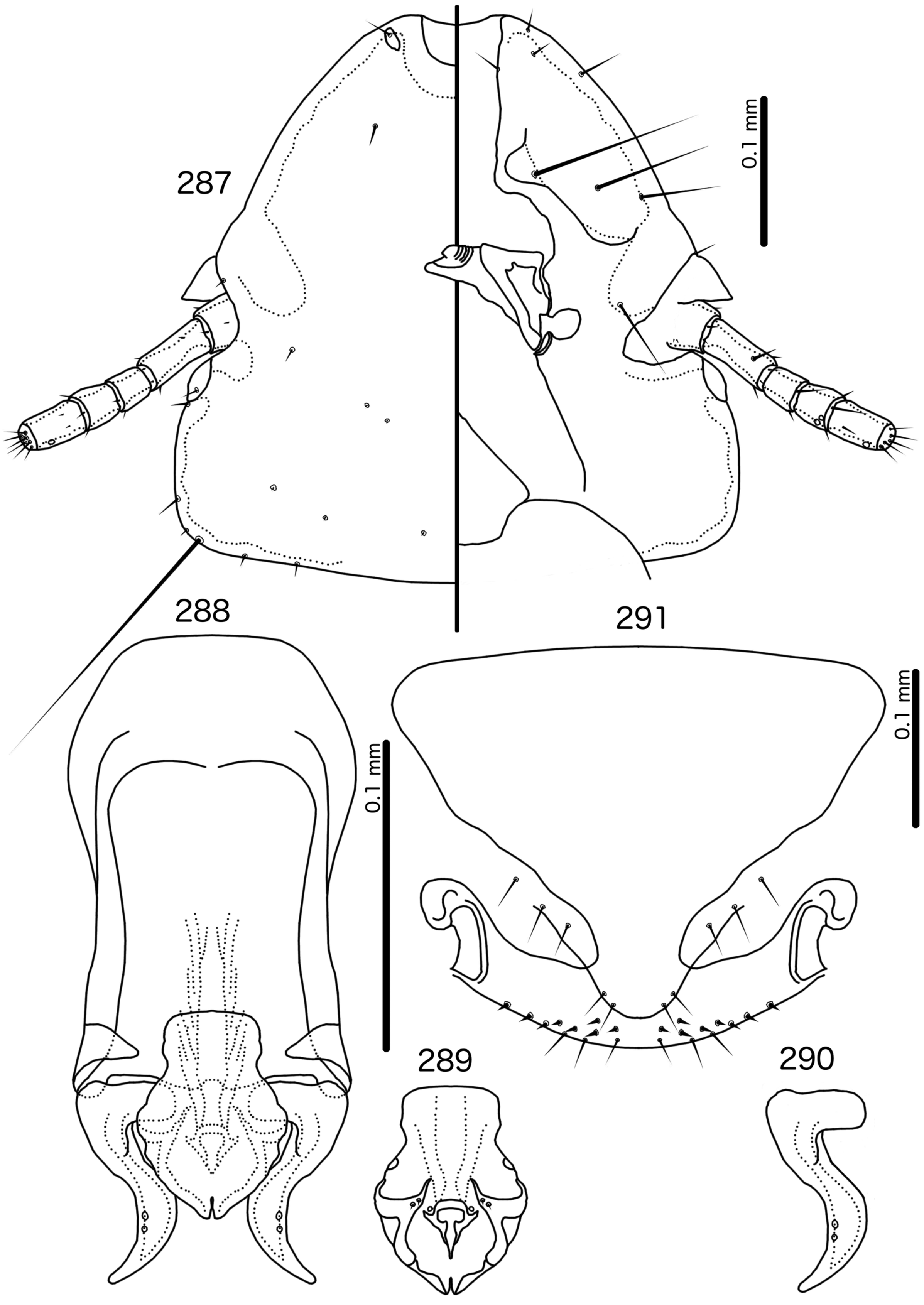
Type host. *Garrulax taewanus* Swinhoe, 1859—Taiwan hwamei.
Type locality. Tientzu, Taiwan.

Diagnosis. *Priceiella* (*Camurnirmus*) *hwameicola* **n. sp.** is most similar to *Pr.* (*Cm.*) *nipalensis* (Ansari, 1956a) and *Pr.* (*Cm.*) *paulbrowni* **n. sp.**, with differences being mainly in the male genitalia. In all three species, the distal mesosome is rounded triangular (Figs 289, 297), the proximal mesosome is at least as long as wide [longer than wide in *Pr.* (*Cm.*) *nipalensis*], and the parameres are at most twice as long as the mesosome (Figs 288, 296). However, the mesosome is broader and with more complicated border thickening in *Pr.* (*Cm.*) *hwameicola* (Fig. 289) than in *Pr.* (*Cm.*) *nipalensis*, with the mesosome of *Pr.* (*Cm.*) *hwameicola* being almost twice at broad as the proximal mesosome at the height of the gonopore, whereas in *Pr.* (*Cm.*) *nipalensis* the mesosome is less than twice as broad as the proximal mesosome at the same place. The parameres of *Pr.* (*Cm.*) *nipalensis* are convergent distally, and not widely divergent as in *Pr.* (*Cm.*) *hwameicola*. The gonopore of *Pr.* (*Cm.*) *nipalensis* lack the horn-shaped lateral extensions present in *Pr.* (*Cm.*) *hwameicola*. Females separated by vulval chaetotaxy, with *Pr.* (*Cm.*) *nipalensis* having 5 *vms* [3 in *Pr.* (*Cm.*) *hwameicola*], but *vos* and *vss* overlap.

For differences between *Pr.* (*Cm.*) *hwameicola* and *Pr.* (*Cm.*) *paulbrowni*, see *Pr.* (*Cm.*) *paulbrowni*, below.



FIGURES 285–286. *Priceiella* (*Camurnirmus*) *hwameicola* **n. gen., n. subgen. & n. sp.** ex *Garrulax taewanus*: **285,** male habitus, dorsal and ventral views. **286,** female habitus, dorsal and ventral views.



FIGURES 287–291. *Priceiella* (*Camurnirmus*) *hwameicola* **n. gen., n. subgen. & n. sp.** ex *Garrulax taewanus*: **287,** male head, dorsal and ventral views. **288,** male genitalia, dorsal view. **289,** male mesosome, ventral view. **290,** male paramere, dorsal view. **291,** female subgenital plate and vulval margin, ventral view.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 287. Minute dorsal preantennal suture present mainly in females surrounding *dsms*. Antennae monomorphic. Only lateral parts of marginal carina, preantennal nodi, and preocular nodi darkly pigmented. Thoracic and abdominal segments as in genus and subgenus descriptions and Figs 285–286. Lateral tergopleurites and pleural incrassations Fig. 316.

Male. Abdominal chaetotaxy as in Table 8 and Fig. 285. Subgenital plate as in Fig. 285. Antero-lateral end of basal apodeme modestly expanded (Fig. 288). Proximal mesosome broad, rectangular. Gonopore (Fig. 289) ventral, open distally. Mesosomal lobes wide, fused distally; 1 *pmes* sensilla on each side antero-lateral to gonopore; 2 *ames* microsetae on each side lateral to *pmes*, located on lateral ridges of mesosomal lobes. Parameral heads (Fig. 290) roughly rectangular. Parameral blades tapering, somewhat elongated, widely divergent distally; *pst1–2* sensilla. Measurements ex *Garrulax taewanus* (n = 4): TL = 1.44–1.50; HL = 0.36–0.39; HW = 0.36–0.39; PRW = 0.21–0.23; PTW = 0.35–0.37; AW = 0.51–0.55.

Female. Abdominal chaetotaxy as in Table 8 and Fig. 286. Subgenital plate roughly triangular (Fig. 291), reaching vulval margin and there flaring into cross-piece. Vulval margin (Fig. 291) gently rounded, with 3 slender *vms* on each side, and 7–8 thorn-like *vss* on each side; 4–6 slender *vos* on each side; distal 2 *vos* near, but not median to, *vss*. Measurements ex *Garrulax taewanus* (n = 7): TL = 1.66–1.83; HL = 0.38–0.41; HW = 0.39–0.43; PRW = 0.22–0.25; PTW = 0.36–0.40; AW = 0.54–0.60.

Etymology. The species epithet is derived from the Chinese "huàméi" for "thrush", on which the vernacular name "Taiwan hwamei" is based, combined with Latin "*-cola*" for "inhabitant".

Type material. Ex ***Garrulax taewanus*** [some as ***Garrulax canorus***]**: Holotype** ♂, Tientzu, Taiwan, 11 Mar. 1962, BBM-PF-454, 24753 on reverse (OSUS). **Paratypes:** 1♀, same data as holotype (OSUS); 3♂, 3♀, 24752 and 24754–5 on reverse (OSUS); 3♀, Puli [Township], Nantou [County], Taiwan, Jan. 1964, T.C. Maa, TMT70, TMT574, TMT554 (PIPeR).

Priceiella* (*Camurnirmus*) *paulbrowni **Gustafsson & Bush, new species**

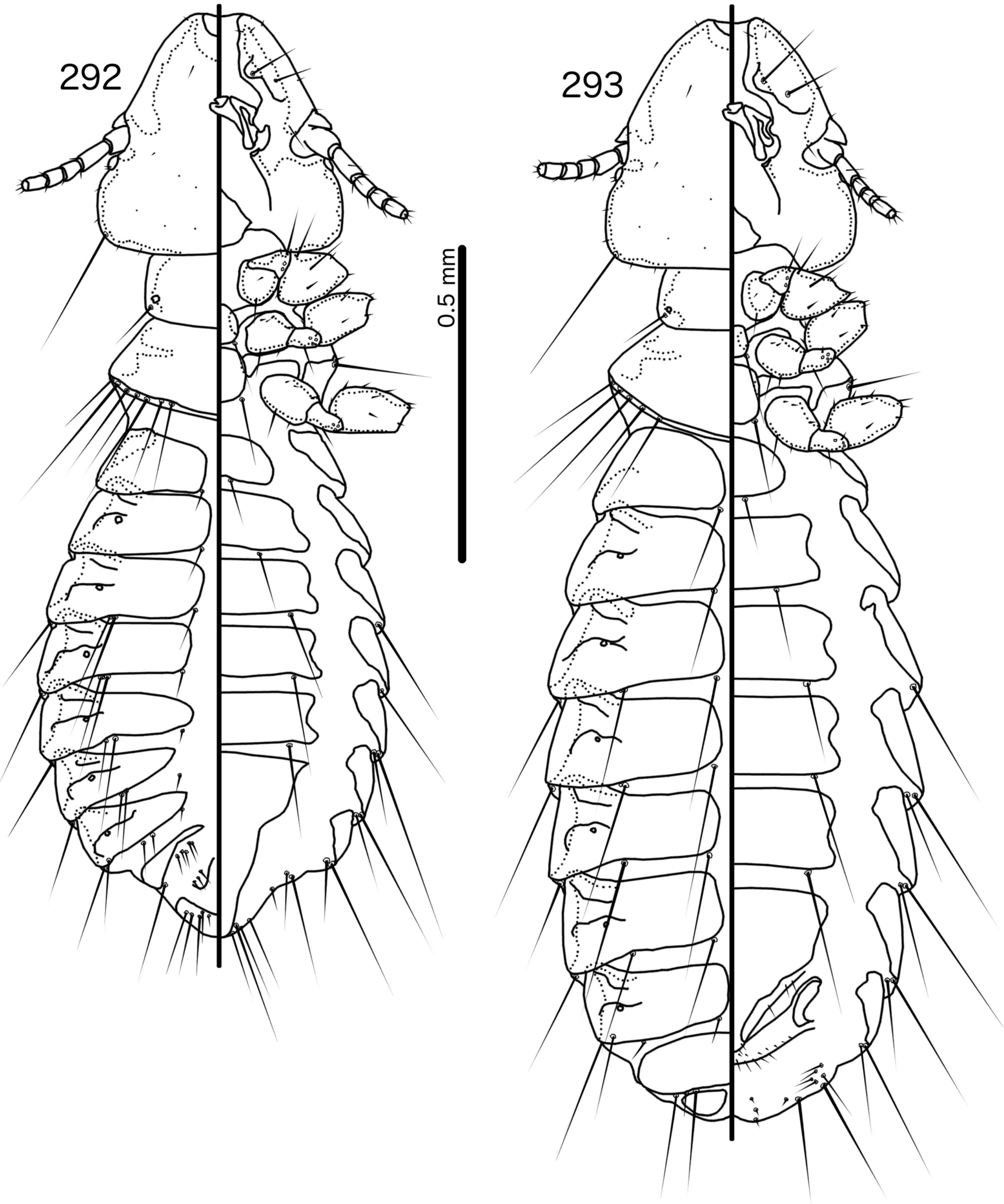
(Figs 292–299)

Type host. *Garrulax leucolophus diardi* (Lesson, 1831)—white-crested laughinthrush.
Type locality. Phu Khiao, Chaiyaphum Province, Thailand.
Other host. *Garrulax leucolophus belangeri* Lesson, 1831—white-crested laughingthrush.

Diagnosis. The male genitalia of *Priceiella* (*Camurnirmus*) *paulbrowni* **n. sp.** (Figs 296–298) are intermediate between *Pr.* (*Cm.*) *hwameicola* **n. sp.** (Figs 288–290) and *Pr.* (*Cm.*) *nipalensis*, and *Pr.* (*Cm.*) *rhinocichlae* (Eichler, 1957). As in *Pr.* (*Cm.*) *hwameicola* (Fig. 289) and *Pr.* (*Cm.*) *nipalensis*, the distal mesosome is rounded triangular in *Pr.* (*Cm.*) *paulbrowni* (Fig. 297), but as in *Pr.* (*Cm.*) *rhinocichlae* the distal mesosome of *Pr.* (*Cm.*) *paulbrowni* (Fig. 297) is also dominated by a broad transversal thickening, and the parameres are almost as long as those of *Pr.* (*Cm.*) *rhinocichlae*. In *Pr.* (*Cm.*) *hwameicola* (Fig. 289) and *Pr.* (*Cm.*) *nipalensis* the distal thickening of the mesosomal lobes are more slender and not medianly continuous, and the parameres are much shorter. In both *Pr.* (*Cm.*) *rhinocichlae* and *Pr.* (*Cm.*) *paulbrowni* (Fig. 296) the distal half of the basal apodeme is much wider than the proximal half, whereas in *Pr.* (*Cm.*) *nipalensis* and *Pr.* (*Cm.*) *hwameicola* (Fig. 288) the basal apodeme is about equally wide in distal and proximal halves. In both *Pr.* (*Cm.*) *rhinocichlae* and *Pr.* (*Cm.*) *paulbrowni* (Fig. 297), the horn-shaped lateral extensions of the gonopore originate from the proximal margin of the gonopore, whereas in *Pr.* (*Cm.*) *hwameicola* (Fig. 289) these extensions originate from the lateral margins of the gonopore.

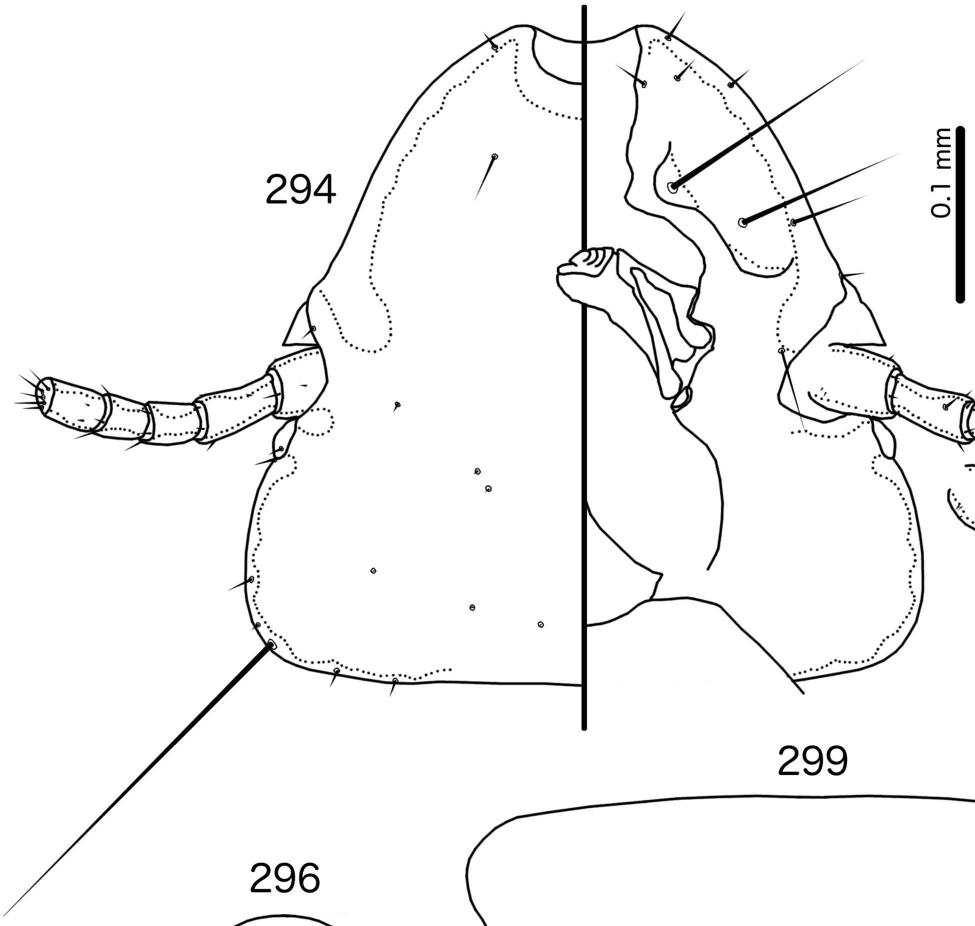
Priceiella (*Camurnirmus*) *paulbrowni* can be separated from *Pr.* (*Cm.*) *rhinocichlae* by the following characters: distal mesosome quadratic in *Pr.* (*Cm.*) *rhinocichlae* but rounded triangular in *Pr.* (*Cm.*) *paulbrowni* (Fig. 297); parameres with characteristic notch on lateral margin about 1/3 from distal tip associated with *pst2* in *Pr.* (*Cm.*) *rhinocichlae*, but parameres without such notch in *Pr.* (*Cm.*) *paulbrowni* (Fig. 298); gonopore longer than wide in *Pr.* (*Cm.*) *rhinocichlae*, but wider than long in *Pr.* (*Cm.*) *paulbrowni* (Fig. 297). Vulval chaetotaxy partially overlapping between *Pr.* (*Cm.*) *rhinocichlae* an *Pr.* (*Cm.*) *hwameicola* (Fig. 299), but *Pr.* (*Cm.*) *rhinocichlae* has 5–7 *vss* [7–9 in *Pr.* (*Cm.*) *hwameicola*]. Females of *Pr.* (*Cm.*) *rhinocichlae* lack the *psps* of tergopleurite VIII present in *Pr.* (*Cm.*) *paulbrowni* (Fig. 293) and *Pr.* (*Cm.*) *hwameicola* (Fig. 286), but have *ps* on segment III, which are absent in *Pr.* (*Cm.*) *paulbrowni* and *Pr.* (*Cm.*) *hwameicola*.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 294. Dorsal preantennal suture absent. Only marginal carina, mandibles, head nodi, and gular plate with dark pigmentation. Thoracic and abdominal segments as in genus and subgenus descriptions and Figs 292–293. Lateral tergopleurites and pleural incrassations as in Fig. 316.



FIGURES 292–293. *Priceiella* (*Camurnirmus*) *paulbrowni* **n. gen., n. subgen. & n. sp.** ex *Garrulax leucolophus diardi*: **292,** male habitus, dorsal and ventral views. **293,** female habitus, dorsal and ventral views.

294



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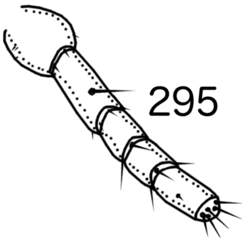

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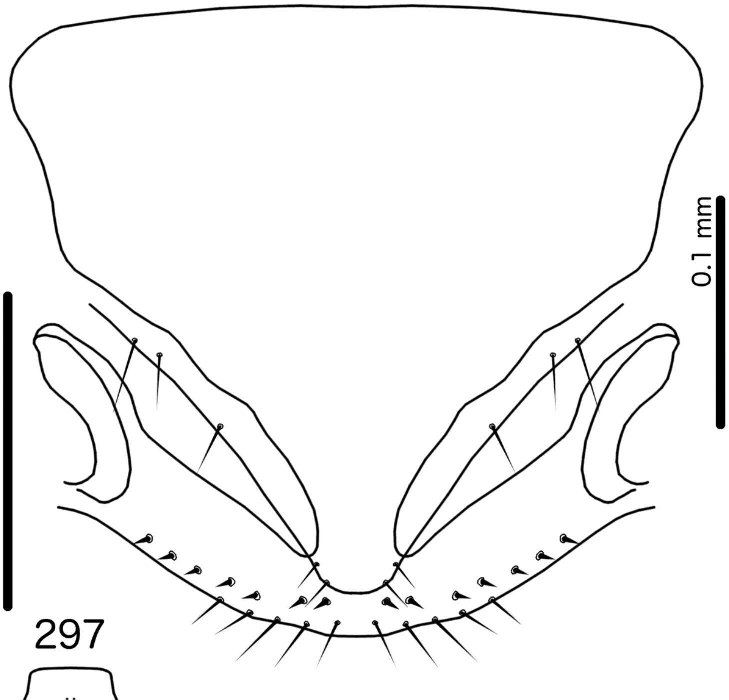

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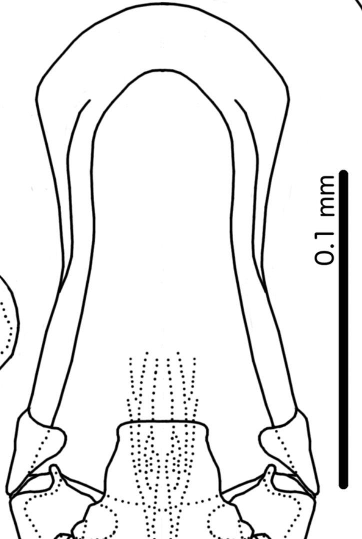

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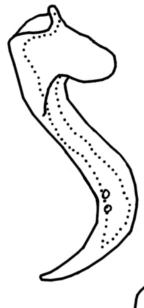

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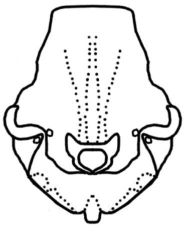


FIGURES 294–299. *Priceiella* (*Camurnirmus*) *paulbrowni* **n. gen., n. subgen. & n. sp.** ex *Garrulax leucolophus diardi*: **294,** male head, dorsal and ventral views. **295,** female antenna, ventral view. **296**, male genitalia, dorsal view. **297,** male mesosome, ventral view. **298,** male paramere, dorsal view. **299,** female subgenital plate and vulval margin, ventral view.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 292. Antero-lateral ends of subgenital plate as in Fig. 292. Basal apodeme narrows anteriorly (Fig. 296), with modest lateral expansion. Proximal mesosome rectangular. Gonopore (Fig. 297) broader than long, narrowly open distally. Mesosomal lobes broad, fused distally; 2 *ames* sensilla on each side anterio-lateral to gonopore (Fig. 297). Parameral heads (Fig. 298) irregular. Parameral blades long, tapering, widely divergent distally; *pst1–2* sensilla. Measurements ex *Garrulax leucolophus diardi* (n = 5): TL = 1.34–1.49; HL = 0.36–0.39; HW = 0.36–0.38; PRW = 0.21–0.24; PTW = 0.34–0.38; AW = 0.51–0.62. Ex *G. l. belangeri* (n = 6): TL = 1.36–1.44; HL = 0.36–0.37; HW = 0.36–0.38; PRW = 0.23–0.24; PTW = 0.35–0.36; AW = 0.51–0.57.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 293. Subgenital plate roughly triangular (Fig. 299), reaching vulval margin where it flares into cross-piece. Vulval margin (Fig. 299) gently rounded, with 3–5 long, slender *vms* on each side, and 7–9 short, thorn-like *vss* on each side; 4–5 long, slender *vos*; distal 2 *vos* near, but not median to, *vss*. Measurements ex *Garrulax leucolophus diardi* (n = 4 except n = 3 for TL and HL): TL = 1.59–1.87; HL = 0.38–0.44; HW = 0.38–0.42; PRW = 0.22–0.26; PTW = 0.37–0.42; AW = 0.56–0.63. Ex *G. l. belangeri* (n = 4): TL = 1.66–1.92; HL = 0.38–0.42; HW = 0.40–0.43; PRW = 0.23–0.27; PTW = 0.36–0.41; AW = 0.56–0.66.

Etymology. The species epithet is in honour of Paul Brown, Senior Curator of Sternorrhyncha, lice, and thrips at the NHML. His monumental efforts in loaning large numbers of specimens made this revision possible.

Type material. Ex ***Garrulax leucolophus diardi*** [some as ***Garrulax leucolophus***]**: Holotype** ♂, Phu Khiao, Chaiyaphum Province, Thailand, 28 Dec. 1952, R.E. Elbel, RE-980, RT-B-17561 (NHML). **Paratypes:** 1♀, same data as holotype (NHML); 1♂, 1♀, Kilos Mountains, Phu Khiao, Chaiyaphum Province, Thailand, 29 Dec. 1952, R.E. Elbel, RE-982, RT-B-17563, 24733 on reverse (OSUS); 1♂, 1♀, Ban Tham, Chiang Mai Province, Thailand, 19 Oct. 1972, GMP-693, 24734 on reverse (OSUS); 1♂, 1♀, Chiang Saen Kao, Chiang Rai Province, Thailand, 22 Feb. 1953, R.E. Elbel & H.G. Deignan, RE-2312, RT-B-12816 (PIPeR); 1♂, 1♀, Phu Nam Lang, Na Phung, Dan Sai District, Loei Province, Thailand, 7 Jun. 1955, R.E. Elbel, RE-5571 (PIPeR); 1♂, 1♀, Ban Na Nong Thum, Non Han Subdistrict, Chum Phae District, Khon Kaen Province, Thailand, 30 Oct. 1953, R.E. Elbel & B. Lekagul, RE-3095, RT-B-22574 (PIPeR).

Additional material examined (non-types)

Ex ***Garrulax leucolophus diardi*** [some as ***G. leucolophus***]**:** 1♂, Phu Lom Lo, Kok Sathon Subdistrict, Dan Sai District, Loei Province, Thailand, 15 Feb. 1955, R.E. Elbel, RE-4645, RT-B-31200 (USNM).

Ex ***Garrulax leucolophus belangeri*** [some as ***Garrulax leucolophus***]**:** 1♂, 1♀, Hin Laem, Tha Khanun, Kanchanaburi Province, Thailand, 2 Nov. 1952, R.E. Elbel & H.G. Deignan, RE-1396, RT-B-15836 (PIPER); 1♂, 1♀, same locality and collector, 9 Nov. 1952, RE-1466, RT-B-15852 (PIPeR); 1♂, 1♀, same locality and collector, 16 Nov. 1952, RE-1515, RT-B-17049 (PIPeR); 1♂, 1♀, same locality and collector, 19 Nov. 1952, RE-1536, RT-B-17062 (PIPeR); 1♂, 1♀, same locality and collector, 9 Nov. 1952, RE-1466, RT-B-15852 (OSUS); 1♂, 1♀, same data as previous (USNM).1♂, 1♀, same locality and collector, 3 Nov. 1952, RE-1397, RT-B-15834, 24748 on reverse (NHML);

Remarks. We found no significant morphological differences between the material we examined from the two host subspecies.

Priceiella (*Thescelovora*) Gustafsson & Bush, new subgenus

Type species. *Priceiella* (*Thescelovora*) *alliocephala* new species

Diagnosis. *Priceiella* (*Thescelovora*) **n. subgen.** is the most aberrant of the four subgenera, from which it is separated by the following characters: dorsal preantennal suture, if present, originates around *dsms* and reaches towards or to *ads* (Fig. 302), whereas the suture, if present, in the other three subgenera is restricted to either *ads* (Fig. 279) or *dsms* (Fig. 287); *aps* absent in male *Pr.* (*Thescelovora*) (Fig. 300), and not present on segment IV–V as in the other three subgenera (Figs 277, 285, 307); mesosome abruptly narrowed anterior to gonopore in *Pr.* (*Thescelovora*) (Fig. 304) as in *Pr.* (*Priceiella*) (Fig. 282), but unlike *Pr.* (*Camurnirmus*) (Figs 289, 297) and *Pr.* (*Torosinirmus*) (Fig. 302), where the mesosome narrows more gradually.

Description. ***Both sexes***. As in genus description except: dorsal preantennal suture typically present at *dsms* but extends posteriorly and may reach *ads* (Fig. 302); abdominal chaetotaxy as in Tables 2 and 8; both sexes without *ps* on segment III; antero-lateral corners of sternal plates not thickened (Figs 300–301).

Male. *aps* absent on male tergopleurites VI–VII, may also be absent on male tergopleurites IV–V (Fig. 300). Males without *aps* on tergopleurite III. No accessory sternal plates lateral to male subgenital plate. Proximal mesosome oval to rectangular, markedly narrowed compared to distal mesosome (Fig. 304). Gonopore open or closed proximally (Fig. 304); if closed often diffuse (not illustrated). Ventral rugose nodi present or absent; if present restricted to lateral margin; 2 *ames* microsetae on each side submedianly near gonopore; 2 *pmes* sensilla on each side lateral to *ames*. Parameral blades (Fig. 305) parallel or slightly divergent distally, typically short.

Etymology. The name *Thescelovora* is formed by Greek "*theskelos*" for "marvelous" or "wondrous", and Latin "*vorare*" for "to devour".

***Priceiella* (*Thescelovora*) *alliocephala* Gustafsson & Bush, new species**

(Figs 300–307, 317)

Type host. *Platylophus galericulatus ardesiacus* (Bonaparte, 1850)—crested jay.
Type locality. 5° 28′ N 102° 40′ E: elev. 140 ft, [Terenganu Sultanate,] Malaysia.

Diagnosis. *Priceiella* (*Thescelovora*) *alliocephala* **n. sp.** is separated from the only other described member of *Pr.* (*Thescelovora*) **n. subgen.**, *Pr.* (*Th.*) *malacocincla* (Najer & Sychra [in Najer *et al.*], 2014) by the following characters: dorsal preantennal suture absent in *Pr.* (*Th.*) *malacocincla*, but present in *Pr.* (*Th.*) *alliocephala* n. sp (Fig. 302); head size [length x width: 0.34 x 0.35 in male *Pr.* (*Th.*) *malacocincla*, and c. 0.37 x 0.38 in female *Pr.* (*Th.*) *malacocincla*; c. 0.42 x 0.42 in male *Pr.* (*Th.*) *alliocephala*, and c. 0.45 x 0.45 in female *Pr.* (*Th.*) *alliocephala*]; lateral margins of preantennal head more or less flat in *Pr.* (*Th.*) *malacocincla*, but concave in *Pr.* (*Th.*) *alliocephala* (Fig. 302); gonopore constricted proximally in *Pr.* (*Th.*) *malacocincla*, but not constricted in *Pr.* (*Th.*) *alliocephala* (Fig. 304); marginal thickenings of mesosomal lobes fused distally in *Pr.* (*Th.*) *alliocephala* (Fig. 304), but not in *Pr.* (*Th.*) *malacocincla*; proximal mesosome narrow in *Pr.* (*Th.*) *malacocincla* but broader in *Pr.* (*Th.*) *alliocephala* (Fig. 304). Vulval chaetotaxy overlaps between these two species, and females better separated by head shape and presence of dorsal preantennal suture.

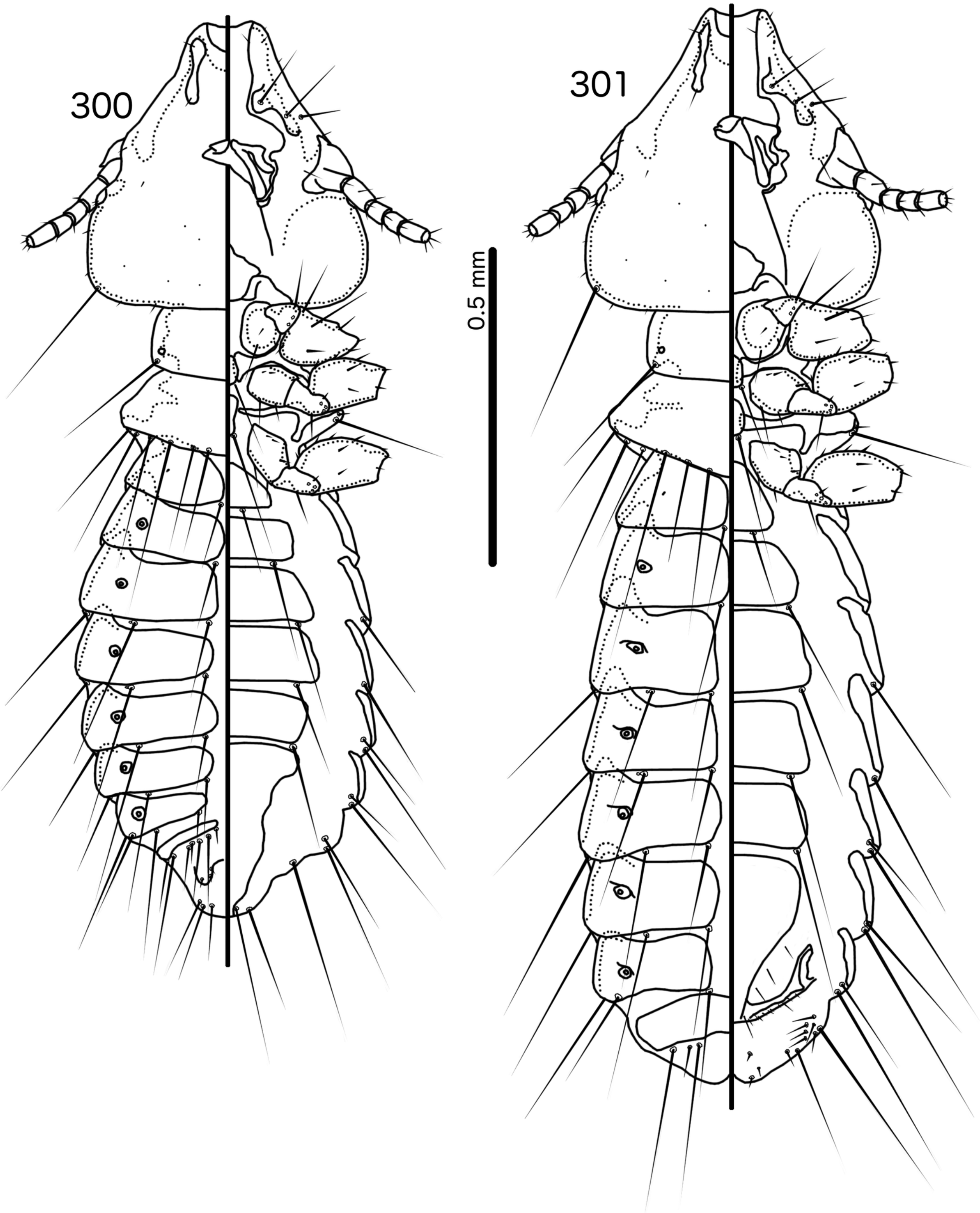
Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus and subgenus descriptions and Fig. 302. Preantennal nodi moderate. Coni much slightly longer than broad at base, reaching to or slightly beyond distal margin of scapes. Preocular nodi moderate. Postocular nodi small. Gular plate short, squat. Thoracic and abdominal segments as genus and subgenus descriptions and Figs 300–301. Tergopleurites with brown pigmentation restricted to lateral half, with translucent areas surrounding spiracle openings. Sternal plates IV–VI and subgenital plate of both sexes with light brown pigmentation; *tps* absent on segments II–VIII. Pleurites not modified as in other *Priceiella* (Fig. 317).

Male. Abdominal chaetotaxy as in Table 8 and Fig. 300. Male genitalia distinct (Figs 303–305). Mesosome narrow anteriorly, widening just posterior to parameral heads. Proximal mesosome gently rounded. Gonopore (Fig. 304) open proximally. Mesosomal lobes broad, short, fused distally; 2 *pmes* microsetae on each side just lateral to gonopore; 2 *ames* sensilla on each side lateral to *pmes*. Parameral heads (Fig. 305) rounded triangular. Parameral blades slender, tapering; *pst1–2* sensilla. Measurements ex *Platylophus galericulatus ardesiacus* (n = 2): TL = 1.32–1.36; HL = 0.42–0.43; HW = 0.42–0.43; PRW = 0.24; PTW = 0.35; AW = 0.44–0.46.

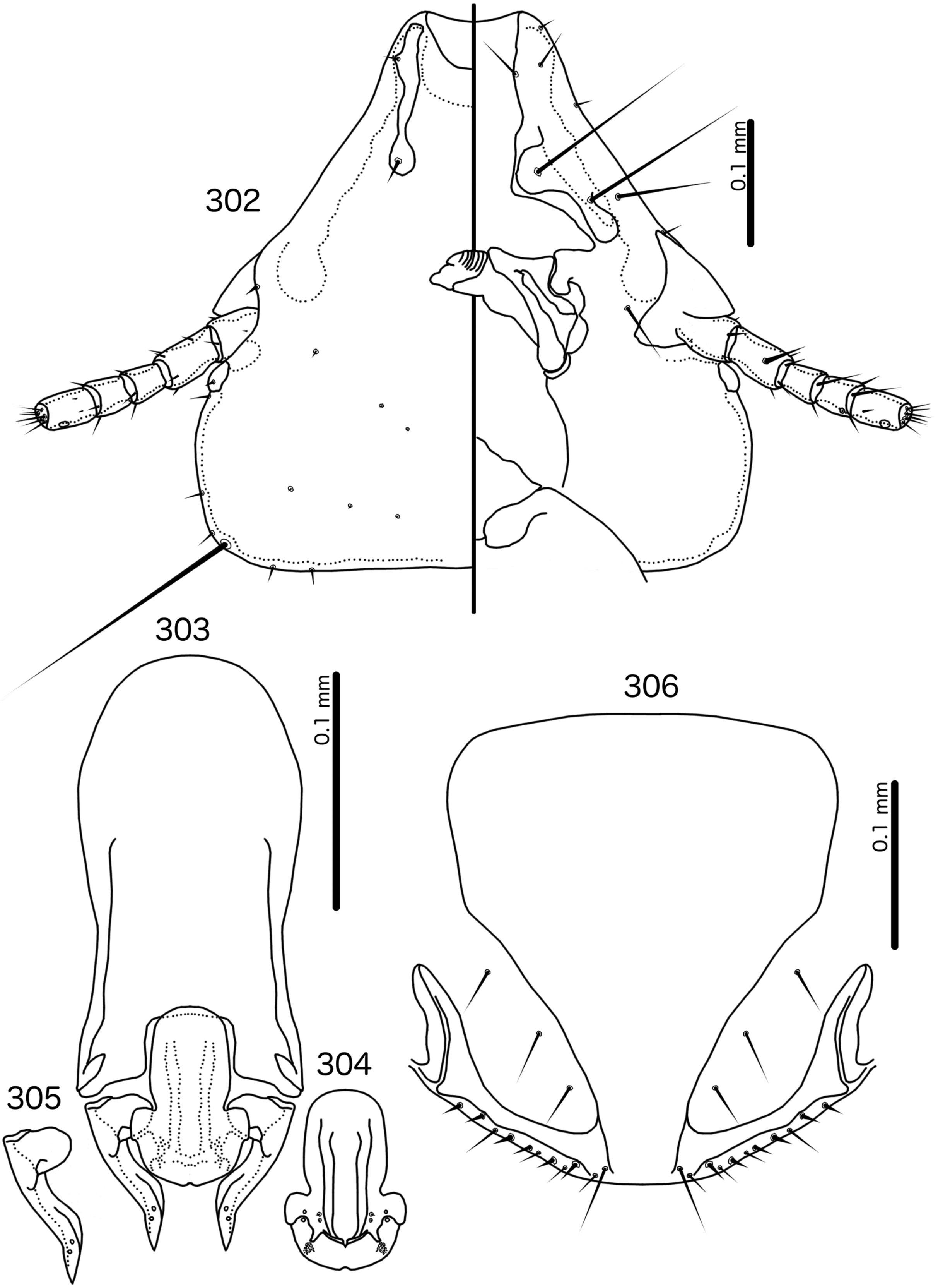
Female. Abdominal chaetotaxy as in Table 8 and Fig. 301. Subgenital plate broadly pentagonal (Fig. 306), reaching vulval margin and flaring. Vulval margin (Fig. 306) gently rounded, with 3–4 long, slender *vms* on each side, and 6–7 long, thorn-like *vss* on each side; 4 long, slender *vos* on each side; distal *vos* situated median to *vss*. Measurements ex *Platylophus galericulatus ardesiacus* (n = 2): TL = 1.61–1.64; HL = 0.45–0.46; HW = 0.45; PRW = 0.26–0.27; PTW = 0.38; AW = 0.46–0.47 .

Etymology. The species epithet is formed by Latin "*allium*" for "garlic" and Greek "*kefáli*" for head, referring to the narrowed preantennal area, unique within the genus (Figs 300–301).

Type material. Ex *Platylophus galericulatus ardesiacus*: Holotype ♂, 5° 28′ N 102° 40′ E: elev. 140 ft, [Terenganu Sultanate,] Malaysia, 25 Mar. 1974, Gn. Lawit Expedition, Brit. Mus. 1974-2 (NHML). **Paratypes:** 1♂, 2♀, same data as holotype (NHML).



FIGURES 300–301. *Priceiella* (*Thescelovora*) *alliocephala* **n. gen., n. subgen. & n. sp.** ex *Platylophus galericulatus ardesiacus*: **300,** male habitus, dorsal and ventral views. **301,** female habitus, dorsal and ventral views.



FIGURES 302–306. *Priceiella* (*Thescelovora*) *alliocephala* **n. gen., n. subgen. & n. sp.** ex *Platylophus galericulatus ardesiacus*: **302,** male head, dorsal and ventral views. **303,** male genitalia, dorsal view. **304,** male mesosome, ventral view. **305,** male paramere, dorsal view. **306,** female subgenital plate and vulval margin, ventral view.

Priceiella (*Torosinirmus*) Gustafsson & Bush, new subgenus

Type species. *Priceiella* (*Torosinirmus*) *koka* **new species**

Diagnosis. *Priceiella* (*Torosinirmus*) **n. subgen.** is most similar to *Pr.* (*Camurnirmus*) **n. subgen.**, with which it shares the following characters: dorsal preantennal suture absent (Figs 294, 309) restricted to around *dsms* (Fig. 287); parameres (Figs 290, 298, 313) highly divergent; antennae generally may be sexually dimorphic [Figs 294–295, 309–310; but not in *Pr.* (*Camurnirmus*) *hwameicola* **n. sp.**, Fig. 287, and not in some *Pr.* (*Torosinirmus*)]; sternal plates and subgenital plates of both sexes without antero-lateral modifications (Figs 285–286, 292–293, 307–308); male subgenital plate without accessory lateral plates (Figs 285–286, 292–293, 307–308); mesosomes broad (Figs 289, 297, 313), generally irregularly oval or shield-shaped, without rugose nodi. These two subgenera differ in the following characters: *ps* present on segment III in both sexes and *aps* present on tergopleurites III in males in *Pr.* (*Torosinirmus*) (Figs 307–308) but both absent in *Pr.* (*Camurnirmus*) (Figs 285–286, 292–293); marginal thickening of mesosome never displaced medianly and continuous distally in *Pr.* (*Torosinirmus*) (Fig. 312) but displaced medianly at least at lateral margin and may be interrupted distally in *Pr.* (*Camurnirmus*) (Figs 289, 297); proximal mesosome broad, flat, and not overlapping with basal apodeme in *Pr.* (*Torosinirmus*) (Figs 311–312), but narrowed and variable, overlapping with basal apodeme in *Pr.* (*Camurnirmus*) (Figs 288–289, 296–287).

Description. ***Both sexes***. As in genus description except: dorsal preantennal suture absent. Antennae may be sexually dimorphic (Figs 309–310). Abdominal chaetotaxy as in Tables 2 and 8. Both sexes with *ps* on segment III. Antero-lateral corners of sternal plates not modified (Figs 307–308).

Male. Males with *aps* on tergopleurites III–VII. No accessory plates lateral to male subgenital plate. Proximal mesomere broad, rounded or rectangular (Fig. 311). Primary mesomeral lobes broad, rounded or angular. Ventral rugose nodi absent; *ames* and *pmes* as in Fig. 311. Parameral heads small, blunt (Fig. 312). Parameral blades very broad, divergent distally.

Female. Female without *psps* on tergopleurite VIII.

Etymology. The name *Torosinirmus* is derived from Latin "*torosus*" for "muscular, fleshy", referring to the very thick parameres of the species in this group (Fig. 313). The ending "*Nirmus*" is a common generic suffix in louse taxonomy, referring to the genus of the same name erected by Nitzsch (1818).

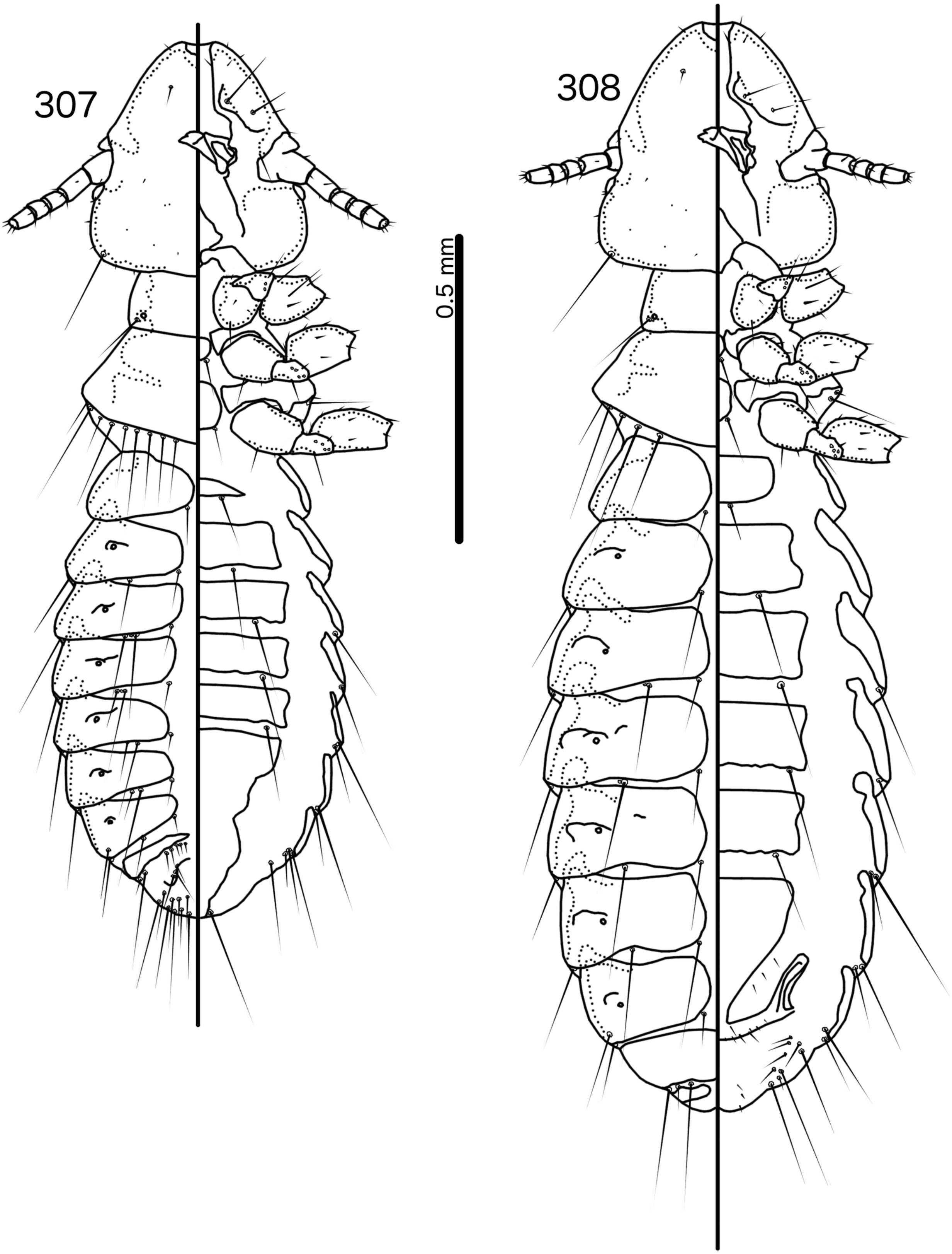
Priceiella (*Torosinirmus*) *koka* Gustafsson & Bush, new species
(Figs 307–314, 318)

Type host. *Turdoides tenebrosa* (Hartlaub, 1883)—dusky babbler.
Type locality. Koka, Ethiopia.

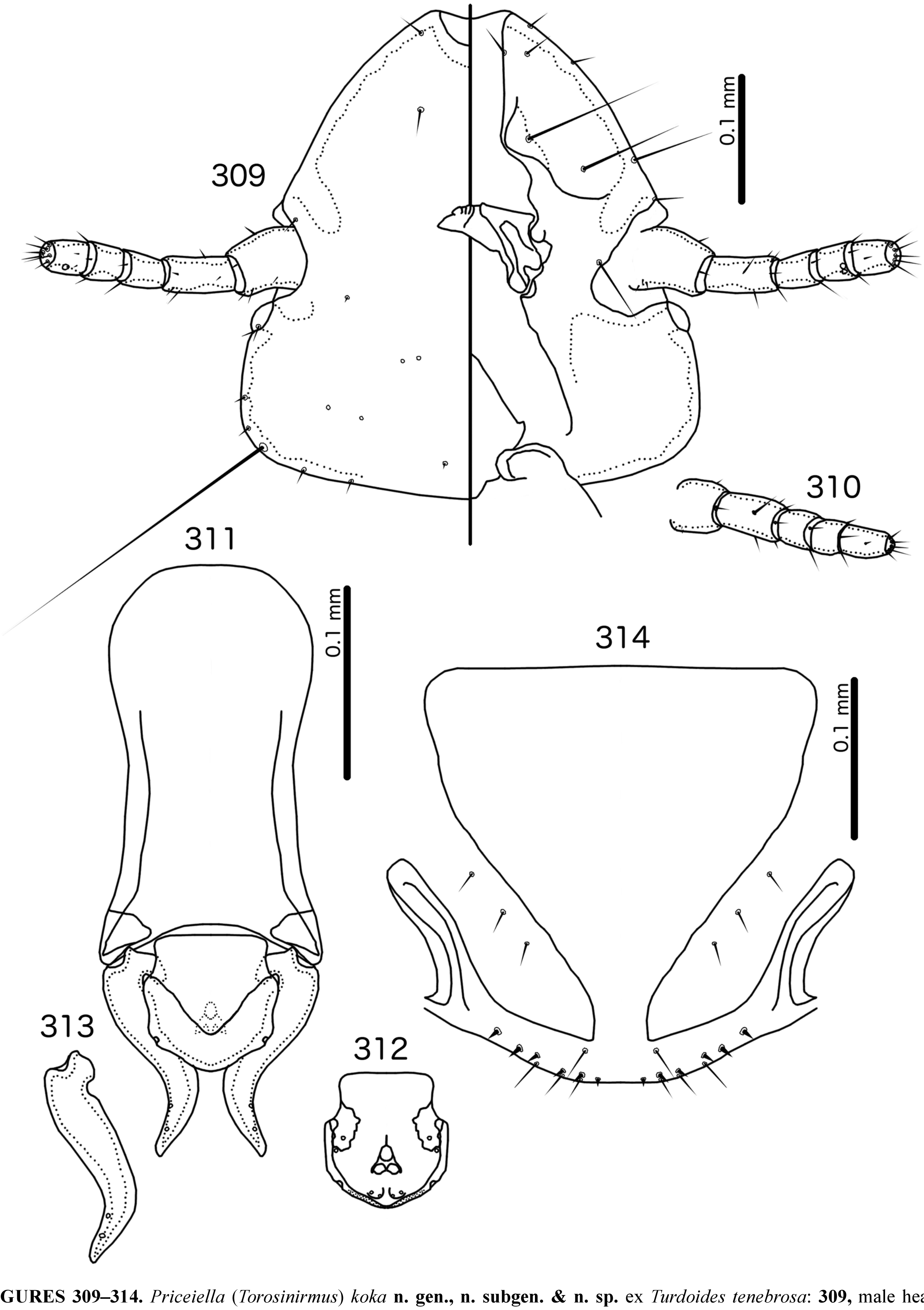
Diagnosis. *Priceiella* (*Torosinirmus*) *koka* **n. sp.** is most similar to *Pr.* (*Ts.*) *nivea* (Ansari, 1956a), with which it shares the long parameres [Fig. 313; parameres of *Pr.* (*Ts.*) *brueliodes* much shorter, broader]. In both *Pr.* (*Ts.*) *koka* and *Pr.* (*Ts.*) *nivea* the divergent part of the paramere is shorter, compared to the convergent part, than in *Pr.* (*Ts.*) *brueliodes*. *Priceiella* (*Ts.*) *koka* (Figs 307–308) also shares the larger number of pterothoracic setae with *Pr.* (*Ts.*) *nivea*. Moreover, the antennae of *Pr.* (*Ts.*) *koka* (Figs 309–310) and *Pr.* (*Ts.*) *nivea* are sexually dimorphic, which is not the case for *Pr.* (*Ts.*) *brueliodes*.

The most significant difference between *Priceiella* (*Torosinirmus*) *koka* and *Pr.* (*Ts.*) *nivea* is the shape of the mesomere, which in the latter species is rounded both anteriorly and posteriorly, whereas the mesomere of *Pr.* (*Ts.*) *koka* (Fig. 312) is broader and entirely flat anteriorly, and more angular posteriorly. Males separated by the setae of tergopleurite IX+X [2 in *Pr.* (*Ts.*) *nivea*, 3–4 in *Pr.* (*Ts.*) *koka*] and the unequal size of the setae of the genital opening in *Pr.* (*Ts.*) *koka*, but equal size of all setae in *Pr.* (*Ts.*) *nivea*.

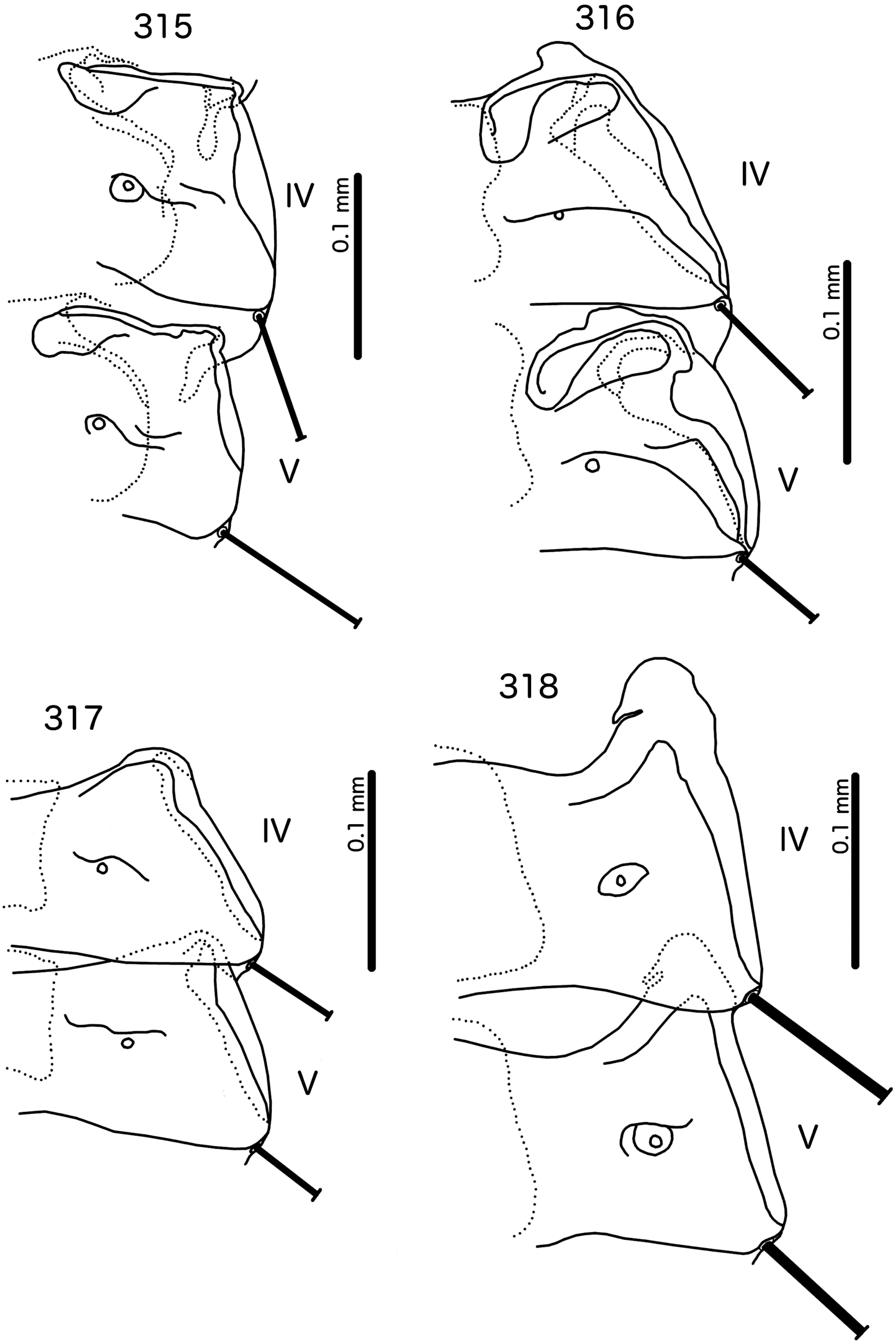
Females of all three species cannot be reliably identified presently. The differences in genital setae [5 *vms* and 6 *vss* on each side in *Priceiella* (*Torosinirmus*) *nivea*, 4 *vms* and 9 *vss* on each side in *Pr.* (*Ts.*) *brueliodes*, and 3–5 *vms* and 5–7 *vss* on each side in *Pr.* (*Ts.*) *koka*] may seem reliable, but Ansari's (1956a) descriptions are based on single specimens of each species, and thus potential overlap between his *Pr.* (*Ts.*) *brueliodes*, *Pr.* (*Ts.*) *nivea*, and *Pr.* (*Ts.*) *koka* is likely underestimated. Differences in abdominal chaetotaxy between the three species may also be illusory, for the same reason. However, *Pr.* (*Ts.*) *koka* (Fig. 309) generally has a flatter frons than either of the other two species. Adequate comparison between females of the three species must await additional collections from the type hosts of *Pr.* (*Ts.*) *nivea* and *Pr.* (*Ts.*) *brueliodes*.



FIGURES 307–308. *Priceiella* (*Torosinirmus*) *koka* **n. gen., n. subgen. & n. sp.** ex *Turdoides tenebrosa*: **307,** male habitus, dorsal and ventral views. **308,** female habitus, dorsal and ventral views.



FIGURES 309–314. *Priceiella* (*Torosinirmus*) *koka* **n. gen., n. subgen. & n. sp.** ex *Turdoides tenebrosa*: **309,** male head, dorsal and ventral views. **310,** female antenna, ventral view. **311,** male genitalia, dorsal view. **312,** male mesosome, ventral view. **313,** male paramere, dorsal view. **314,** female subgenital plate and vulval margin, ventral view.



FIGURES 315–318. Pleurites IV–V of male, including lateral end of sternite, dorsal view (ventral structures shown with dotted lines): **315,** *Priceiella* (*Priceiella*) *sternotypica* (Ansari, 1956a) **n. comb. 316,** *Priceiella* (*Camurnirmus*) *hwameicola* **n. gen., n. subgen. & n. sp. 317,** *Priceiella* (*Thescelovora*) *alliocephala* **n. gen., n. sungen. & n. sp. 318,** *Priceiella* (*Torosinirmus*) *koka* **n. gen., n. sugen. & n. sp.**

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus and subgenus descriptions and Fig. 309. Preantennal nodi moderate. Coni much short, broad, not reaching distal margin of scapes. Antennae sexually dimorphic (Figs 309–310). Preocular nodi moderate. Postocular nodi small. Gular plate short, squat. Thoracic and abdominal segments as genus and subgenus descriptions and Figs 307–308. Tergopleurites largely translucent, but with weak pigmentation lateral to spiracle openings. Sternal plates III–VI and subgenital plates of both sexes with weak pigmentation. Pleurites not modified as in other *Priceiella* (Fig. 318).

Male. Scape long, slightly swollen, curved posteriorly (Fig. 309). Pteronotum with 8–9 posterior setae on each side (Fig. 307). Abdominal plates and chaetotaxy as in Table 8 and Fig. 307. Tergopleurite IX+X with 3–4 setae clustered submedianly. Setae of genital opening of unequal size, with lateral 2 setae 3–4 times as long as median seta. Male genitalia as in Figs. 311–313. Basal apodeme roughly rectangular, lateral margins straight or only slightly concave. Proximal mesomere short, broad, not overlapping with basal apodeme; anterior margin flat. Primary mesomeral lobes broad, gently rounded, somewhat angular in some specimens. Lateral and distal margins thickened, but thickening not sinuous and do not extend medianly towards the gonopore (Fig. 312). Ventral side with small protruding nodi near distal margin. Distal margin of mesomere convergent to median point. Parameral heads small, blunt. Parameral blades (Fig. 313) stout, divergent in distal third only. Measurements ex *Turdoides tenebrosa* (n = 7): TL = 1.21–1.40; HL = 0.35–0.37; HW = 0.33–0.36; PRW = 0.20–0.24; PTW = 0.35–0.38; AW = 0.49–0.52.

Female. Scape as in Fig. 310. Pteronotum with 4–6 posterior setae on each side (most specimens with 5 on each side) (Fig. 308). Abdominal plates and chaetotaxy as in Table 8 and Fig. 308. Subgenital plate roughly triangular (Fig. 314). Vulval margin (Fig. 314) gently rounded, with 3–5 slender *vms* on each side, and 5–7 thorn-like *vss* on each side; 4–5 *vos* on each side; distal *vos* located on cross-piece, just anterior to *vss*. Measurements ex *Turdoides tenebrosa* (n = 10): TL = 1.61–1.75; HL = 0.36–0.42; HW = 0.35–0.39; PRW = 0.21–0.25; PTW = 0.35–0.39; AW = 0.49–0.58.

Etymology. The species name is derived from the type locality.

Type material. Ex ***Turdoides tenebrosa*****: Holotype** ♂, Koka, Ethiopia, 18 Dec. 1960, S. Brelih, IM-7402 (PMSL). **Paratypes:** 5♂, 4♀, same data as holotype, IM-7401, IM-7403, IM-6405–14 (PMSL); 2♂, 5♀, Awassa, Ethiopia, 5 Nov. 1960, S. Brelih, IM-3199–3205 (PMSL).

Corvonirmus Eichler, 1944

Docophorus Nitzsch, 1818: 289 (*in partim*).
Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).
Corvonirmus Eichler, 1944: 80.

Type species. *Nirmus uncinosus* Burmeister, 1838: 430, by original designation.

Diagnosis. *Corvonirmus* is superficially similar to *Hecatrishula* **n. gen.**, expecially the *He. atherae* species group, with which it shares the following characters: tergopleurites reduced, not or barely reaching lateral margins of abdomen (Figs 130–131, 319–320); one or more fenestrae on tergopleurites, which may be perforated medianly (Figs 130–131, 319–320); pigmentation limited; dorsal preantennal suture absent (Figs 132, 321); marginal carina not interrupted but displaced dorsally and posteriorly at osculum (Figs 132, 321); antennae may be sexually dimorphic (Figs 132–133, 319–320); accessory *sts* on at least some segments in both sexes (Figs 130–131, 319–320); *ppss* median to pronotal spiracle opening (Figs 130–131, 319–320); *psps* present on tergopleurite III in both sexes (Figs 130–131, 319–320); *tps* present on tergopleurites III–IV in at least male (Figs 130–131, 319–320). *Corvonirmus* can be separated from *Hecatrishula* by the following characters: *aps* present on at least some segments in male *Corvonirmus* (Table 2), but absent in all segments in *Hecatrishula*; female subgenital plate flares into cross-piece in *Corvonirmus* (Fig. 326) but not in *Hecatrishula* (Fig. 137); *tps* present on tergopleurite II in female *Hecatrishula* (Fig. 131) but absent in female *Corvonirmus* (Fig. 320); *as3* is present in both sexes of *Hecatrishula* (Fig. 132), but is absent in *Corvonirmus* (Fig. 321). Males of *Corvonirmus* are best separated from male *Hecatrishula* by the genitalia: proximal mesosome small with little or no overlap with basal apodeme in

Hecatrishula (Fig. 134), whereas in *Corvonirmus* (Fig. 323) the proximal mesosome is large and overlaps substantially with the basal apodeme; parameral heads complicated and at least bifid (Fig. 136) in *Hecatrishula*, but rectangular and folded medianly in *Corvonirmus* (Fig. 325); mesosomal lobes splayed, not fused distally in *Hecatrishula* (Figs 135), but gently rounded, fused distally in *Corvonirmus* (Figs 323–324); parameres strongly convergent distal to mesosome in *Hecatrishula* (Fig. 134), but much elongated and gently tapering in *Corvonirmus* (Fig. 325); *pst1* lateral microseta in *Hecatrishula* (Fig. 136), but central sensillus in *Corvonirmus* (Fig. 325).

Description. ***Both sexes***. Head indented-dome shaped (Fig. 321), but variable between species. Marginal carina uninterrupted, displaced dorsally and posteriorly at osculum. Ventral carinae typically continuous with marginal carina. Dorsal preantennal suture, dorsal anterior plate, and ventral anterior plate absent. Head setae as in Fig. 321; *as3* absent; *pns* microseta. Preantennal nodi large, often with "hollowed-out" look. Coni typically broad but short, blunt, largely triangular. Antennae typically sexually dimorphic, scapes longer and thicker in males than in females; in some species antennae are almost monomorphic. Preocular nodi located median to eyes. Temporal carinae not visible; *mts3* only macrosetae. Gular plate triangular. Patterns of pigmentation on head often diagnostic to species level.

Prothorax rectangular (Figs 319–320); *ppss* located median to spiracle opening. Proepimera slender, long, reaching around coxae II. Pterothorax pentagonal; lateral margins widely divergent; posterior margin convergent to median point; *mms* widely separated medianly. Meso- and metasterna not fused; 1 seta on posterior margin on each side of each plate. Metepisterna slender, median ends blunt. Leg chaetotaxy as in Fig. 25, except *fI-p2* absent; *fI-v4* long, spike-like.

Abdomen broad, rounded (Figs 319–320), largely translucent, with tergopleurites and sternal plates densely pigmented. Abdominal chaetotaxy as in Table 2; accessory sternal setae may be present. Tergopleurites do not or just barely reach the lateral margins of the abdomen; often much reduced (except in Indo-Malayan and Australasian species) to small, roughly hook-shaped plates; one or more fenestrae on most tergopleurites, the median-most of which may be penetrated medianly; tergopleurites II–IX+X in male and II–VIII in female widely separated medianly. Pleural incrassations typically absent, but narrow incrassations present on at least some tergopleurites in some Indo-Malayan and Australasian species (not illustrated). Sternal plates rectangular, wide, short, not approaching lateral margins of abdomen. Male subgenital plate broadly triangular, reaching posterior margin of abdomen. Female subgenital plate roughly triangular, reaching to vulval margin. Lateral submarginal extensions or cross-piece present. Abdominal chaetotaxy as in Table 2 and Figs 319–320. Vulval margin (Fig. 326) with slender *vms*, thorn-like *vss*; *vos* follows lateral margins of subgenital plate.

Male genitalia (Figs 323–325) large, often reaching anteriorly to segment V or VI, variable in shape. Basal apodeme rounded or rectangular. Proximal mesosome large, rectangular, overlapping with basal apodeme. Prominent ventral ridges converge on gonopore. Gonopore (Fig. 324) subterminal, open distally, with broad, scaled lateral extensions. Mesosomal lobes broad, blunt, fused distally; 2 *ames* microsetae on each side submedianly anterior to gonopore; 1 *pmes* sensillus on each side on lateral extensions of gonopore; 1 *pmes* sensillus on each side on lateral margin of mesosome. Parameral heads (Fig. 325) folded, more or less rectangular, typically oblique. Parameral blades elongated, triangular; *pst1–2* sensilla, central, near distal end of parameres.

Host distribution. Species of *Corvonirmus* are known only from members of the host genus *Corvus* Linnaeus, 1758.

Geographical range. Global except the Neotropics. This may reflect the fact that, apart from Central America and the Caribbean, there are no species of the genus *Corvus* in the Neotropics (Madge & Burn 1999).

Remarks. In the phylogeny of Bush *et al.* (2016), *Corvonirmus* was represented by only two species, which were placed in disparate parts of the tree, in both cases with very low support. Thus we cannot be certain about this phylogenetic placement. Future phylogenetic analyses with additional species will help to elucidate the position of *Corvonirmus* within the *Brueelia*-complex.

Included species

Corvonirmus afzali* (Ansari, 1957a: 154) **n. comb. [in *Brueelia*]
Corvonirmus argulus* (Burmeister, 1838: 430) [in *Nirmus*] **[1]
Corvonirmus hamatofasciatus* (Piaget, 1890: 225) **n. comb. [in *Docophorus*]
Corvonirmus latifasciatus* (Piaget, 1880: 143) **n. comb. [in *Nirmus*]
Corvonirmus leucocephalus* (Nitzsch [in Giebel], 1866: 365) **n. comb. [in *Nirmus*]

***Corvonirmus mollii* (Ansari, 1957a: 160) **n. comb.** [in *Brueelia*]
***Corvonirmus perwienae* (Ansari, 1957a: 168) **n. comb.** [in *Brueelia*]
***Corvonirmus quadrangularis* (Rudow, 1869: 18) **n. comb.** [in *Nirmus*]
  Nirmus bipunctatus Rudow, 1870: 467
***Corvonirmus rotundatus* (Osborn, 1896: 226) **n. comb.** [in *Nirmus*]
***Corvonirmus saliemi* (Ansari, 1957a: 158) **n. comb.** [in *Brueelia*]
***Corvonirmus tasniemae* (Ansari, 1957a: 152) [in *Brueelia*]
***Corvonirmus theresae* (Ansari, 1957a: 150) **n. comb.** [in *Brueelia*]
***Corvonirmus uncinosus* (Burmeister, 1838: 430) [in *Nirmus*]**
  Brueelia uncinosa plena Ansari, 1957a: 158
***Corvonirmus variegatus* (Ansari, 1957a: 153) **n. comb.** [in *Brueelia*]

[1] Ansari (1957b: 157) stated that material from *Corvus corax ruficollis* [as *Corvus ruficollis*] in the Meinertzhagen collection was "indistinguishable" from *Brueelia argula*. Further, he noted (*ibid*.: 163) that additional material from the same host species was indistinguishable from *Brueelia atherae*. In both cases, Ansari refers to 20 males and 6 females. All the material we have examined from this host in the Meinertzhagen collection belongs to an undescribed species of *Hecatrishula*. We assume that Ansari (1957b) inadvertently referred to the same material twice, and therefore we have removed *Corvus ruficollis* as a host of *Corvonirmus argulus*.

Corvonirmus uncinosus (Burmeister, 1838)

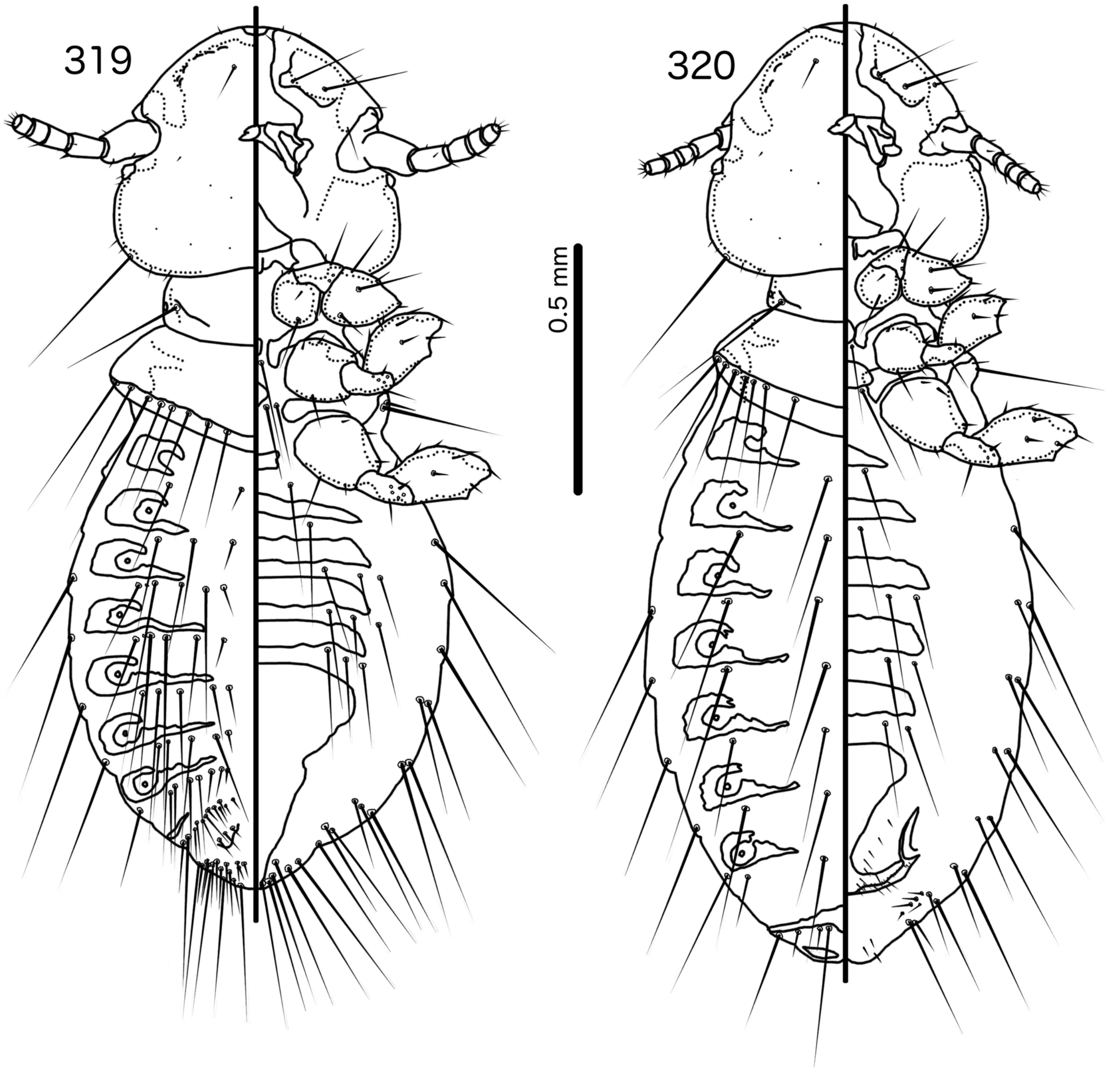
(Figs 319–326)

Nirmus uncinosus Burmeister, 1838: 430.
Degeeriella uncinosa (Nitzsch in Burmeister, 1838); Harrison, 1916: 125.
Degeeriella uncinosa (Nitzsch, 1838); Séguy, 1944: 314.
Brueelia uncinosa (Burmeister, 1838); Hopkins & Clay, 1952: 62.
Brueelia uncinosa plena Ansari, 1957a: 158.
Corvonirmus uncinosus plenus (Ansari, 1957a); Złotorzycka, 1997: 184.

Type host. *Corvus cornix cornix* Linnaeus, 1758—hooded crow.
Type locality. South Uist, Outer Hebrides, Scotland, United Kingdom.
Other hosts. *Corvus corone corone* Linnaeus, 1758—carrion crow. *Corvus cornix pallescens* (Madarasz, 1904)—hooded crow **new host record**. *Corvus cornix sharpie* Oates, 1889—hooded crow **new host record**.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 321. Marginal carina moderately displaced and translucent at osculum. Preantennal nodi large, broad, rounded medianly. Coni short, not reaching distal margin of scape. Pre- and postocular nodi pronounced. Eyes protruding. Gular plate squat, antero-medianly pointed. Dark pigmentation on marginal carina and anterior fourth of ventral carinae, preantennal nodi and margin of antennal socket, all 3 flagellomeres in both sexes, mandibular framework, preocular nodi, anterior section of occipital carinae, and gular plate. Thoracic and abdominal segments as in genus description and Figs 319–320. Tergopleurites distinctive, much reduced.

Male. Scape (Fig. 321) about twice as long and broad as female scape (Fig. 322). Pteronotum with 8–10 *mms* on each side (Fig. 319). Abdominal chaetotaxy as in Table 2 and Fig. 319. Tergopleurite IX+X–XI unpigmented. Basal apodeme (Fig. 323) gently narrowing posteriorly. Proximal mesosome broadly rectangular. Gonopore (Fig. 324) small, narrowly open distally, with scaly lateral extensions (Fig. 246). Mesosomal lobes broad half-oval; 2 *ames* microsetae on each side submedianly anterior to gonopore; 1 *pmes* sensillus on each side on lateral margins of mesosome at level of gonopore; 1 *pmes* sensillus on each side on lateral extensions of gonopore. Parameral heads (Fig. 325) slender rectangular, folded obliquely medianly. Parameral necks very short, slender. Parameral blades broadly triangular, much elongated, gently tapering; *pst1–2* sensilla. Measurements ex *Corvus cornix cornix* (n = 24): TL = 1.46–1.82 (1.62); HL = 0.41–0.48 (0.44); HW = 0.47–0.56 (0.51); PRW = 0.27–0.36 (0.31); PTW = 0.46–0.55 (0.50); AW = 0.52–0.77 (0.70). Ex *C. c. sharpii* (n = 3): TL = 1.47–1.51; HL = 0.45; HW = 0.50–0.53; PRW = 0.31–0.33; PTW = 0.51; AW = 0.70–0.71. Ex. *C. corone corone* (n = 17): TL = 1.46–1.71 (1.58); HL = 0.41–0.46 (0.43); HW = 0.48–0.56 (0.51); PRW = 0.29–0.37 (0.32); PTW = 0.47–0.54 (0.49); AW = 0.59–0.74 (0.68).



FIGURES 319–320. *Corvonirmus uncinosus* (Burmeister, 1838) ex *Corvus cornix cornix*: **319** male habitus, dorsal and ventral views. **320** female habitus, dorsal and ventral views.

Female. Scape as in Fig. 322. Pteronotum with 6–8 *mms* on each side (Fig. 320). Abdominal chaetotaxy as in Table 2 and Fig. 320. Tergopleurite IX+X pigmented only on small rhombic median plate, with vague lateral extensions on posterior margin, not always as distinct as in Fig. 320. Subgenital plate (Fig. 326) triangular, reaching to near vulval margin, where it flares into cross-piece, however cross-piece anterior to vulval margin. Vulval margin gently rounded (Fig. 326), with 4–6 slender *vms* on each side, and 10–14 thorn-like *vss* on each side; 4–6 *vos* on each side; distal 2 *vos* located on cross-piece median to *vss*. Measurements ex *Corvus cornix cornix* (n = 35): TL = 1.82–2.12 (1.94); HL = 0.46–0.52 (0.49); HW = 0.54–0.62 (0.58); PRW = 0.31–0.36 (0.33); PTW = 0.51–0.60 (0.54); AW = 0.70–0.83 (0.75). Ex *C. c. pallescens* (n = 1): TL = 2.06; HL = 0.52; HW = 0.54; PRW = 0.34; PTW = 0.54; AW = 0.81. Ex *C. c. sharpii* (n = 9): TL = 1.76–1.94; HL = 0.47–0.51; HW = 0.56–0.59; PRW = 0.30–0.35; PTW = 0.50–0.57; AW = 0.72–0.81. Ex. *C. corone corone* (n = 44): TL = 1.66–2.08 (1.89); HL = 0.43–0.52 (0.47); HW = 0.50–0.61 (0.57); PRW = 0.29–0.37 (0.33); PTW = 0.47–0.57 (0.53); AW = 0.65–0.82 (0.73).

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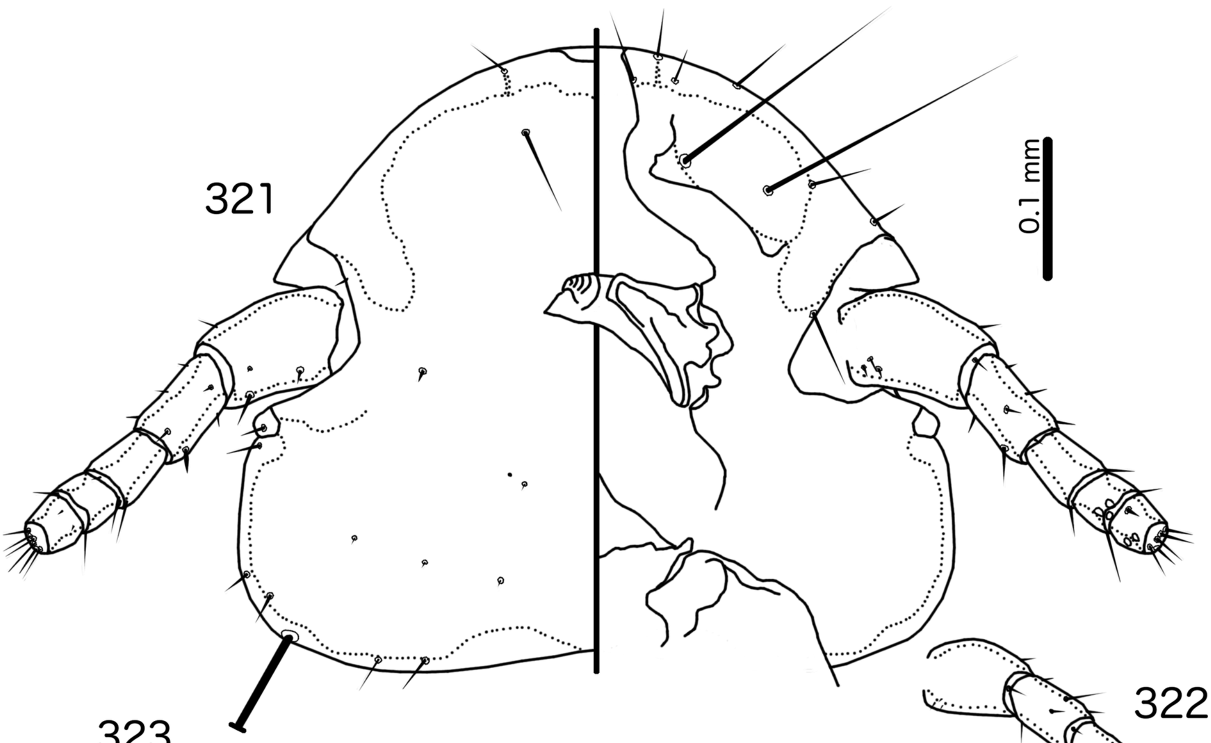

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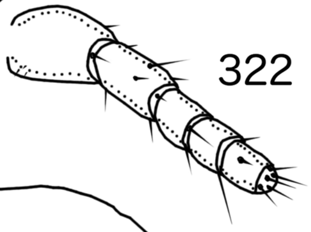

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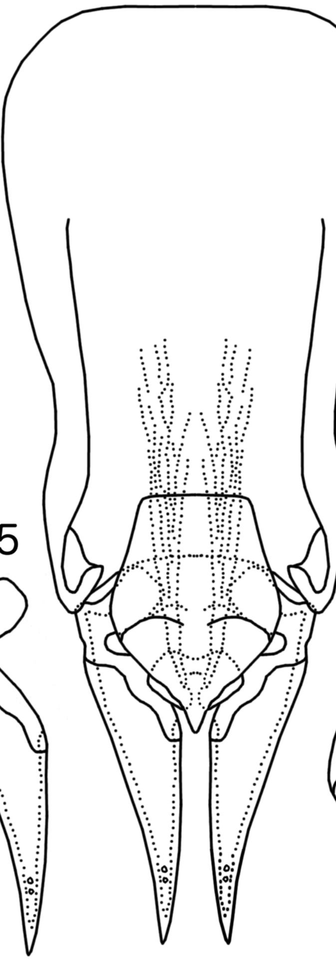

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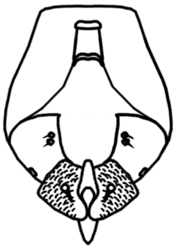

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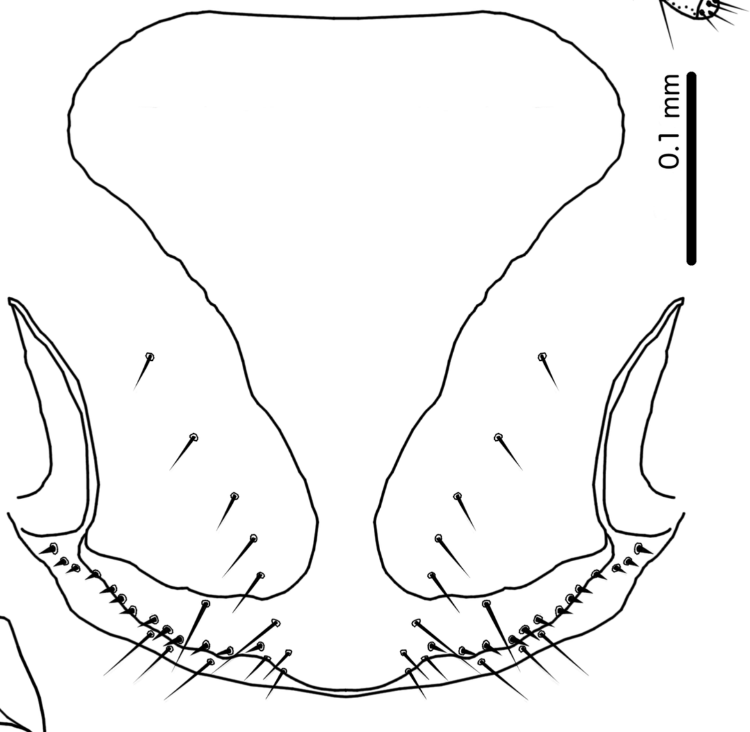


FIGURES 321–326. *Corvonirmus uncinosus* (Burmeister, 1838) ex *Corvus cornix cornix*: **321,** male head, dorsal and ventral views. **322,** female antenna, ventral view. **323,** male genitalia, dorsal view. **324,** male mesosome, ventral view. **325,** male paramere, dorsal view. **326,** female subgenital plate and vulval margin, ventral view.

Type material. Ex ***Corvus cornix cornix*** **[**some as ***Corvus corone cornix*** or ***Corvus corone sardonius*****]: Neotype** ♂, South Uist, Outer Hebrides, Scotland, United Kingdom, Nov. 1920, R. Meinertzhagen, 35 (NHML). **Neoallotype** ♀, same data as holotype (NHML). **Neoparatypes:** 18♂, 32♀, Norfolk, England, United Kingdom, Jan. 1946, R. Meinertzhagen, 15572 (NHML); 1♂, 1♀, South Uist, Scotland, United Kingdom, Sep. 1953, R. Meinertzhagen, 20233 (NHML); 1♂, North Uist, Outer Hebrides, Scotland, United Kingdom, Aug. 1941, R. Meinertzhagen, 14488 (NHML); 5♂, 9♀, Mull, United Kingdom, Feb. 1944, R. Meinertzhagen, 15032 & 15086 (NHML); 1♂, Johnstown, Tallaght, Dublin, Ireland, 12 Jun. 1940, E.O. Maloney (NHML); 3♂, 5♀, Sweden, Jul. 1950, R. Meinertzhagen, 19441 (NHML); 9♂, 13♀, Sweden, Sep. 1946, R. Meinertzhagen, 15984 (NHML); 1♀, Estonia, Aug. 1934, R. Meinertzhagen, 1508 (NHML).

Ex ***Corvus corone corone*****: Holotype** ♂ of *Brueelia uncinosa plena*: Devon, England, United Kingdom, Dec. 1944, R. Meinertzhagen, 15262 (NHML). **Allotype** ♀ of *Br. u. plena*: same data as holotype (NHML). **Paratypes** of *Br. u. plena*: 17♂, 41♀, same data as holotype (NHML); 1♂, 1♀, same data as holotype (OSUS).

Additional material examined (non-types)

Ex ***Corvus cornix cornix*** **[**some as ***Corvus corone cornix*** or ***Corvus corone sardonius*****]:** 1♂, 1♀, County Cork, Ireland, 29 May 1947, E.O. Maloney (NHML); 1♂, 2♀, Aberdeen, Scotland, United Kingdom, 12 May 1964, Eskgrove Lab, Brit. Mus. 1965-186 (NHML); 1♂, 1♀, Wales, United Kingdom, Jan. 1955, R. Meinertzhagen, 20287 (NHML); 1♀, Somerset, England, United Kingdom, May 1934, R. Meinertzhagen, 866 (NHML); 1♂, Cumberland, England, United Kingdom, Apr. 1941, R. Meinertzhagen, 14226 (NHML); 2♂, 2♀, Brookethorpe, Gloucestershire, England, United Kingdom, 23 May 1954, R.S. George, Brit. Mus. 1954-400 (NHML); 1♀, Sardinia, Italy, R. Meinertzhagen, 4038 (NHML); 1♂, “Beslik L. E. end”, 3 Jun. 1918, J. W[aterston?], BM 1930-232 (NHML); 1♂, “East Prussia”, D.M.A. Bate (NHML); 2♂, Mainz, Germany, Nov. 1953, K.C. Emerson (PIPeR).

Ex ***Corvus cornix* ssp.:** 3♀, Eichler collection, 3037 (MFNB); 4♀, Eichler collection, 1480 (MFNB).

Ex ***Corvus corone corone***: 3♂, 5♀, Wales, United Kingdom, Jan. 1955, R. Meinertzhagen, 20287 (NHML); 4♂, 3♀, Brookethorpe, Gloucestershire, England, United Kingdom, 23 May 1954, R.S. George, Brit. Mus. 1954-400 (NHML); 3♀, Gloucestershire, England, United Kingdom, 25 Jul. 1957, R.S. George, Brit. Mus. 1958-149 (NHML); 1♂, 6♀, Thaden, Rendsburg, Germany, 18 Feb. 1940, A. Jönkh, ZM1236/45-1–9 (MFNB).

Ex ***Corvus cornix pallescens*** **[**some as ***Corvus corone sardonius*****]:** 1♀, Palestine, Mar. 1920, R. Meinertzhagen, 37 (NHML); 8♂, 7♀, Egypt, Apr. 1948, R. Meinertzhagen, 17648–51 (NHML); 1♂, 1♀, Beer Tovia [?], Israel, 6 May 1952, Brit. Mus. 1958-520 (NHML); 1♀, Qalyoubiya, Matariya Province, Egypt, 29 Apr. 1952, PE3156 (UMSP).

Ex ***Corvus cornix sharpii*** **[**some as ***Corvus corone sardonius*****]:** 1♂, 1♀, Eichler Collection, 3042 (MFNB); 1♂, 2♀, Eichler Collection, 3024 (MFNB); 2♂, 3♀, Tadzjikistan, 5 Jan. 1941, IN1379/20-1–2 (MFNB); 3♂, 9♀, Verje, Medvode, Slovenia, 14 Apr. 1954, S. Brelih, 195, 1573–5, 2567–75 (PMSL); 2♂, 2♀, Verje, Medvode, Slovenia, 1 Nov. 1954, S. Brelih, 529–532 (PMSL); 1♂, 1♀, Trmbas, Kragujevac, Serbia, 5 Jan. 1941, S. Brelih, 2762–3 (PMSL).

Ex ***Corvus corone/cornix* ssp.:** 1♀, Eichler Collection, 542 (MFNB); 1♂, 1♀, Nikolskoje, RUSSIA?, 11 Jun. 1943, IN1291/5/2-1–2 (MFNB).

Ex ***Corvus corone corone x Corvus cornix cornix*** **[hybrid]:** 1♂, 1♀, Pirnice, Medvode, Slovenia, 25 Jan. 1959, S. Grelih, 14404–5 on reverse (OSUS); 2♂, 2♀, Podkoren, Medvode, Slovenia, 4 Feb. 1966, J. Gregori, 11449–52 (PMSL); 4♂, 4♀, Pirnice, Medvode, Slovenia, 25 Jan. 1959, 6328–31, 6333, 6335–7 (PMSL).

Remarks. *Corvus corone* and *Corvus cornix* have traditionally been considered conspecific, but are now often regarded as different species, though hybrids are prevalent in a well established hybrid zone (Parkin *et al.* 2003). *Corvonirmus* from both *Corvus* species are structurally indistinguishable, though the pigmentation patterns differ. Material from *C. corone* have a dark band on the pedicel (translucent in material from *C. cornix* spp.) and more extensive dark pigmentation on the occipital carinae and along the antennal socket. Abdominal pigmentation patterns overlap between material from the two host species, with material from *C. cornix sharpii* being palest (little to no pigmentation on tergopleurites median to fenestrae), material from *C. cornix cornix* being intermediate in pigmentation (little pigmentation on tergopleurites median to fenestrae anteriorly, posterior margin generally pigmented), and material from *C. corone corone* (“*Brueelia uncinosa plena*”) being darkest (extensive pigmentation of tergopleurites median to tergopleurites along both anterior and posterior margins). In addition, males from *C. corone* typically have at least some pigmentation on tergopleurite IX+X, whereas this tergopleurite is typically entirely translucent in males from *C. cornix*. The tergopleurite IX+X in females from *C. corone* has ornate and partial pigmentation, whereas in females from *C. cornix* is pigmented only along the posterior margin, if at all. Except for the pigmentation of the pedicel, all of these characters are quite variable between individuals, and there is considerable overlap between material from the two host species. Abdominal chaetotaxy also seem to differ between material from different host species and subspecies, but these differences are minor, overlapping, and not consistent. We tentatively consider material from all these hosts as conspecific. In the future, genetic data may help to clarify whether these different pigmentation patterns are indicative of divergence between the *Corvonirmus* from different host species.

A single male available to us from *Corvus corone orientalis* Eversmann, 1841 differs markedly in abdominal chaetotaxy, pigmentation patterns, and many aspects of the preantennal head, as well as having slight differences in the male genitalia. It is probably a different species, but more material is necessary to confirm it, and we do not attempt to formally describe this species here.

Olivinirmus **Złotorzycka, 1964**

Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).
Olivinirmus Złotorzycka, 1964a: 246.

Type species. *Nirmus glandarii* Denny, 1842: 51, by original designation.

Diagnosis. The male genitalia of *Olivinirmus* are variable (Figs 334–337), but superficially similar to those of *Corvonirmus* (Figs 323–325), and these two genera are similar in the setal and structural head characters (Figs 321, 329). In both genera parameres (Figs 325, 332) are long and tapering, connected to a rectangular parameral head by a distinct neck; however, the parameral neck is absent in some *Olivinirmus*, particularly the *semiannulatus* species group (Fig. 337) and the *meinertzhageni* species group (Fig. 335). The gonopore is highly modified in both genera, and there are distinct, often large, rugose areas on the ventral surface of the mesosome in both *Olivinirmus* (Figs 334–337) and *Corvonirmus* (Fig. 324). However, the ventral sclerite found in *Corvonirmus* (Fig. 324) is absent in *Olivinirmus* (Figs 334–337), and the ventral surface of the mesosome is generally simpler in *Corvonirmus* than in *Olivinirmus*. The gonopore is subterminal or terminal in *Corvonirmus*, but ventral in *Olivinirmus*, and while the exact structure of the gonopore varies between the four species groups of *Olivinirmus*, no *pmes* are ever situated on the surface of the gonopore in this genus, whereas this is the case in *Corvonirmus* (Fig. 324). In female *Olivinirmus* (Fig. 333) the subgenital plate does not flare into a cross-piece or lateral submarginal extensions as in *Corvonirmus* (Fig. 326), and the abdominal chaetotaxy of the two genera is dissimilar (Table 2), with *psps* present on male tergopleurites II–III and female tergopleurite III in *Corvonirmus* (Fig. 320), but absent on tergopleurites II–III in both sexes in *Olivinirmus* (Figs 327–328). In all *Corvonirmus* asseccory *sts* are present on at least some segments, but this is never the case in *Olivinirmus*.

Description. ***Both sexes***. Head convex- to indented-dome shaped (Fig. 329). Marginal carina uninterrupted, displaced dorsally and posteriorly at osculum. Pale dot visible in many species at *dsms* where marginal carina is narrowed. Dorsal preantennal suture absent. Ventral carinae sometimes continuous with marginal carina, but often diffuse anterior to pulvinus. Ventral anterior plate absent. Head setae as in Figs 329; *as3* absent. Coni small, triangular. Antennae monomorphic except in the *meinertzhageni* and *semiannulatus* species groups. Temporal carinae not visible; *mts3* only macrosetae. Gular plates triangular to spade-shaped.

Prothorax (Figs 327–328) rectangular. *ppss* on postero-lateral corner. Proepimera hook-shaped medianly, curving around coxae II. Pterothorax pentagonal; lateral margins widely divergent; posterior margin convergent to median point; *mms* narrowly separated medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna widen medianly to blunt ends. Metepimeron often broad, swollen. Leg chaetotaxy as in Fig. 25, except *fI-p2* absent.

Abdomen (Figs 327–328) oval. Abdominal chaetotaxy differing slightly between species groups (Table 9). Tergopleurites rectangular; tergopleurites II–IX+X in males and tergopleurites II–VIII in females moderately divided medianly. Tergopleurites generally translucent or weakly pigmented median to spiracle openings, and in some species median margins are hard to see. Sternal plates rectangular, not approaching pleurites; generally weakly pigmented and may be hard to see. Tergopleural plates reach to ventral side of abdomen. Pleural incrassations moderate to wide. Re-entrant heads moderate. Male subgenital plate triangular, extremely narrow at terminal end of abdomen. Female subgenital plate triangular, but in many species diffuse distally, and in some species it cannot be determined whether it reaches the vulval margin or not. Vulval margin (Figs 333) with few, long, slender *vms*, several thorn-like *vss*; *vos* follows lateral margins of subgenital plate; distal *vos* approaching or situated median to *vss*.

TABLE 9. Abdominal chaetotaxy of segments II–VIII of the species groups of *Olivinirmus*. Trichoid setae of segment VIII are present in all species, and are not listed. Sets of setae differing from those of *Ol. glandarii* are highlighted in **bold**. Material examined from all species is from their respective type hosts. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	Sex	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
Ol. glandarii	M	IV–VIII	IV–VII	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VII	–	II–VIII	II–VI
Ol. meinertzhageni	M	IV–VIII	**IV–VIII**	IV–VIII	**VI–VIII**	II–VIII	II–VI
	F	IV–VIII	–	**IV–VIII**	–	II–VIII	II–VI
Ol. nitzschi	M	IV–VIII	IV–VII	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	**IV–VIII**	–	II–VIII	II–VI
Ol. semiannulatus	M	IV–VIII	**IV–VIII**	**III–VIII**	**VIII**	II–VIII	II–VI
	F	IV–VIII	–	**IV–VIII**	–	II–VIII	II–VI

Male genitalia (Figs 334–337) variable between species-groups (see below). Basal apodeme roughly rectangular, but may be constricted at mid-length (Fig. 334) or widening slightly anteriorly (Fig. 335). Proximal mesosome of varying shape. Gonopore (Fig. 331) open distally. Most species-groups with subparallel, flame-shaped thickenings on ventral side extending into the extrusor muscles. Mesosomal lobes large, fused distally; 0–2 *ames* anterior to gonopore; 0–3 *pmes* posterior to gonopore, often 2 *pmes* laterally and 1 *pmes* just distal to gonopore. In some species both *ames* and *pmes* may be hidden in the ventral structures of the mesosome. Rugose nodi present in some species-groups. Parameral heads (Fig. 332) folded medianly, rectangular to triangular. Parameral blades elongated, tapering; *pst1* sensillus, central; *pst2* sensilla or microseta, central; *pst1–2* may be relatively close (Fig. 336) or much separated (Fig. 337).

Species-group characters. All species-groups in *Olivinirmus* are based primarily on the male genitalia, which are illustrated in Figs 334–337. The phylogeny of Bush *et al.* (2016) did not include members of all of these groups, and the true relationships between these species-groups are unknown. Species not examined by us have been placed in species gropus based on illustrations provided with their original descriptions.

***Olivinirmus glandarii* species-group.** Antennae monomorphic. Abdominal chaetotaxy as in Table 9; *tps* absent; *psps* absent on male tergopleurite III (Fig. 327). Females with or without *psps* on tergopleurite VIII (Fig. 328). Proximal mesosome rounded trapezoidal (Fig. 331). Mesosomal lobes not fused distally, with prominent nodi submedianly. Gonopore open distally and associated with subparallel ventral thickenings; 2 *ames* on each side antero-lateral to gonopore; 2 *pmes* on each side on lateral margin, often hard to see; 1–2 *pmes* on each side postero-lateral to gonopore, often not visible due to rugose nodi. Rugose nodi may be present on distal mesosome. Parameral heads (Fig. 332) quadratic to rectangular; *pst2* sensillus, far distal to *pst1*.

***Olivinirmus meinertzhageni* species-group.** Antennae dimorphic. Abdominal chaetotaxy as in Table 9; *tps* present on male tergopleurites VI–VIII; *psps* absent on male tergopleurite III. Females without *psps* on tergopleurite VIII. Proximal mesosome slender (Fig. 335). Mesosomal lobes fused distally, with prominent marginal thickening. Ventral surface of mesosome densely papillate proximal to gonopore. Gonopore widely open distally, and shaped as trapezoidal plate with serrated lateral margins in distal half; 2 *ames* on each side near antero-lateral corners of gonopore; 1 *pmes* on each side postero-lateral to gonopore; 2 *pmes* on each side on lateral margins. Rugose nodi absent. Parameral heads oblique; *pst2* sensillus, close to *pst1*.

***Olivinirmus morionus* species-group.** Antennae monomorphic. Abdominal chaetotaxy as in Table 9; *tps* absent; *psps* absent on male tergopleurite III. Females with *psps* on tergopleurite VIII. Proximal mesosome slenderly trapezoidal, rounded (Fig. 336). Mesosomal lobes slender, triangular, fused distally, and with prominent nodi on lateral and distal corners. Gonopore widely open distally, and extended laterally into serrated or fringed areas. Parameral heads rounded quadratic; *pst2* microseta, close to *pst1*.

Olivinirmus semiannulatus **species-group.** Antennae dimorphic. Abdominal chaetotaxy as in Table 9; *tps* present on male tergopleurite VIII; *psps* present on male tergopleurite III. Females with *psps* on tergopleurite VIII. Proximal mesosome widely rounded (Fig. 337). Mesosomal lobes large, rounded, fused distally, with extensive rugose nodi in distal half. Gonopore widely open distally. Parameral heads quadratic, but with concave median margins and serrated distal margins; *pst2* microseta, far distal from *pst1*.

Host distribution. Most species occur on members of the Corvidae, but not on the genus *Corvus*. No comprehensive phylogeny of the Corvidae is known to us, but based on the phylogeny of Ericson *et al*. (2005) the distribution of *Olivinirmus* on corvid hosts appears to be discontinuous. Outside the Corvidae, *Olivinirmus* is only know from the Cracticidae, where it occurs on all genera, and possibly all species.

Geographical range. Almost global, not known from Africa south of the Sahara. Corvid hosts not belonging to *Corvus* from this area are parasitised by species of *Brueelia* s. str.

Remarks. In the phylogeny of Bush *et al*. (2016), *Olivinirmus* was placed as a sister group to *Sturnidoecus* with high support, but few morphological similarities exist between these two genera. The “head louse” ecomorph has evolved independently several times within the *Brueelia*-complex, and the evolution of the head louse morphology in *Sturnidoecus* may have obscured similarities between the ancestors of these two genera. Alternatively, the placement of *Olivinirmus* as sister to *Sturnidoecus* is marginally nonsignificant (0.93 Bayesian Posterior Probability) and the data set in Bush *et al*. (2016) may not be sufficient to indicate the true sister relationship between these two genera.

Both Toon & Hughes (2008) and Bush *et al.* (2016) found considerable geographical structure in *Olivinirmus* from Australian cractids. Interestingly, Bush *et al.*’s (2016) study showed that several host species in the same geographic region were parasitised by the same lineage of *Olivinirmus*. The collection of fresh, sequenceable, material from more host species and more geographic regions is needed to understand the diversity and host specificity within *Olivinirmus*.

Included species
Olivinirmus glandarii **species-group**
*_**Olivinirmus glandarii**_ **(Denny, 1842: 51) [in *Nirmus*]**
    Nirmus affinis Nitzsch [in Giebel], 1874: 132 *nec Nirmus affinis* Children, 1836 **[1]**
Olivinirmus husaini* (Ansari, 1956b: 383) **n. comb. [in *Brueelia*]
**Olivinirmus olivaceus* (Burmeister, 1838: 431) [in *Nirmus*]
**Olivinirmus perisoreus* (Ansari, 1956b: 374) [in *Brueelia*]

Olivinirmus meinertzhageni **species-group**
Olivinirmus meinertzhageni* (Ansari, 1956b: 381) **n. comb. [in *Brueelia*]

Olivinirmus morionus **species-group [2]**
Olivinirmus clayae* (Ansari, 1956b: 375) **n. comb. [in *Brueelia*]
Olivinirmus cyaneus* (Carriker, 1963: 301) **n. comb. [in *Brueelia*] **[3]**
Olivinirmus hopkinsi* (Ansari, 1956b: 379) **n. comb. [in *Brueelia*]
    Brueelia yncas Carriker, 1963: 303
Olivinirmus keleri* (Carriker, 1963: 304) **n. comb. [in *Brueelia*]
Olivinirmus morionus* (Carriker, 1956a: 83) **n. comb. [in *Brueelia*]
Olivinirmus nitzschi* (Kéler, 1938: 232) **n. comb. [in *Brueelia*]
Olivinirmus paraffinis **nom. nov.** *pro Brueelia affinis* Carriker, 1963: 302, preoccupied **[1]**
Olivinirmus violaceus* (Carriker, 1963: 302) **n. comb. [in *Brueelia*]

Olivinirmus semiannulatus **species-group**
Olivinirmus semiannulatus* (Piaget, 1883: 156) **n. comb. [in *Nirmus*]
    Brueelia elegans Ansari, 1957c: 122 **[4]**

[1] There are two species called *Brueelia affinis* in the checklist of Price *et al*. (2003). *Nirmus affinis* Nitzsch [in Giebel], 1874 was described from *Garrulus glandarius* (Linnaeus, 1758), but this name was preoccupied by *Nirmus affinis* Children, 1836 [= *Lagopoecus affinis*], from *Lagopus lagopus* (Linnaeus, 1758). In addition, *Br. affinis* (Nitzsch [in Giebel]) is an unnecessary new name for *Nirmus glandarii* Denny, 1842, and therefore here regarded as a junior synonym of this name following Hopkins & Clay (1952: 53). *Brueelia nitzschi affinis* Carriker, 1963 was described from *Cyanocorax affinis affinis* Pelzeln, 1856 and is here considered a valid species, following Price *et al.* (2003). However, Carriker (1963) and subsequent authors seem to have overlooked that Hopkins & Clay (1952: 53) placed *Nirmus affinis* Nitzsch [in Giebel] in *Brueelia*, thus making *Br. affinis* Carriker a junior homonym. The fact that *Br. affinis* (Nitzsch [in Giebel]) is a junior synonym does not make it unavailable [see Article 10.6 of the ICZN (International Commission on Zoological Nomenclature, 1999)], hence the name *Br. affinis* Carriker, 1963 is preoccupied by *Br. affinis* (Nitzsch [in Giebel], 1874), although this species was first a primary homonym of *N. affinis* Children, and then a junior synonym of *B. glandarii* (Denny). We propose the name *Olivinirmus paraffinis* **nomen novum** to replace *Br. affinis* Carriker, 1963 from *Cyanocorax affinis affinis*.

[2] Carriker (1963: 305) stated that the species here placed in the *Ol. morionus* species-group are "very homogeneous and great care must be taken in evaluating their systematic status". This cannot be emphasized enough. Only *Ol. clayae* and *Ol. violaceus* are markedly different from *Ol. nitzschi*, and determination of other species must be approached with caution, a process made difficult by the vagueness of many of the original descriptions. It is possible that these lice all belong to the same euryxenous species, and ultimately many of these species may be synonymized. The material available to us is not sufficient to properly evaluate species limits in the group at this time.

[3] The type host of this species was given by Carriker (1963) as "*Cyanocorax cyana* (Linné)", while Price *et al*. (2003) listed the type host as *Cyanopica cyana* (Pallas, 1776). There is no such species as "*Cyanocorax cyana* (Linné)", but there is a *Cyanocorax cayanus* (Linnaeus, 1766), which is widely distributed in Venezuela (Madge & Burn 1999), where the holotype was collected. In contrast, *Cyanopica cyana* is restricted to the Old World. The host name given by Carriker (1963) is most likely a misspelling, which lead to an erroneous interpretation of the host by Price *et al.* (2003). Therefore, we regard *Cyanocorax cayanus* as the type host of *Ol. Cyaneus*.

[4] We tentatively accept this synonymy, following Price *et al*. (2003), but note that the issue is very complicated, and should be addressed more thoroughly in future work on this genus.

Olivinirmus glandarii (Denny, 1842)

(Figs 327–333)

Nirmus glandarii Denny, 1842: 51.
Nirmus affinis Nitzsch; Giebel, 1861: 298 (*nomen nudum*).
Nirmus affinis Nitzsch [in Giebel], 1874: 132 *nec Nirmus affinis* Children, 1836: 537.
Degeeriella affinis Nitzsch in Giebel, 1861; Harrison 1916: 107.
Degeeriella glandarii Denny, 1842: Harrison 1916: 114.
Brüelia affinis (Nitzsch), 1874; Hopkins & Clay 1952: 53 (as junior synonym of *Brueelia glandarii*).
Brüelia glandarii (Denny), 1842; Hopkins & Clay 1952: 56.
Brueelia glandarii (Denny), 1842; McClure & Ratanaworabhan 1973: 86.
Olivinirmus glandarii (Denny, 1842); Złotorzycka 1997: 181.
Brueelia affinis (Nitzsch [in Giebel], 1874); Price *et al*. 2003: 155 (as junior synonym of *Brueelia glandarii*).

Type host. *Garrulus glandarius rufitergum* Hartert, 1903—Eurasian jay.
Type locality. United Kingdom.
Other hosts. *Garrulus glandarius albipectus* Kleinschmidt, 1920—Eurasian jay **new host record**. *Garrulus glandarius atricapillus* Geoffroy Saint-Hilaire, 1832—Eurasian jay **new host record**. *Garrulus glandarius fernandi* Keve-Kleiner, 1944—Eurasian jay [Ref.: Touleshkov 1962: 125]. *Garrulus glandarius glandarius* (Linnaeus, 1758) (Ref.: Złotorzycka 1997: 181)—Eurasian jay. *Garrulus glandarius graecus* Keve-Kleiner, 1939—Eurasian jay [Ref.: Touleshkov 1960: 426]. *Garrulus glandarius krynicki* Kaleniczenko, 1839—Eurasian jay [Ref.: Ansari 1956b: 373]. *Garrulus glandarius leucotis* Hume, 1874—Eurasian jay [Ref.: McClure & Ratanaworabhan 1973: 86]. *Garrulus glandarius whitakeri* Hartert, 1903—Eurasian jay **new host record**.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus and subgenus descriptions and Fig. 329. Displacement of marginal carina at osculum moderate. Preantennal nodi small, slender. Coni elongated triangular. Preocular nodi moderate, rounded, but larger than postocular nodi; *pos* on posterior margin of eye. Gular plate triangular with convex lateral margins. Thoracic and abdominal segments as in genus and subgenus descriptions and Figs 327–328.

Male. Abdominal chaetotaxy as in Table 9 and Fig. 327. Male genitalia (Figs 330–332) typical for species group. Proximal mesosome rounded-trapezoidal, with anterior margin irregular. Gonopore (Fig. 331) narrowly open distally. Mesosomal lobes fused distally, moderately wide, with prominent nodi on distal margin; 2 *ames* microsetae on each side anterior to gonopore; 2 *pmes* microsetae on lateral margins of mesosome, often very hard to see. Rugose nodi present, but small and often indistinct. Parameral heads (Fig. 332) roughly square, irregular. Parameral blades broadly triangular, somewhat elongated; *pst1–2* sensilla, distantly separated. Measurements ex *Garrulus glandarius atricapilla* (n = 5 except n = 4 for TL, PRW, PRW): TL = 1.38–1.60; HL = 0.39–0.45; HW = 0.38–0.43; PRW = 0.23–0.27; PTW = 0.35–0.40; AW = 0.49–0.59. Ex *G. g. glandarius* (n = 16): TL = 1.27–1.64 (1.45); HL = 0.37–0.46 (0.41); HW = 0.35–0.44 (0.39); PRW = 0.19–0.26 (0.24); PTW = 0.32–0.42 (0.36); AW = 0.47–0.67 (0.56). Ex *G. g. leucotis* (n = 12 except n = 9 for AW): TL = 1.37–1.54 (1.47); HL = 0.42–0.46 (0.43); HW = 0.39–0.46 (0.41); PRW = 0.23–0.28 (0.26); PTW = 0.35–0.44 (0.39); AW = 0.48–0.60 (0.56). Ex *G. g. whitakeri* (n = 7 except n = 5 for AW): TL = 1.40–1.43; HL = 0.40–0.43; HW = 0.38–0.41; PRW = 0.23–0.24; PTW = 0.34–0.36; AW = 0.47–0.56.

Female. Abdominal chaetotaxy as in Table 9 and Fig. 328. No *psps* on tergopleurite VIII. Subgenital plate narrowing distally (Fig. 333), may reach vulval margin. Vulval margin (Fig. 333) gently rounded, with 2–3 long, slender *vms* on each side, and 4–7 short, thorn-like *vss* on each side; 4–5 long, slender *vos* on each side; *vos* do not approach *vss*. Measurements ex *Garrulus glandarius atricapilla* (n = 4): TL = 1.68–1.82; HL = 0.45–0.48; HW = 0.43–0.48; PRW = 0.26–0.28; PTW = 0.39–0.41; AW = 0.59–0.65. Ex *G. g. glandarius* (n = 14): TL = 1.61–2.00 (1.85); HL = 0.42–0.49 (0.45); HW = 0.38–0.47 (0.42); PRW = 0.23–0.27 (0.25); PTW = 0.36–0.43 (0.40); AW = 0.58–0.71 (0.65). Ex *G. g. leucotis* (n = 9 except n = 7 for AW): TL = 1.67–1.96; HL = 0.43–0.51; HW = 0.42–0.49; PRW = 0.25–0.31; PTW = 0.39–0.45; AW = 0.54–0.71. Ex *G. g. whitakeri* (n = 7): TL = 1.70–1.81; HL = 0.43–0.45; HW = 0.41–0.43; PRW = 0.24–0.26; PTW = 0.37–0.39; AW = 0.51–0.64.

Type material. Ex ***Garrulus glandarius rufitergum*****: Lectotype** ♀, United Kingdom, Denny Collection, 1852-98 (NHML). **Paralectotype** 1♀, same data as lectotype (NHML).

Additional material examined (non-types)

Ex ***Garrulus glandarius albipectus*****:** 1♂, 2♀, Most na Soči, Tolmin Municipality, Slovenia, 17 Jun. 1958, S. Brelih, Brit. Mus. 1959-33 (NHML); 1♂, Trboje na Kranja, Slovenia, 8 Mar. 1957, S. Brelih, Brit. Mus. 1959-33 (NHML).

Ex ***Garrulus glandarius atricapillus*****:** 6♂, 5♀, Palestine, Apr. 1953, R. Meinertzhagen, 20148, BM 1953-225 (NHML).

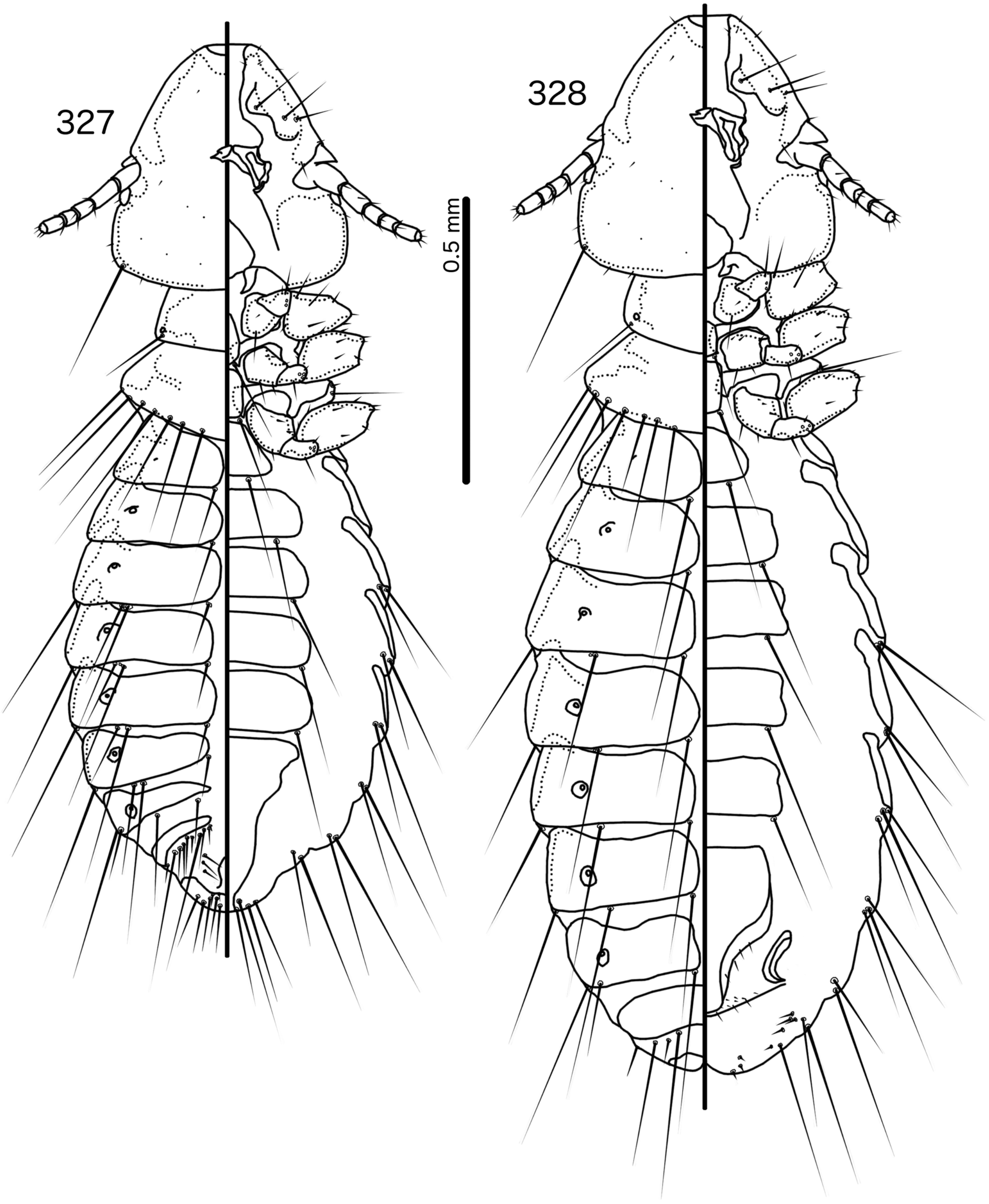
Ex ***Garrulus glandarius glandarius*****:** 1♂, Kelpino, Poland, 18 May 1957, J. Złotorzycka, 1/f/19-4, 21273 (OSUS); 3♀, "NE Poland", Poland, Aug. 1935, R. Meinertzhagen, 4168 (NHML); 3♂, 2♀, Predmeja, Trnovski, Slovenia, 24 Jun. 1964, S. Brelih, 11474–8 (PMSL); 8♂, 10♀, Most na Soči, [Tolmin Municipality,] Slovenia, 430–1, 514–6, 518–25, 630–1, 634, 2580–1 (PMSL); 1♀, Okolica, Ljubljana, Slovenia, 1951, S. Brelih, 500 (PMSL); 3♂, Trboje, Kranj, Slovenia, 8 Mar. 1954, S. Brelih, 526–8 (PMSL); 2♂, 1♀, Vrhnika, Slovenia, 14 Mar. 1976, A. Smuc, 13153–5 (PMSL); 2♂, 2♀, Kelpino, Poland, 18 May 1957, Lachmajer, 1/f/19-1, 1/f/19-3, 1/f/19-7, 1/f19-10 (MFNB).

Ex ***Garrulus glandarius krynicki*****:** 2♀, "Asia Minor", Turkey, R. Meinertzhagen, 4068 (NHML).

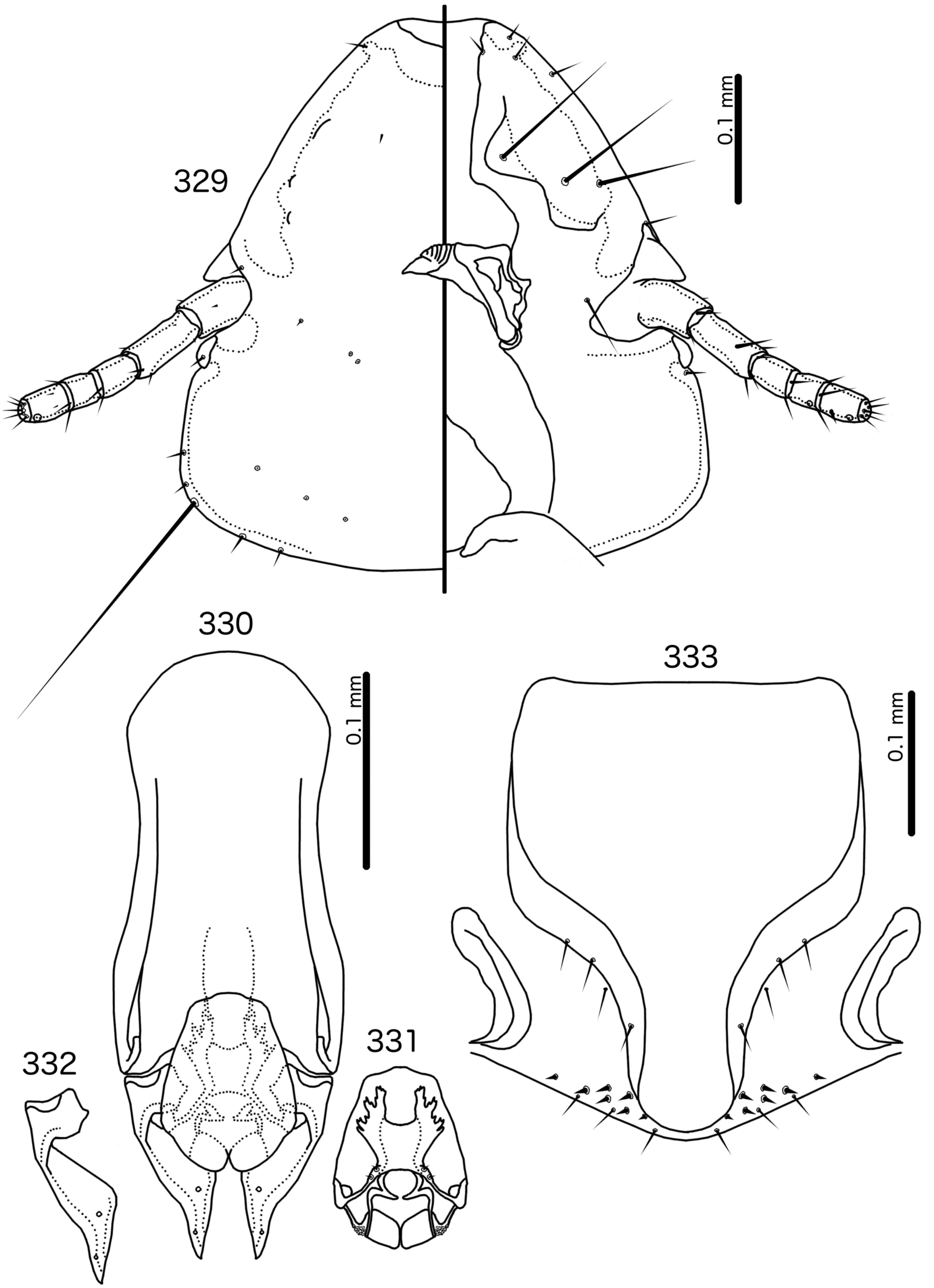
Ex ***Garrulus glandarius leucotis*** **[**some as ***Garrulax glandarius leucotis*****]:** 2♂, 2♀, Ban Bo Kaeo, Hot District, Chiang Mai Province, Thailand, 27 Jan. 1962, K. Thonglongya, V286, Brit. Mus. 1965-630 (NHML); 3♂, 3♀, Ban Bo Kaeo, Hot province, Chiang Mai Province, Thailand, 4 Feb. 1962, K. Thonglongya, V408 (NHML); 1♂, 1♀, Ban Muang, Tha Li District, Loei Province, Thailand, 13 Jan. 1955, R.E. Elbel, RE-4459, RT-B-31101 (NHML); 2♂, 2♀, same data as previous, 12358–9 on reverse (OSUS); 1♂, Myanmar [as Burma], Feb. 1902, R. Meinertzhagen, 842 (NHML); 3♂, 1♀, Huai Mae Sanam, Hot District, Chiang Mai Province, Thailand, 6 Nov. 1962, SEATO Med[ical] Res[earch] Lab, SMRL 1752, Brit. Mus. 1965-630 (NHML); 4♂, 4♀, Ban Bo Kaeo, Hot province, Chiang Mai Province, Thailand, 27 Jan. 1962, K. Thonglongya, V286 (UMSP); 1♂, 1♀, Lo Mountain, Phu Lom, Kok Sathon Subdistrict, Dan Sai District, Loei Province, Thailand, 28 Feb. 1955, R.E. Elbel, RE-4823 (PIPeR); 1♂, 1♀, Sieo Sawan Mountain, Loei Province, Thailand, 22 Nov. 1953, R.E. Elbel, RE-3144, RT-B-22596 (PIPeR); 1♂, 1♀, Khao Sawan Mountains, Sieo, Loei Province, Thailand, 21 Nov. 1953, R.E. Elbel & B. Lekagul, RE-3137, RT-B-22592 (PIPeR); 2♂, 2♀, Ban Bo Kaeo, Hot District, Chiang Mai Province, Thailand, 4 Feb. 1962, K. Thonglongya, V406, UT-14 (PIPeR).

Ex ***Garrulus glandarius rufitergum*** **[**some as ***Garrulus glandarius glandarius*****]:** 1♂, Bogshall [?], England, United Kingdom, 22 Dec. 1932, A.W. Boyd (NHML); 1♂, 6♀, Devon, England, United Kingdom, Jan. 1934, R.

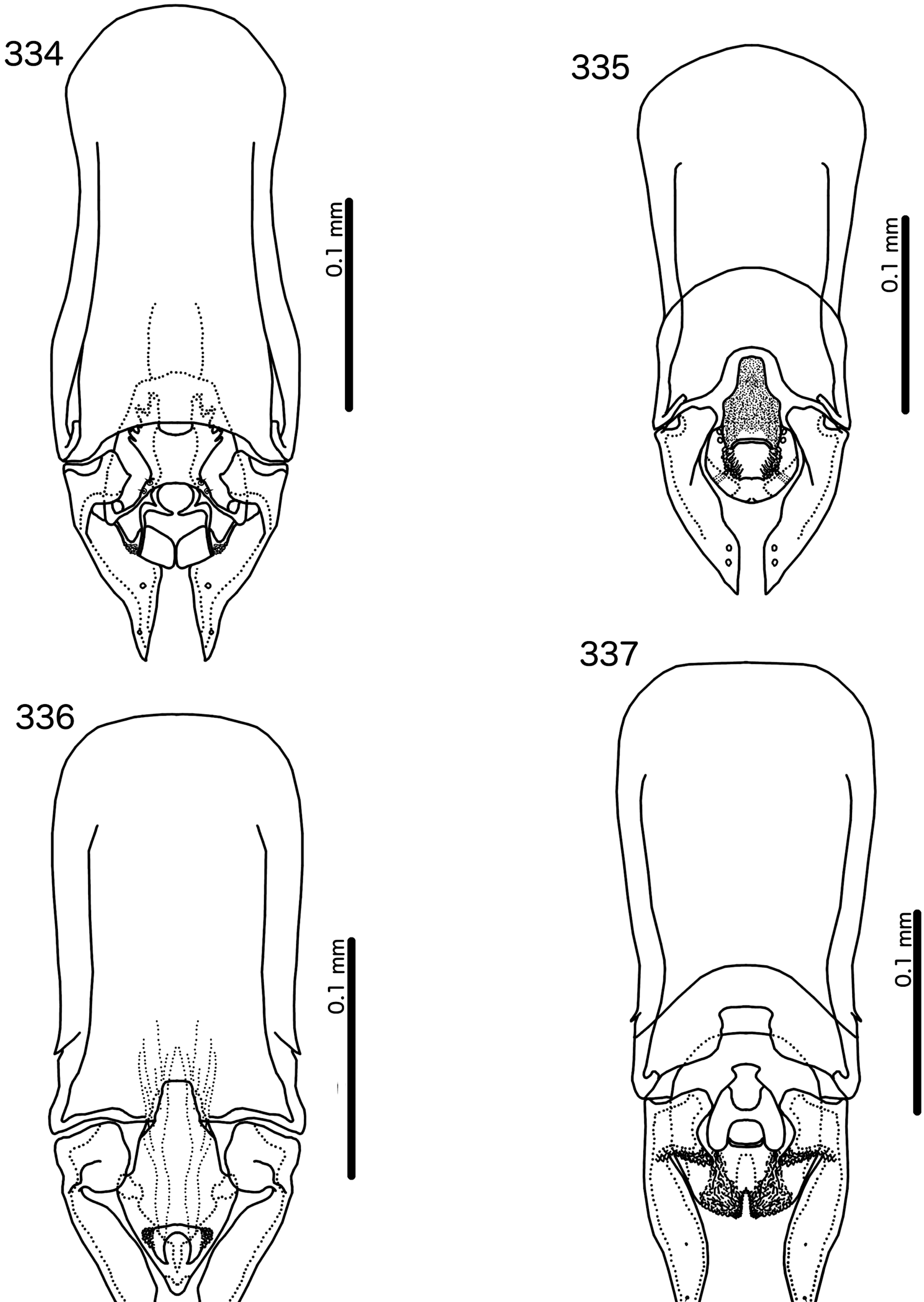
Meinertzhagen, 14824 (NHML); 8♂, 3♀, Suffolk, England, United Kingdom, Aug. 1936, R. Meinertzhagen, 4846 and 4933 (NHML); 3♂, 7♀, Berkshire, England, United Kingdom, Nov. 1945, R. Meinertzhagen, 15546 (NHML); 4♂, 6♀, Hampshire, England, United Kingdom, Dec. 1933, R. Meinertzhagen, 13, 4489, 10682–3, some 1951-171 (NHML); 3♂, 3♀, Suffolk, England, United Kingdom, Aug. 1935, R. Meinertzhagen, 3911 (NHML); 6♂, 26♀, Berkshire, England, United Kingdom, Jul. 1941, R. Meinertzhagen, 14458 (NHML).



FIGURES 327–328. *Olivinirmus glandarii* (Denny, 1842) ex *Garrulus glandarius atricapillus*: **327,** male habitus, dorsal and ventral views. **328,** female habitus, dorsal and ventral views.



FIGURES 329–333. *Olivinirmus glandarii* (Denny, 1842) ex *Garrulus glandarius atricapillus*: **329,** male head, dorsal and ventral views. **330,** male genitalia, dorsal view. **331,** male mesosome, ventral view. **332,** male paramere, dorsal view. **333,** female subgenital plate and vulval margin, ventral view.



FIGURES 334–337. Ventral views of male genitalia representing species groups of *Olivinirmus*: **334,** *Olivinirmus glandarii* (Denny, 1842) (*O. glandarii* group); **335,** *Olivinirmus meinertzhageni* (Ansari, 1956d) **n. comb.** (*O. meinertzhageni* group); **336,** *Olivinirmus cyaneus* (Carriker, 1963) **n. comb.** (*O. morionus* group); **337,** *Olivinirmus semiannulatus* (Piaget, 1883) **n. comb.** (*O. semiannulatus* group).

Ex **Garrulus glandarius severtzowi** [as **Garrulus glandarius glandarius**]: 3♂, 15♀, Estonia, Feb. 1938, R. Meinertzhagen, 10952 (NHML); 3♂, 2♀, Sweden, Oct. 1946, R. Meinertzhagen, 16098 (NHML).

Ex **Garrulus glandarius whitakeri** [as **Garrulus glandarius theresae**]: 7♂, 7♀, Morocco, Nov. 1930, R. Meinertzhagen, 12500 (NHML).

Ex **Garrulus glandarius** ssp.: 2♂, 1♀, Mandrazik, near Vetrina, RUSSIA?, 27 Nov. 1918, Fordham, BM1930-232 (NHML); 4♂, 3♀, "captive bird", unknown locality, M. Rothschild, 57 (NHML).

Ex **Nucifraga caryocatactes ssp.** [possibly stragglers]: 1♂, Ig, [Ljubljana Municipality,] Slovenia, 8 Nov. 1958, Brit. Mus. 1958-661 (NHML); 1♀, Trbovlje, Slovenia, 30 Sep. 1964, S. Brelih, 13734 (PMSL); 1♂, 1♀, Okol, Ig, Slovenia, 8 Sep. 1958, S. Brelih, 489–90 (PMSL); 3♂, 5♀, "Zooloski vrt", Ljubljana, Slovenia, 1951, S. Brelih, 199, 642–3, 2559–63 (PMSL).

Remarks. The head of *O. glandarii* specimens from the eastern host subspecies *Garrulus glandarius leucotis* is generally more elongated and narrow anteriorly than in specimens from the various western host subspecies, but the structure of the male genitalia is identical across material from Eastern and Western host subspecies. A closer study of the *Olivinirmus* may reveal that lice from *G. glandarius leucotis* is specifically or subspecifically different from lice parasitising Western host subspecies.

Nemuus Gustafsson & Bush, new genus

Type species. *Nemuus imperator* **new species**

Diagnosis. *Nemuus* **n. gen.** (Figs 338–353) and *Corvonirmus* (Figs 319–326) share the following characters: head broad, short, with wide, rounded temples; *as3* absent; antennae sexually dimorphic; at least sternal plates IV–VI in both sexes with accessory *sts*; *ads* comparatively long; preocular nodi median to eye, and eye protruding. However, these two genera can be separated by the following characters: female subgenital plate flares to cross-piece or lateral submarginal extensions in *Corvonirmus* (Fig. 326), but does not reach vulval margin in *Nemuus* (Figs 345, 353), and the posterior margin of the subgenital plate is deeply indented medianly in *Nemuus*, which is never the case in *Corvonirmus*; tergopleural plates reach ventral surface of abdomen, and are not reduced medianly in *Nemuus* (Figs 338–339, 346–347), whereas in *Corvonirmus* (Figs 319–320) the tergopleural plates do not reach lateral margins of abdomen, and are generally much reduced in size; marginal carina interrupted medianly and dorsal preantennal suture present in *Nemuus* (Figs 340, 348), but marginal carina complete and dorsal preantennal suture absent in *Corvonirmus* (Fig. 321); female tergopleurites IX+X and XI fused in *Nemuus* (Figs 339, 347) but not in *Corvonirmus* (Fig. 320); for differences in abdominal chaetotaxy, see Table 2. Male genitalia of the two species of *Nemuus* are dissimilar, and adequate comparions with those of *Corvonirmus* cannot presently be made.

Nemuus is superficially similar to *Melibrueelia* (see Valim & Palma 2015 figs 1, 2). Both genera have comparatively broad heads with short preantennal areas, medianly interrupted marginal carinae, and sexually dimorphic antennae. However, there is no premarginal carina in *Nemuus* (Figs 340, 348) as there is in *Melibrueelia*, and in *Melibrueelia* the female subgenital plate reaches the vulval margin and flares into a broad cross-piece there, but does not do so in *Nemuus* (Figs 345, 353). Furthermore, the male genitalia of the two genera are very different. The proximal mesomere in *Melibrueelia* is narrow, but wide in *Nemuus* (Figs 343, 351). In both genera the mesosomal lobes are fused distally, and the gonopore is ventral, but in *Melibrueelia* the distal mesosome is small and triangular and is proportionally much larger and more complicated in *Nemuus* (Figs 342–344, 350–352).

Description. ***Both sexes***. Head rectangular to slightly pentagonal (Figs 340, 348). Marginal carina widely interrupted medianly on dorsal side, from just posterior to *dsms*; premarginal carina absent. Frons hyaline. Ventral carinae not continuous with marginal carina. Ventral anterior plate present, crescent-shaped. Dorsal preantennal suture continuous with hyaline margin, reaching *ads*, but does not separate dorsal anterior plate from main head plate entirely. Head setae as in Figs 340, 348; *as3* absent. Coni small. Antennae sexually dimorphic, with male scapes much larger than those of females. Postocular nodi large, elongated, and curling around the eye to almost meet the posterior margin of the preocular nodi dorsally, and fused with preocular nodi ventrally. Eyes protruding. Temporal carinae not visible; *mts3* only macrosetae. Gular plate triangular.

Prothorax (Figs 338–339, 346–347) trapezoidal, widening posteriorly. *ppss* near postero-lateral corner, but median to spiracle opening. Proepimera slender, curling around coxae II. Pterothorax rounded pentagonal; lateral margins moderately divergent; posterior margin convergent to a rounded median point; *mms* moderately separated medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna with median ends typically slightly widened, blunt. Leg chaetotaxy as in Fig. 25 except *fI-p2, fI-v4* absent.

Abdomen (Figs 338–339, 346–347) broadly oval in both sexes. Tergopleurites rectangular to slightly triangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female moderately divided medianly. Tergopleurites IX+X and XI partially fused in females. Male genital opening associated with small tergopleural plate. Sternal plates rectangular, wide. Abdominal chaetotaxy as in Table 2. Accessory *sts* present on at least segments III–VI in both sexes. Males with 2–3 *aps* on most segments. Pleural incrassations slight. Re-entrant heads small. Male subgenital plate triangular with sinuous lateral margins, reaching distal end of abdomen. Female submarginal plate triangular, with deep median indentation in posterior end; plate does not approach vulval margin (Figs 345, 353). Vulval margin (Figs 345, 353) with few slender *vms*, numerous thorn-like *vss*. *vos* follow lateral margins of subgenital plate; distal *vos* approaching or situated median to *vss*.

Male genitalia (Figs 342–344, 350–352) different markedly between the two species. Basal apodeme (Figs 342, 350) rectangular. Proximal mesosome (Figs 343, 351) rectangular. Gonopore open distally, associated with distinct, species-specific thickenings laterally and anteriorly. Mesosomal lobes elongated and large, extending far posterior to gonopores. Distal parts of lobes thickened; 2 *ames* microsetae on each side submarginally or marginally anterior to gonopore; 2 *pmes* microsetae on each sidemarginally or submarginally distal to gonopore. Parameres (Figs 344, 352) differing between species; *pst1* sensillus, central; *pst2* microseta, submarginal or central.

Host distribution. Known only from members of the host genus *Artamus* Vieillot, 1816 (Artamidae). In addition to the two species described below, we have seen females belonging to this genus from *Artamus leucorhynchus leucopygialis* Gould, 1842 (unpub. data).

Geographical range. Known from Thailand, the Philippines, and New Guinea.

Etymology. The genus name is derived from Japanese "*nemui*", for "sleepy", referring to the the post- and preocular nodi almost completely enclosing the middle of the eye, giving the appearance that members of this genus are about to close their eyes (Figs 340, 348). Gender: masculine.

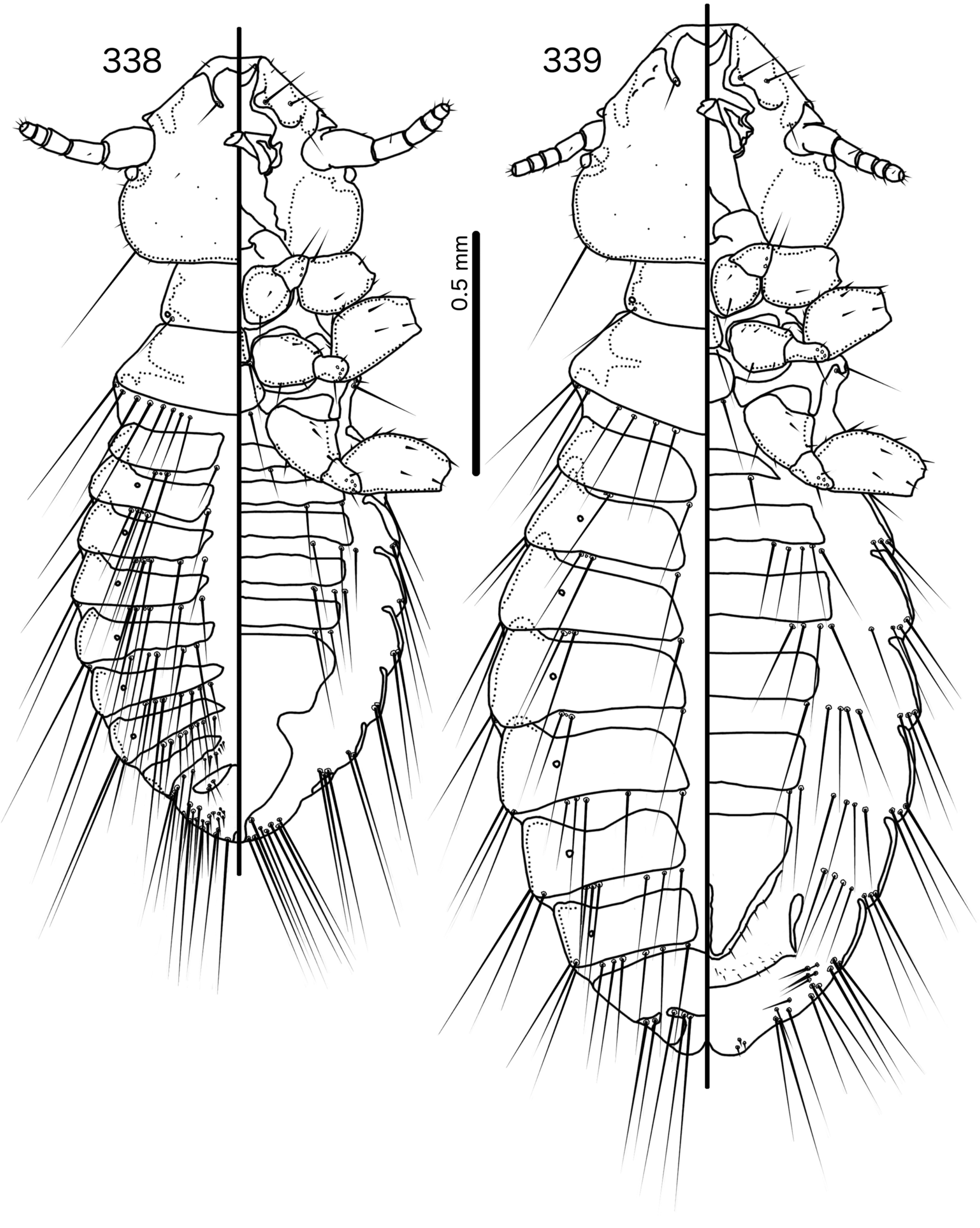
Remarks. *Nemuus* was not represented in the phylogeny of Bush *et al.* (2016), and based on morphology, no other genus treated here appears to be very closely related to *Nemuus*. However, it shows some similarities with *Corvonirmus* (see above) and *Melibrueelia.*

Included species
Nemuus hoedhri **new species**
Nemuus imperator new species

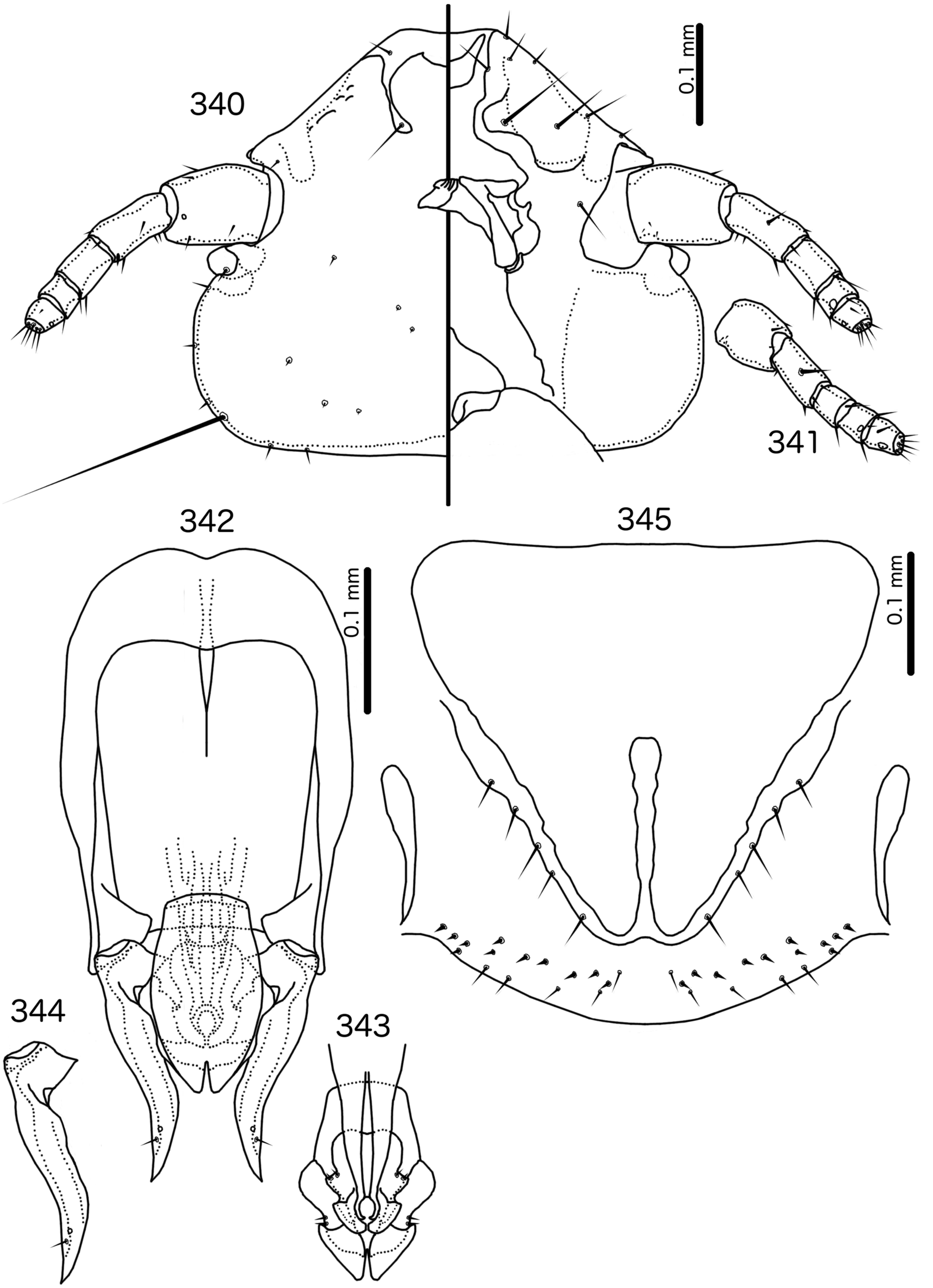
Nemuus imperator Gustafsson & Bush, new species
(Figs 338–345)

Type host. *Artamus maximus* Meyer, 1874—great woodswallow.
Type locality. Wanuma, Madang District, Papua New Guinea.

Diagnosis. *Nemuus imperator* **n. sp.** is separated from *Ne. hoedhri* **n. sp.** by the following characters: preantennal area shorter than postantennal area in *Ne. imperator* (Fig. 340), but about as long as postantennal area in *Ne. hoedhri* (Fig. 348); dorsal anterior plate longer than broad in *Ne. hoedhri* (Fig. 340), but about as long as broad, or shorter than broad, in *Ne. imperator* (Fig. 348); male scape more swollen in *Ne. imperator* (Fig. 340) than in *Ne. hoedhri* (Fig. 348); accessory *sts* present on segment II in both sexes of *Ne. hoedhri* (Figs 346–347) but absent in *Ne. imperator* (Figs 338–339); *tps* present on female tergopleurites II–V in *Ne. hoedhri* (Fig. 346), but absent on these tergopleurites in *Ne. imperator* (Fig. 339); indentation of posterior margin of the female subgenital plate reaches farther than mid-length in *Ne. hoedhri* (Fig. 353) but only to about mid-length in *Ne. imperator* (Fig. 345); *Ne. hoedhri* with 3–4 *vms*, 8–10 *vss*, and 6–8 *vos* on each side (Fig. 353), and *Ne. imperator* with 4–5 *vms*, 10–12 *vss*, and 5–6 *vos* on each side (Fig. 345); mesosome with large distal nodi and no rugose area in *Ne. imperator* (Fig. 343), but with slender thickenings and large rugose areas in *Ne. hoedhri* (Fig. 351); parameral heads moderate, folded distally more than medianly, in *Ne. hoedhri* (Fig. 352), but wide, folded medianly in *Ne. imperator* (Fig. 344); distal parameres blunt in *Ne. hoedhri* (Fig. 352) but pointed in *Ne. imperator* (Fig. 344).



FIGURES 338–339. *Nemuus imperator* **n. gen. & n. sp.** ex *Artamus maximus*: **338,** male habitus, dorsal and ventral views. **339,** female habitus, dorsal and ventral views.



FIGURES 340–345. *Nemuus imperator* **n. gen. & n. sp.** ex *Artamus maximus*: **340,** male head, dorsal and ventral views. **341,** female antenna, ventral view. **342,** male genitalia, dorsal view. **343,** male mesosome, ventral view. **344,** male paramere, dorsal view. **345,** female subgenital plate and vulval margin, ventral view.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 340. Preantennal area very short, flattened. Frons flat or shallowly concave. Dorsal anterior plate wider than long. Ventral, marginal, and occipital carinae, ventral anterior plate, mandibular framework, and gular plate with medium-brown pigmentation. Head nodi with deep-brown pigmentation. Thoracic and abdominal segments as in genus description and Figs 338–339. Lateral section of tergopleurites, metepisterna, proepimera, meso- and metasterna, sternal plates, subgenital plate, and broad band along vulval margin with light-brown pigmentation, progressively darker posteriorly.

Male. Scape swollen (Fig. 340). Subgenital plate with distinct lateral indentation at about half-length (Fig. 338). Abdominal chaetotaxy as in Table 2 and Fig. 338. Basal apodeme notched anteriorly (Fig. 342). Proximal mesosome broadly flattened, overlapping with basal apodeme (Fig. 343). Gonopore narrowly open distally. Mesosomal lobes slender, elongated, with distinct nodi in anterior and posterior ends. Posterior nodi large, triangular; anterior nodi rounded; 2 *ames* microsetae on each side submedianly anterior to gonopore; 2 *pmes* microsetae on each side on lateral margins of mesosomal lobes just anterior to distal nodi. Parameral heads (Fig. 344) roughly triangular, folded medianly. Parameral blades long, pointed distally; *pst1* as in genus description; *pst2* marginal. Measurements ex *Artamus maximus* (n = 21 except n = 20 for AW and n = 17 for TL): TL =1.36–1.62 (1.53); HL = 0.36–0.42 (0.40); HW = 0.41–0.49 (0.46); PRW = 0.28–0.34 (0.31); PTW = 0.44–0.54 (0.48); AW = 0.54–0.71 (0.65).

Female. Scape not swollen (Fig. 341). Abdominal chaetotaxy as in Table 2 and Fig. 339; *tps* absent on segments II–V. Posterior margin of subgenital plate narrowly indented medianly to about mid-length (Fig. 345). Broad band of light brown pigmentation follows vulval margin. Vulval margin gently rounded (Fig. 345); 4–5 short, slender *vms* on each side, and 10–12 short, thorn-like *vss* on each side; 5–6 short, slender *vos* on each side; distal *vos* median to *vss*. Measurements (n = 26): TL = 1.69–2.66 (2.18); HL = 0.43–0.48 (0.45); HW = 0.47–0.55 (0.51); PRW = 0.30–0.35 (0.32); PTW = 0.49–0.57 (0.52); AW = 0.70–0.90 (0.79).

Etymology. The species epithet derived from Latin "*imperator*" for "emperor", referring to the large size of this species.

Type material. Ex ***Artamus maximus*****: Holotype** ♂, Wanuma, Madang District, Papua New Guinea, 24 Feb. 1974, 103887 (OSUS). **Paratypes:** 3♂, 4♀, same data as holotype (OSUS); 1♂, 1♀, Mount Kaindi, Wau, Morobe District, Papua New Guinea, 24 Aug. 1969, BBM-97690 (OSUS); 9♂, 7♀, vicinity of Wau, elev. 7700 ft, Mount Kaindi, Morobe District, Papua New Guinea, 23 Apr. 1970, A.B. Mirza, BBM-NG-99110–3 (BPBM).

Additional material examined (non-types)

Ex ***Artamus maximus*****:** 2♂, 2♀, Mount Kaindi, elev. 2350, Morobe District, Papua New Guinea, 14 Jun. 1967, A.C. Ziegler, BBM-NG-53555 (BPBM); 4♂, same locality and collector as previous, 23 Jun. 1967, BBM-NG-53287 (BPBM); 1♂, same locality and collector as previous, 30 Jun. 1967, BBM-NG-53340 (BPBM); 2♂, 3♀, same locality and collector as previous, 2 Jul. 1967, BBM-NG-53394 or BBM-NG-53397 (BPBM); 1♂, 1♀, same locality as previous, 16 Jun. 1967, P.H. Colman, BBM-NG-50702 (BPBM); 3♀, same locality and collector as previous, 14 Jul. 1967, BBM-NG-51183 or BBM-NG-51190 (BPBM); 1♂, same loacality as previous, 28 Jan. 1963, J.H. Sedlacek, BBM-NG-20204 (BPBM); 1♂, 1♀, same locality and collector as previous, 6 Oct. 1962, BBM-NG-20178. 1♂, 2♀, Wau, elev. 1200 m, Morobe District, Papua New Guinea, 1 Oct. 1962, J.H. Sedlacek, BBM-NG-20177 (BPBM); 1♂, 1♀, vicinity of Wau, elev. 7000 ft, Mount Missim, Morobe District, Papua New Guinea, 11 Jun. 1963, P.J. Shanahan, BBM-NG-28524–5 (BPBM); 2♂, 2♀, vicinity of Wau, elev. 7700 ft, Mount Kaindi, Morobe District, Papua New Guinea, 24 Feb. 1970, F.J. Radovsky, BBM-NG-99129 (BPBM); 2♂, Pindiu, elev. 3000 ft, Morobe District, Papua New Guinea, 22 Apr. 1963, P.J. Shanahan, BBM-NG-27729 (BPBM); 2♀, Bulolo River, elev. 3000 ft, Morobe District, Papua New Guinea, 15 Jun. 1963, P.J. Shanahan, BBM-NG-28454 (BPBM); 1♂, same locality and collector as previous, 16 Jun. 1963, BBM-NG-28455 (BPBM); 2♂, 4♀, Karimui, elev. 1100 m, Chimbu District, Papua New Guinea, 12 Jul. 1963, J.H. Sedlacek, BBM-NG-20074–5 (BPBM); 2♂, 3♀, Kassam Pass, elev. 1300 m, Eastern Highlands District, Papua New Guinea, 25 Aug. 1967, P.H. Colman, BBM-NG-60040–1 (BPBM); 4♂, 4♀, Kalolo Creek, elev. 1070 m., 6 km NW of Wau, Morobe District, Papua New Guinea, 16 Sep. 1967, A.B. Mirza, BBM-NG-54563 (BPBM); 2♂, 1♀, Enarotali, Papua Province, Indonesia, 5 Jul. 1962, H. Clissold, BBM-21290 (BPBM); 1♀, Lake Anggi Gidji, West Papua Province, Indonesia, 26 Feb. 1963, M.C. Thompson, BBM-NG-22438 (BPBM).

Nemuus hoedhri Gustafsson & Bush, new species

(Figs 346–353)

Type host. *Artamus fuscus* Vieillot, 1817—ashy woodswallow.
Type locality. Khao Oerewan Mountains, Lopburi Province, Thailand.

Diagnosis. *Nemuus hoedhri* **n. sp.** is much paler than *Ne. imperator* **n. sp.**, and both sexes are easily told apart by head shape, pigmentation patterns, and the accessory *sts* present on segment II in *Ne. hoedhri* (Figs 346–347) but not in *Ne. imperator* (Figs 338–339).

Male *Nemuus hoedhri* is separated from male *Ne. imperator* by male genitalia: rugose area of ventral mesosome present in *Ne. hoedhri* (Fig. 351) but absent in *Ne. imperator* (Fig. 343); gonopore with lateral triangular extensions in distal half in *Ne. imperator* (Fig. 343), but with hook-shaped anterior extensions in *Ne. hoedhri* (Fig. 351); parameral heads truncated in *Ne. hoedhri* (Fig. 352), but not in *Ne. imperator* (Fig. 344); parameral blades blunt distally in *Ne. hoedhri* (Fig. 352), but pointed distally in *Ne. imperator* (Fig. 344).

Female *Nemuus hoedhri* is separated from female *Ne. imperator* by the following characters: *tps* absent on tergopleurites II–V in *Ne. imperator* (Fig. 339), but present in *Ne. hoedhri* (Fig. 347); indentation of posterior margin of the female subgenital plate reaches farther than mid-length in *Ne. hoedhri* (Fig. 353) but only to about mid-length in *Ne. imperator* (Fig. 345); vulval chaetotaxy with slight overlap, but *Ne. hoedhri* (Fig. 353) generally with fewer *vms* (3–4) and *vss* (8–10) than *Ne. imperator* (Fig. 345) (4–5 *vms* and 10–12 *vss*).

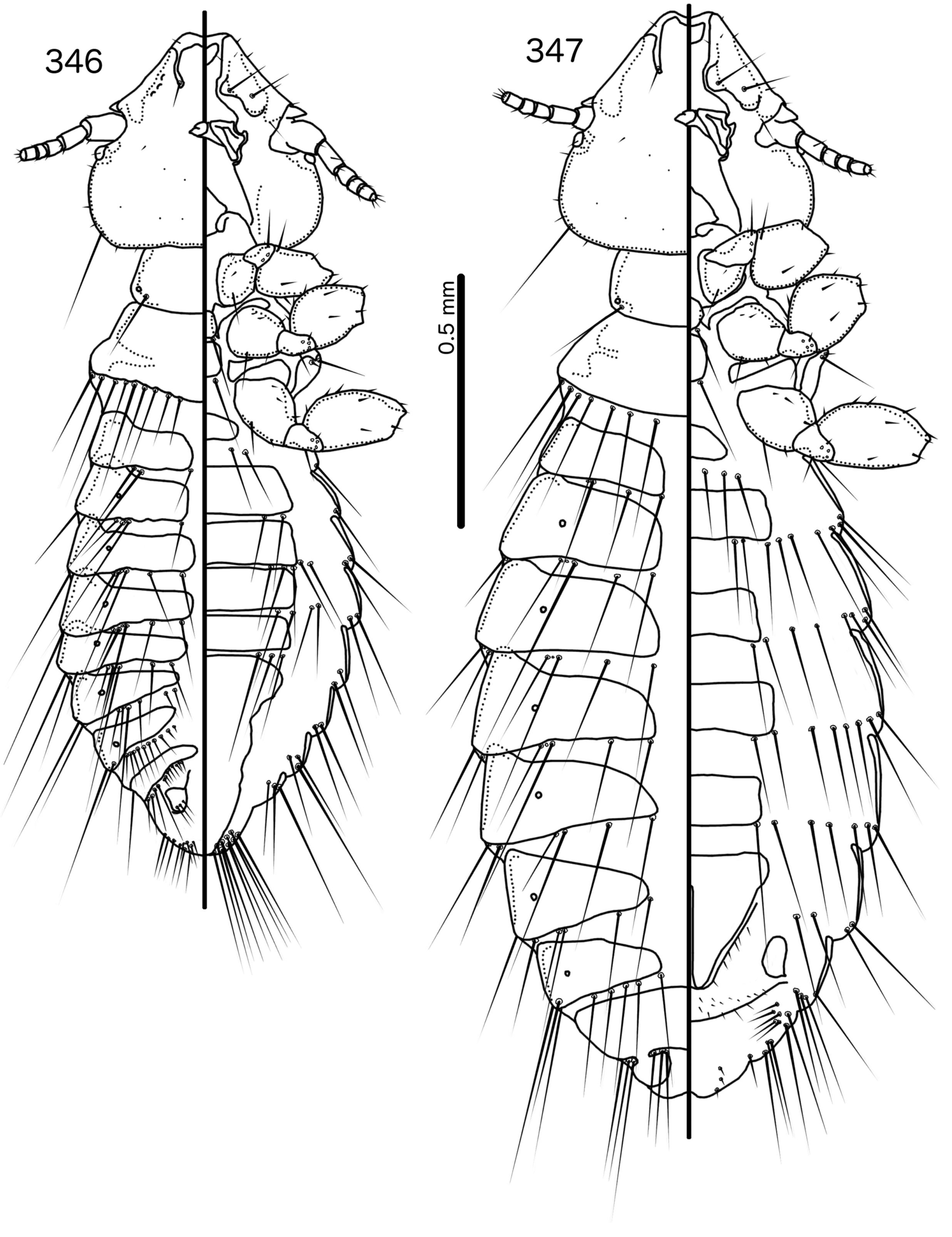
Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 348. Preantennal area not shortened. Frons distinctly concave. Dorsal anterior plate as long as or longer than wide. Head largely translucent, but at least nodi, mandibular framework, gular plate, and occipital and ventral carinae with pale brown pigmentation. Thoracic and abdominal segments as in genus description and Figs 346–347. Body largely translucent, but proepimera, metepisterna, pleurites, sternal plates, and subgenital plates with pale brown pigmentation.

Male. Scape swollen (Fig. 348). Subgenital plate with irregular lateral margins but no prominent lateral indentation at half-length. Abdominal chaetotaxy as in Table 2 and Fig. 346. Basal apodeme not notched anteriorly (Fig. 350). Proximal mesosome with irregular, somewhat rounded anterior margin, not overlapping with basal apodeme. Gonopore (Fig. 351) ventral, narrowly open distally, and associated with hook-shaped antero-lateral extensions. Mesosomal lobes broad, short, with distinct rugose area at half-length. Lateral margins of lobes thickened; 2 *ames* microsetae on each side on lateral margin of mesosome anterior to gonopore; 2 *pmes* microsetae on each side sublaterally on rugose area in distal mesosome. Parameral heads (Fig. 352) truncated. Parameral blades long, rounded distally; *pst1* as in genus description; *pst2* central. Measurements ex *Artamus fuscus* (n = 6 except n = 5 for TL, PTW, and AW): TL = 1.45–1.57; HL = 0.40–0.43; HW = 0.43–0.47; PRW = 0.27–0.29; PTW = 0.43–0.47; AW = 0.55–0.61.

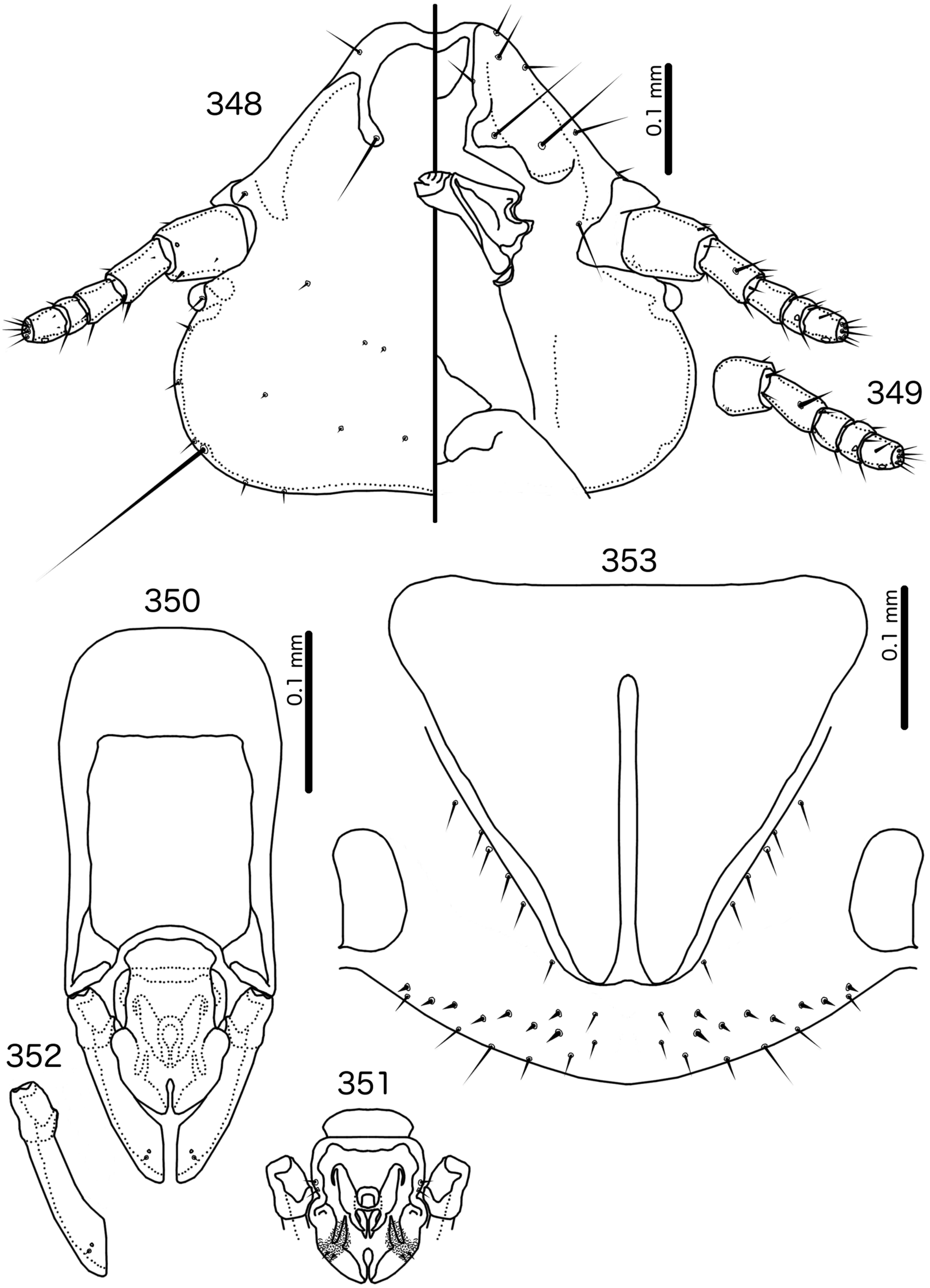
Female. Scape not swollen (Fig. 349). Abdominal chaetotaxy as in Table 2 and Fig. 347; *tps* present on tergopleurites II–V. Posterior margin of subgenital plate narrowly indented medianly to more than to mid-length (Fig. 353). Vulval margin gently rounded (Fig. 353), with no pigmented band; 3–4 short, slender *vms* on each side, and 8–10 short, thorn-like *vss* on each side; 6–8 short, slender *vos* on each side; 1–2 distal *vos* median to *vss*. Measurements ex *Artamus fuscus* (n = 6 except n = 4 for AW): TL = 1.92–2.07; HL = 0.43–0.46; HW = 0.46–0.50; PRW = 0.29–0.31; PTW = 0.50–0.53; AW = 0.75–0.78.

Etymology. *Nemuus hoedhri* is named after Höðr, the blind brother of Baldr in Norse mythology. Höðr was fooled by the trickster god Loki into killing Baldr, by shooting at him with an arrow made of mistletoe, the only thing that could kill him. Here, this name refers to the fusion of the pre- and postocular nodi, so that the eye appears isolated from the rest of the head (Fig. 348), and the lice thus seem "blind".

Type material. Ex ***Artamus fuscus***: **Holotype** ♂, Khao Oerewan Mountains, Lopburi Province, Thailand, 10 Jul. 1953, R.E. Elbel, RE-2770, B-21651, 24590 on reverse (OSUS). **Paratypes:** 2♂, 3♀, same data as holotype, 24589 or 24591 on reverse (OSUS); 3♂, 3♀, same data as holotype (PIPeR); 1♀, Khao Kham Mountains, Lopburi Province, Thailand, 17 Aug. 1953, RE-2894, RT-B-21697 (PIPeR); 1♂, Bal Lat, Ban Kaeng Subdistrict, Phu Khiao District, Chaiyaphum Province, Thailand, 19 Dec. 1952, R.E. Elbel, RE-933, RT-B-17551 (PIPeR).



FIGURES 346–347. *Nemuus hoedhri* **n. gen. & n. sp.** ex *Artamus fuscus*: **346,** male habitus, dorsal and ventral views. **347,** female habitus, dorsal and ventral views.



FIGURES 348–353. *Nemuus hoedhri* **n. gen. & n. sp.** ex *Artamus fuscus*: **348,** male head, dorsal and ventral views. **349,** female antenna, ventral view. **350,** male genitalia, dorsal view. **351,** male mesosome and parameral heads, ventral view. **352,** male paramere, dorsal view. **353,** female subgenital plate and vulval margin, ventral view.

Melibrueelia Valim & Palma, 2015

Melibrueelia Valim & Palma, 2015: 483.

Type species. *Melibrueelia novaeseelandiae* Valim & Palma, 2015: 484, by original designation.

Diagnosis. Valim & Palma (2015) compared this genus with *Brueelia* s. str., "*Brueelia* s. lat." (= *Priceiella* **n. subgen.**), *Corvonirmus*, and *Turdinirmus*. We refer to their description for details on how to separate *Melibrueelia* from these genera. For a comparison with *Nemuus* **n. gen.**, see the diagnosis for this genus above.

Description. ***Both sexes***. Head pentagonal, wider in male than in female (Valim & Palma 2015: fig. 2). Marginal caina interrupted laterally and submedianly, no displaced section at osculum. Frons hyaline. Dorsal preantennal suture continuous with hyaline margin, reaching *ads* and *dsms*, and completely separating dorsal anterior plate from main head plate. Ventral carina not continuous with marginal carina. Ventral anterior plate present, crescent-shaped. Coni small, slender. Antennae sexually dimorphic, with male scapes more than twice as long and twice as wide as female scapes, and more distal segments modified as in Valim & Palma (2015: fig. 2A). Head setae as in Valim & Palma (2015: fig. 2); *as3* absent; *pns* present, sensilliform; *pos* on marginal temporal carina. Temporal carinae not visible; *mts3* only macrosetae. Gular plate broadly triangular.

Prothorax rectangular (Valim & Palma 2015: fig. 1); *ppss* on postero-lateral corners. Proepimera oblique, moderate, curled around coxae II. Pterothorax pentagonal: lateral margins highly divergent, posterior margin convergent to slight median rounded point; *mms* moderately (in males) or widely (in females) separated medianly. Meso- and metathorax not fused, each with 1 seta on postero-lateral corner on each side. Let chaetotaxy as in Fig. 25, except *fI-p2* absent; *fI-p3* ventral, submarginal, thorn-like.

Abdomen rounded in male, more oblong in female (Valim & Palma 2015: fig. 1). Abdominal chaetotaxy as in Table 2. Tergopleurites II–XI in male and II–VIII in female narrowly divided medianly; tergopleurites roughly triangular in male but roughly rectangular in female. Tergopleurites IX+X and XI fused in female. Sternal plates rectangular, broad, but not approaching lateral margins of abdomen; sternal plates very slender in male. Pleural incrassations slender. Ventral section of tergopleurites very narrow. Re-entrant heads slight, blunt. Male subgenital plate roughly trapezoidal, with anterior margin rounded, posterior end reaching terminal end of abdomen and there often widening slightly. Female subgenital plate rounded triangular, reaching vulval margin and there flaring into broad cross-pieces (Valim & Palma 2015: fig. 1B); plate with conspicuous reticulation. Vulval margin gently rounded, but median section concave; lateral to concave section vulval margin is thickened. Slender *vms* and thorn-like *vss*; *vos* follow lateral margins of subgenital plate, with distal *vos* median to *vss*.

Basal apodeme (Valim & Palma 2015: fig. 1C) rounded trapezoidal, anterior end slightly wider than posterior end. Proximal mesosome slender, widening in proximal end. Mesosomal lobes slender, fused and extended somewhat distally. Ventral surface with large rugose area surrounding ventrally located gonopore; 3 *ames* microsetae on each side antero-lateral to gonopore; 2 *pmes* microsetae on each side, on lateral margins postero-lateral to gonopore (not illustrated by Valim & Palma 2015). Parameral heads folded medianly, rectangular. Parameral blades connected to parameral heads by slender neck, bulging in mid-section, and tapering distally; *pst1–2* sensilla, central, near distal end of parameres.

Host distribution. Only known from New Zealand honeyeaters (Meliphagidae).

Geographical range. New Zealand.

Remarks. We do not include illustrations or a description of *Melibrueelia novaeseelandiae*—the type and only species of the genus—because it was recently described and well illustrated by Valim & Palma (2015). No representative of *Melibrueelia* was included in the phylogeny of Bush *et al.* (2016).

Included species
**Melibrueelia novaeseelandiae* Valim & Palma, 2015: 484

Guimaraesiella Eichler, 1949

Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).

Brueelia Kéler, 1936a: 257 (*in partim*).
Guimarãesiella Eichler, 1949: 11.
Xobugirado Eichler 1949: 13.
Allobrueelia Eichler, 1951b: 36.
Allobrueelia Eichler, 1952: 74 (near-verbatim redescription).
Allonirmus Złotorzycka, 1964a: 263.
Nitzschinirmus Mey & Barker, 2014: 101 **new synonymy.**

Type species. *Docophorus subalbicans* Piaget, 1885: 6 [= *Docophorus papuanus* Giebel, 1879: 475], by original designation.

Diagnosis. *Guimaraesiella* as circumscribed here is a variable genus, with considerable variation in the preantennal area (Figs 361–364), the male genitalia (Figs 357, 365–369, 373), and abdominal chaetotaxy (Table 10). Many of the groups of taxa here placed in *Guimaraesiella* differ from *Guimaraesiella* s. str. (here represented by the type species, *Gu. papuana*), and may form good genera. However, a more thorough study of the variation within this group is needed to establish this.

Guimaraesiella belongs to a large well-supported clade (Bush *et al.* 2016) of genera treated here (all genera from *Saepocephalum* **n. gen.** to *Bizarrifrons* in this manuscript) that have medianly folded parameral heads, lack *as3*, and typically have *aps* on at least some male tergopleurites. This group encompasses clades A–H in the phylogeny of Bush *et al.* (2016). Within this group the following genera contain species that have a submedianly interrupted marginal carina, which is also found in most *Guimaraesiella* (except the *Gu. cicchinoi* group, Fig. 361): *Sturnidoecus* (Fig. 379), *Bizarrifrons* (Fig. 477), *Manucodicola* **n. gen.** (Fig. 453), *Schizosairhynchus* **n. gen.** (Fig. 465), *Rostrinirmus* (Fig. 439), *Nemuus* **n. gen.** (Fig. 340), *Melibrueelia* (see Valim & Palma 2015 figs 1, 2).) and *Buphagoecus* **n. gen.** (Fig. 429). In addition, some members of *Priceiella* (*Thescelovora*) **n. subgen.** (Fig. 302) have a dorsal preantennal suture that may be as extensive posteriorly as that found in some *Guimaraesiella*, but in *Pr.* (*Thescelovora*) this suture never reaches the margins of the head, and the marginal carina is not interrupted laterally or submedianly. For differences in the abdominal chaetotaxy between *Guimaraesiella* and these other genera, see Table 2.

All groups of *Guimaraesiella* can be separated from *Manucodicola* (Fig. 453) and *Bizarrifrons* (Fig. 477) by the preantennal area, which is symmetrical in *Guimaraesiella* (Figs 356, 361–364, 372) but asymmetrical in these two genera (but see *Bi. quasisymmetricus* Valim & Palma 2012). Furthermore, in both *Bizarrifrons* and *Manucodicola*, the premarginal carina is absent, and the lateral margins of the preantennal head is hyaline dorsally as far posterior as the lateral interruption of the marginal carina, whereas in all *Guimaraesiella* that have a laterally interrupted marginal carina (e.g. *Guimaraesiella pandolura* **n. sp.**, Fig. 372), the premarginal carina is present. Sternal plates are absent on segments II–III in *Manucodicola* (Figs 451–452; in *Mn. semiramisae* **n. sp.** sternal plate IV is also absent, Figs 457–458), but these are always present in *Guimaraesiella* (Figs 354–355, 370–371). The basal apodeme is never as strongly trapezoidal in *Guimaraesiella* (Figs 357, 365–369, 373) as it is in *Manucodicola* (Figs 455, 461), and even in species of *Guimaraesiella* where the mesosomal lobes are well developed (Figs 366–369), these are never as wide as those found in *Manucodicola* (Figs 455, 461). The male genitalia of most *Guimaraesiella* are very dissimilar from those of *Bizarrifrons* (Fig. 478), but there are some similarities between the male genitalia of *Bizarrifrons* and those of the *Gu. sehri* group (Fig. 366). Species in the *Gu. sehri* group ad *Bizarrifrons* both have prominent marginal nodi on the distal mesosome, at least 1 *pmes* on each side is marginal, the proximal mesosome is broad and overlaps extensively with the basal apodeme, and the gonopore is comparatively small and seemingly situated near the distal nodi of the mesosomal lobes. However, the mesosomal lobes of *Bizarrifrons* (Fig. 478) are not fused distal to the gonopore, and the gonopore in *Bizarrifrons* is actually terminal, whereas the gonopore in the *Gu. sehri* group (Fig. 366) is ventral, and the lobes are partially fused distal to the gonopore. In addition, *ames* are microsetae in *Bizarrifrons*, but sensilla in the *Gu. sehri* group.

In most described species of *Guimaraesiella*, especially in the Old World [(except *Gu. pandolura* (Fig. 372) and *Gu. myiophoneae* (Clay 1936)], the dorsal preantennal suture does not completely encircle the dorsal anterior plate (Figs 361–363). This separates most species of *Guimaraesiella* from *Sturnidoecus* (Fig. 379), *Buphagoecus* **n. gen.** (Fig. 429), *Schizosairhynchus* n gen. (Fig. 465), and *Rostrinirmus* (Fig. 439), in which the dorsal anterior plate is always completely separated from the main head plate. However, many New World *Guimaraesiella* and the two Old World species mentioned above do have a dorsal anterior plate that is completely separated from the main head plate, similar to these other genera. In *Schizosairhynchus* (Fig. 465), the dorsal anterior plate has a pointed and thickened posterior margin, that is overlapping with the main head plate. This is not seen in *Guimaraesiella*. In

Schizosairhynchus, the premarginal carina is absent, but this is present in *Guimaraesiella* (e.g. Fig. 372). No known species of *Guimaraesiella* have the postero-lateral extensions of the dorsal preantennal suture found in all *Sturnidoecus* (Fig. 379) and *Buphagoecus* (Fig. 429). There are no structural or setal differences in the head between *Rostrinirmus* (Fig. 439) and these *Guimaraesiella*, with the exception that the *os* is a macroseta in *Ro. ruficeps* (but not in the *Ro. raji* species group, Fig. 444), but a microseta in *Guimaraesiella*.

All *Guimaraesiella* have sternal plates on segments II–VI in both sexes, and none have accessory lateral sternal plates on any segments; all sternal plates are roughly rectangular and in no species of *Guimaraesiella* (e.g. Figs 354–355) is sternal plate II expanded laterally as in all *Schizosairhynchus* (Figs 451–452). In many species of *Sturnidoecus* at least some sternal plates are absent (e.g. *St. sturni*, Figs 377–378) or reduced to small ovals (e.g. *St. australafricanus* **n. sp.**, Figs 399–400). In *Schizosairhynchus*, accessory sternal plates are present.

The female subgenital plate of most *Guimaraesiella* spp. does not flare into a cross-piece at the vulval margin (Figs 360, 376), as in *Sturnidoecus* (Fig. 383), and female *Guimaraesiella* spp. are best separated from e.g. *Sturnidoecus* spp. by non-genitalic characters. However, the subgenital plate of the *Gu. sexmaculata* group has lateral submarginal bulges (not illustrated, but similar in extent to those of *Schizosairhynchus erysichthoni* **n. sp.**, Fig. 469), and the *Gu. sehri*, *Gu. brunneinucha*, and *Gu. cicchinoi* groups all contain species in which a complete cross-piece is present (not illustrated). As the *Gu. brunneinucha* group also contains some species that have completely separated dorsal anterior plates, the presence of a cross-piece is an additional character that separates these species from e.g. *Sturnidoecus* (Fig. 383) or *Rostrinirmus* (Fig. 440).

The male genitalia of *Guimaraesiella* are variable between groups. Those of *Guimaraesiella* s. str. (Figs 357–359), the *Gu. cicchinoi* group (Fig. 365), and *Gu. pandolura* (Figs 373–375) are simple, with much reduced mesosomal lobes, and thus unlike those of any of the genera mentioned previously in this diagnosis, but similar to those of *Traihoriella* (Figs 266–268, 273–275). There are no consistent and significant differences between the male genitalia of *Traihoriella* and these groups of *Guimaraesiella*, but the two genera are easily separated by non-genitalic characters. For instance, apart from the *Gu. cicchinoi* group (Fig. 361), the marginal carina of these *Guimaraesiella* (e.g. Fig. 356) is completely interrupted at least submedianly, and a dorsal preantennal suture is present, whereas in *Traihoriella* (Figs 265, 272) the marginal carina is uninterrupted, and there is no suture. Even in the *Gu. cicchinoi* group, there is a small suture, and the marginal carina is interrupted partially submedianly.

The male genitalia of the *Guimaraesiella diaprepes* group (Fig. 369) are similar to those of the *Rostrinirmus raji* species group (Figs 441–443), and if more species are discovered that belong to these groups, they may prove to be inseparable on the male genitalia alone. However, *Rostrinirmus* is separated from *Gu. diaprepes* on the characters mentioned above, and there are no great similarities between the male genitalia of *Gu diaprepes* and those of the *Ro. ruficeps* species group (Figs 448–450).

The male genitalia of the *Guimaraesiella sehri* group (Fig. 366) are similar to those of some *Nemuus* (Figs 350–352). The mesosome of both groups have distally fused mesosomal lobes, a clearly ventral gonopore, large triangular nodi on the distal mesosomal lobes, at least one lateral *pmes* microseta, proximal mesosomes that overlap with the basal apodeme, and similar shapes of the parameral heads. However, the two groups are separated by non-genital characters: antennae sexually dimorphic in *Nemuus* (Figs 348–349) but not in the *Gu. sehri* group; female subgenital plate without deep notch on distal margin in the *Gu. sehri* group, but with such notch in *Nemuus* (Fig. 353); premarginal carina present in the *Gu. sehri* group, but absent in *Nemuus* (Fig. 348); *psps* and (in males) *aps* present on tergopleurites II–III in *Nemuus* (Figs 346–347), but not in the *Gu. sehri* group; accessory ventral setae on at least segments III–VI in *Nemuus* (Figs 346–347), but no such setae in the *Gu. sehri* group.

No genus treated here is particularly similar to the *Guimaraesiella sexmaculata* group in the male genitalia (Fig. 368). There are superficial similarities between the male genitalia of this group and *Melibrueelia*, in that both groups have extensive rugose areas on the ventral mesosome, a narrowed proximal mesosome, and relatively short parameres, but the mesosomal lobes of *Melibrueelia* are fused distally whereas those of the *Gu. sexmaculata* group are divided distally, and the proximal mesosome is not trapezoidal in the *Gu. sexmaculata* group as it is in *Melibrueelia*. Non-genitalic characters also separate the two groups, as well as separating *Melibrueelia* from *Guimaraesiella* in general: antennae are sexually dimorphic in *Melibrueelia*, but this is only very rarely the case in *Guimaraesiella*; *aps* are present in male *Melibrueelia* on tergopleurites III–IV, but never present on tergopleurite III in *Guimaraesiella*, and present on tergopleurite IV only in the *Gu. brunneinucha* and *Gu. pandolura* groups; the female subgenital plate may form a cross-piece in *Guimaraesiella*, and in both the *Gu. brunneinucha, Gu. sehri,* and *Gu. cicchinoi* groups this cross-piece reaches the lateral ends of the vulval margin, however the cross-piece is never as wide as in *Melibrueelia*, and of all the groups of *Guimaraesiella* that have extensive cross-pieces, only members of the *Gu. cicchinoi* group have reticulations of the female subgenital plate.

No species treated here has male genitalia similar to those found in the *Guimaraesiella brunneinucha* group (Fig. 367). This group is separated from other genera by the non-genitalic characters detailed above.

Description. ***Both sexes***. Head shape variable (Figs 356, 372), generally pentagonal or trapezoidal, in some species bulb-shaped. Marginal carina interrupted at least submedianly (Figs 356, 361–364, 372); may be interrupted laterally (Fig. 372); median section may be dorsally and posteriorly displaced or absent at osculum. Dorsal preantennal suture variable, from virtually non-existent (Fig. 361) to fully encircling a dorsal anterior plate (Fig. 372); in Old World species it generally reaches the *ads* but is not transversally continuous posterior to this (Fig. 356); in New World species, particularly from the Neotropics, complete encircling of dorsal anterior plate (Fig. 364) is more common. Ventral carinae often clearly continuous with marginal carina. Ventral anterior plate present or absent. Head setae as in Fig. 356; *as3* absent. Coni variable. Antennae monomorphic in most species [(but see *Guimaraesiella menuraelyrae* (Coinde, 1854)]. Temporal carinae generally not visible; *mts3* only macrosetae. Gular plate variable.

Prothorax rectangular (Figs 354–355, 370–371); *ppss* on postero-lateral corner. Proepimera variable, median ends generally hammer- or hook-shaped. Pterothorax rounded pentagonal, with widely divergent lateral margins and rounded posterior margin. Meso- and metasterna not fused, each with 1 seta on postero-lateral corners on each side. Metepisterna with blunt median ends, in some species associated with swollen metepimeron. *mms* widely separated medianly. Leg chaetotaxy as in Fig. 25, except *fI-p2–4* absent; *fI-v4* absent in some species (e.g. *Gu. papuana*), but present in other species (e.g. *Gu. pandolura*); other patterns may exist within genus.

Abdomen slender to oval (Figs 354–355, 370–371). Abdominal chaetotaxy as in Table 2 (but see Table 10 for some known variations). Tergopleurites rectangular or bluntly triangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly to moderately separated medianly. Sternal plates medianly continuous, rectangular, do not approach pleurites. Pleural incrassations typically moderate. Re-entrant heads small to moderate. Male subgenital plate triangular to T-shaped, reaching posterior margin of abdomen. Female subgenital plate roughly triangular, approaching or reaching vulval margin but often not flaring into cross-piece (Figs 360, 376). Members of at least the *Guimaraesiella sehri*, *Gu. brunneinucha*, and *Gu. cicchinoi* species groups have complete cross-pieces, and members of the *Gu. sexmaculata* species group have lateral submarginal bulges. Vulval margin (Figs 360, 376) with slender *vms*, thorn-like *vss*; *vos* follow lateral margins of subgenital plate; distal *vos* approaching or located median to *vss*.

TABLE 10. Chaetotaxy of abdominal segments II–VIII of some *Guimaraesiella*. Trichoid setae of segment VIII are present in all species, and are not listed. Sets of setae differing from those of *Gu. papuana* are highlighted in **bold**. Material examined from all species is from their respective type hosts. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	Sex	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
Gu. papuana	M	IV–VIII	V–VII	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VIII	–	II–VIII	II–VI
Gu. diaprepes	M	IV–VIII	V–VII	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	**IV–VII**	–	II–VIII	II–VI
Gu. menuraelyrae	M	IV–VIII	**IV–VII**	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	IV–VIII	–	II–VIII	II–VI
Gu. pandolura	M	IV–VIII	**VI–VII**	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	**VI–VII**	IV–VIII	–	II–VIII	II–VI
Gu. polyglotta	M	IV–VIII	**IV–VII**	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	**IV–VII**		II–VIII	II–VI
Gu. sueta	M	IV–VIII	V–VII[1]	IV–VIII	–	II–VIII	II–VI
	F	IV–VIII	–	**V–VIII**	–	II–VIII	II–VI

[1] Specimens from neotropic trogons have 2 *aps* on each side on at least some segments.

Basal apodeme trapezoidal to more or less rectangular, in some species constricted at mid-length (Figs 357, 365–369, 373). Proximal mesosome small. Mesosomal lobes variable between species groups (Figs 358, 365–369, 374). Up to 3 *ames* sensilla anterior to gonopore; 2 *pmes* microsetae typically on lateral margins of mesosome; in *Guimaraesiella sexmaculata* species group (Fig. 368) and *Gu. diaprepes* species group (Fig. 369) the *pmes* are sensilla and located distal to gonopore, not on lateral margins. Parameral heads (Figs 359, 375) simple, folded dorsally, overlapping with mesosome. Parameral blades simple, often lobe-like or sabre-shaped; *pst1* sensillus; *pst2* microseta.

Morphological variation. *Guimaraesiella* is more morphologically variable than any other genus treated here, and genetic data (Bush *et al.* 2016) suggests that it may be paraphyletic. Several subgroups can be recognised, but we do not propose any species-groups here, as the taxonomy and morphology of the group is very confusing, we have little genetic data to help understand the morphological data, and the wide host relationships of many species (see Bush *et al.* 2016) suggests that many poorly described species may be misidentified from available slide-mounted material. Despite all of this, there are some groups that can be identified and delimited.

Species of *Guimaraesiella* from the Trogoniformes were nested deeply within the clade of *Guimaraesiella* in the phylogeny of Bush *et al.* (2016: fig. 3, Clade A-3). However, the male genitalia (Fig. 365) of these species are more similar to those of *Traihoriella* (Figs 266, 273), and the structure of the preantennal area is different from all other *Guimaraesiella* (see Fig. 361). We here include *Gu. sueta* (Valim & Weckstein, 2011) and *Gu. cicchinoi* (Valim & Weckstein, 2011) in *Guimaraesiella* based on their placement in Bush *et al.* (2016). Ultimately, lice of the Brueelia-complex that occur on New World trogons may be considered as a separate genus. It is not clear whether these lice are closely related to *Brueelia*-complex lice from Asian trogons (here placed in genus *Harpactrox* **n. gen.**). These two groups are very dissimilar in the structure of the male genitalia, but there are a few similarities in the preantennal area, e.g. the marginal carina is largely uninterrupted in both groups (Figs 248, 255, 260, 361).

The clade of *Guimaraesiella* that is primarily associated with Dicruridae (*Gu. sexmaculata* group) was separated from the "core *Guimaraesiella*" in the phylogeny of Bush *et al.* (2016: fig. 3, clades A–C) by the genus *Priceiella* **n. gen.** Each of the three clades were strongly supported (≥ 99% Bayesian Posterior Probabilities, BPP), however the topological relationships between these clades were not. More recently, a study with increased taxon sampling and sequences from additional genes has reconstructed a phylogeny of the *Brueelia*-complex (Gustafsson & Bush unpublished data). This recent study strongly supports reciprocal monophyly of the *Gu. sexmaculata* group and the core *Guimaraesiella* together (≥97% BPP), as well as the monophyly and placement of *Priceiella* as sister to these clades of *Guimaraesiella* (≥94% BPP). This topology is also strongly supported by morphological differences. Specifically, *Priceiella* is easily separated from *Guimaraesiella* by abdominal chaetotaxy, preantennal structure, male genitalia, shape of abdominal plates, and other characters (see *Priceiella*, above). Including *Priceiella* in *Guimaraesiella* would make the latter extremely diverse. In contrast, the *Gu. sexmaculata* group has some unique morphological characters but is more similar to core *Guimaraesiella* than to *Priceiella*. Thus, we keep *Guimaraesiella dicruri* (Ansari, 1955b) and *Gu. sexmaculata* (Piaget, 1880) in *Guimaraesiella*.

Guimaraesiella from several genera of babblers, the *Gu. sehri* group, differ from other *Guimaraesiella* primarily in the shape of the male genitalia (Fig. 366). Two female specimens likely belonging to this group were included in the phylogeny of Bush *et al.* (2016: fig. 3, Clade A-5), where they were nested within *Guimaraesiella*; however no males were sequenced, and it is difficult to confirm the identification on females alone. Females of the *Gu. sehri* group have cross-pieces along the vulval margin connected to the subgenital plate, unlike *Guimaraesiella* s. str., which has no cross-piece (Fig. 360). The only previously described members of this species group are *Gu. sehri* (Ansari, 1955a) and *Gu. avinus* (Ansari, 1955a). It may be that these species also warrant recognition as a separate subgenus or genus.

Several New World species have aberrant male genitalia (Fig. 367), which are more reminiscent of *Olivinirmus* (particularly the *Ol. semiannulata* species group, Fig. 337). This group includes at least *Guimaraesiella incerta* (Cicchino, 1983), *Gu. cubana* (Cicchino, 1983), *Gu. brunneinucha* (Cicchino, 1983), *Gu. polyglotta* (Williams, 1983), and possibly *Gu. erythrophthalma* (Cicchino, 1983). Most of the specimens of this group we have studied are from the Mimidae and Emberizidae, but the group appears to be more widely distributed. In the phylogeny of Bush *et al.* (2016), this group was represented by two females, one from *Dumetella carolinensis* (Linnaeus, 1766) and one from *Arremon aurantiirostris* Lafresnaye, 1847. These two species were placed as a sister group to *Gu. antiqua* (Bush *et al.* 2016: fig. 3, Clade A-4), which is a typical *Guimaraesiella* based on male genitalia. We here include the species of this group in *Guimaraesiella*. A more exhaustive genetic survey of the New World

Guimaraesiella should be conducted. It should be noted that there are similarities in the male genitalia between mainly South American *Guimaraesiella* and the f *Guimaraesiella* group from the babblers. For instance, both groups have a clearly ventral gonopore (Figs 366, 367), distally fused mesomeral lobes, and nodi on the distal margin of the mesosome. Notably, these two groups were also placed close together in the phylogeny of Bush *et al.* (2016).

Guimaraesiella diaprepes (Kellogg & Chapman 1902) has aberrant male genitalia (Fig. 369), which are intermediate between those of the *Gu. sexmaculata* group (Fig. 368) and those of *Gu. papuana* (Fig. 357). No member of this group was included in the phylogeny of Bush *et al.* (2016), and non-genital characters of *Gu. diaprepes* are very similar to *Gu. papuana*. The geographical isolation of the host of *Gu. diaprepes* in Hawaii may indicate that this species belongs to a separate subgenus or genus, but too little is known about this monotypic group to justify the erection of a higher taxon at this time.

Host distribution. Species of *Guimaraesiella* live on a wide range of mainly small to large-bodied passerines, and many species of *Guimaraesiella* parasitise multiple hosts (Johnson *et al.* 2002a; Bush *et al.* 2016; Light *et al.* 2016). In addition to the Passeriformes, we also include two species known from Trogoniformes.

Geographical range. Together with *Sturnidoecus, Guimaraesiella* is the only truly global genus treated here, and is known from all continents except Antarctica.

Remarks. The genus *Guimaraesiella* was established by Eichler (1949: 11) for *Docophorus subalbicans* Piaget, 1885. The only morphological character Eichler (1949) mentions is the "narrowly triangular and anteriorly notched clypeus". Our material examined from the type host of *Gu. subalbicans*, *Paradisaea minor* Shaw, 1809, corresponds to Piaget's (1885) illustrations. Particularly, the elongated head shape seen in Piaget's (1885: plate I, fig. 8) illustration is typical of material from the Paradisaeidae. Despite the short and vague original description offered by Eichler (1949), *Guimaraesiella* is the valid name for this group.

Xobugirado Eichler, 1949 was erected for *Nirmus submarginellus* Nitzsch [in Giebel, 1866] [= *Nirmus menuraelyrae* Coinde, 1859], supposedly differentiated from *Brueelia* by Piaget (1885: 22). However, it is unclear what characters Eichler referred to as he simply stated: "durch die l. cit. beschriebenen Kennzeichen von *Brüelia* unterschieden" (Eichler 1949: 13). Hopkins & Clay (1952: 362) considered *Xobugirado* to be technically valid, as Eichler placed only a single species in *Xobugirado* and implied that the "generic characters are stated to be those of the species" (Hopkins & Clay 1952: 362). Mey & Barker (2014: 100) suggested that article 13.1 of the Code (International Commission on Zoological Nomenclature 1999) would invalidate *Xobugirado* on the grounds that Eichler (1949) never stated which characters in Piaget's (1885) description separate *Xobugirado* from *Brueelia*. Piaget's (1885) description naturally contains no such statement, as *Brueelia* was not described until over 40 years later. However, although brief, Piaget's (1885) description of *Nirmus submarginellus* does contain several characters that would separate it from *Brueelia brachythorax*, most significantly the head shape and the abdominal chaetotaxy. We therefore agree with Hopkins & Clay (1952) that *Xobugirado* Eichler, 1949 is an available name.

Nitzschinirmus menuraelyrae—as named by Mey & Barker (2014: 101)—was included in the phylogeny of Bush *et al.* (2016) placed close to the type species of *Guimaraesiella* and deeply nested within this genus, suggesting that the genus *Nitzschinirmus* Mey & Barker, 2014 is a synonym of *Guimaraesiella*. Even if *Nirmus menuraelyrae* proves separable from *Guimaraesiella*, *Nitzschinirmus* Mey & Barker, 2014 will still be a junior synonym of *Xobugirado* because these two latter genera share the same type species.

The male genitalia of *Gu. menuraelyrae* (see Mey & Barker 2014: fig. 39) are typical for *Guimaraesiella*, and the preantennal structure (*ibid*, fig. 36) is inseparable from *Guimaraesiella*. There are some differences in the abdominal chaetotaxy (Table 10) of *Gu. menuraelyrae* particularly the high number of pleural setae on segment XI, the presence of more than one *sts* on sternal plate VI in some specimens examined, and the two *aps* on male tergopleurites V–VII. *Guimaraesiella menuraelyrae* also have sexually dimorphic antennae and a thickened vulval margin, but no cross-piece. It should be noted that the illustration of the female genitalia in Mey & Barker (2014: Fig. 41) does not inlcude the subgenital plate, which is shaped approximately as in *Gu. papuana* (Fig. 360) but with reticulations at least in the central part. The thickening of the vulval margin is also seen in some other species of *Guimaraesiella* (e.g. *Gu. papuana*, Fig. 360, dotted lines), although it not as extensive as in *Gu. menuraelyrae*. Sexual dimorphism in the antennae alone is not sufficient to separate a genus, and several genera treated here (e.g. *Priceiella* **n. gen.**) contain species both with and without sexual dimorphism in the antennae. The differences in abdominal chaetotaxy between *Gu. menuraelyrae* and other *Guimaraesiella* are intriguing, but these characters do not justify the elevation above the level of species group.

Allobrueelia Eichler, 1951b was erected for the "*marginalis*-Typ" of *Brueelia* on thrushes, based on head shape, wide pleurites, and male genitalia. Martín-Mateo (2009: 339) claimed that Eichler (1951b) did not provide a description or indication for *Allobrueelia* and *Turdinirmus* when he named them, which would make them unavailable until Złotorzycka (1964a) provided such a description. In the case of *Allobrueelia*, Eichler (1951b: 8) stated that this genus was erected for the "*marginalis*-Typ sensu meo", which are characterized by their head shape and other "structural peculiarities" shared with *Allobrueelia amsel*. Eichler (1951b) illustrated the male genitalia of this species, and noted that it had a "somewhat bell-like head-shape" and "very broad pleurites". This description is admittedly short and uninformative, but does render the name available. The same characters are repeated almost verbatim by Eichler (1952), and Złotorzycka (1964a) only added that these species also have a "broken zygoma" (= interrupted ventral carina). This character is shared by all genera treated here, and is of little use in determining the affinities of these species. The correct author of *Allobrueelia* is therefore Eichler (1951b). The illustrations of the male genitalia by Eichler (1951b) and studies of the type species of *Allobrueelia* (including the holotype), as well as several other species placed in that genus by Eichler (1951b) and Złotorzycka (1964a) show that almost all of them are members of *Guimaraesiella*, although *Allobrueelia daumae* is a *Turdinirmus* and *Allobrueelia marginella*, tentatively included by Eichler (1952), is a *Motmotnirmus*. We therefore regard *Allobrueelia* as a junior synonym of *Guimaraesiella*.

Based on a single female specimen, Złotorzycka (1964a: 263) asserted that her new genus *Allonirmus* was markedly distinct from *Allobrueelia*. However, she noted that the head of *Allonirmus* was like that of *Allobrueelia*, and that the type species of *Allonirmus*—*Nirmus tristis* Giebel, 1874—had previously been placed in *Allobrueelia* by Bálat (1955), but Złotorzycka (1964a) did not provide characters to separate *Allonirmus* from *Allobrueelia* or from *Guimaraesiella*. The specimen named as "*Allonirmus tristis*" at the MFNB examined by Złotorzycka, as well as all other material from *Erithacus rubeculae* that we have examined, belong to *Guimaraesiella*. We therefore regard *Allonirmus* as a junior synonym of *Guimaraesiella*.

Included species
Guimaraesiella abbasi (Carriker, 1956a: 119) **n. comb.** [in *Brueelia*]
Guimaraesiella addoloratoi* (Cicchino, 1986b: 92) **n. comb. [in *Brueelia*]
Guimaraesiella amsel* (Eichler, 1951b: 9) **n. comb. [in *Turdinirmus*]
Guimaraesiella antiqua* (Ansari, 1956c: 122) **n. comb. [in *Brueelia*] **[1]**
    Brueelia longifrons Ansari, 1956c: 121 *nec Brueelia longifrons* Carriker, 1956a: 81
Brueelia zeropunctata Ansari, 1957d: 270 **new synonymy**
Guimaraesiella atricapilla* (Cicchino, 1983: 290) **n. comb. [in *Brueelia*]
Guimaraesiella avinus* (Ansari, 1956a: 141) **n. comb. [in *Brueelia*]
Guimaraesiella bisetacea* (Piaget, 1885: 27) **n. comb. [in *Nirmus*]
    Nirmus bisetosus Piaget, 1885: plate III **new synonymy**
Guimaraesiella brunneinucha* (Cicchino, 1983: 286) **n. comb. [in *Brueelia*]
Guimaraesiella busharae* (Ansari, 1955a: 54) **n. comb. [in *Brueelia*]
Guimaraesiella callaeincola* (Valim & Palma, 2015) **n. comb. [in *Brueelia*]
Guimaraesiella capitus (Ansari, 1955a: 56) **n. comb.** [in *Brueelia*]
Guimaraesiella cicchinoi* (Valim & Weckstein, 2011: 6) **n. comb. [in *Brueelia*]
Guimaraesiella chiguanca* (Cicchino, 1986b: 93) **n. comb. [in *Brueelia*]
Guimaraesiella concava* (Eichler [in Niethammer], 1956: 124) **n. comb. [in *Turdinirmus*]
Guimaraesiella cubana (Cicchino, 1983: 293) **n. comb.** [in *Brueelia*] **[2]**
Guimaraesiella cucphuongensis (Najer & Sychra [in Najer *et al.*], 2012b: 44) **n. comb.** [in *Brueelia*]
Guimaraesiella diaprepes* (Kellogg & Chapman, 1902: 158) **n. comb. [in *Nirmus*] **[3]**
Gumaraesiella dicruri* (Ansari, 1955b: 53) **n. comb. [in *Brueelia*]
Guimaraesiella erythrophthalma (Cicchino, 1983: 288) **n. comb.** [in *Brueelia*] **[4]**
Guimaraesiella flavala (Najer & Sychra [in Najer *et al.*], 2012b: 42) **n. comb.** [in *Brueelia*]
Guimaraesiella galapagensis* (Kellogg & Kuwana, 1902: 464) **n. comb. [in *Docophorus*]
    Nirmus galapagensis Kellogg & Kuwana, 1902: 471
Guimaraesiella granatensis (Soler-Cruz, Rodríguez, Florido-Navío & Muñoz Parra, 1987: 243) **n. comb.** [in *Maculinirmus*]

Guimaraesiella haftorni (Balát, 1981a: 280) **n. comb.** [in *Allobrueelia*]
Guimaraesiella ilmasae* (Ansari, 1956c: 139) **n. comb. [in *Brueelia*]
Guimaraesiella incerta (Cicchino, 1983: 283) **n. comb.** [in *Brueelia*]
Guimaraesiella insolita (Cicchino, 1983: 284) **n. comb.** [in *Brueelia*]
Guimaraesiella interposita* (Kellogg, 1899: 23) **n. comb. [in *Nirmus*]
Guimaraesiella lais (Giebel, 1874: 143) **n. comb.** [in *Nirmus*]
Guimaraesiella magellanica* (Cicchino, 1986b: 96) **n. comb. [in *Brueelia*]
Guimaraesiella marginata* (Burmeister, 1838: 429) **n. comb. [in *Nirmus*]
  Nirmus marginalis Burmeister, 1838: 431
Guimaraesiella melanococa (Carriker, 1903: 141) **n. comb.** [in *Nirmus*]
Guimaraesiella menuraelyrae* (Coinde, 1859: 424) **n. comb. [in *Nirmus*]
  Nirmus submarginellus Nitzsch [in Giebel], 1866: 368
  Docophorus paraboliceps Piaget, 1890: 224
  Nirmus menura Le Souëf & Bullen, 1902: 157
  Degeeriella submarginalis Johnston & Harrison, 1912: 11
Guimaraesiella myiophoneae* (Clay, 1936: 911) **n. comb. [in *Degeeriella*]
Guimaraesiella neodaumae* (Najer & Sychra [in Najer *et al.*], 2012c: 68) **n. comb. [in *Brueelia*]
Guimaraesiella nigrosignata* (Piaget, 1880: 157) **n. comb. [in *Nirmus*]
Guimaraesiella niquitaoi* (Carriker, 1963: 308) **n. comb. [in *Brueelia*]
Guimaraesiella nitzschii* (Ponton, 1871: 8) **n. comb. [in *Nirmus*] **[5]**
Degeeriella pontoni (Johnston & Harrison, 1912: 12)
Guimaraesiella oudhensis* (Ansari, 1956c: 130) **n. comb. [in *Brueelia*]
Guimaraesiella pallida* (Piaget, 1880: 144) **n. comb. [in *Nirmus*]
Guimaraesiella pallidula (Harrison, 1916: 120) **n. comb.** [in *Degeeriella*]
  Nirmus pallidus Osborn, 1896: 227 *nec Nirmus pallidus* Piaget, 1880: 144
Guimaraesiella pandolura* **new species
***_Guimaraesiella papuana_ (Giebel, 1879: 475) [in _Docophorus_] [6]**
  Docophorus subalbicans Piaget, 1885: 6
  Docophorus subalbicans var. *alpha* Piaget, 1885: 6 **new synonymy**
  Docophorus subalbicans var. *beta* Piaget, 1885: 7
  Guimaraesiella longiabdominalis Eichler, 1949: 12 **new synonymy**
  Guimaraesiella rotundifrontalis Eichler, 1949: 12 **new synonymy**
Guimaraesiella persimilis* (Cicchino, 1987: 35) **n. comb. [in *Brueelia*]
Guimaraesiella pointu* (Ansari, 1955a: 52) **n. comb. [in *Brueelia*]
Guimaraesiella polyglotta* (Williams, 1983: 602) **n. comb. [in *Brueelia*] **[7]**
Guimaraesiella ptiliogonis* (Carriker, 1903: 143) **n. comb. [in *Nirmus*]
Guimaraesiella rhamphocelii (Cicchino, 1983: 290) **n. comb.** [in *Brueelia*]
Guimaraesiella saghirae* (Ansari, 1955a: 55) **n. comb. [in *Brueelia*]
Guimaraesiella saltatora* (Carriker, 1956a: 119) **n. comb. [in *Brueelia*]
Guimaraesiella satelles* (Nitzsch [in Giebel], 1866: 365) **n. comb. [in *Nirmus*] **[8]**
Guimaraesiella schistacea (Cicchino, 1983: 288) **n. comb.** [in *Brueelia*]
Guimaraesiella sehri* (Ansari, 1955b: 53) **n. comb. [in *Brueelia*]
Guimaraesiella setifer* (Piaget, 1885: 8) **n. comb. [in *Docophorus*]
Guimaraesiella sexmaculata* (Piaget, 1880: 666) **n. comb. [in *Nirmus*]
Guimaraesiella similis (Cicchino, 1986b: 96) **n. comb.** [in *Brueelia*]
Guimaraesiella subacuta (Piaget, 1880: 137) **n. comb.** [in *Nirmus*]
Guimaraesiella sueta* (Valim & Weckstein, 2011: 3) **n. comb. [in *Brueelia*]
Guimaraesiella taulis* (Eichler [in Niethammer], 1956: 134) **n. comb. [in *Brueelia*] **[9]**
Guimaraesiella tovornikae* (Balát, 1981a: 281) **n. comb. [in *Allonirmus*] **[10]**
  Nigronirmus atricapillae Soler-Cruz, Alcántara-Ibañez & Florido-Navío, 1984: 147 **new synonymy**
  Brueelia neoatricapillae Price, Hellenthal & Palma, 2003: 153 **new synonymy**
Guimaraesiella tristis* (Giebel, 1874: 143) **n. comb. [in *Nirmus*]

***Guimaraesiella turdinulae* (Ansari, 1956c: 126) [in *Brueelia*] **n. comb.**

Brueelia turdinulae eternitatus Ansari, 1956c: 129

Allobrueelia abluda Złotorzycka, 1964a: 265

***Guimaraesiella viscivori* (Denny, 1842: 50) **n. comb.** [in *Nirmus*]

***Guimaraesiella wallacei* (Mey & Barker, 2014: 75) **n. comb.** [in *Brueelia*]

[1] Bush *et al.* (2016) showed that *Guimaraesiella* from *Catharus* thrushes across North and South America are more or less genetically similar, confirming the findings of Bueter *et al.* (2009). The only tangible difference between *Br. zeropunctata* and *Br. antiqua* given by Ansari (1956c) is the number of setae of the vulval margin and the shape of the subgenital plate. These characters exhibit considerable intraspecific variation, which we do not consider sufficient to separate these species. Therefore, we place *Br. zeropunctata* as a junior synonym of *Br. antiqua*.

[2] This species has an aberrant male genitalia for a *Guimaraesiella*, and may belong to a separate subgenus or even a genus. Since we have not examined any material of this species, we tentatively place it in *Guimaraesiella* based on the structure and chaetotaxy of the preantennal area, the abdominal chaetotaxy, and the relative similarities of some elements of the male genitalia.

[3] Mey & Barker (2014: 93) suggested that *Brueelia diaprepes* does not belong to *Brueelia* s. lat., but rather to *Philopterus* or *Philopteroides* Mey 2004. We examined the lectotype and paralectotypes and conclude that, while *Br. diaprepes* does have somewhat aberrant male genitalia for a *Guimaraesiella* (Fig. 369), it does belong to the broad concept of *Guimaraesiella* presented here. Ultimately, additional collections from Hawaiian honeycreepers may reveal that this species should be placed in a separate genus.

[4] This species was not listed in Price *et al.* (2003).

[5] Ponton's (1871) illustration of *Nirmus nitzschii* is not detailed, but appears similar in shape and proportions to specimens of *Guimaraesiella* that we have seen from the type host, hence we include this species in *Guimaraesiella*. Johnson & Harrison (1912) considered *Nirmus nitzschii* Ponton, 1871, to be preoccupied by *Nirmus nitzschi* Giebel, 1866, and replaced it with *Degeeriella pontoni* Johnston & Harrison, 1912. However, Giebel (1866) did not provide any description or illustration of *Nirmus nitzschi* which is thus an unavailable *nomen nudum*. Giebel (1874) made *Nirmus nitzschi* available by providing a short description, but it became automatically an invalid junior homonym of *Nirmus nitzschii* Ponton, 1871. Hopkins & Clay (1952: 293, followed by Price *et al.* 2003: 219) placed *Ni. nitzschi* [sic] Ponton, 1871 in *Picicola* Clay & Meinertzhagen, 1938 and correctly considered *De. pontoni* Johnston & Harrison, 1912, to be a junior synonym. No reason for placing this species in *Picicola* was given, but Hopkins & Clay (1952) may have taken Johnston & Harrison (1912) implication that Giebel's (1874) species from the same host had a "bluntly pointed" anterior end of the head, making it similar to many species of *Picicola*. However, this feature does not appear in the illustration of this species in Ponton (1871), which has a gently rounded anterior margin of the head, equal to material we have examined from other ptilonorhynchid hosts. Although the type material of *Nirmus nitzschii* Ponton, 1871 is lost (Williams 1979: 640), we tentatively placed it in *Guimaraesiella*.

[6] See redescription below for comments on new synonymies.

[7] Cicchino (1986c) placed *Br. polyglotta* as a junior synonym of *Brueelia brunneinucha*. However, differences in the original descriptions suggest that they may be different species. For instance, the male *Gu. brunneinucha* has *ss* on tergopleurites II–III and VIII, which are absent in *Gu. polyglotta*. Also *Gu. polyglotta* has *pns* as microsetae, but *Gu. brunneinucha* has *pns* are sensilla. We have not examined type material from either of these two species, but consider these differences sufficient to retain both species as valid until a more thorough revision of the *Guimaraesiella* from members of Mimidae and Emberizidae can be made.

[8] *Guimaraesiella satelles* Nitzsch [in Giebel], 1866, was briefly described as having an "elongatedly heart-shaped" head (Giebel 1874: 133), which is similar to that of *Gu. papuana*, but the rest of the description of *Gu. satelles* (in Giebel 1874) is insufficient to determine whether these species should be synonymized. Giebel's material is likely lost (Clay & Hopkins 1955: 50), but we have examined three individuals (NHML, BM-1934-70) from *Ptiloris paradiseus* Swainson, 1825, the type host of *Gu. Satelles*. These specimens are not the same species as the material from other Paradisaeidae. Whether this material is the same as Giebel's *Gu. satelles* or not is impossible to establish with certainty. For the present, we consider *Gu. satelles* and *Gu. papuana* to be separate species.

[9] The holotype of this species is in very poor condition, and our placement of *Br. taulis* in *Guimaraesiella* relies entirely on the mention of "islands" formed by the premarginal carina (Eichler [in Niethammer] 1956: 134), and what we can discern of the abdominal chaetotaxy in the holotype. The preantennal area is almost entirely obscured because of poor mounting, and being the holotype a female, there are no male genitalia to consider. Future collections from the type host of *Br. taulis* may reveal that this louse species belongs to another genus. Eichler [in Niethammer] (1956: 134) mentioned that it was close to *Br. tristis* (a *Guimaraesiella*), which he erroneously believed to be *Brueelia* s. str.

[10] Based on the original descriptions of *Nigronirmus atricapillae* Soler-Cruz *et al.*, 1984 and *Allonirmus tovornikae* Bálat, 1981a, both from the same type host, these species are inseparable. Soler-Cruz *et al.* (1984) did not refer to Bálat (1981a) and may have been unaware of his earlier description. Thus, the names *Br. atricapillae* (Soler-Cruz *et al.* 1984) and its new name *Br. neoatricapillae* Price *et al.*, 2003 are synonyms of *Gu. tovornikae* (Bálat, 1981a).

Guimaraesiella papuana **(Giebel, 1879)**

(Figs 354–360)

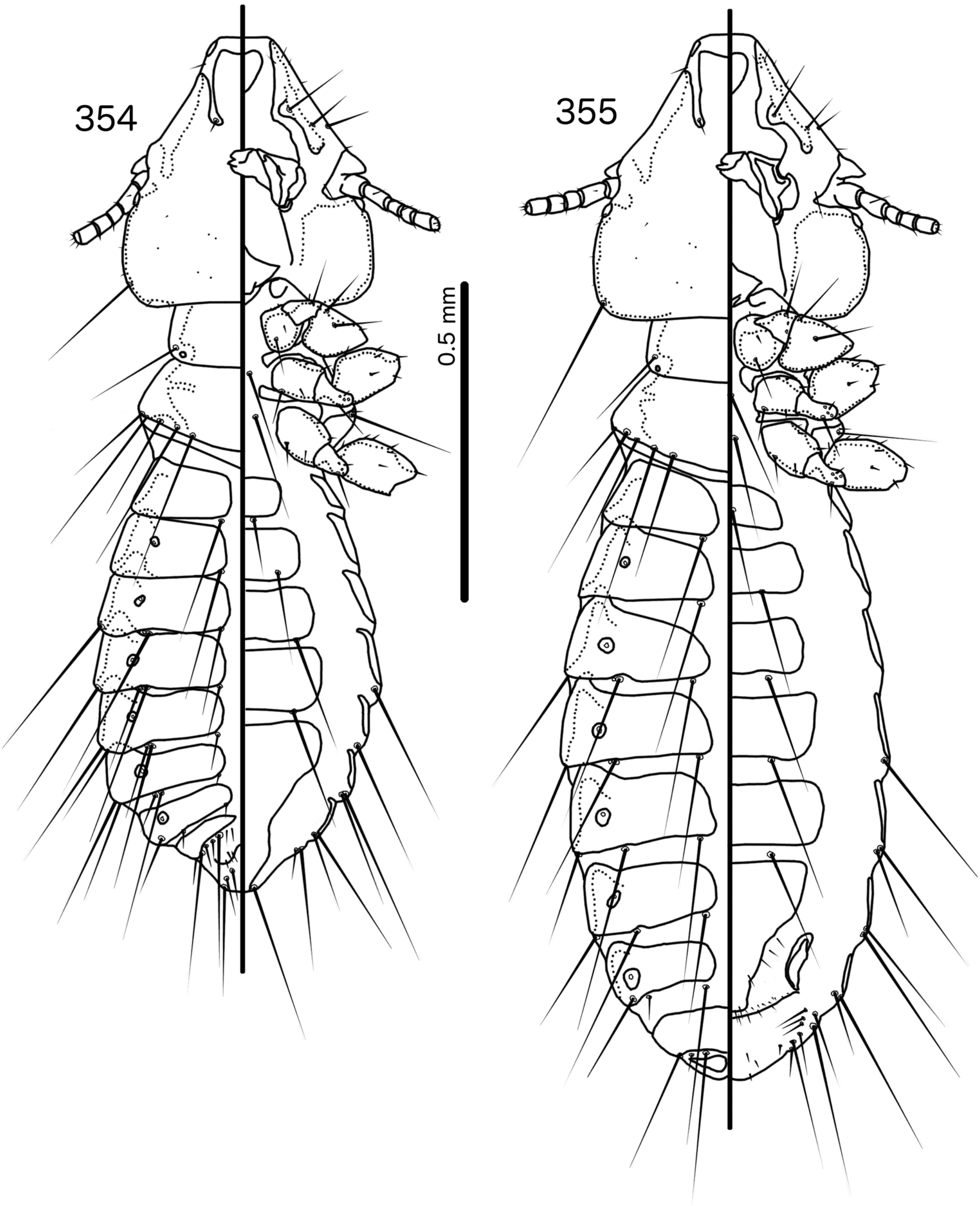
Docophorus papuanus Giebel, 1874: 475.
Docophorus subalbicans Piaget, 1885: 6.
Docophorus subalbicans var. *a* Piaget, 1885: 7.
Docophorus subalbicans var. *b* Piaget, 1885: 7.
Philopterus papuanus (Giebel, 1874); Harrison, 1916: 101.
Philopterus subalbicans (Piaget, 1885); Harrison, 1916: 105.
Guimaraesiella subalbicans (Piaget, 1885); Eichler, 1949: 11**.**
Guimaraesiella longiabdominalis Eichler, 1949: 12 **new synonymy.**
Guimaraesiella rotundifrontalis Eichler, 1949: 12 **new synonymy.**
Brueelia longiabdominalis (Eichler, 1949); Hopkins & Clay, 1952: 57**.**
Brueelia papuana (Giebel, 1874); Hopkins & Clay, 1952: 60.
Brueelia rotundifrontalis (Eichler, 1949); Hopkins & Clay, 1952: 61.
Brueelia subalbicans (Piaget, 1885); Hopkins & Clay, 1952: 61.
Brueelia subalbicans var. *a* (Piaget, 1885); Hopkins & Clay, 1952: 62 (as synonym of *Br. rotundifrontalis*) **new synonymy.**
Brueelia subalbicans var. *b* (Piaget, 1885); Hopkins & Clay, 1952: 62 (as synonym of *Br. longiabdominalis*) **new synonymy**
Brueelia subalbicans alpha (Piaget, 1885); Price *et al*. 2003: 158 (as synonym of *Br. rotundifrontalis*).
Brueelia subalbicans beta (Piaget, 1885); Price *et al*. 2003: 158 (as synonym of *Br. longiabdominalis*).

Type host. *Paradisaea minor* Shaw, 1809—lesser bird-of-paradise.
Type locality. "Südseeinseln"; New Guinea.
Other hosts. *Cicinnurus magnificus hunsteini* (A.B. Meyer, 1885)—magnificent bird-of-paradise **new host record.** *Paradisaea apoda novaeguineae* D'Albertis & Salvadori, 1879—greater bird-of-paradise **new host record.** *Paradisaea minor finschi* A.B. Meyer, 1885—lesser bird-of-paradise **new host record.** *Paradisaea raggiana augustaevictoriae* Cabanis, 1888—raggiana bird-of-paradise **new host record.** *Paradisaea raggiana raggiana* P.L. Sclater, 1873—raggiana bird-of-paradise **new host record.** *Paradisaea raggiana salvadorii* Mayr & Rand, 1935—raggiana bird-of-paradise **new host record.** *Paradisaea rubra* Daudin, 1800—red bird-of-paradise **new host record.** *Parotia sefilata* (Forster, 1781)—western parotia **new host record.** *Parotia lawesii* E.P. Ramsay, 1885—Lawes' parotia **new host record.** *Phonygammus keraudrenii purpureoviolaceus* A.B. Meyer, 1885—trumpet manucode **new host record.** *Colluricincla ferruginea clara* (A.B. Meyer, 1894)—rusty pitohui **new host record.** *Ptiloris magnificus magnificus* (Vieillot, 1819)—magnificent riflebird **new host record.**

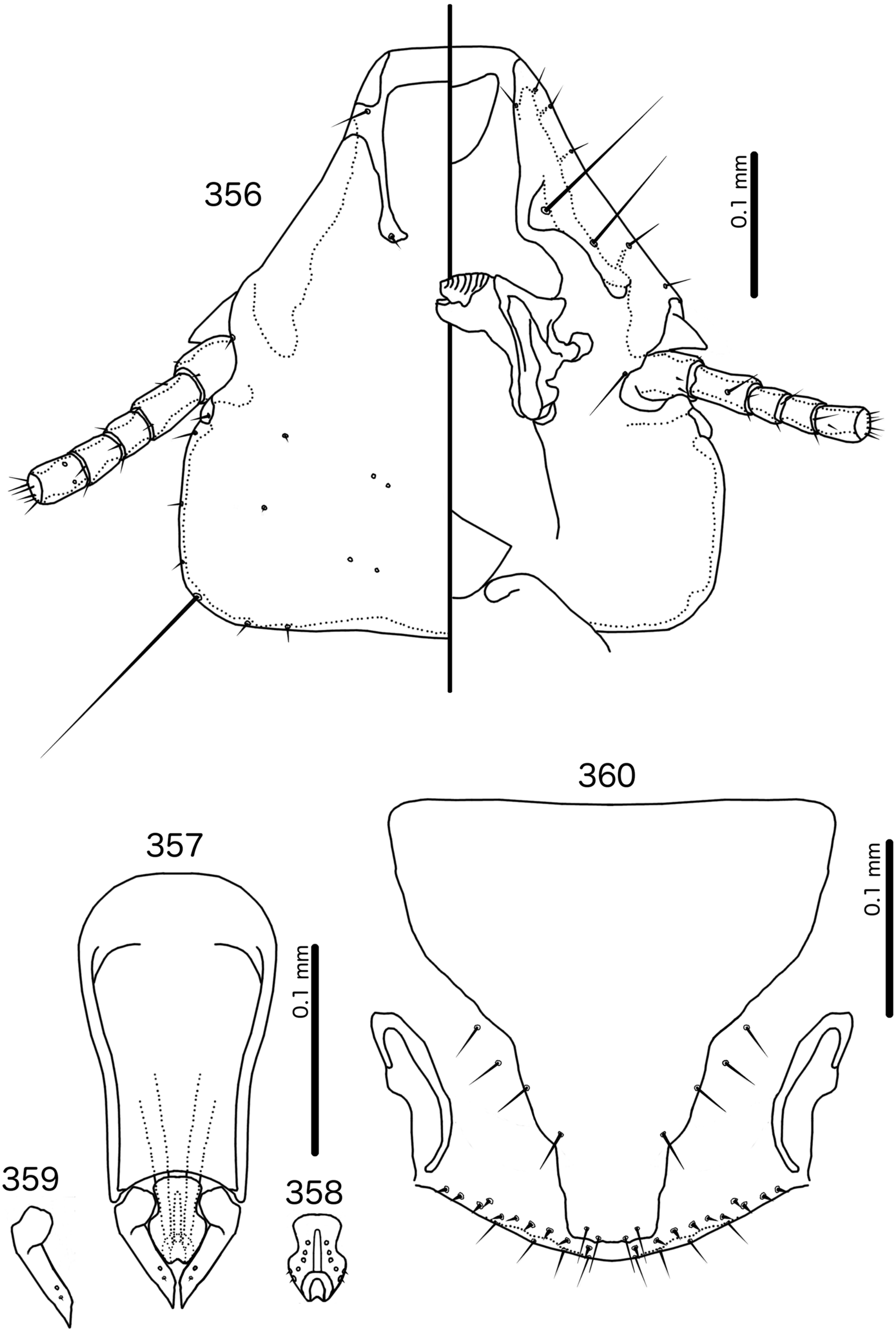
Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in Fig. 356; *ads* far posterior to *avs3*. Dorsal preantennal suture not medianly continuous posterior to dorsal anterior plate. Preantennal nodi small, triangular. Coni short, not or barely reaching distal margin of scapes. Pre- and postocular nodi both slender, not much wider than marginal temporal carina; *pos* located on postocular nodi. Gular plate broad, short, with median point. Thoracic and abdominal segments as in Figs 354–355. Proepimera and metepisterna both moderate, with blunt median ends. Meso- and metasterna weakly sclerotized, each with 1 seta on postero-lateral corners on each side. Pteronotum with 5 (rarely more) *mms* on each side in both sexes. Re-entrant heads of pleurites III-VI slender, translucent. All abdominal plates very pale.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 354. Subgenital plate with straight or concave lateral margins (Fig. 354). Male genitalia typical for genus (Fig. 357). Basal apodeme broader proximally. Proximal mesosome broad, blunt. Gonopore (Fig. 358) broadly open distally. Mesosomal lobes absent; up to 4 *ames* sensilla on each side in continuous, distally diverging rows anterior and lateral to gonopore; 2 *pmes* microsetae on lateral margins of mesosome. Parameral heads (Fig. 359) roughly quadratic. Parameral blades short, slender, pointed distally; *pst1–2* as in genus description. Measurements ex *Cicinnurus magnificus hunsteini* (n = 9): TL = 1.20–1.37; HL = 0.39–0.42; HW = 0.35–0.39; PRW = 0.22–0.24; PTW = 0.30–0.34; AW = 0.35–0.43. Ex *Colluricincla ferruginea clara* (n = 2 except n = 1 for TL): TL = 1.28; HL = 0.39–0.40; HW = 0.39–0.40; PRW = 0.22–0.23; PTW = 0.32–0.33; AW = 0.39–0.46. Ex *Parotia lawesii* (n = 11 except n = 8 for TL): TL = 1.23–1.38 (1.30); HL = 0.37–0.40 (0.39); HW = 0.35–0.38 (0.36); PRW = 0.21–0.23 (0.22); PTW = 0.30–0.32 (0.31); AW = 0.39–0.45 (0.42). Ex *Paradisaea apoda novaeguineae* (n = 4): TL = 1.28–1.41; HL = 0.41–0.44; HW = 0.39–0.41; PRW = 0.23–0.25; PTW = 0.31–0.34; AW = 0.40–0.47. Ex *P. minor finschi* (n = 9): TL = 1.35–1.60; HL = 0.41–0.46; HW = 0.37–0.43; PRW = 0.23–0.29; PTW = 0.31–0.37; AW = 0.41–0.52. Ex *P. raggiana augustaevictoriae* (n = 15): TL = 1.30–1.51 (1.37); HL = 0.40–0.45 (0.42); HW = 0.36–0.41 (0.39); PRW = 0.22–0.26 (0.24); PTW = 0.32–0.36 (0.33); AW = 0.43–0.48 (0.45). Ex *P. r. raggiana* (n = 7): TL = 1.32–1.51; HL = 0.42–0.46; HW = 0.37–0.42;

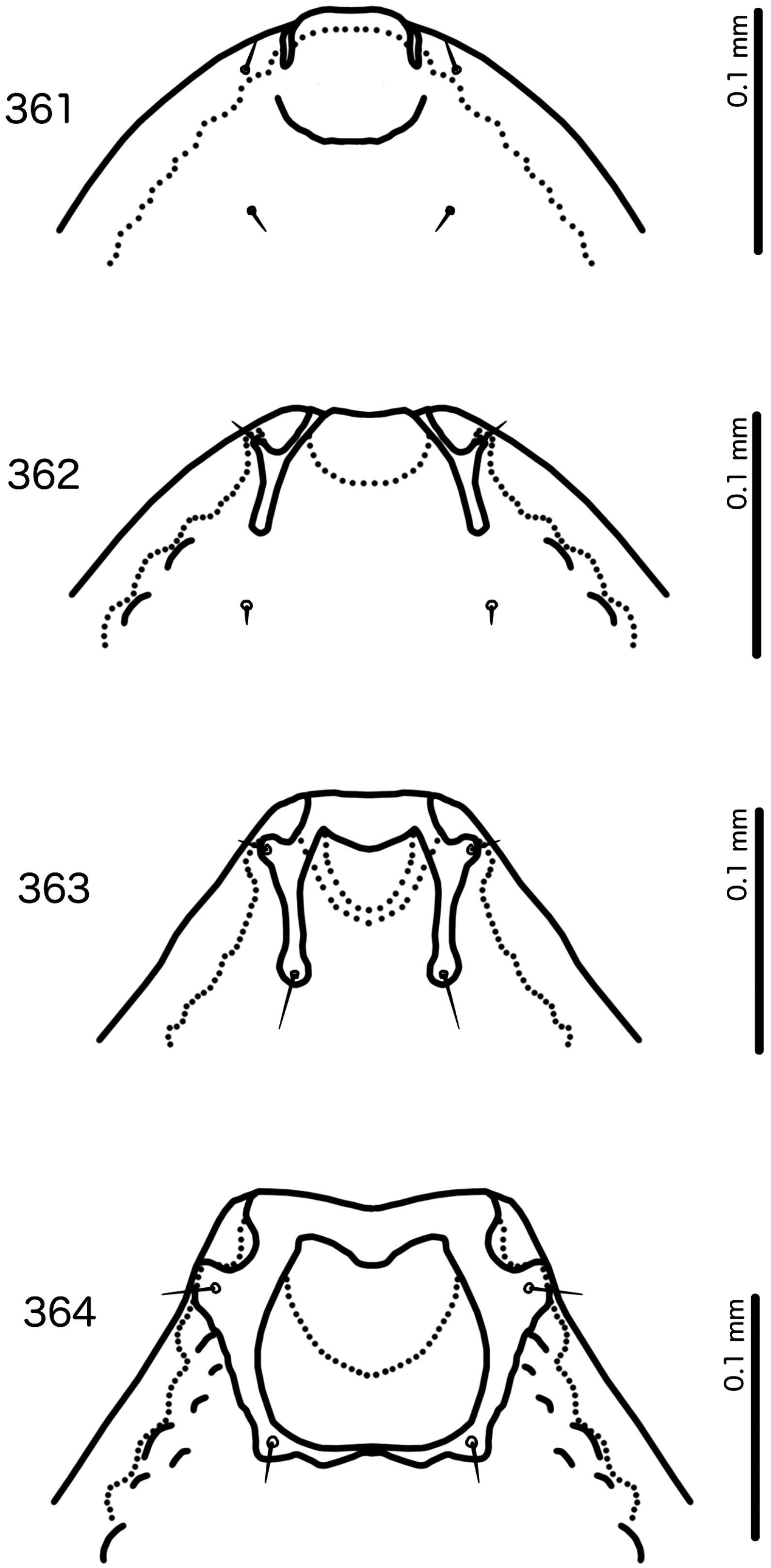
PRW = 0.24–0.26; PTW = 0.32–0.35; AW = 0.43–0.48. Ex *P. r. salvodorii* (n = 13): TL = 1.22–1.45 (1.37); HL = 0.38–0.45 (0.42); HW = 0.34–0.42 (0.39); PRW = 0.22–0.27 (0.24); PTW = 0.30–0.36 (0.34); AW = 0.36–0.46 (0.43). Ex *P. rubra* (n = 5): TL = 1.31–1.53; HL = 0.41–0.45; HW = 0.39–0.42; PRW = 0.23–0.24; PTW = 0.32–0.35; AW = 0.41–0.46. Ex *Ptiloris magnificus magnificus* (n = 9): TL = 1.31–1.51; HL = 0.40–0.45; HW = 0.36–0.42; PRW = 0.22–0.26; PTW = 0.32–0.36; AW = 0.39–0.47.



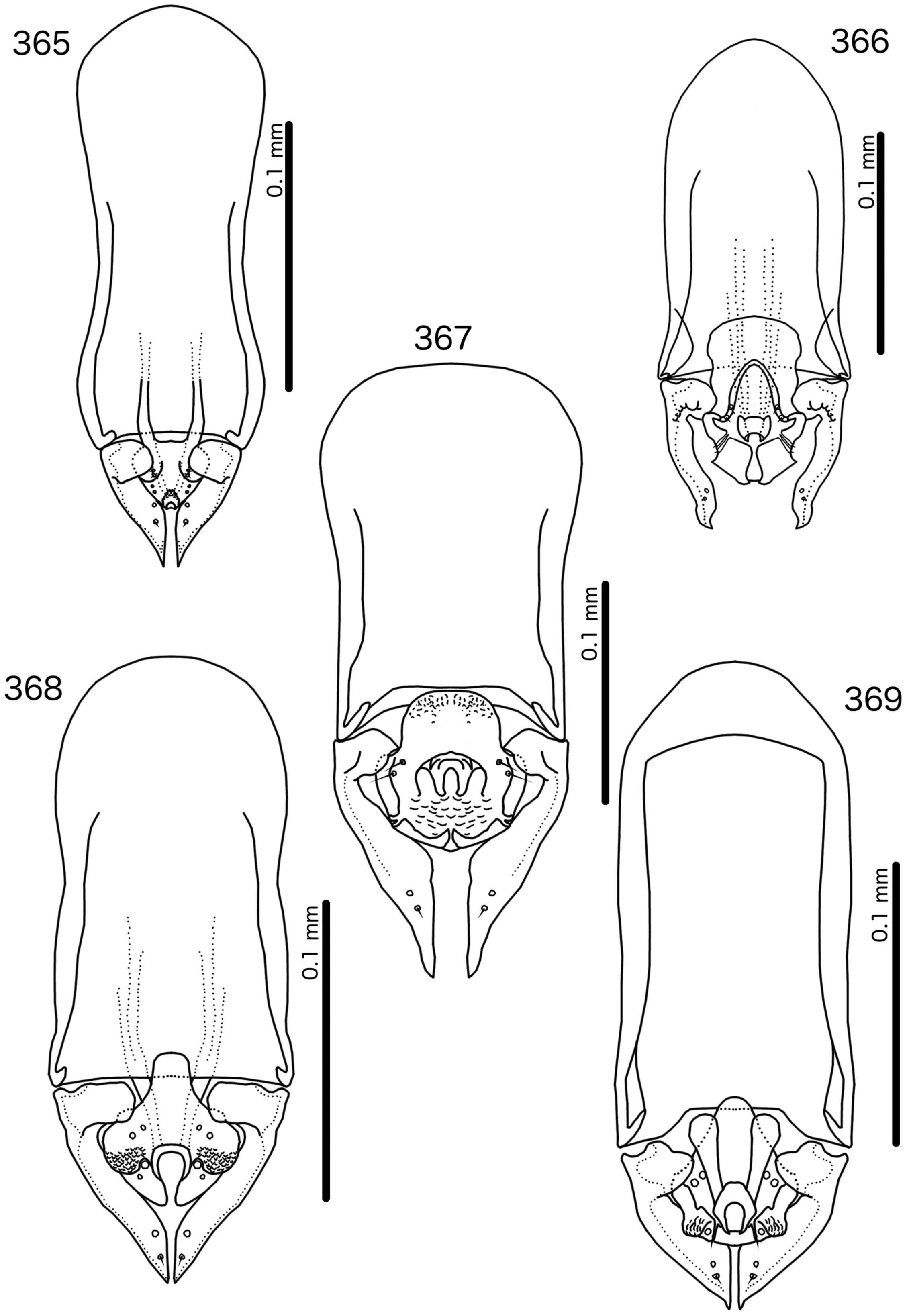
FIGURES 354–355. *Guimaraesiella papuana* (Giebel, 1870) ex *Paradisaea minor*: **354,** male habitus, dorsal and ventral views. **355,** female habitus, dorsal and ventral views.



FIGURES 356–360. *Guimaraesiella papuana* (Giebel, 1870) ex *Paradisaea minor*: **356,** male head, dorsal and ventral views. **357,** male genitalia, dorsal view. **358,** male mesosome, ventral view. **359,** male paramere, dorsal view. **360,** female subgenital plate and vulval margin, ventral view.



FIGURES 361–364. Variation of preantennal area in *Guimaraesiella* Eichler, 1949, dorsal views: **361,** *Guimaraesiella sueta* Valim & Weckstein, 2011 **n. comb.**, ex *Pharomachrus pavoninus*: **362,** *Guimaraesiella* sp. ex *Turdus falcklandii*. **363,** *Guimaraesiella* sp. ex *Rhipidura javanica*. **364,** *Guimaraesiella antiqua* (Ansari, 1956b) **n. comb.** ex *Catharus guttatus nanus*.



FIGURES 365–369. *Guimaraesiella* male genitalia, ventral views: **365,** *Guimaraesiella cicchinoi* Valim & Weckstein, 2011 **n. comb.**, ex *Trogon collaris.* **366,** *Guimaraesiella* sp. ex *Heterophasia melanoleuca*. **367,** *Guimaraesiella* sp. ex *Dumetella carolinensis*. **368,** *Guimaraesiella* sp. ex *Dicrurus hottentottus*. **369,** *Guimaraesiella diaprepes* (Kellogg & Chapman, 1902) **n. comb.** ex *Vestiaria coccinea*.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 355. Subgenital plate (Fig. 360) broadly triangular, approaching vulval margin; in some specimens with lateral submarginal bulges, often only on one side, and absent entirely in many specimens. Vulval margin (Fig. 360) gently rounded, with 3–5 short, slender *vms* on each side, and 9–12 short, thorn-like *vss* on each side; 5–8 long slender *vos* on each side; the 2 distal *vos* near or median to *vss*. Measurements ex *Cicinnurus magnificus hunsteini* (n = 14): TL = 1.50–1.73 (1.61); HL = 0.42–0.47 (0.44); HW = 0.39–0.44 (0.41); PRW = 0.24–0.27 (0.25); PTW = 0.34–0.42 (0.36); AW = 0.44–0.51 (0.50). Ex *Colluricincla ferruginea clara* (n = 4): TL = 1.48–1.62; HL = 0.41–0.43; HW = 0.40–0.41; PRW = 0.24–0.25; PTW = 0.34–0.35; AW = 0.45–0.50. Ex *Parotia lawesii* (n = 10): TL = 1.57–1.74 (1.65); HL = 0.42–0.44 (0.43); HW = 0.38–0.42 (0.40); PRW = 0.23–0.27 (0.25); PTW = 0.33–0.37 (0.35); AW = 0.48–0.55 (0.50). Ex *Paradisaea apoda novaeguineae* (n = 8): TL = 1.46–1.75; HL = 0.42–0.47; HW = 0.39–0.46; PRW = 0.24–0.26; PTW = 0.34–0.38; AW = 0.46–0.51. Ex *P. minor finschi* (n = 14): TL = 1.54–1.84 (1.70); HL = 0.42–0.50 (0.46); HW = 0.39–0.48 (0.44); PRW = 0.24–0.30 (0.37); PTW = 0.34–0.41 (0.38); AW = 0.48–0.59 (0.53). Ex *P. raggiana augustaevictoriae* (n = 15): TL = 1.47–1.74 (1.61); HL = 0.41–0.47 (0.44); HW = 0.39–0.44 (0.41); PRW = 0.23–0.28 (0.25); PTW = 0.32–0.38 (0.35); AW = 0.44–0.57 (0.50). Ex *P. r. raggiana* (n = 7): TL = 1.64–1.83; HL = 0.45–0.50; HW = 0.40–0.46; PRW = 0.25–0.27; PTW = 0.34–0.38; AW = 0.48–0.52. Ex *P. r. salvadorii* (n = 13): TL = 1.51–1.78 (1.63); HL = 0.43–0.48 (0.45); HW = 0.38–0.44 (0.42); PRW = 0.23–0.27 (0.25); PTW = 0.34–0.39 (0.36); AW = 0.46–0.58 (0.50). Ex *P. rubra* (n = 7): TL = 1.46–1.69; HL = 0.44–0.45; HW = 0.41–0.43; PRW = 0.24–0.26; PTW = 0.34–0.37; AW = 0.45–0.52. Ex *Phonygammus keraudrenii purpureoviolaceus* (n = 1): TL = 1.73; HL = 0.45; HW = 0.42; PRW = 0.26; PTW = 0.36; AW = 0.54. Ex *Ptiloris magnificus magnificus* (n = 5): TL = 1.54–1.77; HL = 0.42–0.46; HW = 0.40–0.43; PRW = 0.23–0.26; PTW = 0.34–0.38; AW = 0.48–0.55.

Type material. Ex ***Paradisaea rubra***: **Syntypes** of *Gu. rotundofrontalis*: 1♂, 5♀, Piaget Collection, 620, 621 (NHML).

Ex ***Parotia sefilata*: Syntypes** of *Gu. longiabdominalis*: 1♂, 2♀, Piaget collection, 623 (NHML).

Additional material examined (non-types)

Ex ***Paradisaea minor finschi*:** 1♂, 1♀, Wanuma, Madang District, Papua New Guinea, 19 Feb. 1974, 103774, 24292 on reverse (OSUS); 3♂, 6♀, Telefomin, elev. 4500 ft, West Sepik District, Papua New Guinea, 5 Sep. 1963, P. Temple, BBM-NG-22962 (BPBM).

Ex ***Paradisaea minor minor*** **[**as ***Paradisaea papuana*]:** 3♂, Piaget Collection, 622, BM1928-325 (NHML).

Ex ***Paradisaea apoda***: 3♂, 10♀, "New Guinea", R. Meinertzhagen, 16200 (NHML).

Ex ***Paradisaea raggiana raggiana***: 1♂, 1♀, Mount Bosavi, Southern Highlands District, Papua New Guinea, 16 May 1973, 103202 (OSUS); 4♂, 4♀, Mount Bosavi, Southern Highlands Province, Papua New Guinea, 18 May 1973, 103225 (OSUS); 2♂, 2♀, Mount Bosavi, Southern Highlands Province, Papua New Guinea, 1 Jun. 1973, 103267 (OSUS).

Ex ***Paradisaea raggiana salvadorii***: 3♂, 2♀, Karimui, elev. 1100 m, Simbu District, Papua New Guinea, 9 Jul. 1963, J.H. Sedlack, BBM-NG-20061 (BPBM); 1♂, 1♀, Kuta, elev. 7000 ft, Western Highlands District, Papua New Guinea, 2 Jul. 1963, H. Clissold, BBM-NG-28276 (BPBM); 5♂, 2♀, Korgua, elev. 4900 ft, Western Highlands District, Papua New Guinea, 21 Jun. 1963, H. Clissold, BBM-NG-28166 (BPBM); 3♂, 8♀, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 15 Feb. 1964, H. Clissold, BBM-NG-29535 & BBM-NG-29530 (BPBM); 5♂, 10♀, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 20 Feb. 1964, H. Clissold, BBM-NG-29613 (BPBM); 3♂, 9♀, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 10 Feb. 1964, H. Clissold, BBM-NG-29455 (BPBM); 1♀, Korgua, elev. 5000 ft, Western Highlands District, Papua New Guinea, 22 Jun. 1963, H. Clissold, BBM-NG-28176 (BPBM); 1♂, 2♀, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 9 Feb. 1964, H. Clissold, BBM-NG-29435 (BPBM); 6♀, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 4 Feb. 1964, H. Clissold, BBM-NG-29392 (BPBM).

Ex ***Paradisaea raggiana augustaevictoriae***: 5♀, Mount Missim, elev. 3000 ft, Morobe District, Papua New Guinea, 17 Jan. 1963, H. Clissold, BBM-NG-20186 (BPBM); 3♀, Coviak, elev. 4000 ft, Morobe District, Papua New Guinea, 25 Feb. 1963, H. Clissold, BBM-NG-20335 (BPBM); 2♂, Watut Valley, elev. 800 m, Morobe District, Papua New Guinea, 5 Mar. 1963, J.H. Sedlack, BBM-NG-20215 (BPBM); 6♂, 7♀, Pindin, elev. 3000 ft, Morobe District, Papua New Guinea, 20 Apr. 1963, H. Clissold, BBM-NG-27723 (BPBM); 1♂, 2♀, Bulolo River, elev. 3000 ft, Morobe District, Papua New Guinea, 5 Jun. 1963, P.J. Shanahan, BBM-NG-27889 (BPBM); 10♂, 20♀, Nakata Ridge, Wau, elev. 5000 ft, Morobe District, Papua New Guinea, 15 Jul. 1963, P.J. Shanahan, BBM-NG-28553 and BBM-NG-29623 (BPBM); 1♂, Vicinity of Lae, elev. 30 m, Singanwa River, Morobe District, Papua New Guinea, 14 Apr. 1966, G. Lippert, BBM-NG-24805 (BPBM); 2♂, 1♀, Vicinity of Lae, elev. 30 m, Singanwa River, Morobe District, Papua New Guinea, 16 Apr. 1966, O.R. Wilkes, BBM-NG-24815 (BPBM); 9♂, 26♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 29 Jul. 1967, A.C. Ziegler, BBM-NG-53631–2 (BPBM) [one slide contains one *Neopsittaconirmus*]. 6♂, 10♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 5 Aug. 1967, P.H. Colman, BBM-NG-51369 (BPBM); 1♂, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 5 Aug. 1967, A.B. Mirza, BBM-NG-54107 (BPBM); 1♂, 6♀, 10 km W of Bulolo, elev. 780 m., Morobe District, Papua New Guinea, 8 Aug. 1967, A.B. Mirza, BBM-NG-54144 (BPBM); 7♂, 8♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 10 Aug. 1967, A.C. Ziegler, BBM-NG-53935–6, BBM-NG-54051 (BPBM); 11♂, 15♀, 10 km W of Bulolo, elev. 780, Morobe District, Papua New Guinea, 10 Aug. 1967, A.B. Mirza, BBM-NG-54186–88, BBM-NG-54486 (BPBM) [one slide contains unidentified *Picicola*]. 2♂, 8♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 13 Aug. 1967, A.B. Mirza, BBM-NG-54245–6 (BPBM); 2♂, 1♀, 10 km W of Bulolo, Morobe District, Papua New Guinea, 14 Aug. 1967, A.B. Mirza, BBM-NG-54253 (BPBM) [one slide contains unidentified *Myrsidea*]. 1♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 16 Aug. 1967, A.C. Ziegler, BBM-NG-53974 (BPBM); 4♂, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 18 Aug. 1967, A.C. Ziegler, BBM-NG-54023 (BPBM); 39♂, 38♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 19 Aug. 1967, A.C. Ziegler, BBM-NG-54023, BBM-NG-54050, BBM-NG-54056, BBM-NG-54060, BBM-NG-54081 (BPBM); 1♂, 1♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 21 Aug. 1967, A.C. Ziegler, BBM-NG-54314 (BPBM); 3♂, Kalolo, elev. 150 m, Morobe District, Papua New Guinea, 24 Aug. 1966, O.R. Wilkes, BBM-NG-52920 (BPBM); 4♂, 3♀, Mount Missim, elev. 1070 m, 6 km NW of Wau, Morobe District, Papua New Guinea, 9 Sep. 1967, A.B. Mirza, BBM-NG-54485 (BPBM) [one slide contains unidentified *Myrsidea*]. 3♂, 1♀, Mount Missim, elev. 1070 m, 6 km NW Wau, Morobe District, Papua New Guinea, 10 Sep. 1967, A.B. Mirza, BBM-NG-54470 (BPBM); 3♂, Kalolo, elev. 150 m, Morobe District, Papua New Guinea, 24 Aug. 1966, O.R. Wilkes, BBM-NG-52920 (BPBM).

Ex ***Paradisaea raggiana* ssp.:** 4♂, 4♀, Wandum Island, Papua New Guinea, H. Clissold, 20511 (OSUS).

Ex ***Paradisaea raggiana*? [**uncertain host identifications**]:** 3♀, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 15 Feb. 1964, H. Clissold, BBM-NG-29532 (BPBM); 17♂, 25♀, Mount Missim, elev. 1070 m, 6 km NW of Wau, Morobe District, Papua New Guinea, 5 Sep. 1967, A.B. Mirza, BBM-NG-54008, BBM-NG-50019, BBM-NG-54407–8 (BPBM).

Ex ***Parotia lawesii*:** 1♂, Nakata Ridge, elev. 5000 ft, Wau, Morobe District, Papua New Guinea, 16 Mar. 1985, A. Engilis Jr., BBM-NG-109576 (BPBM); 1♂, Nakata Ridge, elev. 5000 ft, Wau, Morobe District, Papua New Guinea, 27 Mar. 1963, P.J. Shanahan, BBM-NG-27550 (PIpeR); 6♂, 10♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 18 Aug. 1967, A.C. Ziegler, BBM-NG-54025 (BPBM); 1♂, Nakata Ridge, elev. 5000 ft, Wau, Morobe District, Papua New Guinea, 12 May 1963, P.J. Shanahan, BBM-NG-27796 (BPBM) [slide contains unidentified *Myrsidea*]. 1♀, Nakata Ridge, elev. 5000 ft, Wau, Morobe District, Papua New Guinea, 16 Jul. 1963, P.J. Shanahan, BBM-NG-28561 (BPBM); 1♂, Wau Creek, elev. 5000 ft, Morobe District, Papua New Guinea, 17 Mar. 1963, H. Clissold, BBM-NG-20457 (BPBM).

Ex ***Parotia lawesii*? [**uncertain host identifications**]:** 2♀, Nakata Ridge, eleb. 5000 ft, Wau, Morobe District, Papua New Guinea, 20 May 1963, P.J. Shanahan, BBM-NG-27833–4 (BPBM) [one sldie contains unidentified *Myrsidea*].

Ex ***Ptiloris magnificus magnificus*:** 3♂, "New Guinea", R. Meinertzhagen, 16182 (NHML); 4♂, 5♀, Mount Missim, elev. 1070 m, 6 km NW of Wau, Morobe District, Papua New Guinea, 12 Sep. 1967, A.B. Mirza, BBM-NG-54488 (BPBM); 1♂, Oransbari, elev. 10 ft, West Papua Province, Indonesia, 23 Dec. 1962, A Pigai & L.P. Richards, BBM-NG-22212 (BPBM).

Ex ***Phonygammus keraudrenii purpureoviolaceus*:** 1♀, Nakata Ridge, elev. 5000 ft, Wau, Morobe District, Papua New Guinea, 18 Jul. 1963, P.J. Shanahan, BBM-NG-28570 (BPBM).

Ex ***Cicinnurus magnificus hunsteini* [**some as ***Diphyllodes magnificus*]:** 5♂, 3♀, 10 km W of Bulolo, elev. 780, Morobe District, Papua New Guinea, 19 Aug. 1967, A.C. Ziegler, BBM-NG-54043 (BPBM); 2♂, 9♀, Wau, elev. 1200 m, Morobe District, Papua New Guinea, 15 May 1963, [J.H.] Sedlacek, BBM-NG-27806 (BPBM); 4♂, 1♀, Bulolo River, elev. 3000 m, Morobe District, Papua New Guinea, 13 Jun. 1963, P.J. Shanahan, BBM-NG-28438 (BPBM) [one slides contains an unidentified *Columbicola* nymph]. 3♂, 2♀, Wau, elev. 1200 m, Morobe District, Papua New Guinea, 28 Nov. 1961, [J.H.] Sedlacek, BBM-NG-56116 (BPBM); 1♂, 2♀, 10 km W of

Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 19 Aug. 1967, A.C. Ziegler, BBM-NG-54043 (BPBM); 1♂, 2♀, Clear Water Base, Mount Missim, elev. 1070 m, 6 km NW Wau, Morobe District, Papua New Guinea, 5 Sep. 1967, A.B. Mirza, BBM-NG-54402 (BPBM); 1♀, 10 km W of Bulolo, elev. 780, Morobe District, Papua New Guinea, 31 Jul. 1967, P.H. Colman, BBM-NG-51252 (BPBM).

Ex ***Colluricincla ferruginea clara***: 1♂, Sitium Village, elev. 100 ft, 12 m NE of Lae, Bupu River, Morobe District, Papua New Guinea, 17 Apr. 1970, A.B. Mirza, BBM-NG-98625 (BPBM); 4♀, Jumbora Plantation, elev. 200 ft, Popondetta, Northern District, Papua New Guinea, 24 Sep. 1963, H. Clissold, BBM-NG-28855 (BPBM); 1♀, 10 km W of Bulolo, elev. 780 m, Morobe District, Papua New Guinea, 18 Aug. 1967, A.C. Ziegler, BBM-NG-54037 (BPBM).

Remarks. Giebel's (1879) description of *Docophorus papuanus* is short and vague, preventing comparison with Piaget's (1885) description of *Docophorus subalbicans*. The two were synonymised by Harrison (1916: 105) and followed by Hopkins & Clay (1952: 61), Price *et al*. (2003: 158) and Mey & Marker (2014: 82). Giebel's type material is likely lost (Clay & Hopkins 1955: 50), so no comparison can be made between type material of the two species. Nothing in Giebel's description of *Do. papuanus* contradicts the description of *Do. subalbicans* by Piaget (1885). The original description of *Do. subalbicans* mentions an indented signature that gradually fades posteriorly, and the illustration is concordant with *Guimaraesiella* lice commonly found on *Paradisaea* spp. We therefore accept this synonymy.

Guimaraesiella rotundifrontalis Eichler, 1949 and *Guimaraesiella longiabdominalis* Eichler, 1949 are new names given to Piaget's (1885: 7) "var. *α*" and "var. *β*" of *Do. subalbicans*, respectively. The former is described as having a rounded head in front and a narrower clypeus, whereas the latter is apparently more distinct. Piaget (1885: 8) stated that *Do. subalbicans* var. *β* was probably the same as *Do. papuana* Giebel, but neither variety was illustrated. No further information on the morphology of these species was given by Eichler (1949), and neither species has been redescribed since. As Piaget's (1885) original descriptions are inadequate to separate *Gu. rotundifrontalis* and *Gu. longiabdominalis* from *Gu. subalbicans*, which is itself here considered a synonym of *Gu. papuana*, we hereby regard *Gu. rotundifrontalis* and *Gu. longiabdominalis* as junior synonyms with *Gu. papuana*.

Material belonging to the *Brueelia*-complex from two species of birds-of-paradise were included in the phylogeny of Bush *et al*. (2016) and found to be genetically similar. Bush *et al*. (2016) included a single specimen of *Guimaraesiella* from *Colluricincla ferruginea clara* (Mayer, 1894), which was nested inside the material from birds-of-paradise. Morphologically, this specimen is indistinguishable from other specimens of *Guimaraesiella* from the Paradisaeidae, and we have included *Colluricincla ferruginea* as a host of *Gu. papuana*.

Material from several other birds-of-paradise examined are very similar to material from species of *Paradisaea*, but the majority of the samples are either only females or poorly preserved. Therefore, we have not included any material from other hosts as conspecific with *Guimaraesiella papuana*.

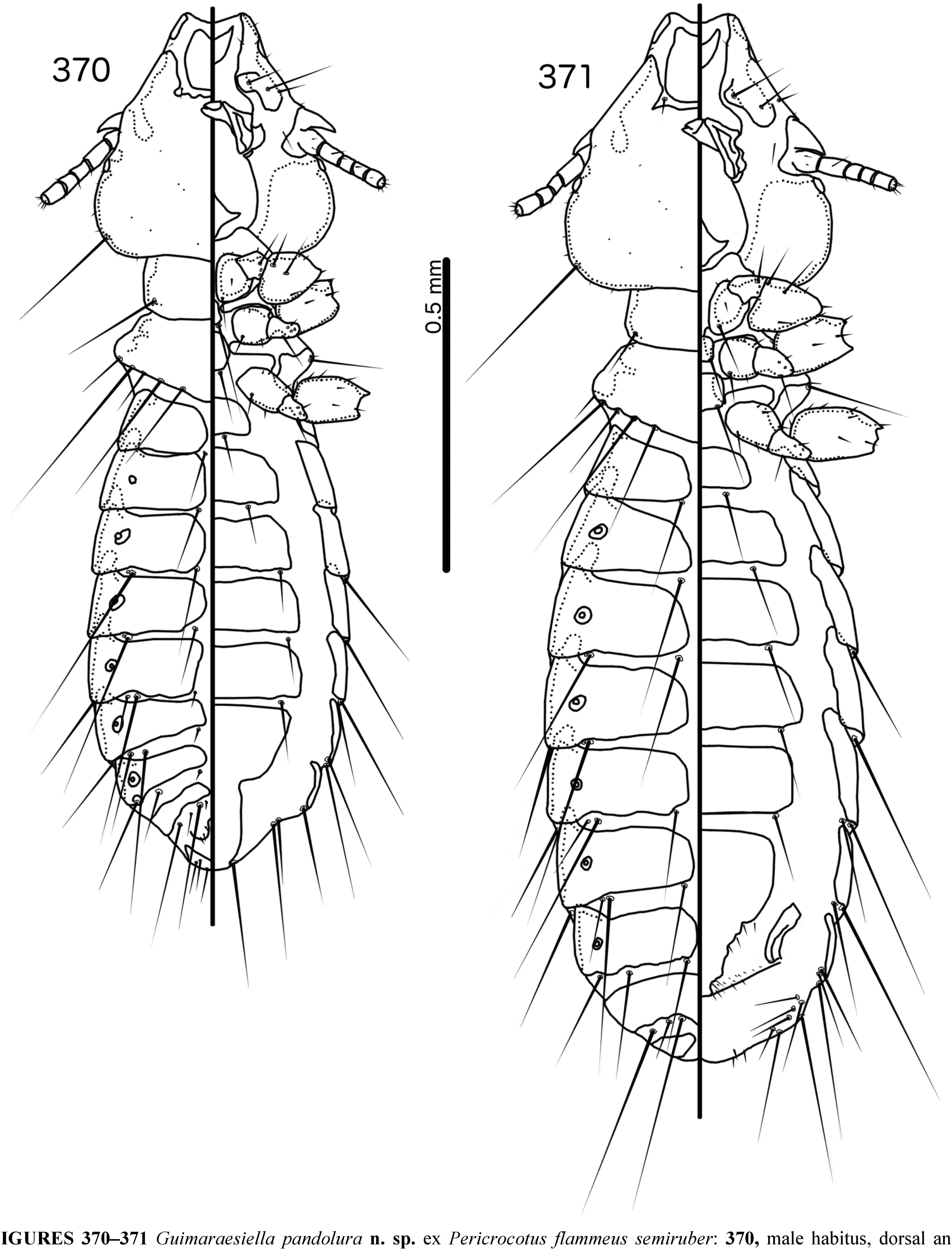
Guimaraesiella pandolura **Gustafsson & Bush, new species**

(Figs 370–376)

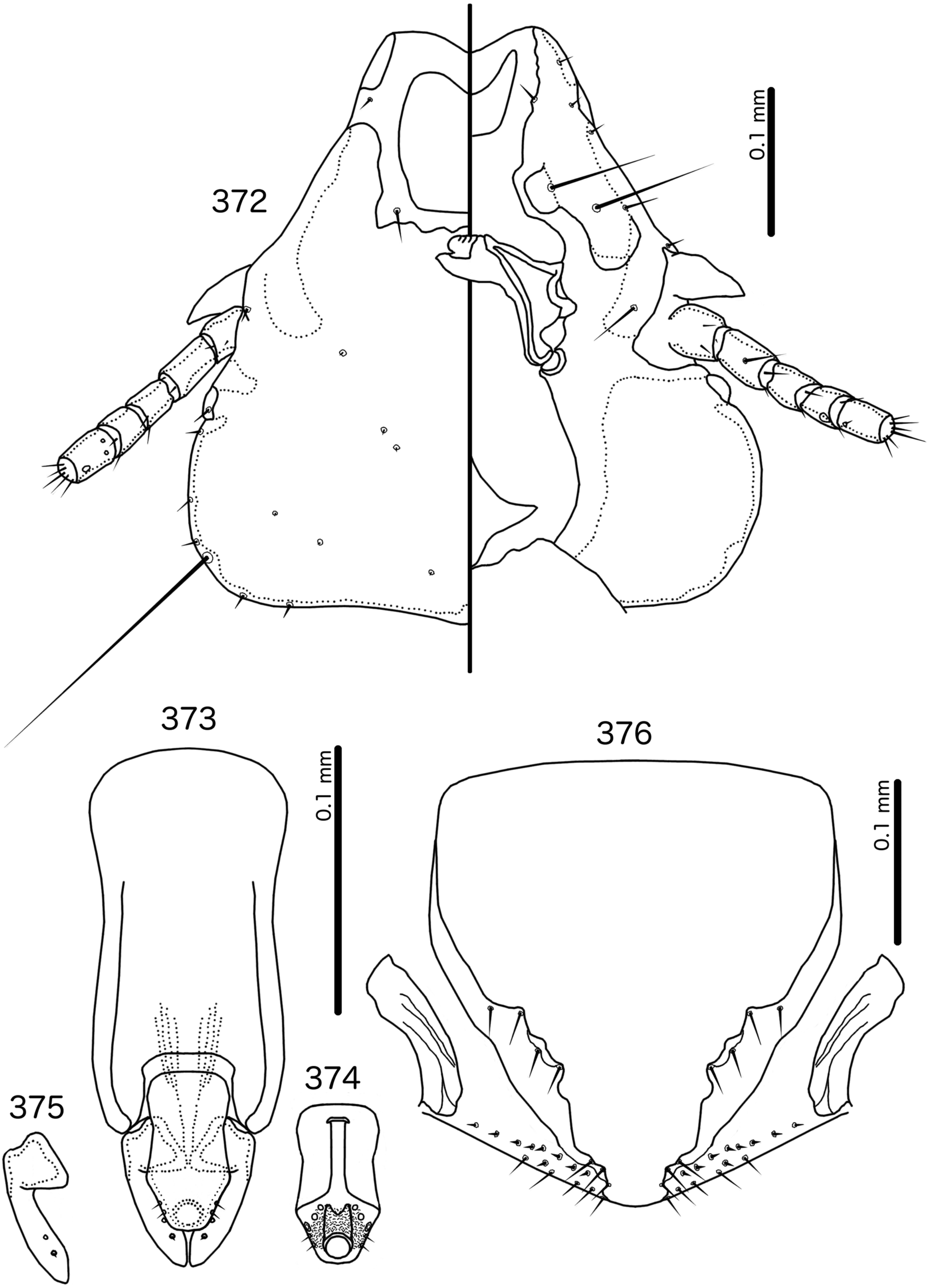
Type host. *Pericrocotus speciosus semiruber* Whistler & Kinnear, 1933—scarlet minivet.
Type locality. Pang La, Lampang Province, Thailand.

Diagnosis. Only a few other species of *Guimaraesiella* have completely separated dorsal anterior plates: *Guimaraesiella myiophoneae*, *Guimaraesiella saltatora*, *Guimaraesiella pallidula, Guimaraesiella antiqua,* and the members of the *Gu. brunneinucha* group. Of these, all species except *Gu. myiophoneae* are found only in the New World. These New World species can be separated from *Gu. pandolura* **n. sp.** (Fig. 374) by the size and position of the gonopore; in *Gu. pandolura* the gonopore is subterminal and dominates the distal mesosome, whereas the gonopore is much smaller and positioned ventrally in New World species (Fig. 367).

Apart from the dorsal preantennal suture, no morphological characters places *Guimaraesiella pandolura* particularly close to *Gu. myiophoneae*. In *Gu. pandolura* (Fig. 372) the marginal carina is completely interrupted laterally, whereas in *Gu. myiophoneae* it is complete ventrally. The mesosome of *Gu. myiophoneae* is similar in shape to that of the *Gu. sexmaculata* group (Fig. 368), and the mesosomal lobes are much wider than the gonopore, unlike in *Gu. pandolura* (Fig. 374) where the mesosome is more slender. As in the *Gu. sexmaculata* group, the gonopore of *Gu. myiophoneae* is terminal and the mesosomal lobes are not fused distally, but the gonopore is set in a depression, with mesosomal lobes protruding distal to the gonopore; in *Gu. pandolura* (Fig. 374) the gonopore is subterminal and closed distally, but lobes do not protrude distal to the gonopore. In *Gu. myiophoneae aps* are present on male tergopleurite V, but these are absent in *Gu. pandolura* (Fig. 370). The female vulval chaetotaxy of both species are very similar, and females are best told apart on head shape.



FIGURES 370–371 *Guimaraesiella pandolura* **n. sp.** ex *Pericrocotus flammeus semiruber*: **370,** male habitus, dorsal and ventral views. **371,** female habitus, dorsal and ventral views.



FIGURES 372–376. *Guimaraesiella pandolura* **n. sp.** ex *Pericrocotus flammeus semiruber*: **372,** male head, dorsal and ventral views. **373,** male genitalia, dorsal view. **374,** male mesosome, ventral view. **375,** male paramere, dorsal view. **376,** female submarginal plate and vulval margin, ventral view.

Description. *Both sexes*. Head shape, structure and chaetotaxy as in Fig. 372. Dorsal preantennal suture completely encircles dorsal anterior plate, separating it from main head plate. Ventral carina diffuse anterior to pulvinus. Preantennal nodi short, slender. Coni slender, reaching beyond distal margin of scapes. Preocular nodi large, quadratic. Postocular nodi moderate, clearly wider than very slender marginal temporal carina; *pos* located on nodi. Temporal carinae broad but diffuse. Gular plate small, star-shaped. Thoracic and abdominal segments as in genus description and Figs 370–371. Proepimera moderate, with pointed median ends. Metepisterna slender, with pointed median ends. Meso- and metasterna each with 1 long seta on posterior margin on each side. Pteronotum with 5 *mms* on each side.

***Male*.** Subgenital plate with lateral indentation at about half length (Fig. 370). Abdominal chaetotaxy as in Table 2 and Fig. 370. Male genitalia typical for genus (Fig. 373). Basal apodeme slender. Proximal mesosome blunt, broad. Gonopore (Fig. 374) closed distally. Ventral sclerite slender, with proximal thickening. Distal mesosome rugose; 3 *ames* sensilla visible on each side of mesosome; 2 *pmes* microsetae on lateral margins of mesosomal lobes. Parameral heads (Fig. 375) trapezoidal, widening medianly. Parameral blades short, blunt distally; *pst1–2* as in genus description. Measurements ex *Pericrocotus speciosus semiruber* (n = 3): TL = 1.25–1.33; HL = 0.37; HW = 0.36–0.38; PRW = 0.21–0.22; PTW = 0.30–0.31; AW = 0.39–0.45.

***Female*.** Abdominal chaetotaxy as in Table 2 and Fig. 371. Subgenital plate (Fig. 376) broadly triangular, reaching vulval margin. Vulval margin (Fig. 376) somewhat pointed medianly, with 4–5 short, slender *vms* on each side, and 8–10 short, thorn-like *vss* on each side; 7–8 long, slender *vos* on each side; distal 2–3 *vos* median to *vss*. Measurements ex *Pericrocotus speciosus semiruber* (n = 4): TL = 1.65–1.83; HL = 0.42–0.46; HW = 0.42–0.46; PRW = 0.23–0.27; PTW = 0.35–0.39; AW = 0.43–0.54.

Etymology. The species epithet is formed by Latin "*pando*" for "open, spread out, extend" and "*lura*" for "mouth of a bag", referring to the shape of the preantennal area (Figs 370–371).

Type material. Ex ***Pericrocotus speciosus semiruber*: Holotype** ♂, Pang La, Lampang Province, Thailand, 3 Feb. 1953, R.E. Elbel & H.G. Deignan, RE-2223, RT-B-17745 (OSUS). **Paratypes:** 3♂, 3♀, same data as holotype (OSUS); 1♂, 1♀, Pang La, Lampang Province, Thailand, 4 Feb. 1953, R.E. Elbel & H.G. Deignan, RE-2226, RT-B-17748 (NHML); 2♂, 1♀, same data as holotype (PIPeR); 1♀, Ban Muang Khai, Tha Li District, Loei Province, Thailand, 13 Jan. 1953, R.E. Elbel, RE-4462, B-31103 (PIPeR); 1♂, 1♀, Pang La, Lampang Province, Thailand, 4 Feb. 1953, R.E. Elbel & H.G. Deignan, RE-2226, RT-B-17748 (PIPeR).

Remarks. We have examined a small number of *Guimaraesiella* specimens held in the NHML and PIPeR collections from the following *Pericrorotus* hosts: *P. brevirostris brevirostris* (Vigors, 1831), *P. cinnamomeus thai* Deignan, 1947, *P. ethologus laetus* Mayr, 1940, *P. flammeus flammifer* Hume, 1875, *P. flammeus gonzalesi* Ripley & Rabor, 1961, *P. speciosus speciosus* (Latham, 1790), and *P. roseus stanfordi* Vaughan & Jones, 1913. None of these hosts have hitherto been recorded as harbouring *Guimaraesiella* or any other genus/species belonging to the *Brueelia*-complex. These lice are very similar to *Guimaraesiella pandolura*, but differ in dimensions and shape of the dorsal preantennal plate. However, available samples are not sufficient to establish whether they are conspecific with a variable *Gu. pandolura*, or a different species. Furthermore, even material from other subspecies of *Pericrocotus speciosus* from outside Thailand (e.g. Philippines, Burma and India) cannot be reliably placed in *G. pandolura*, suggesting that there may be a high degree of geographical specificity in the *Guimaraesiella* lice parasitising *Pericrocotus* hosts.

Sturnidoecus Eichler, 1944

Pediculus Linné, 1758 (*in partim*).
Philopterus Nitzsch, 1818: 288 (*in partim*).
Docophorus Nitzsch, 1818: 289 (*in partim*).
Nirmus Nitzsch, 1818: 291 (*in partim*).
Penenirmus Clay & Meinertzhagen, 1938: 73 (*in partim*).
Sturnidoecus Eichler, 1944: 81.
Turdinirmus Eichler, 1951b: 41 (*in partim*).

Type species. *Docophorus leontodon* Nitzsch, 1818: 290 [=*Pediculus sturni* Schrank, 1776: 118], by original designation.

Diagnosis. In overall habitus, *Sturnidoecus* (Figs 377–378, 399–400, 406–407, 413–414, 420–421) is most similar to *Rostrinirmus* (Figs 437–438), *Buphagoecus* **n. gen.** (Figs 427–428), and *Schizosairhynchus* **n. gen.** (Figs 463–464, 470–471). Members of all of these genera were considered parts of *Sturnidoecus* in the checklist of Price *et al.* (2003). *Bizarrifrons* (Fig. 478) and *Manucodicola* **n. gen.** (Figs 451–452, 457–458) are also similar to *Sturnidoecus*, but these two genera are separated from *Sturnidoecus* species by the asymmetrical shape of the frons (Figs 478, 454, 460), and the structure of the dorsal anterior plate. In *Bizarrifrons* and *Manucodicola*, the dorsal anterior plate is continuous with the main head plate, whereas this plate is separate from the main head plate in *Sturnidoecus*.

In *Sturnidoecus* (Figs 379, 401, 408, 415, 422), *Rostrinirmus* (Fig. 439), *Buphagoecus* (Fig. 429), and *Schizosairhynchus* (Figs 465, 472), the dorsal anterior plate is completely separated from the main head plate, and the dorsal preantennal suture reaches both the hyaline margin and the lateral margins of the head. Coni are large in all four genera, and typically reach to or beyond the distal margin of the scape. The marginal carina is interrupted laterally in all *Sturnidoecus* and *Schizosairhynchus*, but not in *Rostrinirmus* or *Buphagoecus*. The premarginal carina is always present in *Sturnidoecus*, but this is always absent in *Schizosairhynchus*. The postero-lateral extensions of the dorsal preantennal suture found in *Sturnidoecus* are also found in *Buphagoecus*, but not in *Rostrinirmus* or *Schizosa*. In all four genera *as3* is absent. *as1* is absent in *Rostrinirmus*, but this is present in *Sturnidoecus*. Conversely, *as2* is absent in some *Sturnidoecus* (see species-group summaries below), but always present in the other three genera. The posterior margins of the dorsal anterior plate differs between these four genera, with those of *Sturnidoecus* and *Buphagoecus* roughly rectangular, those of *Rostrinirmus* more rounded, and those of *Schizosairhynchus* elongated into a thickened spur that overlaps with the main head plate.

Sturnidoecus (Figs 377–378, 399–400, 406–407, 413–414, 420–421) and *Schizosairhynchus* (Figs 463–464, 470–471) have setal rows on most tergopleurites. By contrast, in *Buphagoecus* (Figs 427–428) and *Rostrinirmus* (Figs 437–438) all tergopleurites of both sexes have at most 1 *ss*, 1 *psps*, and 1 *aps*, apart from *ps*. *Rostrinirmus*, *Schizosairhynchus*, and *Sturnidoecus* all have multiple *sts* on at least some segments, but this is never found in *Buphagoecus*. No *Sturnidoecus* have subsidiary lateral sternal plates or the wide sternal plate II found in all *Schizosairhynchus*.

The female genitalia are virtually the same in both *Sturnidoecus* (Figs 383, 405, 412, 419, 426) and *Rostrinirmus* (Fig. 440), but many *Schizosairhynchus* (Fig. 469) and *Buphagoecus* (Fig. 430) have partial cross-pieces. In general, females of *Sturnidoecus* and *Schizosairhynchus* have more *vms* than females of the other two genera, but there is considerable intraspecific variation in setal numbers.

The male genitalia of *Sturnidoecus* are variable (Figs 384–398), but distinctly different from those of *Buphagoecus* (Figs 431–436), *Rostrinirmus* (Figs 441–443, 445–450), and *Schizosairhynchus* (Figs 466–468, 474–476). The gonopore is always terminal in *Sturnidoecus* (but not clearly visible in *St. somnodraco* **n. sp.**, Figs 423–425), but ventral in *Schizosairhynchus, Rostrinirmus,* and *Buphagoecus*. Unlike in *Schizosairhynchus* and *Rostrinirmus*, there are no rugose nodi in any *Sturnidoecus*, and the hook-shaped or triangular ventral processes found in many *Sturnidoecus* groups are not found in any other genus in the *Brueelia*-complex. While mesosomal setal patterns vary considerably among the different species-groups in *Sturnidoecus*, there are a few setal characters that set *Sturnidoecus* spp. apart: the *pmes* are never on the lateral margins of the mesosome in *Sturnidoecus*, but they are always on the lateral margins in *Schizosairhynchus*; in *Buphagoecus*, both *pmes* and *ames* may be distal to gonopore (e.g. Fig. 432), but this is never the case in *Sturnidoecus*.

Outside the *Brueelia*-complex, *Sturnidoecus* is superficially similar to the *Philopterus*- and *Penenirmus*-complexes, which occasionally infest the same hosts as *Sturnidoecus* spp. (see Price *et al.* 2003). All three of these generic complexes contain species that are of the “head louse” ecotype (Johnson *et al.* 2012), and at least some species of all three generic complexes have the following characters in common: marginal carina interrupted submedianly and laterally; dorsal anterior plate completely separated from main head plate posteriorly; at least some tergopleurites with dense or sparse setal rows; pleurites that do not, or only barely, reach the ventral surface of the abdomen. However, there are also substantial differences between *Sturnidoecus* and members of the *Philopterus*- and *Penenirmus*-complexes. The hyaline margin in *Sturnidoecus* is always contained between the antero-lateral ends of the marginal carina, and the laterally extended hyaline frons seen in some *Philopterus*-complex genera [e.g. *Mayriphilopterus* Mey 2004 (see Mey 2004: fig. 17a)] does not occur in *Sturnidoecus*. The posterior margin of the dorsal anterior plate is roughly flat in all *Sturnidoecus* (e.g. Fig. 379), not tapered posteriorly as in many *Philopterus*-complex genera, nor pointed as in the *Penenirmus*-complex. The *mts3* is the only temporal macrosetae in *Sturnidoecus* (Fig. 379), and neither *os* nor *pos* are macrosetae in this genus, unlike in the *Penenirmus*- and *Philopterus*-complexes. Trabecula are absent in the *Penenirmus*-complex and in *Sturnidoecus* (Fig. 379), but present in the *Philopterus*-complex; however, the long and often thick coni of *Sturnidoecus* may be confused with trabecula, especially in poorly preserved material or nymphs. In the *Philopterus*-complex *ads* is located on the posterior margin of the dorsal anterior plate, whereas in *Sturnidoecus* (Fig. 379) it is always located in the dorsal preantennal suture. Additional differences between lice in the *Penenirmus*- and *Philopterus*-complexes and lice of the Brueelia-complex are detailed in the introduction.

Description. ***Both sexes***. Head bulb-shaped (Figs 379, 401, 408, 415, 422). Marginal carina interrupted submedianly, but typically entire laterally; however, the lateral section of the margila carina where the dorsal preantennal suture reaches the lateral margin of the head is typically indented laterally (Fig. 415) or displaced medianly (Fig. 379). Frons flat or concave, hyaline. Hyaline margin continuous with dorsal preantennal suture reaching *dsms* and *ads*, completely separating dorsal anterior plate from main head plate. Postero-lateral corners of suture extended towards preantennal nodi. Dorsal anterior plate with flat or concave posterior margin, concave anterior margin. Ventral anterior plate present, crescent-shaped. Ventral carinae diffuse anterior to pulvinus. Head setae as in Figs 379, 401, 408, 415, 422, varying slightly between species groups; *as3* absent; *as1* absent in *Sturnidoecus mon* **n. sp.** (Fig. 408) and *St. somnodraco* **n. sp.** (Fig. 422) species-groups. Coni long, pointed, often reaching beyond distal margin of scapes. Antennae monomorphic (except *St. orientalis*; not illustrated). Temporal carinae visible in most species; *mts3* only macrosetae. Gular plate variable.

Prothorax (Figs 377–378, 399–400, 406–407, 413–414, 420–421) small, rectangular; *ppss* on postero-lateral corners. Proepimera hook- or hammer-shaped medianly. Pterothorax trapezoidal to pentagonal; lateral margins divergent; posterior margin either convergent to median point, flat, or gently rounded; *mms* uninterrupted medianly. Meso- and metasterna small, not fused. Mesosternum with 1 seta on postero-lateral corner on each side; metasternum with 1–3 setae on postero-lateral corner on each side. Metepisterna with slender to hammer-shaped median ends. Leg chaetotaxy as in Fig. 25, except *fI-p2* absent.

Abdomen (Figs 377–378, 399–400, 406–407, 413–414, 420–421) round to oblong in female, rounded in males; almost circular in some species. Tergopleurites rectangular or triangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female moderately to widely separated medianly. Sternal plates medianly continuous, variable in shape between species groups, and some or all may be absent. Pleural incrassations slight; ventral segments of the pleurites typically absent at least in more posterior segments. Re-entrant heads broad, blunt. Abdominal chaetotaxy as in Table 2, but differs between species groups (Table 11). Male subgenital plate triangular to trapezoidal, in some species may not reach posterior margin of abdomen. Female subgenital plate (Figs 383, 405, 412, 419, 426) roughly triangular, lateral margins often concave, approaching or reaching vulval margin; cross-piece or lateral extensions never present. Vulval margin (Figs 383, 405, 412, 419, 426) with slender *vms*, thorn-like *vss*; *vos* follows lateral margins of subgenital plate; distal *vos* typically median to *vss*.

TABLE 11. Chaetotaxy of abdominal segments II–VIII of some species groups of *Sturnidoecus*. Trichoid setae of segment VIII are present in all species, and are not listed. Sets of setae differing from those of *St. sturni* are highlighted in **bold**. Material examined from all species is from their respective type hosts. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	Sex	*ps*	*aps*	*psps*	*tps*	*ss*	*sts*
St. sturni	M	IV–VIII	II–VII	II–VIII	II–VIII	II–VIII	II–VI
	F	IV–VIII	II–VII	II–VIII	II–VIII	II–VIII	II–VI
St. australafricanus	M	IV–VIII	**IV–VII**	**IV–VIII**	II–VIII	II–VIII	II–VI
	F	IV–VIII	**IV–VII**	**III–VIII**	II–VIII	II–VIII	II–VI
St. mon	M	**III–VIII**	**IV–VII**	**IV–VIII**	II–VIII	II–VIII	II–VI
	F	IV–VIII	**IV–VII**	**IV–VIII**	II–VIII	II–VIII	II–VI
St. porphyrogenitus	M	IV–VIII	**V–VII**	**IV–VIII**	II–VIII	II–VIII	II–VI
	F	IV–VIII	**VI–VII**	**IV–VIII**	II–VIII	II–VIII	II–VI

Male genitalia differ between species-groups (Figs 384–398). Basal apodeme generally broad, rounded to rectangular. Proximal mesosome typically broad. Gonopore highly modified, and often not recognizable; terminal in all species-groups except *Sturnidoecus somnodraco* (Fig. 395). Mesosomal lobes usually very slender, may be elongated distally. Mesosome may be much shorter than parameres (*St. mon* species-group, Fig. 389) to almost as long as parameres (*St. clayae* species-group, Fig. 386). Up to 5 setae on each side of mesosome, location varies between species groups, but typically separated into longer *ames* and shorter *pmes*; *pmes* typically more median than *ames*. Several groups (e.g. *St. clayae* species group, Fig. 387) with one or more fleshy triangular structures on ventral surface. Parameral heads folded, typically rectangular (e.g. *St. simpl*ex species-group, Fig. 394) or finger-like (e.g. *St. meinertzhageni* species-group, Fig. 388), but may be different (e.g. *St. clayae* species group, Fig. 386). Parameral blades typically slender, elongated (but see *St. somnodraco* species-group, Fig. 395); *pst1* sensilla, typically central; *pst2* microsetae, central or submarginal near median margin of parameres.

Species-groups. All species groups in *Sturnidoecus* are based on the structure of the male genitalia. Representative male genitalia for each species group are illustrated in Figs 384–398. Note that these species groups are only for the convenience of identification and comparison, and may not from monophyletic groups. The phylogeny of Bush *et al.* (2016) did not represent all of the groups with distinct male genitalia, and therefore how these unique genitalic structures are distributed across *Sturnidoecus* needs further study.

Material from several species were not available to us, and the existing descriptions and illustrations are insufficiently detailed to assign these species of the groups used here. Thus, these species are presently placed as *Sturnidoecus incertae sedis* (see below). The single female of *St. femoratus* (Piaget, 1880) examined by us also cannot be placed. Note also that some species listed as *Sturnidoecus* by Price *et al.* (2003) are here removed to *Penenirmus* or *Philopterus*. These are principally species described by Ansari (1955b), that have too many temporal macrosetae, and in some cases trabecula, as is apparent in the later illustrations provided by Ansari (1958b). These species are discussed towards the end of this paper, under "Species referred to other genera", and include: *Docophorus aenas* Piaget, 1885, *Sturnidoecus capitis* Ansari, 1955b, and *Sturnidoecus chilchil* Ansari, 1955b, which are moved to *Philopterus*; and *Sturnidoecus chendoola* Ansari, 1955b, *Sturnidoecus guldum* Ansari, 1955b, *Sturnidoecus irritans* Ansari, 1955b, *Nirmus quadrilineatus* Nitzsch, 1866, and *Sturnidoecus saleimi* Ansari, 1955b, which are moved to *Penenirmus.*

In addition, we have transferred *Sturnidoecus philippensis* Tandan & Kumar, 1969, to the genus *Schizosairhynchus* (see above), and *St. husaini* Ansari, 1968, and *St. prominens* Ansari, 1968, have been elevated to a genus of their own, *Buphagoecus*.

***Sturnidoecus australafricanus* species-group** (Fig. 384). *as1* present. Basal apodeme rectangular, anterior end rounded. Proximal mesosome as in Fig. 384, wider anteriorly, overlapping basal apodeme. Mesosomal lobes narrow, sinuous, with wide lateral thickenings; *ames* and *pmes* of roughly equal length, barely separated into sets, and together forming distally converging rows. Ventral triangular hook just distal to midline. Parameral heads rectangular. Parameral blades gently tapering, curving medianly.

***Sturnidoecus basilewskyi* species-group** (Fig. 385). *as1* present. Basal apodeme rectangular, anterior end rounded. Proximal mesosome as in Fig. 385, wider anteriorly, overlapping basal apodeme. Mesosomal lobes slender, thickened laterally, with prominent combs distally; 2 *ames* on each side much longer than 3 *pmes* on each side; *ames* and *pmes* aligned to form distally converging rows. Parameral heads slender. Parameral blades slender, with irregular median margin.

***Sturnidoecus clayae* species-group** (Figs 386–387). *as1* present. Basal apodeme truncated oval, anterior end rounded. Proximal mesosome as in Fig. 386, wider anteriorly, not overlapping basal apodeme. Mesosomal lobes slender, elongated to reach distal tips of parameres. Elongated parts of mesosome not fused medianly. Triangular extension on ventral side (Fig. 387); 3 *ames* much longer than 2 *pmes*; *ames* sublateral, not forming distally converging rows; *pmes* lateral to gonopore, forming transversal row. Parameral heads wider medianly. Parameral blades elongated, straight, pointed distally.

***Sturnidoecus meinertzhageni* species-group** (Fig. 388). *as1* present. Basal apodeme largely rectangular, widening slightly distally, with rounded anterior end indented medianly. Proximal mesosome trapezoidal, narrow anterior, overlapping basal apodeme. Mesosomal lobes wide, rounded, with distal section elongated medianly to approach distal parts of parameres. Thickened transversal nodi at about half length of lobed; *ames* and *pmes* of roughly equal length, forming distally converging rows. Parameral heads finger-like. Parameral blades broad, tapering only distally.

***Sturnidoecus mon* species-group** (Fig. 389). *as1* absent. Basal apodeme rectangular, anterior end rounded. Proximal mesosome square-shaped, anterior margin irregular, overlapping basal apodeme. Gonopore as crescent-shaped thickening at terminal margin of mesosome; anterior margin of gonopore serrated. Mesosomal lobes rectangular, squat; 2 *ames* much longer than 3 *pmes*, the latter sensilla. *ames* submedian, near anterior end of mesosomal lobes; *pmes* submedian, lateral to gonopore. Parameral heads rectangular. Parameral blades broad, tapering only distally, straight.

***Sturnidoecus pastoris* species-group** (Fig. 390). *as1* present. Basal apodeme truncated ovoid, anterior margin rounded. Proximal mesosome as in Fig. 390, wider anteriorly, with uneven anterior margin, overlapping basal apodeme. Mesosomal lobes oval, slender, with convoluted thickenings and large hooks on ventral side; 2 sublateral *ames* much longer than 3 submedian *pmes*l setae together form distally converging rows. Parameral heads roughly triangular. Parameral blades gently tapering.

***Sturnidoecus porphyrogenitus* species-group** (Fig. 391). *as1* present. Basal apodeme broadly oval, wider proximally, anterior margin rounded. Proximal mesosome trapezoidal, wider anteriorly, overlapping basal apodeme. Mesosomal lobes wide, roughly rectangular, with sinuous lateral margins; 2 *ames* and 3 *pmes* of roughly equal length; *ames* lateral to *pmes*. Parameral heads roughly rectangular. Parameral blades slender, angular.

***Sturnidoecus senegalensis* species-group** (Figs 392–393). *as1* present. Basal apodeme roughly rectangular, anterior end rounded. Proximal mesosome triangular, wider anteriorly with thickened anterior margin, not overlapping basal apodeme. Mesosomal lobes slender, elongated, nearly as long as parameres. One or two hook-shaped bulges on ventral side (Fig. 393); 4 *ames* shorter than single *pmes*; sets form distally converging rows much anterior to gonopore. Parameral heads bent and blunt. Parameral blades elongated, straight, tapering only distally.

***Sturnidoecus simpl*ex species-group** (Fig. 394). *as1* present. Basal apodeme rectangular, anterior margin rounded. Proximal mesosome roughly quadratic, overlapping basal apodeme. Mesosomal lobes roundedly rectangular, with wide thickenings laterally and distally; 2 sublateral *ames* much longer than 3 submedian *pmes*, and sets widely separated. Parameral heads rounded, with thumb-like extension on anterior end. Parameral blades lobe-like, short.

***Sturnidoecus somnodraco* species-group** (Fig. 395). *as1* absent. Basal apodeme rectangular, anterior margin rounded. Proximal mesosome as in Fig. 395, overlapping basal apodeme; lateral margins with prominent point at half length. Mesosomal lobes slender, with large thickenings laterally; 2 *ames* sublaterally on each side. No *pmes* visible. Parameral heads bluntly quadratic. parameral blades triangular, folded medianly; lateral margin with prominent point; parameres short.

***Sturnidoecus sturni* species-group** (Fig. 396). *as1* present. Basal apodeme truncated oval, anterior margin rounded. Transverse band along distal margin of basal apodeme. Proximal mesosome bilobed, overlapping basal apodeme. Mesosomal lobes slender, somewhat elongated, with large hooks distally; 2 sublateral *ames* much longer than 3 submedian *pmes*, which are often sensilliform and hard to see; *ames* and *pmes* much separated. Parameral heads fingerlike, slender. Parameral blades broad, straight, tapering only distally.

***Sturnidoecus wittei* species-group** (Fig. 397–398). *as1* present. Basal apodeme almost quadratic, anterior margin flat. Proximal mesosome widely trapezoidal with thickened anterior margin, overlapping basal apodeme. Mesosomal lobes slender, elongate, approaching distal parameres. Elongated section fused medianly; 4 *ames* much longer than single *pmes*, sets much separated but forming distally converging rows. Prominent ventral horns on anterior third of mesosome (Fig. 398). Parameral heads broad and rounded. Parameral blades long, broad, tapering only near distal tips.

Host distribution. *Sturnidoecus* is widely distributed on members of several families of birds, primarily Sturnidae, Turdidae, Ploceidae, and Malaconotidae, but some species occur on several other host families (see Appendices I and II), and we have seen undescribed material from additional host families (unpub. data) including Campephagidae, Estrildidae, Icteridae, Lybiidae, Mimidae, Motacillidae, Nectariniidae, Stenostiridae, Timaliidae, Thraupidae. The distribution in the New World appears entirely limited to thrushes and introduced host species (such as *Sturnus vulgaris*), but in Sub-Saharan Africa *Sturnidoecus* is widely distributed on several host families. *Sturnidoecus* appears to be replaced by *Schizosairhynchus* on several South-East Asian sturnid genera, such as *Aplonis* and *Mino* [the “South-East Asian/Pacific Starlings” of Lovette & Rubenstein (2007)]. Intriguingly, *Sturnidoecus* has not been found on either Mimidae or Rhabdornithidae, both of which are closely related to the Sturnidae and Buphagidae (Zuccon *et al*. 2006; Lovette & Rubenstein 2007).

Geographical distribution. Near global, but in some areas primarily on introduced hosts.

Included species
(arranged by species group)

Sturnidoecus australafricanus group
Sturnidoecus australafricanus* **new species

Sturnidoecus basilewskyi group
Sturnidoecus basilewskyi* Tendeiro, 1963: 15 **[1]
  Sturnidoecus basilewskyi minor Tendeiro, 1963: 17 **new synonymy**
  Sturnidoecus lopesi Tendeiro, 1963: 21 **new synonymy**
**Sturnidoecus galbula* Tendeiro, 1963: 29
Sturnidoecus neointermedius Price, Hellenthal & Palma, 2003: 243
  Sturnidoecus intermedius Tendeiro, 1963: 37 *nec Sturnidoecus intermedius* Ansari, 1955a
**Sturnidoecus sexualis* Tendeiro, 1963: 34
**Sturnidoecus textoris* Tendeiro, 1964: 196
**Sturnidoecus xanthops* Tendeiro, 1963: 43

Sturnidoecus clayae group
**Sturnidoecus avivorax* Ansari, 1968: 5
**Sturnidoecus clayae* Ansari, 1968: 5

Sturnidoecus meinertzhageni group
**Sturnidoecus meinertzhageni* Ansari, 1968: 5

Sturnidoecus mon group
Sturnidoecus mon* **new species

***Sturnidoecus pastoris* group [2]**
Sturnidoecus acutifrons (Uchida, 1949: 549) [in *Philopterus*]
Sturnidoecus affinis (Piaget, 1880: 67) [in *Docophorus*]
**Sturnidoecus bannoo* Ansari, 1955b: 62
  Sturnidoecus bannoo laticephalum Ansari, 1968: 9
  Sturnidoecus bannoo avinus Ansari, 1968: 9
Sturnidoecus borobodur Mey, 1989: 156
Sturnidoecus capensis* (Giebel, 1874: 90) [in *Docophorus*] **[3]
  Sturnidoecus capensis fragilis Ansari, 1968: 8 **new synonymy**
**Sturnidoecus neoacutifrons* Price, Hellenthal & Palma, 2003: 243
  Sturnidoecus acutifrons Ansari, 1968: 8 *nec Sturnidoecus acutifrons* (Uchida, 1949)
**Sturnidoecus parvifrons* Ansari, 1968: 7
**Sturnidoecus pastoris* (Denny, 1842: 43) [in *Docophorus*]
Sturnidoecus peguensis Mey, 1989: 156
Sturnidoecus stresemanni Mey, 1989: 154
**Sturnidoecus zoophilic* Ansari, 1968: 11

Sturnidoecus porphyrogenitus group
Sturnidoceus porphyrogenitus* **new species

Sturnidoecus senegalensis group
**Sturnidoecus continuus* (Piaget, 1880: 88) [in *Docophorus*]
**Sturnidoecus distinguendus* Ansari, 1968: 6
**Sturnidoecus eichleri* Ansari, 1968: 6
**Sturnidoecus opeca* Ansari, 1968: 5

**Sturnidoecus senegalensis* (Rudow, 1869: 10) [in *Docophorus*]
**Sturnidoecus theresae* Ansari, 1968: 5

*Sturnidoecus simpl*ex group
**Sturnidoecus caligineus* (Carriker, 1903: 144) [in *Nirmus*]
**Sturnidoecus carrikeri* Ansari, 1955a: 68
**Sturnidoecus illustris* Ansari, 1968: 7
**Sturnidoecus incomptu*s Ansari, 1955a: 72
**Sturnidoecus intermedius* Ansari, 1955a: 68
Sturnidoecus melodicus (Eichler, 1951b: 13) [in *Turdinirmus*]
**Sturnidoecus mexicanus* Carriker, 1956a: 39
**Sturnidoecus obsoletus* Ansari, 1955a: 68
**Sturnidoecus perunensis* Ansari, 1955a: 64
Sturnidoecus regalis Ansari, 1955a: 64
Sturnidoecus rehanae Ansari, 1955a: 67
**Sturnidoecus sarwatae* (Ansari, 1955a): 73 [in *Penenirmus*]
**Sturnidoecus simplex* (Kellogg, 1896: 492) [in *Nirmus*]
    Philopterus migratorii Peters, 1935: 146
**Sturnidoecus zahrae* Ansari, 1968: 7

Sturnidoecus somnodraco group
Sturnidoecus somnodraco* **new species

Sturnidoecus sturni group
**Sturnidoecus afzali* Ansari, 1968: 6
**Sturnidoecus graculae* (Piaget, 1880: 67) [in *Docophorus*]
**Sturnidoecus orientalis* Mey, 1989: 158
****Sturnidoecus sturni*** **(Schrank, 1776: 118) [in *Pediculus*]**
    Philopterus leontodon Nitzsch, 1818: 290
    Docophorus ostralegi Denny, 1842: 42

Sturnidoecus wittei group
**Sturnidoecus wittei* Tendeiro, 1963: 46

Sturnidoecus incertae sedis
Sturnidoecus atharea Ansari, 1955b: 61
Sturnidoecus bituberculatus (Giebel, 1874: 90) [in *Docophorus*]
Sturnidoecus blandus Złotorzycka, 1964a: 278
**Sturnidoecus femoratus* (Piaget, 1880: 68) [in *Docophorus*]
Sturnidoecus radui Bechet, 1965: 59
**Sturnidoecus subacutus* (Piaget, 1880: 68) [in *Docophorus*]

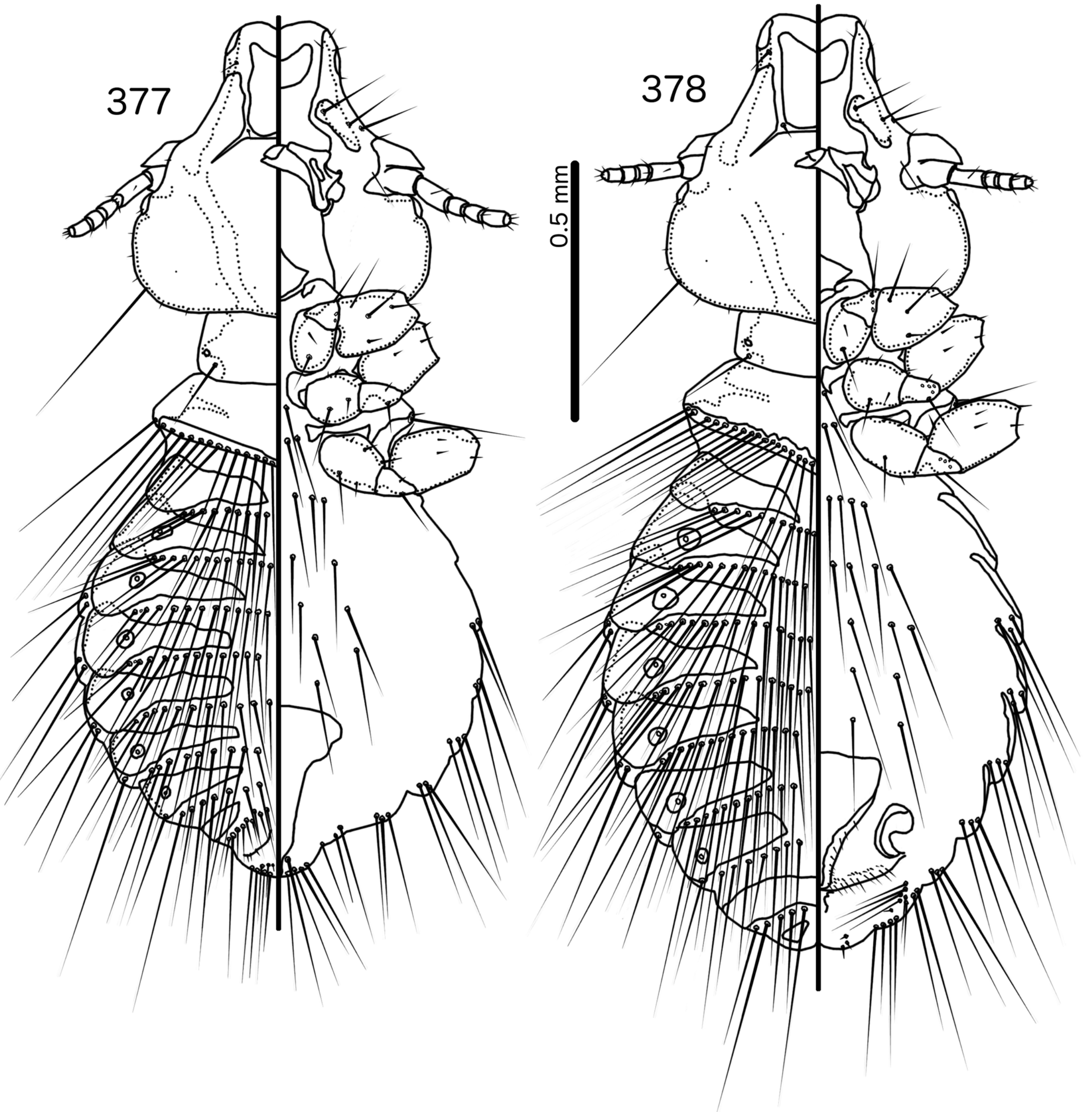
[1] Tendeiro (1963) described *St. basilewskyi* including two subspecies, the nominate and *St. basilewskyi minor*. We follow Ledger (1980) in considering *St. basilewskyi minor* as a junior synonym of *St. basilewskyi basilewskyi*, contra Price *et al.* (2003: 242) who considered *St. basilewskyi* to be described in 1964 and therefore a junior synonym of *St. minor.*

[2] The relationships among *St. affinis, St. bannoo*, *St. peguensis*, and *St. capensis* is complicated, and the distribution of these species appears to be governed by geography rather than host relatedness. These species are morphologically very similar, and may actually be a single species that varies in size between different geographical areas. A more thorough revision is needed to determine more confidently the species limits within this group.

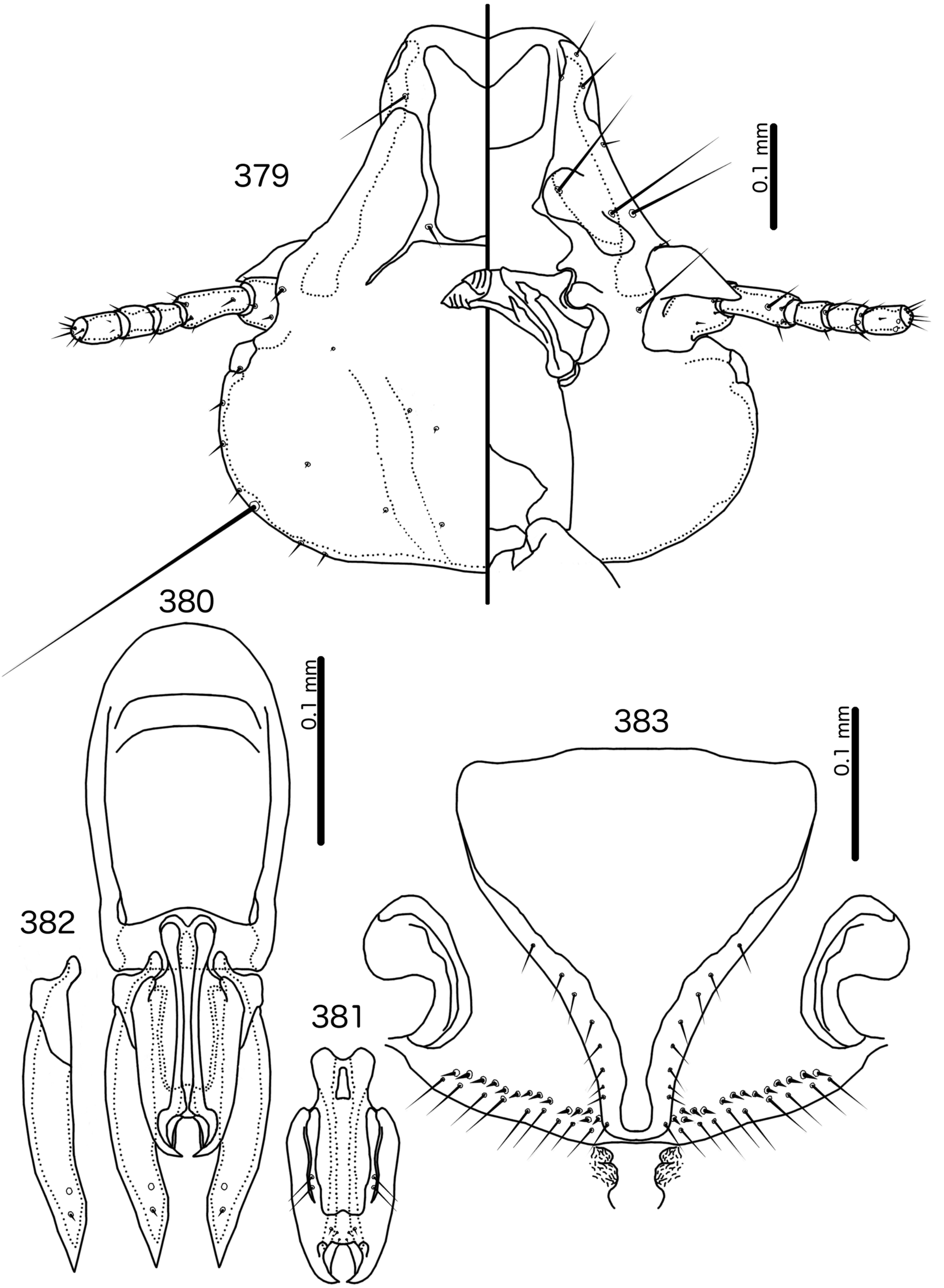
[3] The first mention of this species is in Giebel (1866: 360) but limited to a statement that it is close to *Docophorus leontodon* [= *Sturnidoecus sturni*], making it a *nomen nudum*. The first description was provided by Giebel (1874), and this is the correct date for this species.

Sturnidoecus sturni **(Schrank, 1776)**
(Figs 377–383)

Pediculus sturni Schrank, 1776: 118.
Philopterus leontodon Nitzsch, 1818: 290.
Docophorus ostralegi Denny, 1842: 42.
Philopterus leontodon Nitzsch in Burmeister, 1838; Harrison, 1916: 97.
Philopterus ostralegi Denny, 1842; Harrison, 1916: 101.
Philopterus sturni Schrank, 1776; Harrison, 1918: 104.
Sturnidoecus leontodon (Nitzsch sensu Piaget 1880); Eichler, 1944: 81.
Sturnidoecus ostralegi (Denny), 1842; Hopkins & Clay, 1952; 345 (as junior synonym of *S. sturni*).
Sturnidoecus sturni (Schrank), 1776; Hopkins & Clay, 1952: 345.



FIGURES 377–378. *Sturnidoecus sturni* (Schrank, 1776) ex *Sturnus vulgaris vulgaris*: **377,** male habitus, dorsal and ventral views. **378,** female habitus, dorsal and ventral views.



FIGURES 379–383. *Sturnidoecus sturni* (Schrank, 1776) ex *Sturnus vulgaris vulgaris*: **379,** male head, dorsal and ventral views. **380,** male genitalia, dorsal view. **381,** male mesosome, ventral view. **382,** male paramere, dorsal view. **383,** female subgenital plate and vulval margin, ventral view.

Type host. *Sturnus vulgaris vulgaris* Linnaeus, 1758—European starling.

Type locality. None given in original publication, but neotype has type locality Cornwall, England, United Kingdom.

Other hosts. *Sturnus vulgaris poltaratskyi* Finsch, 1878—European starling. *Sturnus vulgaris zetlandicus* Hartert, 1918—European starling. *Sturnus vulgaris humii* Brooks, 1876 [Ref.: Ansari 1968]—European starling. *Sturnus vulgaris nobilior* Hume, 1879—European starling **new host record**

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 379; *as1* present. Preantennal nodi moderate, blunt. Coni long, pointed, reaching well beyond distal margin of scapes. Preocular nodi large, triangular. Postocular nodi very prominent, rounded: *pos* located far posterior to nodi. Gular plate small, star-shaped. Thoracic and abdominal segments as in genus description and Figs 377–378. Posterior margin of pterothorax convergent to median point. Tergopleurites with large, translucent areas around spiracle openings. Tergopleurites pale brown. Sternal plates absent. Both sexes very setose.

Male. Abdominal chaetotaxy as in Table 11 and Fig. 377. Subgenital plate may reach posterior margin of abdomen. Male genitalia as in genus and species group descriptions and Figs 380–382. Measurements ex *Sturnus vulgaris poltaratskyi* (n = 2): TL = 1.41–1.43; HL = 0.47–0.48; HW = 0.48–0.49; PRW = 0.28–0.29; PTW = 0.43–0.45; AW = 0.66–0.67. Ex *S. v. vulgaris* (n = 14): TL = 1.32–1.57 (1.44); HL = 0.46–0.54 (0.49); HW = 0.46–0.55 (0.50); PRW = 0.27–0.31 (0.29); PTW = 0.42–0.49 (0.45); AW = 0.58–0.78 (0.70). Ex. *S. v. zetlandicus* (n = 15): TL = 1.36–1.60 (1.45); HL = 0.47–0.54 (0.50); HW = 0.48–0.56 (0.51); PRW = 0.26–0.31 (0.29); PTW = 0.41–0.50 (0.45); AW = 0.61–0.73 (0.68).

Female. Abdominal chaetotaxy as in Table 11 and Fig. 378. Subgenital plate funnel-shaped, very narrow distally (Fig. 383). Vulval margin (Fig. 383) gently rounded, with 7–10 long, slender *vms* on each side, and 12–15 (rarely 16–17) thorn-like *vss* on each side; 5–9 short, slender *vos* on each side; distal *vos* median or distal to *vss*. Measurements ex *Sturnus vulgaris poltaratskyi* (n = 3): TL = 1.73–1.93; HL = 0.52–0.56; HW = 0.54–0.56; PRW = 0.31–0.34; PTW = 0.49–0.54; AW = 0.84–0.94. Ex *S. v. vulgaris* (n = 14): TL = 1.65–1.83 (1.75); HL = 0.50–0.56 (0.53); HW = 0.51–0.60 (0.54); PRW = 0.29–0.33 (0.31); PTW = 0.48–0.54 (0.50); AW = 0.74–0.89 (0.83). Ex *S. v. zetlandicus* (n = 15): TL = 1.59–1.86 (1.72); HL = 0.51–0.58 (0.55); HW = 0.51–0.61 (0.57); PRW = 0.29–0.34 (0.32); PTW = 0.45–0.54 (0.50); AW = 0.72–0.88 (0.77).

Type material. Ex ***Sturnus vulgaris vulgaris***: **Neotype** ♂, Cornwall, England, United Kingdom, Mar. 1946, R. Meinertzhagen, 15663 (NHML). **Neoallotype** ♀, same data as neotype (NHML). **Neoparatypes:** 5♂, 5♀, same data as neotype (NHML); 7♂, 9♀, Kent, England, United Kingdom, Mar. 1937, R. Meinertzhagen, 8337 (NHML); 5♂, 5♀, South Uist, Scotland, United Kingdom, Jan. 1934, R. Meinertzhagen, 100–2, 127 (NHML); 2♂, Lincolnshire, England, United Kingdom, Dec. 1936, R. Meinertzhagen, 8149 (NHML); 6♂, 10♀, Shetlands, Scotland, United Kingdom, Aug. 1939, R. Meinertzhagen, 13573–6 (NHML); 16♂, 24♀, Norfolk, England, United Kingdom, Apr. 1934, R. Meinertzhagen, 297, 764, 14088–9, 14104–5 (NHML); 1♀, Layer Marney, Essex, England, United Kingdom, 1 Jun. 1934, J.W. Campbell, Brit. Mus. 1936-624 (NHML); 6♂, 15♀, Cornwall, England, United Kingdom, Jan. 1937, R. Meinertzhagen, 8233–5 (NHML); 8♂, 4♀, Ireland, Aug. 1937. R. Meinertzhagen, 10463–4, 10466 (NHML).

Ex ***Sturnus vulgaris zetlandicus*** **Neoparatypes:** 10♂, 10♀, Hoy, Orkney Islands, Scotland, United Kingdom, 5 Aug. 1938, G.H.E. Hopkins (NHML); 2♂, 3♀, Shetlands, Scotland, United Kingdom, Aug. 1939, R. Meinertzhagen, 13567–9 (NHML); 3♂, 5♀, North Uist, Scotland, United Kingdom, Aug. 1941, R. Meinertzhagen, 14539–41 (NHML); 3♂, 2♀, South Uist, Scotland, United Kingdom, Jan. 1934, R. Meinertzhagen, 93, 98, 120 (NHML); 10♂, 9♀, Orkney, Scotland, United Kingdom, Aug. 1936, R. Meinertzhagen, 11514 (NHML); 44♂, 51♀, same locality and collector as previous, Aug. 1938, 11425, 11479–80, 11525 (NHML**).**

Ex ***Haematopus ostralegus*** **(**stragglers**)**: **Holotype** ♀ of *Docophorus ostralegi*: United Kingdom, Denny Collection, [BM]1952-98 (NHML). **Syntypes** of *Docophorus ostralegi*: 2♂, same data as holotype (NHML).

Additional material examined (non-types)

Ex *Sturnus vulgaris vulgaris*: 1♂, 3♀, Llanbrynmair, Monmouthshire, Wales, United Kingdom, 20 Jul. 1960 (NHML); 1♀, Pembrey, Carmarthenshire, Wales, United Kingdom, 1 Jun. 1935, J.G. Williams (NHML); 1♂, Longton, Lancashire, England, United Kingdom, 8 Feb. 1923, W.H. Heathcote (NHML); 1♀, Radcliffe, Lancashire, England, United Kingdom, 1 Mar. 1931, T. Warwick (NHML); 1♂, 3♀, Layer Marney, Essex, England, United Kingdom, 1 Apr. 1934, J.W. Campbell (NHML); 1♂, 1♀, Cornwall, England, United Kingdom, 23 Feb. 1965, Lasswade Veterirany Lab (NHML); 1♂, 1♀, Bass Strait, Australia, Dec. 1952, BM1953-735 (NHML); 1♂, 1♀, Blue Lake, Raoul Island, New Zealand, 6 Jan. 1967, "D.S.I.R., N.Z.", Brit. Mus. 1968-401

(NHML); 1♀, Herzogenbach [?], Germany, 20 Apr. 1936, 437 (NHML) [one slide contains unidentified menoponid]. 1♂, 1♀, Uukeroda [?], Eisenach, Germany, 26 Jul. 1875[?], 46 (MFNB); 1♂, 1♀, Halle, Germany, 18 May 1949, 4012 (MFNB); 1♂, 1♀, Norfolk, England, United Kingdom, Feb. 1934, R. Meinertzhagen, 297 [Meinertzhagen No.], 931 [Eichler No.]. 4♂, 7♀, Berlin, Germany, 27 Apr. 1953, [Stefan] von Kéler, IN1383/1-1–2/8 (MFNB); 1♀, Auggen, Baden, Germany, 1 Aug. 1959, [Stefan] von. Kéler (MFNB); 2♂, 1♀, Józefów, Warszaw, Poland, 29 Mar. 1954, Klopicka, 48/1954 (MFNB); 1♂, 1♀, Bácsalmás, Bácska, Bács-Kiskun County, Hungary, 18 Apr. 1969, J. Rékási, 12068–9 (PMSL); 7♂, 7♀, Radovlija, Podbrezje, Naklo, Gorenjska, Slovenia, 20 Nov. 1959, S. Brelih, 2923–36 (PMSL); 3♂, 2♀, Stozice, Ljubljana, Slovenia, 15 Mar. 1960, S. Brelih, 10863–7 (PMSL); 3♂, 2♀, Ljubljansko Barje, Vrhnika, Slovenia, 15 Mar. 1956, S. Brelih, 122-3, 1133–5 (PMSL).

Ex ***Sturnus vulgaris nobilior***: 6♂, 8♀, Afghanistan, May 1937, R. Meinertzhagen, 10235, 10258 (MNHML); 7♂, 12♀, Sind, India, Jan. 1937, R. Meinertzhagen, 10409 (NHML).

Ex ***Sturnus vulgaris poltaratskyi*** **[**some as ***Sturnus vulgaris menzbieri*]:** Bharatpur, Rajasthan State, India, 4 Jan. 1952, R. Meinertzhagen, 19679, 19578, BM1952-143 (NHML); 3♀, Punjab, India, Dec. 1940, R. Meinertzhagen, 14418 (NHML).

Ex ***Sturnus vulgaris zetlandicus***: 4♂, 7♀, North Uist, Hebrides, Scotland, United Kingdom, Aug. 1941, R. Meinertzhagen, 14471–7 (NHML) [slide contains one *Philopterus* and one *Quadraceps*]. 3♂, 13♀, Orkney, Scotland, United Kingdom, Aug. 1938, R. Meinertzhagen, 11308, 11361, 11479 (NHML); 1♂, 1♀, Fair Isle, Scotland, United Kingdom, 8159 on reverse (OSUS).

Ex ***Sturnus vulgaris*** **ssp.:** 1♂, 1♀, unknown locality (NHML); 1♂, 1♀, Bahrain, 2 Jan. 1971, M.D. Gallagher, 564–5, Brit. Mus. 1971-349 (NHML); 1♀, unknown locality, 11. Apr. 1876 (MFNB); 22♂, 32♀, unknown locality, Eichler Collection, 120, 353, 379, 437, 868, 956, 1800, 1853, 1863, 2671, 2922, 3117, 3546, 3630–1, 3748, 3974, 50405, 50447, 50556, 50558 (MFNB) [slides also contain *Brueelia nebulosa* and unidentified menoponids; one specimen infested by *Trenomyces helveticus*]. 1♂, 4♀, unknown locality, 27 May 1947, Eichler Collection, 4013 (MFNB); 1♂, 2♀, unknown locality, [IN]1824/47–8 (MFNB); 4♂, 3♀, "Kowno", 5 Mar. 1920, S.G. Iwanowsky, IN1401/6/2-1–3 (MFNB); 1♂, 5♀, unknown locality, 7 Jul. 1992, D.H. Clayton, 218 (UMSP).

Ex ***Turdus philomelos*** **[**as ***Turdus musicus*****] (**stragglers**):** 1♂, 1♀, Raoul Island, New Zealand, 26 Nov. 1962, C.M. Clark, Brit. Mus. 1966-330 (NHML).

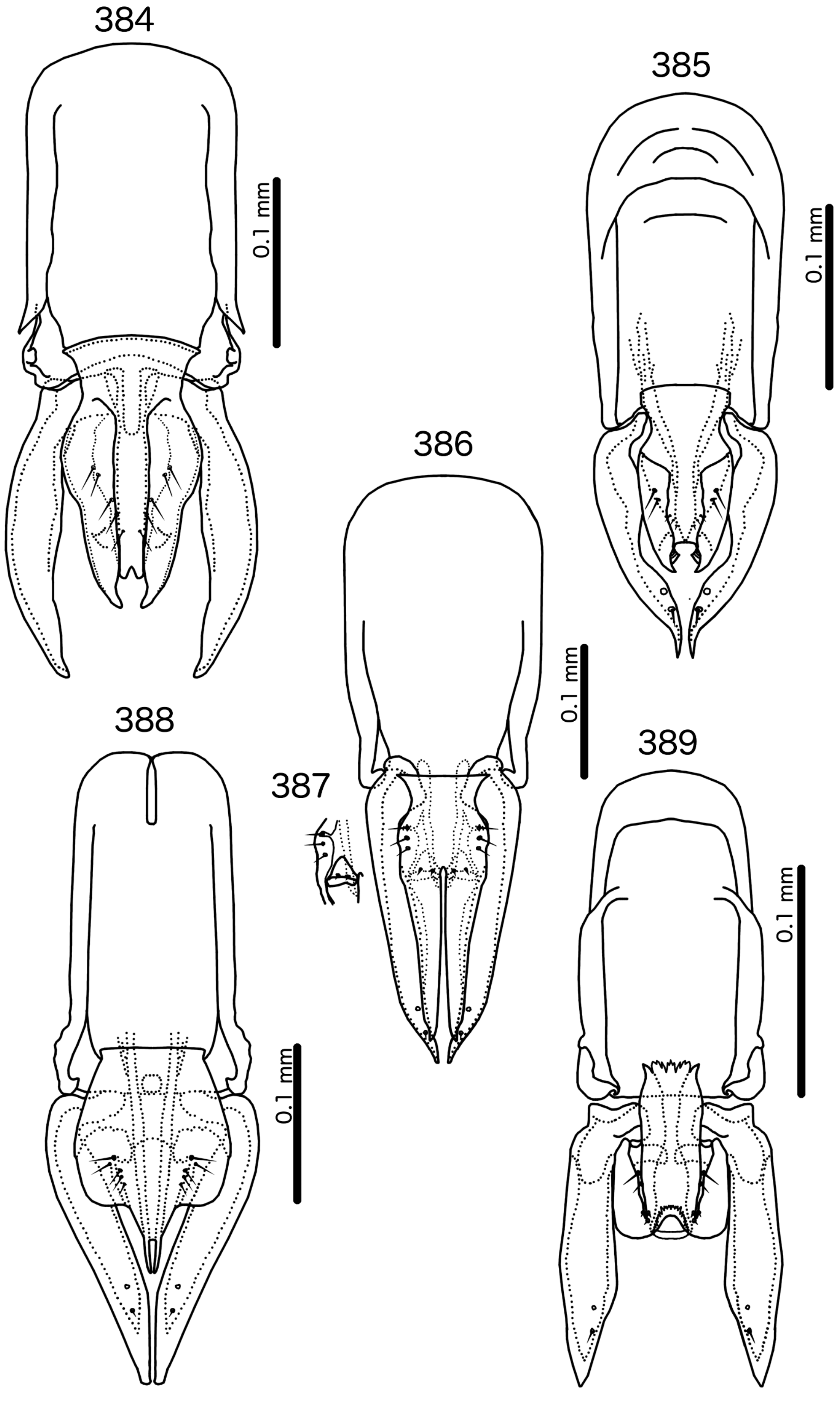
Remarks. Females from *Sturnus vulgaris poltaratskyi* have fewer submarginal setae (9–10) than lice collected from western Eurasia. As only a few specimens from *S. vulgaris* from continental Europe, Russia, and the Middle East have been examined, we are unable to establish whether these differences are due to clinal variation or indicative of these forms being distinct populations. Based on available material, we consider all of these lice to be *St. sturni*.

Sturnidoecus australafricanus Gustafsson & Bush, new species

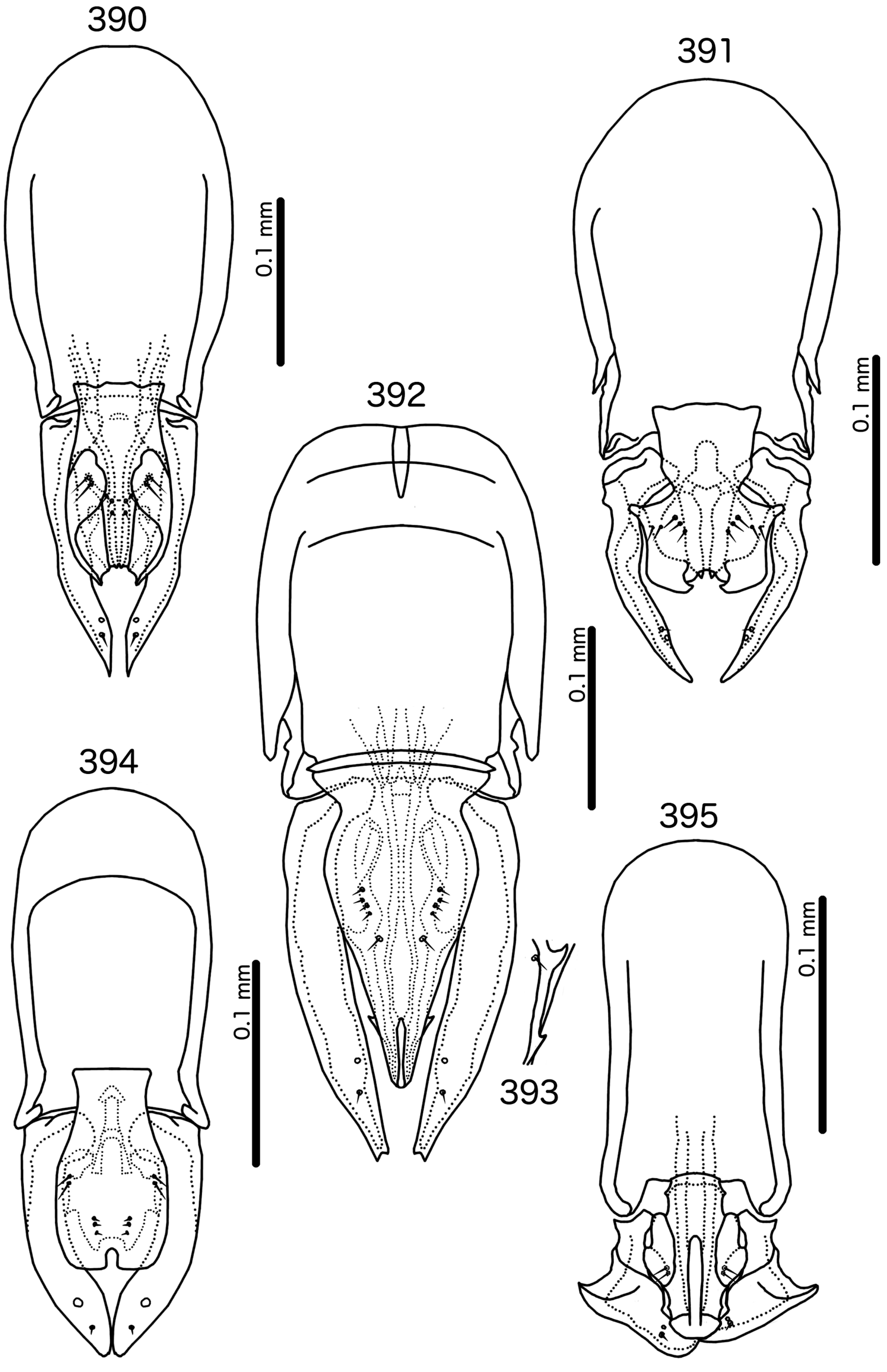
(Figs 399–405)

Type host. *Corvinella melanoleuca expressa* Clancey, 1961—magpie shrike.
Type locality. Nwamayiwane, South Africa.

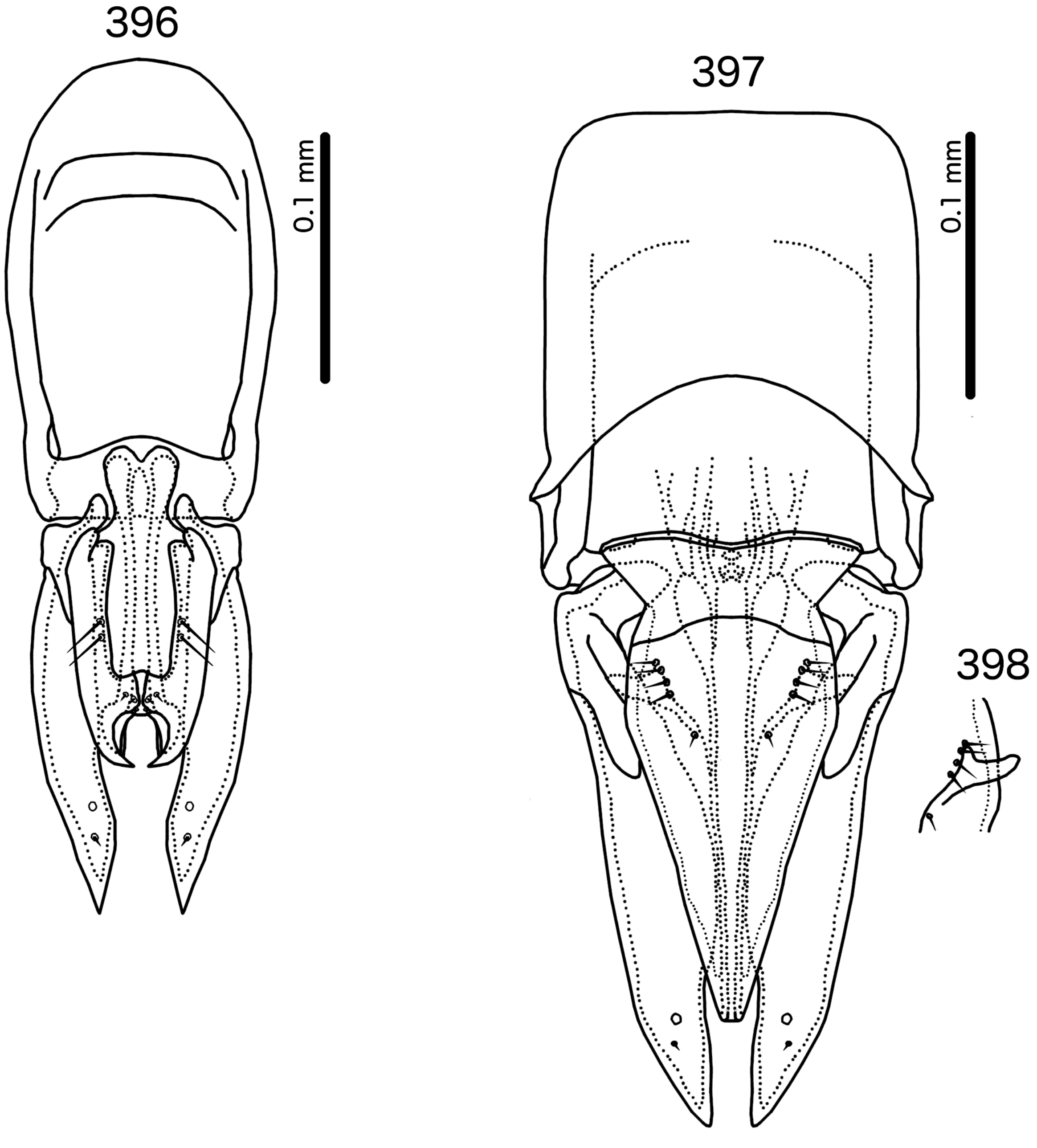
Diagnosis. Only known species in its species-group, and easily separated from most other *Sturnidoecus* by the structure of male genitalia. The overall shape of the mesosome of *St. australafricanus* **n. sp.** (Fig. 384) is similar to that of the *St. basilewskyi* (Fig. 385), *St. pastoris* (Fig. 390) and *St. sturni* (Fig. 396) species-groups, being generally fairly rounded, with paired hooks on distal margin. However, the lateral margins of the mesosome are more sinuous in *St. australafricanus* than in members of the other three species groups. Also, unlike the *St. basilewskyi* and *St. sturni* species groups, there are hook-shaped structures on each side of the ventral surface of the mesosome in *St. australafricanus*. The proximal mesosome of *St. australafricanus* is widely trapezoidal, with a convex anterior margin, as in the *St. basilewskyi* species-group, whereas in the *St. sturni* species group the proximal mesosome is smaller with a concave anterior margin; the proximal mesosome of the *St. pastoris* species-group is irregular, but still widens at the anterior margin. In all four groups the *ames* and *pmes* form a more or less obvious pair of distantly converging rows, but only in the *St. australafricanus* group are the *ames* and *pmes* both of roughly equal size.



FIGURES 384–389. Dorsal views of *Sturnidoecus* male genitalia representing all species groups (setae transposed to dorsal side for clarity): **384,** *Sturnidoecus australafricanus* **n. sp.** (*St. australafricanus* group). **385,** *Sturnidoecus basilewskyi* Tendeiro, 1963 (*St. basilewskyi* group). **386,** *Sturnidoecus clayae* Ansari, 1968 (*St. clayae* group). **387,** *Sturnidoecus clayae* Ansari, 1968 (part of ventral view of mesosome showing the triangular extensions). **388,** *Sturnidoecus meinertzhageni* Ansari, 1968 (*St. meinertzhageni* group). **389,** *Sturnidoecus mon* **n. sp.** (*St. mon* group).



FIGURES 390–395. Dorsal views of *Sturnidoecus* male genitalia representing all species groups (setae transposed to dorsal side for clarity): **390,** *Sturnidoecus pastoris* (Denny, 1842) (*St. pastoris* group). **391,** *Sturnidoecus porphyrogenitus* **n. sp.** (*St. porphyrogenitus* group). **392,** *Sturnidoecus senegalensis* (Rudow, 1896) (*St. senegalensis* group). **393,** *Sturnidoecus senegalensis* (Rudow, 1896) (part of ventral view of mesosome showing the two ventral hooks). **394,** *Sturnidoecus simplex* (Kellogg, 1896) (*St. simplex* group). **395** *Sturnidoecus somnodraco* **n. sp.** (*St. somnodraco* group).

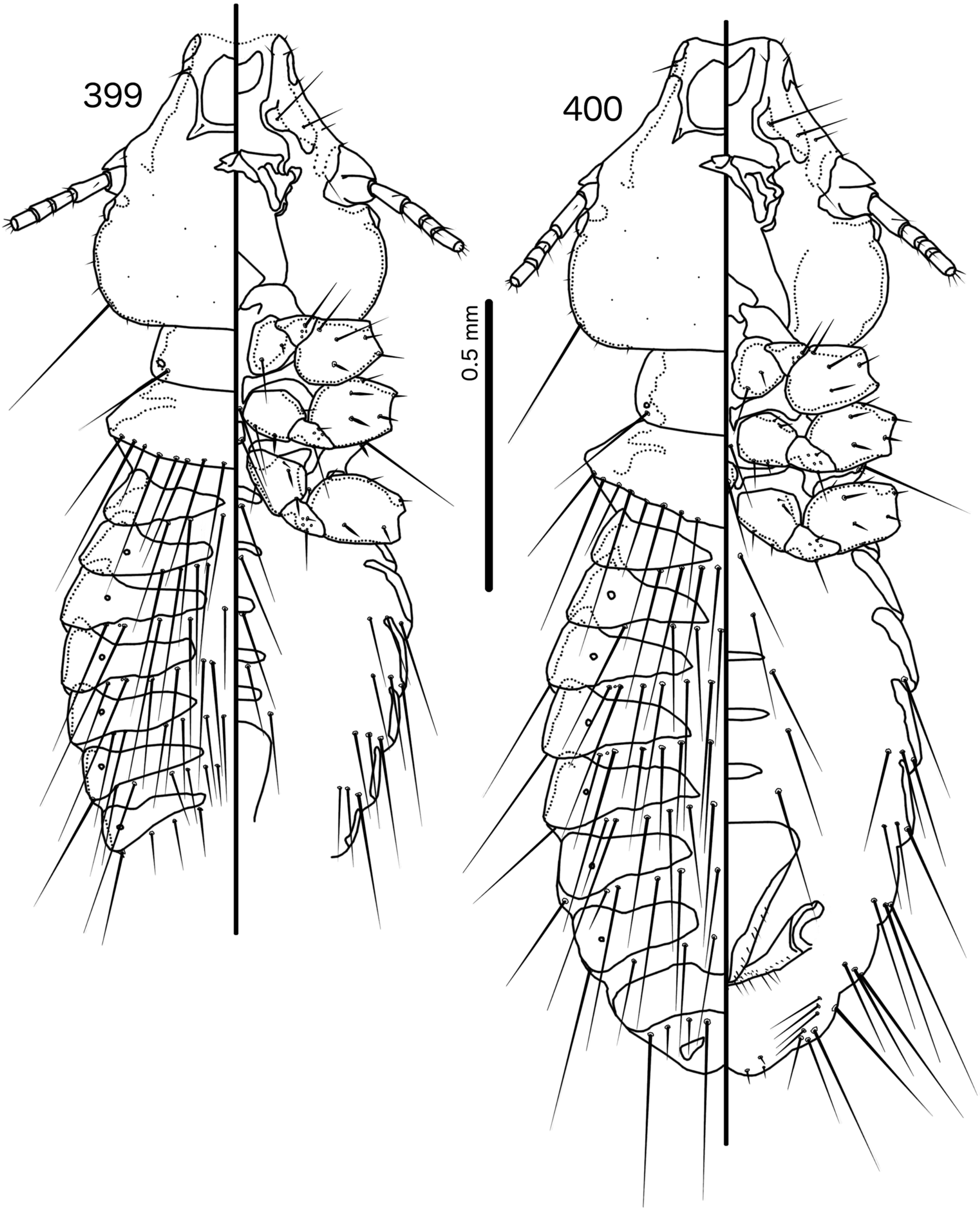


FIGURES 396–398. Dorsal views of *Sturnidoecus* male genitalia representing all species groups (setae transposed to dorsal side for clarity): **396,** *Sturnidoecus sturni* (Schrank, 1776) (*St. sturni* group). **397,** *Sturnidoecus wittei* Tendeiro, 1963 (*St. wittei* group). **398,** *Sturnidoecus wittei* Tendeiro, 1963 (part of ventral view of mesosome showing single hook).

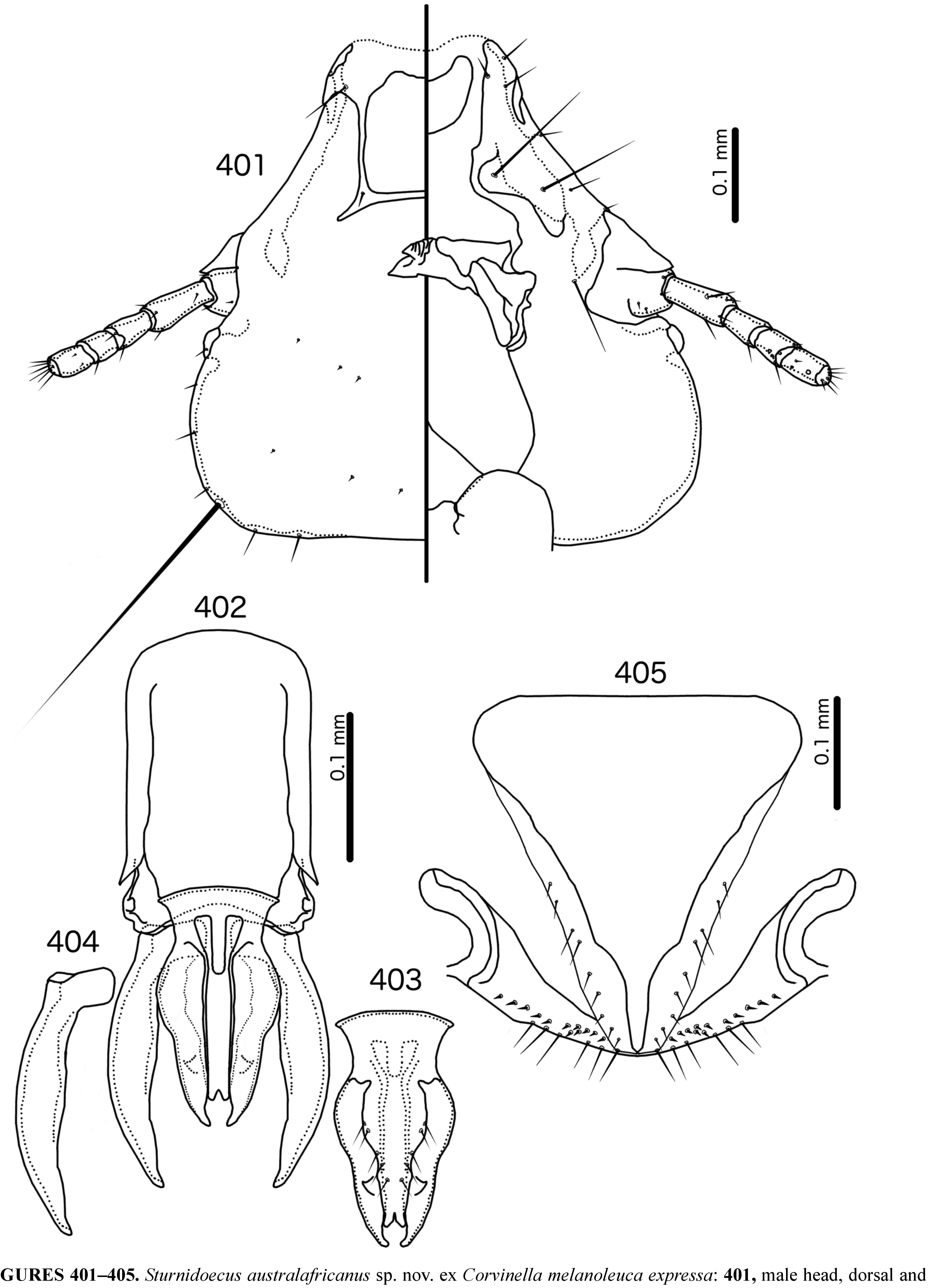
Unlike most other groups of *Sturnidoecus*, *St. australafricanus* (Figs 399–400) have reduced sternal plates that are narrower than the subgenital plate in both sexes. Uniquely in *Sturnidoecus*, female *St. australafricanus* (Fig. 400) have sternal plates only on segments III–VI, but not on segment II. The female genitalia are typical for the genus, and the lack of this sternal plate may be the best character to differentiate female *St. australafricanus* from other species.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 401; *as1* present. Dorsal preantennal suture extends only slightly towards preantennal nodi. Coni broad and short compared to other *Sturnidoecus* spp., barely or not reaching distal margin of scapes. Preocular nodi comparatively large, rectangular. Postocular nodi comparatively large, rounded; *pos* located just posterior to nodi. Gular plate slender, spade-shaped. Thoracic and abdominal segments as in genus description and Figs 399–400. Posterior margin of pterothorax rounded in both sexes. Sternal plates small in both sexes.

Male. Distal abdomen of male distorted in single available male, and not illustrated. Sternal plates present on segments II–VI, small (Fig. 399). Abdominal chaetotaxy as in Table 11 and Fig. 399. Male genitalia as in genus and species group description and Fig. 402–404. Measurements ex *Corvinella melanoleuca expressa* (n = 1): TL = 1.45; HL = 0.46; HW = 0.47; PRW = 0.30; PTW = 0.43; AW = 0.57.



FIGURES 399–400. *Sturnidoecus australafricanus* sp. nov. ex *Corvinella melanoleuca expressa*: **399,** male dorsal and ventral views (distal abdomen not illustrated, distorted in only available specimen). **400,** female habitus, dorsal and ventral views.



FIGURES 401–405. *Sturnidoecus australafricanus* sp. nov. ex *Corvinella melanoleuca expressa*: **401,** male head, dorsal and ventral views (hyaline margin collapsed in single available male, dotted lines represent likely extent in fresh material). **402,** male genitalia, dorsal view. **403,** male mesosome, ventral view. **404,** male paramere, dorsal view. **405,** female subgenital plate and vulval margin, ventral view.

Female. Sternal plates present on segments IV–VI (Fig. 400). Abdominal chaetotaxy as in Table 11 and Fig. 400. Subgenital plate roughly triangular, narrowing considerably distally (Fig. 405). Vulval margin (Fig. 405) gently rounded, with 5–7 long, slender *vms* on each side, and 10–13 short, thorn-like *vss* on each side; 7–10 short, slender *vos* on each side; distal 1–2 *vos* median to *vss*. Measurements ex *Corvinella melanoleuca expressa* (n = 6): TL = 1.63–1.77; HL = 0.48–0.52; HW = 0.49–0.53; PRW = 0.30–0.32; PTW = 0.44–0.47; AW = 0.61–0.71.

Etymology. The species epithet refers to the predominantly southern African distribution of the host.

Type material. Ex ***Corvinella melanoleuca* expressa** [as ***Corvinella melanoleuca***]: **Holotype** ♂, Nwamayiwane, South Africa, 24 Apr. 1983, Braack & Espie, PHTH-22 (NHML). **Paratypes:** 6♀, same data as holotype (NHML).

Sturnidoecus mon **Gustafsson & Bush, new species**

(Figs 406–414)

Type host. *Euplectes hordeaceus* (Linnaeus, 1758)—black-winged bishop.
Type locality. Lovi, Mole, Northern Region, Ghana.

Diagnosis. *Sturnidoecus mon* **n. sp.** is the only known species in its group, and is separated from all other *Sturnidoecus* by the shape of the male genitalia (Figs 389, 411–413). Apart from *St. mon*, the only *Sturnidoecus* species-groups with largely flat posterior margins of the mesosome are the *St. porphyrogenitus* (Fig. 391) and *St. simpl*ex (Fig. 394) species-groups, however apart from this superficial similarity, these three species groups are very different in the male genitalia. *Sturnidoecus mon* is the only known species in the genus with a clearly defined, subterminal gonopore (Fig. 410), an irregular, somewhat frayed-looking anterior margin of the proximal mesosome, and paired ventral rectangular flaps of the anterior mesosomal lobes. Females can only be distinguished from other species of *Sturnidoecus* by the median bulge of the vulval margin (Fig. 412).

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 408; *as1* absent. Preantennal nodi not broader than marginal carinae, not distinct. Coni slender, reaching just beyond distal margin of scapes. Preocular nodi small, square-shaped. Postocular nodi not distinct; *pos* located at posterior margin of eye. Gular plate broad, very angular. Thoracic and abdominal segments as in genus description and Figs 406–407. Posterior margin of pterothorax rounded in both sexes. Sternal plates large, present on segments II–VI in both sexes.

Male. Abdominal chaetotaxy as in Table 11 and Fig. 406. Male genitalia as in genus and species group descriptions and Figs 409–411. Measurements ex *Euplectes hordeaceus* (n = 5): TL = 1.14–1.22; HL = 0.38–0.41; HW = 0.37–0.42; PRW = 0.21–0.23; PTW = 0.30–0.36; AW = 0.44–0.47.

Female. Abdominal chaetotaxy as in Table 11 and Fig. 407. Subgenital plate roughly triangular, lateral margins irregular distally (Fig. 412). Vulval margin bulging distinctly in median section (Fig. 412), with 3–4 short slender *vms* on bulging section on each side, and 8–10 thorn-like *vss* on each side; 5–7 long, slender *vos* on each side; distal 1–2 *vos* median to *vss*. Measurements ex *Euplectes hordeaceus* (n = 2): TL = 1.33–1.41; HL = 0.42–0.44; HW = 0.42–0.43; PRW = 0.23 –0.24; PTW = 0.36–0.38; AW = 0.52–0.59.

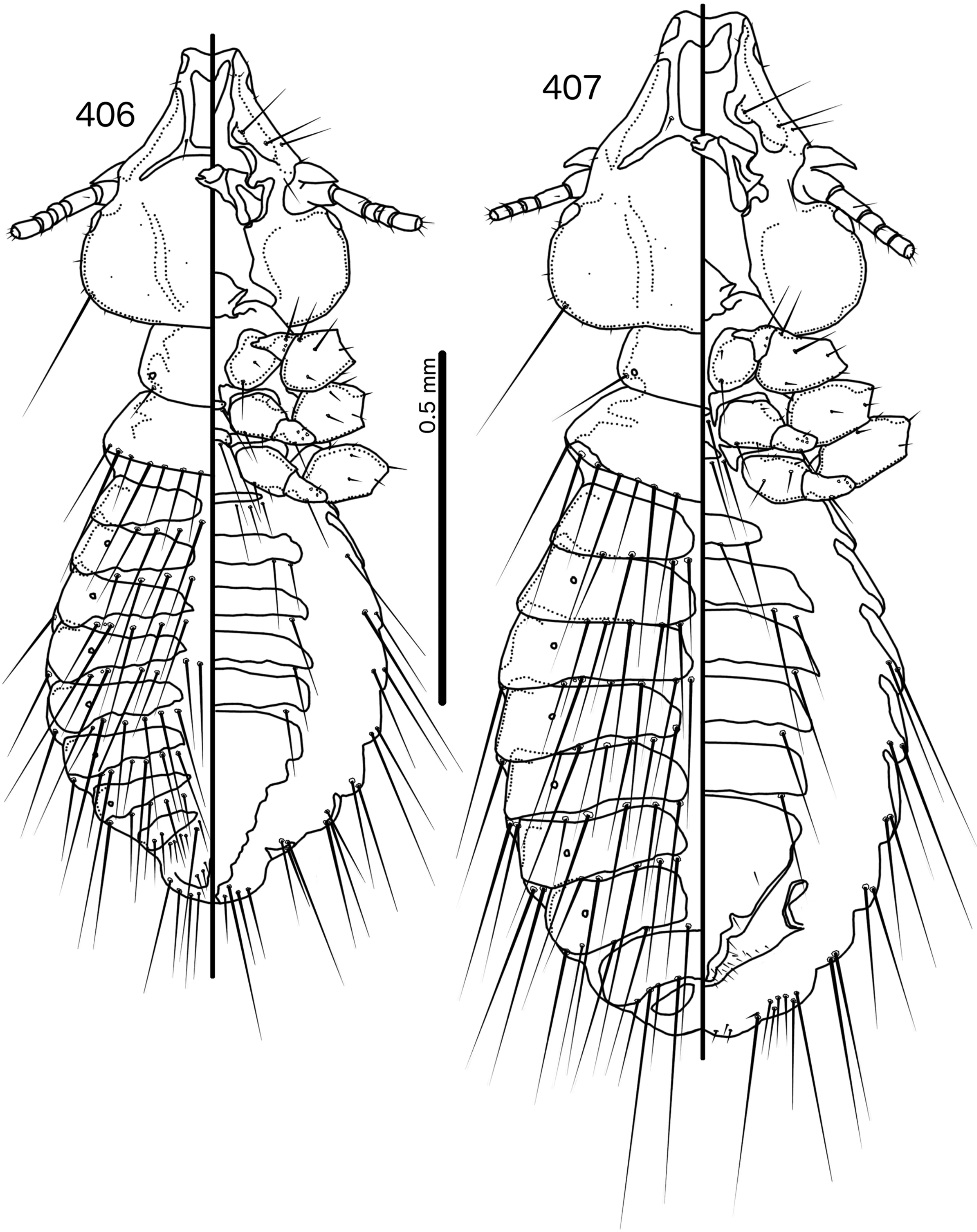
Etymology. The species epithet is derived from Japanese "*mon*" for "gate", as the overall shape of the mesosome and parameres (Fig. 409) resemble the stylized shape of the Japanese *torii* gates.

Type material. Ex ***Euplectes hordeaceus***: **Holotype** ♂, Lovi, Mole [National Park], Northern Region, Ghana, 26 Aug. 1968, Oxford University Expedition, Brit. Mus. 1969-32 (NHML). **Paratypes:** 9♂, 4♀, same data as holotype (NHML).

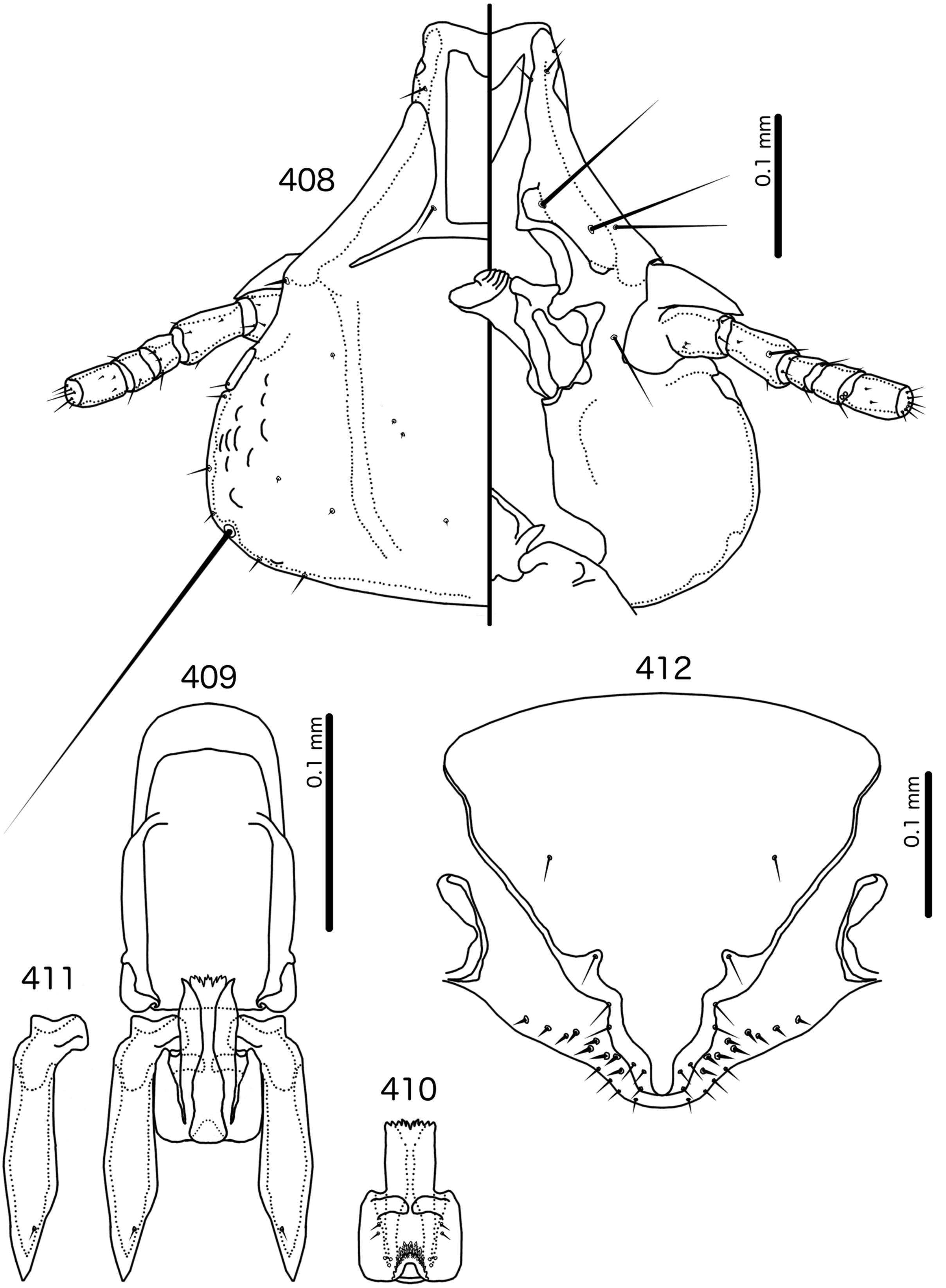
Sturnidoecus porphyrogenitus **Gustafsson & Bush, new species**

(Figs 413–419)

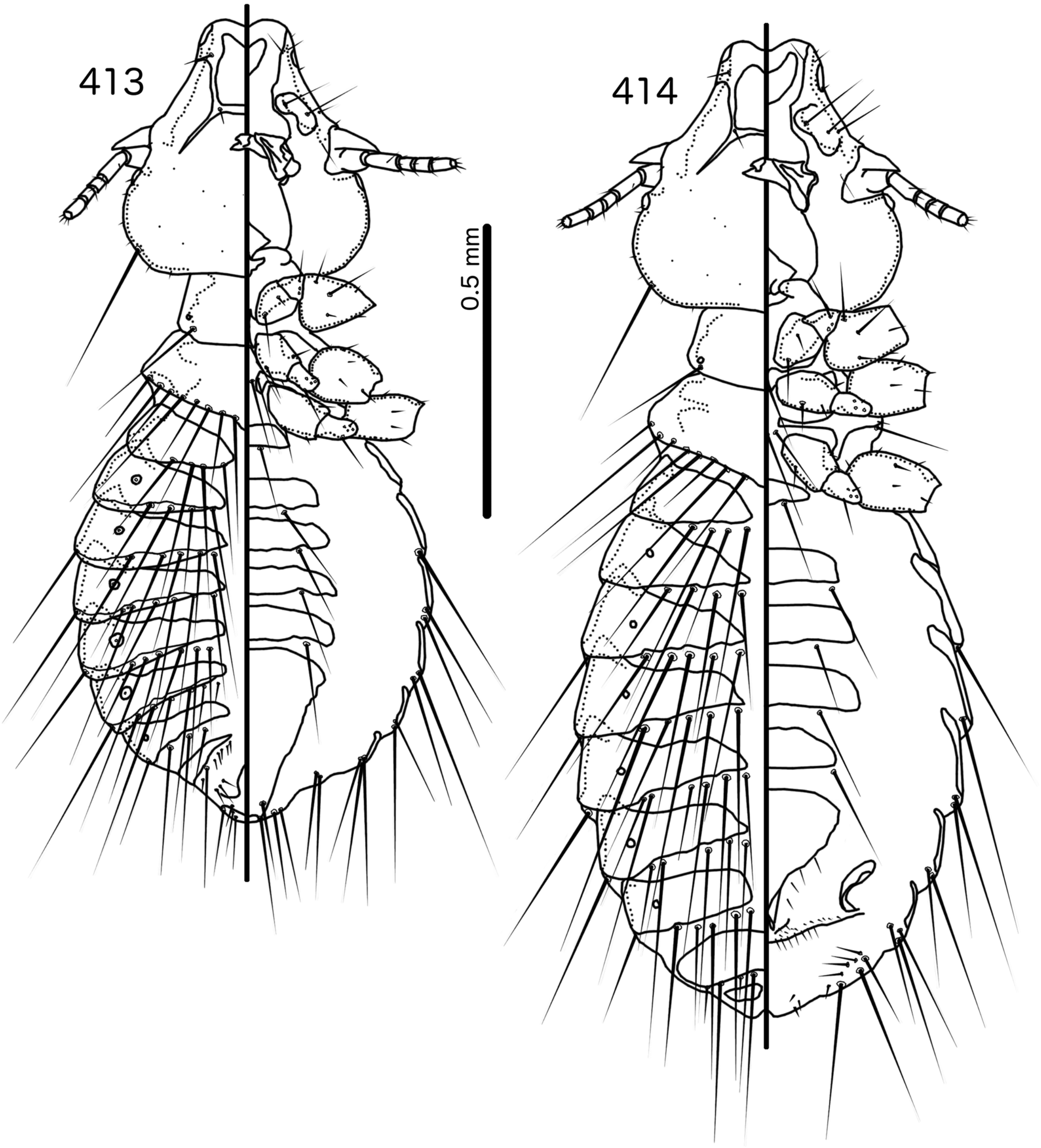
Type host. *Cinnyricinclus leucogaster verreauxi* (Bocage, 1870)—violet-backed starling.
Type locality. 15° 46' S, 34° 28' E, Mozambique.



FIGURES 406–407. *Sturnidoecus mon* **n. sp.** ex *Euplectes hordeaceus*: **406,** male habitus, dorsal and ventral views. **407,** female habitus, dorsal and ventral views.

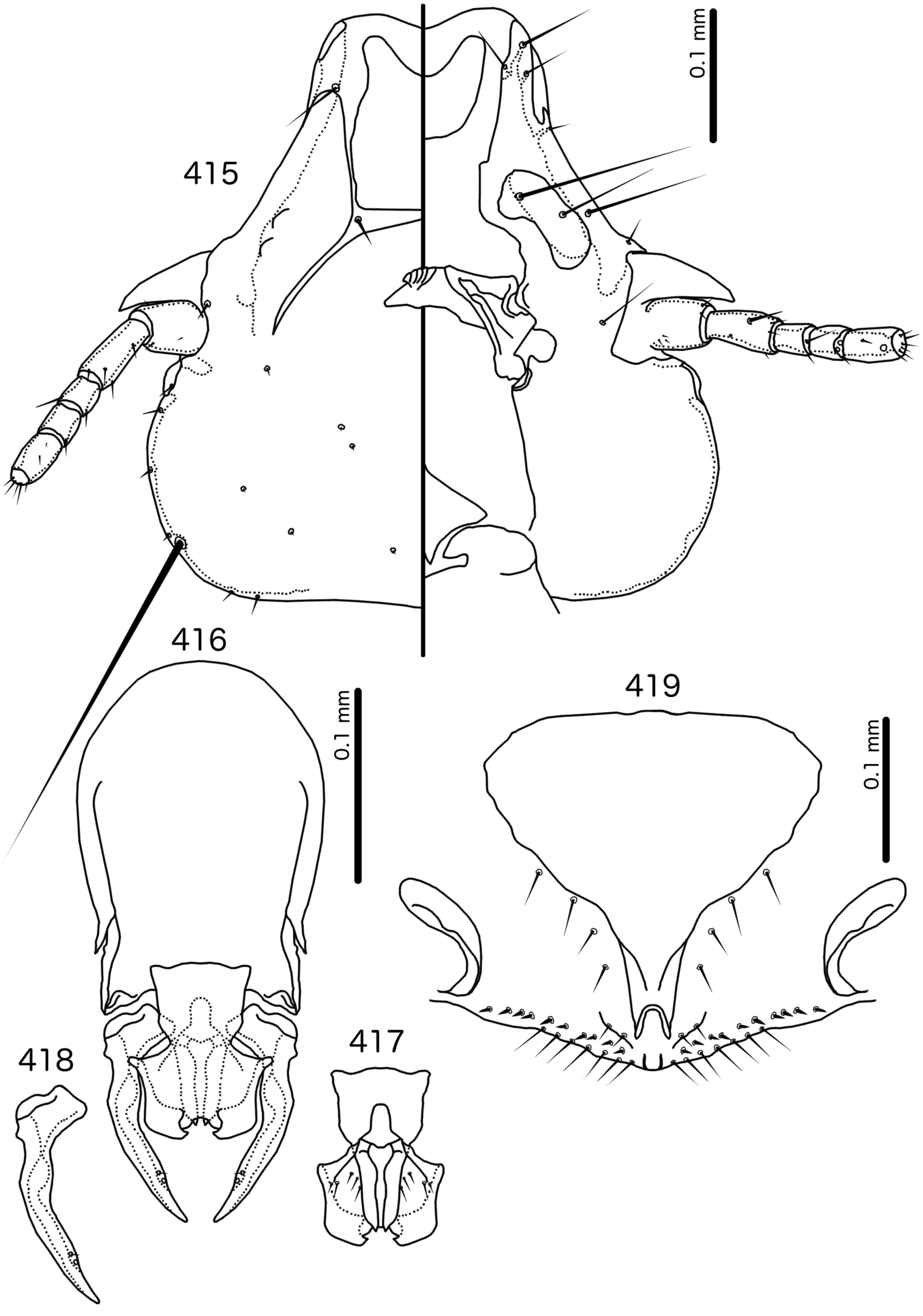


FIGURES 408–412. *Sturnidoecus mon* **n. sp.** ex *Euplectes hordeaceus*: **408,** male head, dorsal and ventral views. **409,** male genitalia, dorsal view. **410,** male mesosome, ventral view. **411,** male paramere, dorsal view. **412,** female subgenital plate and vulval margin, ventral view.



FIGURES 413–414. *Sturnidoecus porphyrogenitus* **n. sp.** ex *Cinnyricinclus leucogaster verreauxi*: **413,** male habitus, dorsal and ventral views. **414,** female habitus, dorsal and ventral views.

Diagnosis. *Sturnidoecus porphyrogenitus* **n. sp.** is the only known species in its group, and separated from all other species of *Sturnidoecus* by the shape and structure of the male genitalia (Figs 392, 416–418). The paired hooks on the distal margin of the mesosome are also found in the *St. australafricanus* **n. sp.** (Fig. 384), *St. basilewskyi* (Fig. 385), *St. pastoris* (Fig. 390), and *St. sturni* (Fig. 397) species-groups. However, *St. porphyrogenitus* is the only species with wide, roughly rectangular mesosomal lobes with angular antero-lateral processes. Uniquely within *Sturnidoecus*, the *ames* of *St. porphyrogenitus* are shorter than the *pmes*, and the *ames* are situated laterally to the *pmes*, rather than anterior to these (Fig. 417). Abdominal chaetotaxy of *St. porphyrogenitus* is distinct within the genus (Table 11), in that *aps* and *psps* are absent in more anterior segements in both sexes. This pattern is similar to that found in *St. mon* **n. sp.** and *St. australafricanus*, but in these species both sexes have *psps* on tergopleurite IV,



FIGURES 415–419. *Sturnidoecus porphyrogenitus* **n. sp.** ex *Cinnyricinclus leucogaster verreauxi*: **415,** male head, dorsal and ventral views. **416,** male genitalia, dorsal view. **417,** male mesosome, ventral view. **418,** male paramere, dorsal view. **419,** female subgenital plate and vulval margin, ventral view.

whereas in *St. porphyrogenitus* there are no *psps* on tergopleurite IV. Female *St. porphyrogenitus* best separated from other species of *Sturnidoecus* by the U-shaped thickening of the distal subgenital plate, which is not found in any other *Sturnidoecus*.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 415; *as1* present. Preantennal nodi slender, pointed. Coni long, clearly reaching beyond distal margin of scapes. Preocular nodi small. Postocular nodi small, not much wider than marginal temporal carina; *pos* on posterior end of nodi. Gular plate short, squat, with median point. Thoracic and abdominal segments as in genus description and Figs 413–414. Posterior margin of pterothorax convergent with distinct median bulge. Sternal plates moderate, present on segments II–VI in both sexes.

Male. Abdominal chaetotaxy as in Table 11 and Fig. 413. Male genitalia as in genus and species group descriptions and Figs 391, 416–418. Measurements ex *Cinnyricinclus leucogaster verreauxi* (n = 2): TL = 1.40–1.41; HL = 0.42–0.44; HW = 0.41–0.43; PRW = 0.24–0.25; PTW = 0.37; AW = 0.61–0.64.

Female. Abdominal chaetotaxy as in Table 11 and Fig. 414. Subgenital plate rounded triangular, not reaching vulval margin, and with distinct U-shaped thickening at distal end (Fig. 419). Vulval margin (Fig. 419) bulging slightly in median section, with 6–8 long, slender *vms* on each side, and 10–12 short, thorn-like *vss* on each side; 5–6 short, slender *vos* on each side; distal 2 *vos* near *vss*. Measurements ex *Cinnyricinclus leucogaster verreauxi* (n = 3): TL = 1.47–1.62; HL = 0.40–0.46; HW = 0.43–0.46; PRW = 0.24–0.27; PTW = 0.38–0.40; AW = 0.51–0.66.

Etymology. The species epithet is derived from Greek "*Porphyrogénnētos*", which was the honorary title given to sons or daughters of the reigning Byzantine emperor, meaning "born in the Purple [Chamber]", a part of the Great Palace of Constantinople. It is thus a fitting name for a louse parasitising one of the few species of purple birds.

Type material. Ex ***Cinnyricinclus leucogaster verreauxi* [as *C. leucogaster*]: Holotype** ♂, 15° 46' S, 34° 28' E, Mozambique, 12 Oct. 1964, A.L. Moore, A-122 (NHML). **Paratypes:** 1♂, 2♀, same data as holotype (NHML).

Remarks. *Sturnidoecus porphyrogenitus* was included in Bush *et al*. (2016: specimen 323).

Sturnidoecus somnodraco Gustafsson & Bush, new species

(Figs 420–426)

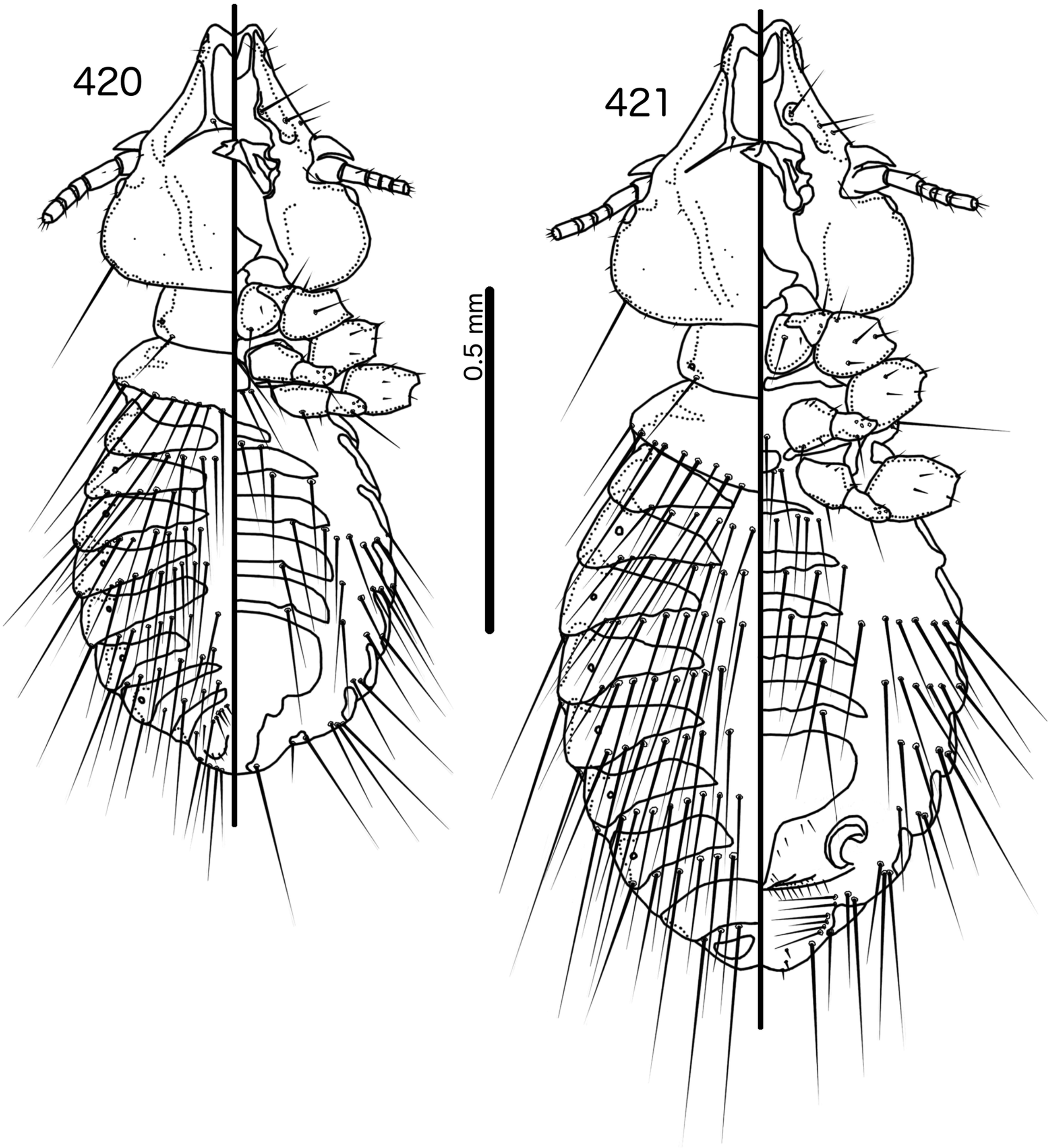
Type host. *Quelea quelea quelea* (Linnaeus, 1758)—red-billed quelea.
Other host. *Qualea quelea lathami* (Smith, 1836)—red-billed quelea.
Type locality. Hahn, Dakar, Senegal.

Diagnosis. *Sturnidoecus somnodraco* **n. sp.** is the only known species in its species group, and males are separated from all other *Sturnidoecus* by their peculiar genitalia (Figs 423–425). Both the mesosome and the parameres are unique within the *Brueelia*-complex, and not easily comparable with any other group within *Sturnidoecus*. The lack of *as2* in *St. somnodraco* (Fig. 422) suggests a close relationship with *St. mon* **n. sp.** (Fig. 408), which is the only other *Sturnidoecus* species that also lacks this seta. However, the chaetotaxy of both sexes of *St. somnodraco* is more similar to that of *St. sturni* (Table 11).

Female *St. somnodraco* can be identified by the lack of *as3* (Fig. 422) and the shape of the subgenital plate (Fig. 426), which is unique within *Sturnidoecus*. Unlike *St. sturni* (Fig. 383) or *St. mon* (Fig. 412), in which the subgenital plate is roughly triangular, the subgenital plate of *St. somnodraco* (Fig. 426) is largely oval, with a narrow median process more reminiscent of *Mirandofures* **n. gen.** (e.g. Fig. 105) than *Sturnidoecus*.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 422; *as1* absent. Preantennal nodi slender but distinct. Coni slender, reaching far beyond distal margin of scapes. Preocular nodi small and bulging. Postocular nodi small; *pos* located far posterior to nodi. Gular plate broader than long, angular, with prominent median point. Thoracic and abdominal segments as in genus description and Figs 420–421. Posterior margin of pterothorax convergent to median point. Sternal plates wide, present on segments II–VI in both sexes.

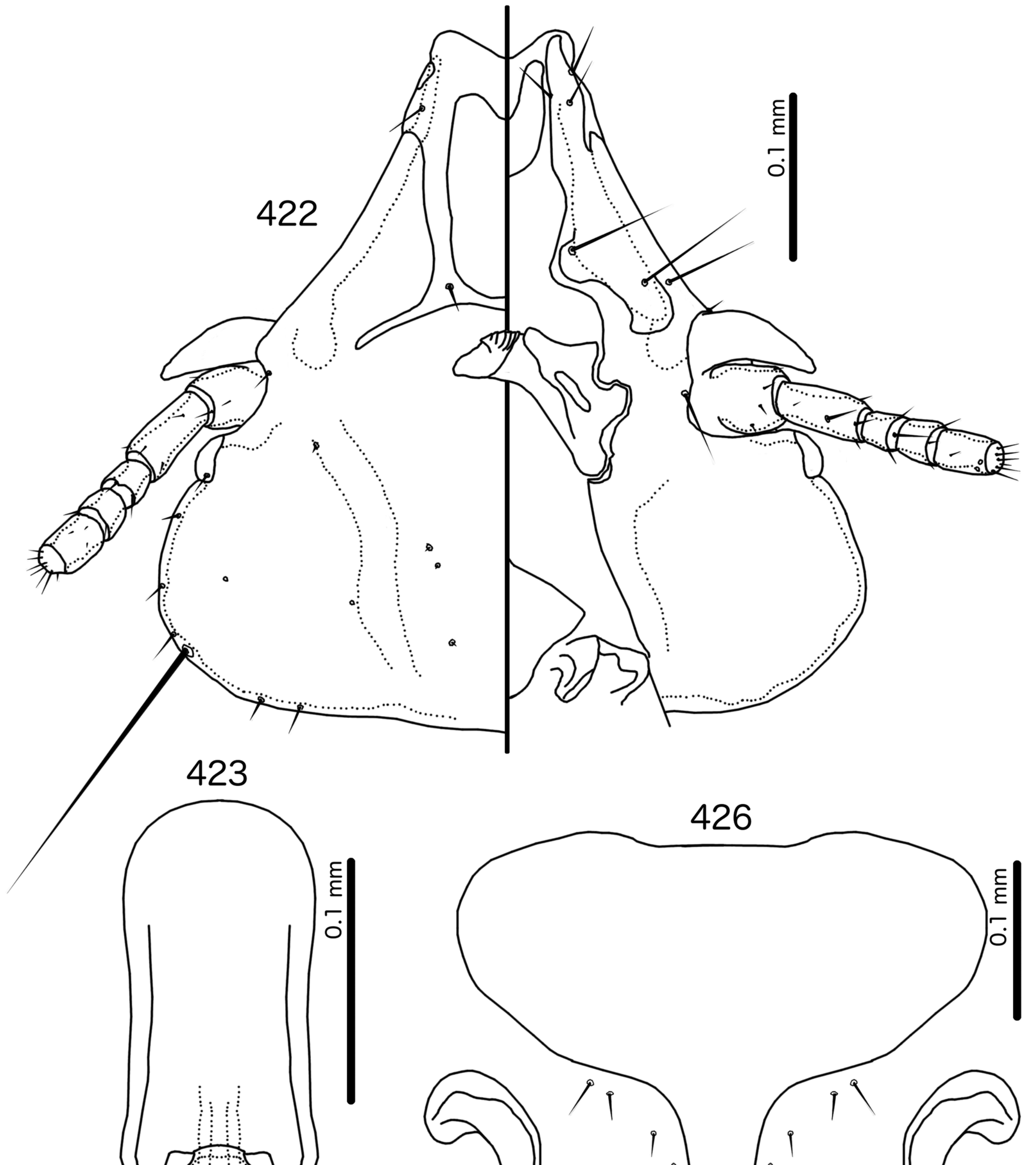
Male. Abdominal chaetotaxy as in Table 2 and Fig. 420. Male genitalia as in genus and species group descriptions and Figs 423–425. Measurements ex *Quelea quelea quelea* (n = 2): TL = 1.13–1.16; HL = 0.40; HW = 0.40; PRW = 0.24; PTW = 0.36 –0.37; AW = 0.47–0.52. Ex *Q. q. lathami* (n = 1): TL = 1.20; HL = 0.41; HW = 0.40; PRW = 0.24; PTW = 0.36; AW = 0.50.



FIGURES 420–421. *Sturnidoecus somnodraco* **n. sp.** ex *Quelea quelea quelea*: **420,** male habitus, dorsal and ventral views. **421,** female habitus, dorsal and ventral views.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 421. Subgenital plate oval with narrow distal extension of median section (Fig. 426). Vulval margin more or less flat (Fig. 426), with 6–9 long, slender *vms* on each side, and 10–11 short, thorn-like *vss* on each side; 4–6 *vos* on each side, with varying size; distal 2 *vos* approaching *vss*. Measurements ex *Quelea quelea quelea* (n = 2): TL = 1.32–1.36; HL = 0.42–0.43; HW = 0.43–0.44; PRW = 0.25–0.26; PTW = 0.39; AW = 0.58–0.59.

Etymology. The species epithet is derived from Latin "*somnus*" for "sleep" and "*draco*" for "dragon. This refers to the shape of the male genitalia (Figs 423– 425), that are reminiscent of the head of a dragon, sleeping with its arms tucked underneath its chin and elbows protruding laterally.



FIGURES 422–426. *Sturnidoecus somnodraco* **n. sp.** ex *Quelea quelea quelea*: **422,** male head, dorsal and ventral views. **423,** male genitalia, dorsal view. **424,** male mesosome, ventral view. **425,** male paramere, dorsal view. **426,** female subgenital plate and vulval margin, ventral view.

Type material. Ex ***Quelea quelea quelea*****: Holotype** ♂, Hahn, Dakar, [Dakar Region,] Senegal, 16 Jun. 1955, P. Morel, Brit. Mus. 1964-685 (NHML). **Paratypes:** 1♂, 2♀, same data as holotype (NHML).

Additional material examined (non-types)

Ex ***Quelea quelea lathami*****:** 1♂, Vwaza Wildlife Reserve, Vwaza, Khuta Maji, Malawi, 15 Oct. 2009, Swati Patel, MLW-3746, FMNH-INS 0000 029 079, FMNH-468582 (FMNH).

Remarks. *Sturnidoecus somnodraco* was included in the phylogeny of Bush *et al*. (2016: specimen 322), and was strongly supported as a sister to the *St. basilewskyi* species group (specimens 318–321)

Buphagoecus Gustafsson & Bush, new genus

Sturnidoecus Eichler, 1944: 81 (*in partim*).

Type species. *Sturnidoecus husaini* Ansari, 1968: 6

Diagnosis. *Buphagoecus* **n. gen.** (Figs 427–436) was previously considered a part of *Sturnidoecus* (Figs 377–426), and non-genital characters of *Buphagoecus* are most similar to this genus and to *Rostrinirmus* (Figs 437–450). All three genera are of the "head louse" ecotype (*e.g,* Figs 377–378, 427–428, 437–438), and share the following morphological characters: parameral heads medianly folded (e.g. Figs 382, 433, 447); *as3* absent (e.g. Figs 379, 429, 439); marginal carinae interrupted submedianly (e.g. Figs 379, 429, 439) and at least partially interrupted laterally; dorsal anterior plates completely separated from the main head plate by dorsal preantennal suture (e.g. Figs 379, 429, 439). Sternal plates of *Buphagoecus* (Figs 427–428) are much reduced, similar to some *Sturnidoecus* (e.g. Figs 399–400), and like *Sturnidoecus* (e.g. Fig. 379) the dorsal preantennal suture of *Buphagoecus* (Fig. 429) is extended postero-laterally towards the preantennal nodi and the posterior margin of the dorsal anterior plate is roughly flat. The abdominal chaetotaxy of *Buphagoecus* (Table 2, Figs 427–428) is more similar to that of *Rostrinirmus* (Table 2, Figs 437–438) than to any *Sturnidoecus* (Table 11, Figs 377–378, 399–400, 406–407, 413–414, 420–421), in that there are no setal rows on any segment in either sex. Neither *psps* nor *aps* are found in more anterior segments in either sex of *Buphagoecus*, but these are present in the anterior segments of both sexes in *Rostrinirmus*. *Anterior seta 1* is present in *Buphagoecus* (Fig. 429) as in most *Sturnidoecus* (e.g. Fig. 379), but unlike *Rostrinirmus* (Fig. 439) where *as1* is absent. *Post-nodal seta* is absent in *Buphagoecus* but present in both *Sturnidoecus* and *Rostrinirmus*.

The genitalia of both sexes of *Buphagoecus* (Figs 430–436) differ from those of *Sturnidoecus* (e.g. Figs 384–398 for male genitalia, and Figs 383, 405, 412, 419, 426 for female genitalia) and *Rostrinirmus* (Figs 440–443, 445–450). The female subgenital plate of *Buphagoecus* (Fig. 430) is more reduced than in any *Rostrinirmus* (Fig. 440) or *Sturnidoecus* (e.g. Fig. 383) species, and unlike in the other two genera the subgenital plate of female *Buphagoecus* flares into a partial cross-piece (Fig. 430). The male genitalia of *Buphagoecus* (Figs 431–436) are unique within the *Brueelia*-complex, and not similar to those of any other genus treated here. The mesosome of *Bo. prominens* (Figs 434–435) is somewhat similar to those the *St. basilewskyi* species group (Fig. 385) and the *St. pastoris* species group (Fig. 390), but the fleshy bilobed distal extension of the mesosome is not found in any *Sturnidoecus*. The lateral extensions of the distal basal apodeme are also unique to *Buphagoecus*. In addition, the position of the *ames* and *pmes* is quite variable among species groups in *Sturnidoecus* (Figs 384–398), but neither set of setae are ever distal to the gonopore as in *Buphagoecus* (Figs 432, 435).

Description. ***Both sexes***. Head slenderly bulb-shaped (Fig. 429). Marginal carina interrupted submedianly and laterally; lateral interruption only dorsal, and marginal carina laterally continuous on ventral side. Dorsal anterior plate with rectangular posterior margin, entirely separated from main head plate by dorsal preantennal suture. Dorsal preantennal suture extended towards preantennal nodi. Ventral anterior plate present, crescent-shaped, anterior margin deeply concave. Ventral carinae not continuous with marginal carina. Head setae as in Fig. 429; *as3* absent; *as1* very long; *pos* just posterior to eye. Coni moderate. Antennae monomorphic. Temporal carinae not distinct; *mts3* only macrosetae. Gular plate broadly spade-shaped.

Prothorax small, rectangular (Figs 427–428); *ppss* on postero-lateral corners. Proepimera broad, median ends hatchet-shaped. Pterothorax pentagonal; lateral margins widely divergent; posterior margin convergent to median point; *mms* narrowly separated medianly. Mesosternum and associated setae absent. Metasternum present; 1 seta on postero-lateral corner on each side in male, 2 setae in female. Metepisterna slender with much widened, bluntly triangular median ends. Leg chaetotaxy roughly as in Fig. 25, except *fI-v3, fI-p2* absent.

Abdomen broad, oval (Figs 427–428). Tergopleurites triangular, with anterior margin deeply indented around spiracle openings; tergopleurites II–IX+X in male and tergopleurites II–VIII in female widely separated medianly. Sternal plates small, crescent-shaped, not approaching lateral margins of abdomen. Tergopleurites do not or only barely reach ventral surface of abdomen. Pleural incrassations very slender. Re-entrant heads short, broad, blunt. Male subgenital plate rounded triangular, not reaching posterior margin of abdomen. Female subgenital plate roughly T-shaped, reaching vulval margin where it flares into partial cross-piece (Fig. 430). Abdominal chaetotaxy as in Table 2 and Figs 427–428. Vulval margin (Fig. 430) with slender *vms*, thorn-like *vss*; *vos* follow lateral margins of subgenital plate; distal *vos* approach *vss*.

Male genitalia unique within *Brueelia*-complex (Figs 431–436). Basal apodeme rectangular, flaring slightly proximally. Distal ends of basal apodeme extended laterally into angular lateral plates, larger in *Buphagoecus husaini* (Fig. 431) than in *Bo. prominens* (Fig. 434). Proximal mesosome broadly fishtail-shaped, thickened along most of margin, overlapping basal apodeme. Gonopore (Figs 432, 435) small, ventral. Mesosomal lobes broad, rounded, extending distal to gonopore into large (in *Bo. husaini*, Fig. 432) or small (in *Bu. prominens*, Fig. 435) bilobed section. Bilobed section with 3+2 setae in *Bo. husaini* but only 2–3 visible setae in *Bu. prominens*; *ames* and *pmes* not distinguishable with certainty. Parameral heads (Figs 433, 436) moderate, triangular. Parameral blades curved, broad, tapering only distally; *pst1* sensillus, central, near distal tip of paramere; *pst2* microseta, central, closely distal to *pst1*.

Host distribution. *Buphagoecus* **n. gen.** is known only from the two species of oxpeckers in the family Buphagidae. This family is the sister group to all Sturnidae and Mimidae (Lovette & Rubenstein 2007).

Geographical range. Both hosts are limited to Sub-Saharan Africa.

Etymology. The genus name is derives from the generic name of the hosts, *Buphagus* Brisson, 1760 with a suffix from Greek "*oikos*" for "house". Gender: masculine.

Remarks. *Buphagoecus* was not represented in the phylogeny of Bush *et al.* (2016), and its relationships to other genera, particularly *Sturnidoecus*, are unknown. The "head louse" ecomorph appears to have evolved several times within the *Brueelia*-complex, resulting in genera that are superficially similar in general habitus, but dissimilar in the details of the preantennal and genital structures as well abdominal chaetotaxy (i.e. *Bizarrifrons*, *Buphagoecus*, *Manucodicola* **n. gen.**, *Nemuus* **n. gen.**, *Rostrinirmus*, *Schizosairhynchus* **n. gen.**, *Sturnidoecus*).

Included species
**Buphagoecus husaini* (Ansari, 1968) n. comb. [in *Sturnidoecus*]
Buphagoecus prominens* (Ansari, 1968) **n. comb. [in *Sturnidoecus*]

Buphagoecus husaini **(Ansari, 1968)**

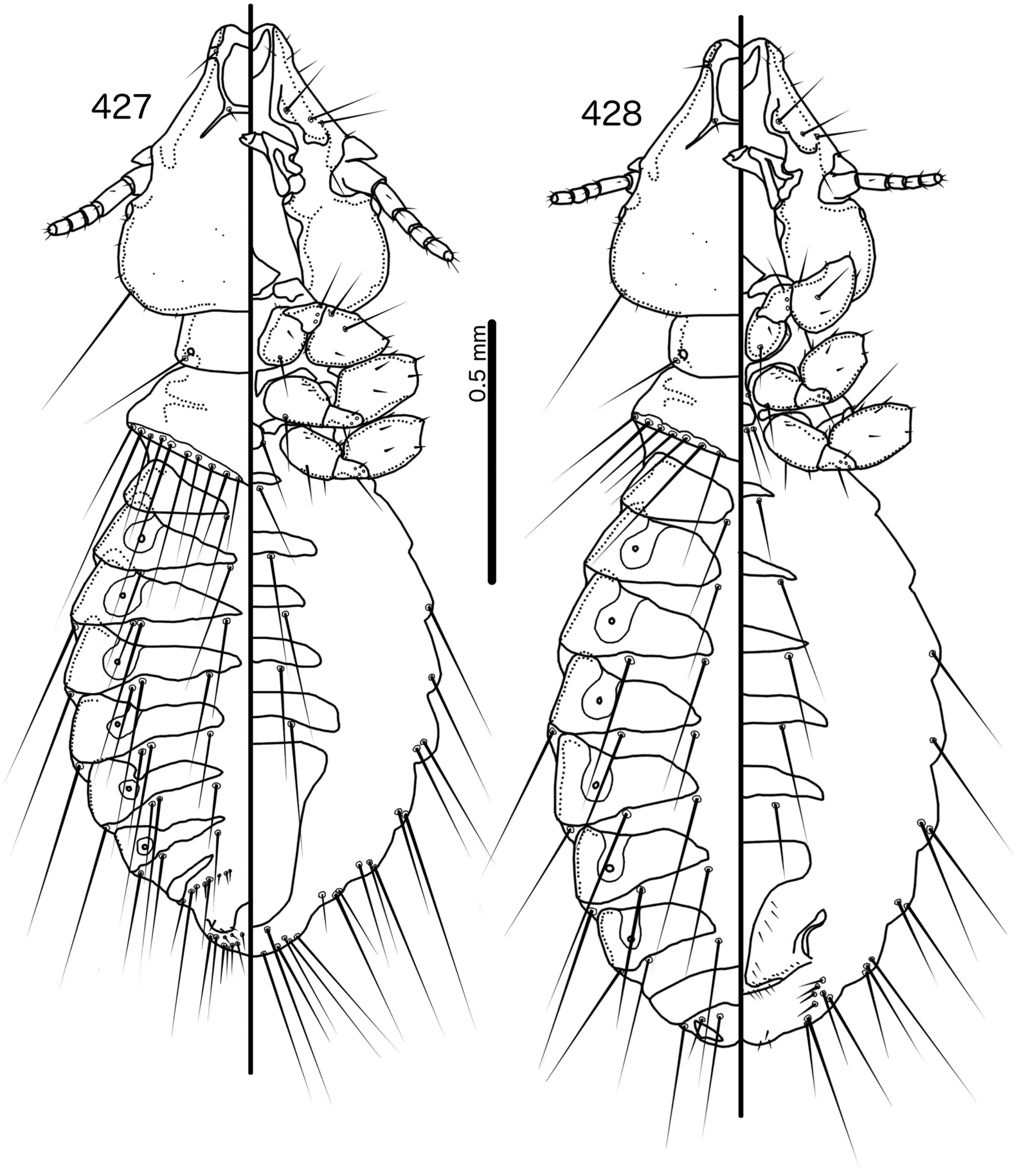
(Figs 427–433)

Sturnidoecus husaini husaini Ansari, 1968: 6.
Sturnidoecus husaini Ansari, 1968; Price *et al.* 2003: 242.

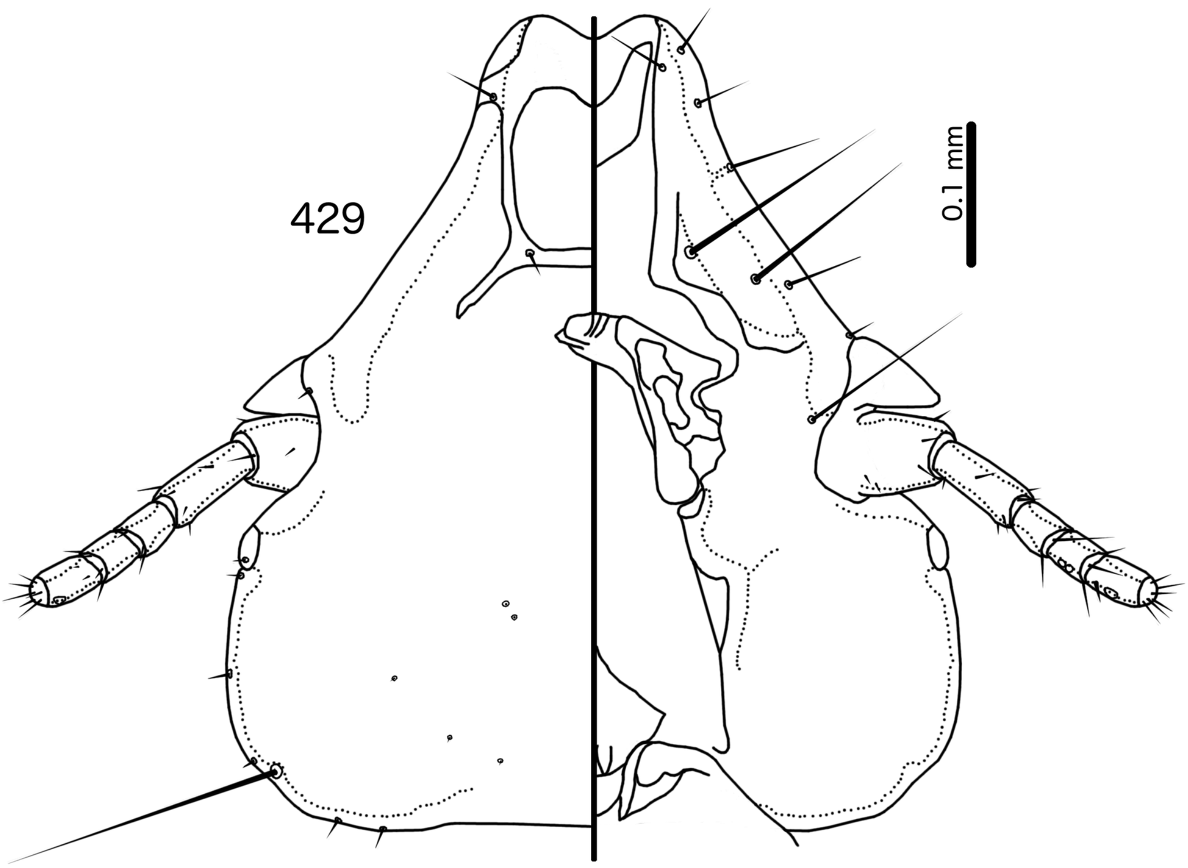
Type host. *Buphagus africanus africanus* Linnaeus, 1766—yellow-billed oxpecker.
Type locality. Isiolo, Kenya.

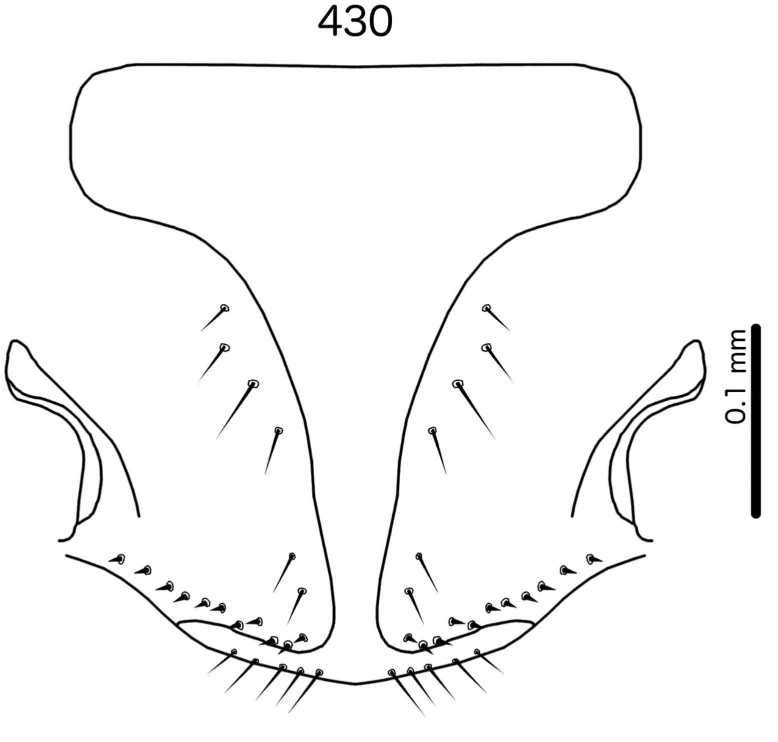
Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 429. Preantennal nodi slender. Coni broad and short, not reaching distal margin of scapes. Preocular nodi broad. Postocular nodi moderate, rounded. Gular plate triangular. Thoracic and abdominal segments as in genus description and Figs 427–428; *ppss* reach to or beyond posterior margin of pterothorax. Tergopleurites II–VIII translucent in large area surrounding spiracle opening. Sternal plates moderately pigmented. Pleurites only consistently visible in segments II–IV, very slender, with large, triangular, translucent re-entrant heads.

Male. Pteronotum with 9 *mms* on each side (Fig. 427). Abdominal chaetotaxy as in Table 2 and Fig. 427. Tergopleurites irregularly triangular, widely separated medianly. Subgenital plate rounded trapezoidal, not reaching posterior margin of abdomen. Basal apodeme distinct (Fig. 431), lateral margins roughly parallel, but bulging proximally. Distal fifth of basal apodeme with large, angular lateral extension. Proximal mesosome broad, bilobed. Distal mesosome unlike other genera treated here, with large, roughly trapezoidal distal plate and triangular median sclerites. Gonopore (Fig. 432) extended proximally, slender, open distally; 5 minute setae on each side of distal mesosome (Fig. 432). Parameral heads (Fig. 433) narrowly triangular. Parameral blades angular, broad; *pst1–2* as in genus description. Measurements ex *Buphagus africanus africanus* (n = 2 except n = 1 for TL): TL = 1.67; HL = 0.51–0.52; HW = 0.45–0.49; PRW = 0.27–0.30; PTW = 0.42–0.48; AW = 0.68–0.73.

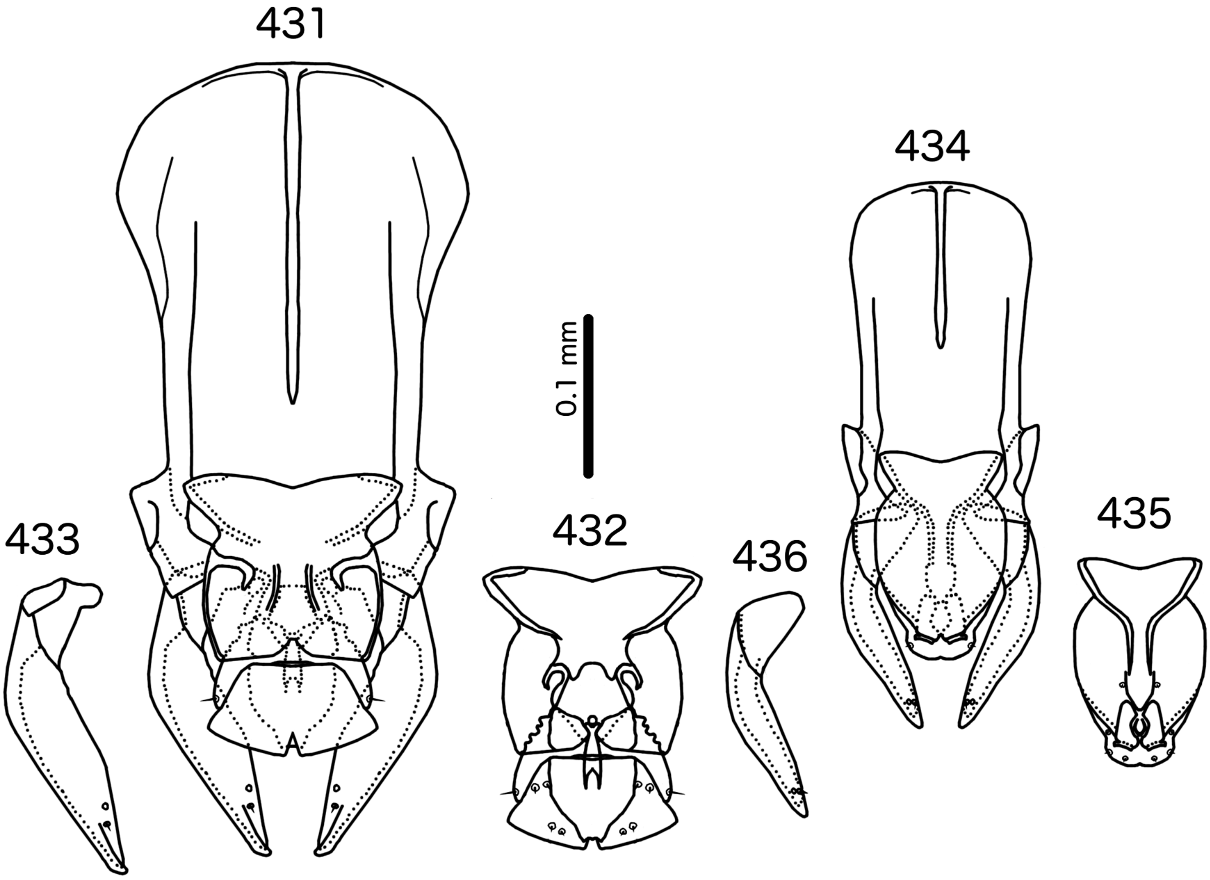


FIGURES 427–428. *Buphagoecus husaini* (Ansari, 1968) **n. comb.** ex *Buphagus africanus africanus*: **427,** male habitus, dorsal and ventral views. **428,** female habitus, dorsal and ventral views.





FIGURES 429–430. *Buphagoecus husaini* (Ansari, 1968) **n. comb.** ex *Buphagus africanus africanus*: **429,** male head, dorsal and ventral views. **430,** female subgenital plate and vulval margin, ventral view.



FIGURES 431–436. *Buphagoecus husaini* (Ansari, 1968) **n. comb.** ex *Buphagus africanus africanus*: **431,** male genitalia, dorsal view. **432,** male mesosome, ventral view. **433,** male parameres, dorsal view. *Buphagoecus prominens* (Ansari, 1968) **n. comb.** ex *Buphagus erythrorhynchus erythrorhynchus*: **434,** male genitalia, dorsal view. **435,** male mesosome, ventral view. **436,** male paramere, dorsal view.

Female. Pteronotum with 8 *mms* on each side (Fig. 428). Abdominal chaetotaxy as in Table 2 and Fig. 428. Subgenital plate (Fig. 430) slenderly triangular, with very concave lateral margins, flaring distally into cross-piece. Vulval margin gently rounded (Fig. 430) with 3–5 slender *vms* on each side, and 11–12 thorn-like *vss* anterior to cross-piece on each side; 6 *vos* on each side; distal 2 *vos* separated from proximal 4, but median to *vss*. Measurements ex *Buphagus africanus africanus* (n = 2): TL = 1.82–2.07; HL = 0.51–0.54; HW = 0.49–0.51; PRW = 0.28–0.30; PTW = 0.42–0.47; AW = 0.73–0.74.

Type material. Ex ***Buphagus africanus africanus*****: Holotype** ♂, Isiolo, Kenya, Jan. 1956, R. Meinertzhagen, 20442 (NHML). **Paratypes:** 1♂, 1♀, same data as holotype (NHML).

Additional material examined (non-types)

Ex ***Buphagus africanus africanus*****:** 1♂, 2♀, Kenya, Apr. 1949, R. Meinertzhagen, 18902 (NHML).

Remarks. Ansari (1968) stated that *Sturnidoecus husaini husaini* could be separated from *St. husaini prominens* by the male genitalia, but did not illustrate these features for either species. We have included illustrations of the male genitalia of both *Bo. husaini* and *Bo. prominens* (Figs 431–436), which are sufficiently different to reject Price's *et al.* (2003) synonymisation of the two subspecies, and treat them both as a separate species. Material of *Bo. prominens* available to us is mostly poorly mounted, preventing a complete illustration of this species. *Buphagoecus husaini*, *Bo. prominens* and all other *Sturnidoecus* species described by Ansari (1968) were not listed by Ledger (1980), despite having been published 12 years earlier.

Rostrinirmus Złotorzycka, 1964

Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Penenirmus Clay & Meinertzhagen, 1938: 73 (*in partim*).
Sturnidoecus Eichler, 1944: 81 (*in partim*).
Rostrinirmus Złotorzycka, 1964a: 276.

Type species. *Rostrinirmus refractoriolus* Złotorzycka, 1964a: 277 [= *Nirmus ruficeps* Nitzsch [in Giebel], 1866: 367], by original designation.

Diagnosis. In general morphology, *Rostrinirmus* (Figs 437–450) is most similar to *Sturnidoecus* (Figs 377–426) and *Buphagoecus* **n. gen.** (Figs 427–436), and was previously considered part of *Sturnidoecus*. Like these two genera, the dorsal anterior plate of *Rostrinirmus* (Fig. 439) is completely separated from the main head plate. However, the posterior margin of the dorsal anterior plate is rounded in *Rostrinirmus* (Fig. 439) and the dorsal preantennal suture does not extend towards the preantennal nodi; in *Sturnidoecus* (e.g. Fig. 279) and *Buphagoecus* (Fig. 429) the posterior margin of the dorsal anterior plate is more or less flat and one branch of the dorsal preantennal suture extends towards the preantennal nodi. The lateral section of the marginal carina is ventrally uninterrupted in both *Rostrinirmus* (Fig. 439) and *Buphagoecus* (Fig. 429), but partially interrupted (Fig. 415) or at least displaced (Fig. 379) laterally in *Sturnidoecus* (e.g. Fig. 379). The *pns* is present in *Rostrinirmus* (Fig. 439) and *Sturnidoecus* (e.g. Fig. 379), but absent in *Buphagoecus* (Fig. 429), and *as2* is absent in all *Rostrinirmus*, but present in *Buphagoecus* and most *Sturnidoecus* (see this genus).

Male genitalia of *Rostrinirmus* (Figs 441–443, 445–450) most similar to those of *Bizarrifrons* (Fig. 478) or *Schizosairhynchus* **n. gen.** (Figs 466–468, 474–476), but unlike those of any species-group in *Sturnidoecus* (Figs 384–398) and *Buphagoecus* (Figs 431–436). In *Rostrinirmus* (e.g. Fig. 449) and *Schizosairhynchus* (e.g. Fig. 467) the mesosomal lobes are fused distally, and the gonopore is ventral, whereas in *Bizarrifrons* (Fig. 478) the mesosomal lobes are not fused and the gonopore is terminal. The male genitalia of *Schizosairhynchus* and *Rostrinirmus* can be separated by the following characters: ventral sclerite present in *Schizosairhynchus* (VS in Fig. 467) but absent in *Rostrinirmus* (Fig. 449); parameral heads with angular median folds in *Rostrinirmus* (Fig. 450) but with widened blunt proximal ends in *Schizosairhynchus* (e.g. Fig. 468); rugose nodi marginal in *Rostrinirmus* (Fig. 449) but submarginal in *Schizosairhynchus* (Fig. 467); *pmes* as sublateral sensilla in *Rostrinirmus* (Fig. 449) but as lateral microsetae in *Schizosairhynchus* (Fig. 467); marginal thickenings of mesosomal lobes continuous distally in *Schizosairhynchus* (Fig. 467) but interrupted medio-distally in *Rostrinirmus* (Fig. 449). However, these two genera are best separated by the following non-genitalic characters: marginal carina interrupted laterally in *Schizosairhynchus* (Fig. 465) but not in *Rostrinirmus* (Fig. 439); dorsal anterior plate short with rounded posterior margin in *Rostrinirmus* (Fig. 439) but long with pointed posterior margin in *Schizosairhynchus* (Fig. 465); *as2* absent in *Rostrinirmus* (Fig. 439) but present in *Schizosairhynchus* (Fig. 465); accessory sternal plates present on at least some segments in both sexes in *Schizosairhynchus* (Figs 463–464), but never present in *Rostrinirmus* (Figs 437–438); sternal plate II of *Rostrinirmus* (Figs 437–438) not modified as in *Schizosairhynchus* (Figs 463–464); *ppss* on medio-posterior margin of prothorax in *Schizosairhynchus* (Figs 463–464), but on postero-lateral corners in *Rostrinirmus* (Figs 437–438).

Description. ***Both sexes***. Head bulb-shaped (Fig. 439). Marginal carina interrupted only submedianly. Frons hyaline. Dorsal preantennal suture continuous with hyaline margin, reaching *ads*, *dsms*, and lateral margins of head, and separating dorsal anterior plate from main head plate posteriorly. Posterior margin of dorsal anterior plate rounded. Ventral carinae diffuse anterior to pulvinus, not clearly continuous with marginal carina. Ventral anterior plate present, broadly crescent-shaped. Head setae as in Fig. 439 (*Rostrinirmus ruficeps* species group) or with setae along temporal margin as in Fig. 444 (*Ro. raji* species group); *as3* and *as1* absent; *pas* spine-like; *os* macrosetae in *Ro. ruficeps* species-group (Fig. 439) but microsetae in *Ro. raji* species group (Fig. 444). Coni broad, reaching to or slightly beyond distal margin of scapes. Antennae monomorphic. Temporal carinae not visible; *mts3* only macrosetae. Gular plate spade-shaped or triangular.

Prothorax rectangular to trapezoidal, widening posteriorly (Figs 437–438); *ppss* on postero-lateral corners. Proepimera hook-shaped, curling around coxae II. Pterothorax pentagonal; lateral margins divergent; posterior margin convergent to rounded median point; *mms* narrowly interrupted medianly. Meso- and metasterna not fused;

1 seta on postero-lateral corner on each side of each plate. Metepisterna either slender (*Rostrinirmus raji* species-group) or widening (*Ro. ruficeps* species-group) medianly. Leg chaetotaxy as in Fig. 25, except *fI-p2* absent; *fII-v2, fIII-v2* absent in *Ro. ruficeps* but present in members of the *Ro. raji* species group (but see remarks under *Ro. ruficeps*).

Abdomen (Figs 437–438) oblong in female, broadly oval in male. Tergopleurites triangular in male, more rectangular in female; tergopleurites II–IX+X in male and tergopleurites II–VIII in female widely separated medianly. Sternal plates broad, rectangular, do not approach pleurites. Pleural incrassations slight. Tergopleurites barely reach ventral surface of abdomen, often absent ventrally in females. Re-entrant heads wide, blunt, short, present mainly in anterior segments of male. Male subgenital plate triangular, with irregular lateral margins, reaching posterior end of abdomen. Female subgenital plate triangular, reaching or approaching vulval margin but not flaring into cross-piece (Fig. 440). Abdominal chaetotaxy variable between species groups (Table 12). Vulval margin (Fig. 440) with slender *vms*, thorn-like *vss*; *vos* follow lateral margins of subgenital plate; distal *vos* situated median to *vss*.

TABLE 12. Chaetotaxy of male abdominal segments II–VIII of the species groups of *Rostrinirmus*. Trichoid setae of segment VIII are present in all species, and are not listed. Sets of setae differing from those of *Ro. ruficeps* are highlighted in **bold**. Material examined from all species is from their respective type hosts. Abbreviations: *aps* = accessory post-spiracular seta; *psps* = principal post-spiracular seta; *ps* = paratergal seta; *ss* = sutural seta; *sts* = sternal seta; *tps* = tergal posterior seta.

Species	**Sex**	***ps***	***aps***	***psps***	***tps***	***ss***	***sts***
Ro. ruficeps	M	IV–VIII	II–VII	II–VIII	VII–VIII	II–VIII	II–VI
Ro. buresi (representing the Ro. raji species group)	M	IV–VIII	II–VII	II–VIII	–	II–VIII	II–VI

Male genitalia different between species groups (Figs 441–443, 445–450). Basal apodeme rectangular, anterior margin flat (*Rostrinirmus ruficeps* species-group, Figs 445, 448) or rounded (*Ro. raji* species-group, Fig. 441). Proximal mesosome broad, flat. Gonopore small, open distally, associated with subparallel club-like thickenings in *Ro. raji* species-group (Fig. 442). *Rostrinirmus ruficeps* (Fig. 445) with gonopore minute, and sometimes cannot be seen. Some *Ro. ruficeps* with asymmetrical mesosome as in Fig. 449. Mesosomal lobes broad, fused distally; rugose nodi near distal end, more extensive medianly in *Ro. raji* species group (Fig. 442) than in *Ro. ruficeps* species group (Fig. 446); 2 *ames* microsetae sublaterally on each side anterior to gonopore; 1 *pmes* sensillus on each side near rugose nodi, distal to gonopore. Parameral heads (Figs 443, 447, 450) folded, but differ between species-groups. Parameral blades broad; *pst1* sensillus, central; *pst2* microseta, central, near *pst1*.

Species-group characters. Two species-groups recognised on the basis of setae of the temporal margin of the head and abdomen and the shape of the male genitalia.

***Rostrinirmus raji* species-group.** *os* microsetae (Fig. 444). Male abdominal chaetotaxy as in Table 12; *tps* present on tergopleurites VII–VIII. Basal apodeme rounded anteriorly (Fig. 441). Gonopore prominent (Fig. 442). Mesosomal lobes with distinct nodi in distal end and large oblique rugose nodi anterior to these (Fig. 442). Parameral heads (Fig. 443) folded, irregularly shaped, short.

***Rostrinirmus ruficeps* species-group.** *os* macrosetae (Fig. 440). Male abdominal chaetotaxy as in Table 12; *tps* absent. Basal apodeme flat anteriorly (Figs 445, 448). Gonopore not prominent (Figs 446, 449). Mesosome symmetrical (Fig. 446) or asymmetrical (Fig. 449). Mesosomal lobes irregularly shaped, with small rugose nodi on posterior margin. Parameral heads with unique shape, much elongated (Figs 447, 450).

Host distribution. Most described species and our material examined are from members of either Passeridae or Emberizidae, but described and undescribed material from a few other families, such as Pycnonotidae and Sylviidae, suggest that the host range of *Rostrinirmus* may be wider. Also, some of the *Sturnidoecus* we listed as *incertae sedis* may ultimately belong to *Rostrinirmus*. These taxonomic decisions require examination of additional material. We have tentatively included all species originally described in *Rostrinirmus*, but we encourage future collections from these hosts to ascertain whether this is the proper placement of these taxa.

Geographical range. Widely distributed across the Old World.

Remarks. In the original description of *Rostrinirmus*, Złotorzycka (1964a: 276) only mentions the rounded dorsal anterior plate, but no other characters for differentiating her new genus from *Sturnidoecus*. Balát (1981b: 165) added that the male genitalia had a “peculiar shape”.

Included species

Rostrinirmus raji species-group:

Rostrinirmus boevi* (Balát, 1958: 418) **n. comb. [in *Penenirmus*]
Rostrinirmus buresi* (Balát, 1958: 416) **n. comb. [in *Penenirmus*] **[1]**
    Rostrinirmus rostratus Mey, 1982b: 181 **new synonymy [2]**
Rostrinirmus carpodaci Balát, 1981b: 165
Rostrinirmus hudeci Balát, 1981b: 166
Rostrinirmus pflegeri Balát, 1981b: 166
Rostrinirmus raji* (Ansari, 1947: 269) **n. comb. [in *Penenirmus*]
Rostrinirmus tulackovae Balát, 1981b: 167

Rostrinirmus ruficeps species-group:

***Rostrinirmus ruficeps* (Nitzsch [in Giebel], 1866: 367) [in *Nirmus*]**
    Philopterus suzume Uchida, 1949: 548
    Rostrinirmus refractoriolus Złotorzycka, 1964a: 277 **[3]**

[1] Balát (1958) stated that *Ro. buresi* is close to *Penenirmus* [here *Rostrinirmus*] *ruficeps* (Nitzsch, 1866), but did not illustrate it. Złotorzycka (1964a, 1968b, 1977, 1997) and Balát (1981b) placed *Ro. buresi* in *Rostrinirmus*, together with *Ro. ruficeps* and *Ro. refractoriolus*. Złotorzycka (1997: 217) provided some illustrations of the male genitalia, which are similar to those of other *Rostrinirmus* species, but unlike those of *Penenirmus*. We agree with this placement, rather than the treatment of *Ro. buresi* as *Penenirmus* by Price *et al*. (2003: 210).

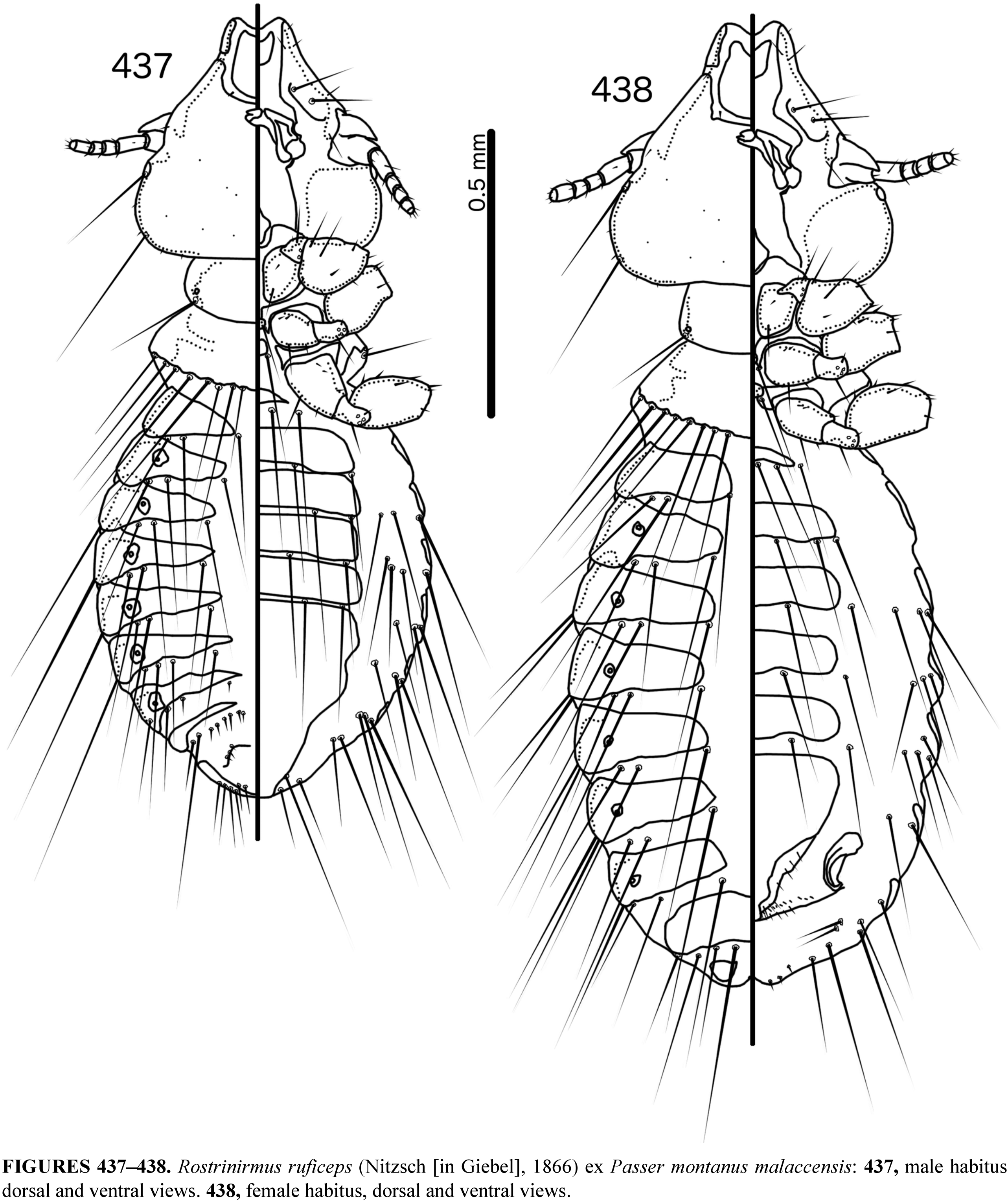
[2] Based on the few specimens of *Ro. rostratus* we have been able to examine, we find them indistinguishable from *Ro. buresi.* Mey (1982b: 181) used differences in the shape of the body and the female subgenital plate to differentiate these two species, but the shape of the lateral sides of most sternal plates and the subgenital plate for both *Ro. buresi* and *Ro. ruficeps* are subject to individual variation, with some specimens having flat lateral margins on one side and concave margins on the other. Therefore, this character is probably not reliable, given large enough samples. The measurements given by Mey (1982b) for *Ro. rostratus* all fall within the ranges given by Balát (1958) for *Ro. buresi*. We consider the two names synonymous. It is interesting to note that the two host species, *Emberiza bruniceps* Brandt, 1841 and *E. melanocephala* Scopoli, 1769, readily hybridise where ranges overlap (Byers *et al*. 1995: 179, 182).

[3] *Rostrinirmus refractoriolus* was first synonymized under *Ro. ruficeps* by Machácek (1977), who noted that the material of *Rostrinirmus* he examined from *Passer montanus* and *P. domesticus* were indistinguishable. Złotorzycka (1964a: 277) did not have any material of *Ro. ruficeps* when she described *Ro. refractoriolus*, and did not provide any characters to differentiate the two species in her short description, only mentioning *Ro. ruficeps* briefly, and noting that it probably belonged to *Sturnidoecus*. Złotorzycka (1997: 216) later illustrated the male genitalia of *Ro. refractoriolus* and, despite the poor quality of the illustrations, the male genitalia are indistibguishable from those of *Rostrinirmus* from *Passer montanus*. We accept Machácek's (1977) synonymization of these two species, based on the similarity of the male genitalia and the lack of distinguishing characters.

Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866)
(Figs 437–440, 445–450)

Nirmus ruficeps Nitzsch [in Giebel], 1866: 367.
Degeeriella ruficeps Nitzsch in Giebel, 1866; Harrison, 1916: 122.
Degeeriella ruficeps (Nitzsch); Séguy, 1944: 323.
Philopterus suzume Uchida, 1949: 548.
Sturnidoecus ruficeps (Nitzsch), 1866; Hopkins & Clay, 1952: 345.
Sturnidoecus suzume (Uchida), 1949; Hopkins & Clay, 1952: 345.
Penenirmus ruficeps (Nitzsch, 1866); Balát, 1981b: 46.
Rostrinirmus refractoriolus Złotorzycka, 1964a: 277.
Sturnidoecus refractoriolus Złotorzycka, 1964a; Ledger, 1980: 145.
Rostrinirmus ruficeps (Nitzsch, 1866); Złotorzycka, 1997: 215.

Type host. *Passer montanus montanus* (Linnaeus, 1758)—Eurasian tree sparrow.
Type locality. None given in original description, possibly Germany.
Other hosts. *Passer montanus saturatus* Stejneger, 1885—tree sparrow. *Passer montanus malaccensis* Dubois, 1887—tree sparrow **new host record**. *Passer montanus obscuratus* Jacobi, 1923—tree sparrow **new host record**. *Passer domesticus domesticus* (Linnaeus, 1758)—house sparrow.



FIGURES 437–438. *Rostrinirmus ruficeps* (Nitzsch [in Giebel], 1866) ex *Passer montanus malaccensis*: **437,** male habitus, dorsal and ventral views. **438,** female habitus, dorsal and ventral views.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 439; *pns* and *pts* very small, not visible in most specimens examined; *dsms* longer than in most other species of genus; *os* macroseta. Thoracic and abdominal segments as in genus description and Figs 437–438.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 437. Basal apodeme (Figs 445, 448) largely rectangular, widening distally. Proximal mesosome wide, rectangular. Mesosomal lobes wide, irregular, with moderate ventral rugose nodi near distal margin; 2 *ames* microsetae sublaterally on each side of anterior half of mesosome; 1 *pmes* sensillus on each side of mesosomal lobes median to rugose nodi. Gonopore small, not visible in European material

(Fig. 446), but trifid, and attached to an asymmetrically bending tube-like structure in Asian material (Fig. 449). Parameral heads uniquely shaped(Figs 447, 450), much elongated. Parameral blades crooked, tapering distally; *pst1–2* as in genus description. Measurements ex *Passer montanus montanus* (n = 11 except n = 10 for TL): TL = 1.21–1.33 (1.27); HL = 0.38–0.42 (0.40); HW = 0.41–0.45 (0.42); PRW = 0.23–0.25 (0.24); PTW = 0.36–0.40 (0.37); AW = 0.55–0.61 (0.58). Ex *P. m. malaccensis* (n = 15 except n = 14 for AW and n = 12 for TL): TL = 1.15–1.40 (1.29); HL = 0.38–0.41 (0.39); HW = 0.40–0.46 (0.42); PRW = 0.23–0.26 (0.25); PTW = 0.35–0.41 (0.37); AW = 0.53–0.58 (0.56). Ex. *P. m. obscuratus* (n = 2): TL = 1.24–1.28; HL = 0.39–0.40; HW = 0.41–0.43; PRW = 0.24–0.25; PTW = 0.37; AW = 0.58.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 438. Subgenital plate broadly triangular (Fig. 440), reaching or approaching vulval margin but not flaring into cross-piece. Vulval margin (Fig. 440) gently rounded, with 5–6 short, slender *vms* on each side (median *vms* often displaced proximally), and 7–9 short, thorn-like *vss* on each side; 7–8 long, slender *vos* on each side; distal 2–3 *vos* just proximal or median to *vss*. Measurements ex *Passer montanus montanus* (n = 19): TL = 1.36–1.57 (1.48); HL = 0.42–0.47 (0.44); HW = 0.42–0.49 (0.46); PRW = 0.24–0.28 (0.26); PTW = 0.37–0.44 (0.40); AW = 0.54–0.72 (0.64). Ex *P. m. malaccensis* (n = 18 except n = 17 for TL): TL = 1.41–1.67 (1.53); HL = 0.42–0.46 (0.44); HW = 0.44–0.51 (0.47); PRW = 0.24–0.29 (0.27); PTW = 0.37–0.43 (0.41); AW = 0.59–0.71 (0.65). Ex. *P. m. obscuratus* (n = 2): TL = 1.55; HL = 0.42–0.45; HW = 0.46–0.48; PRW = 0.26; PTW = 0.40; AW = 0.68–0.69.

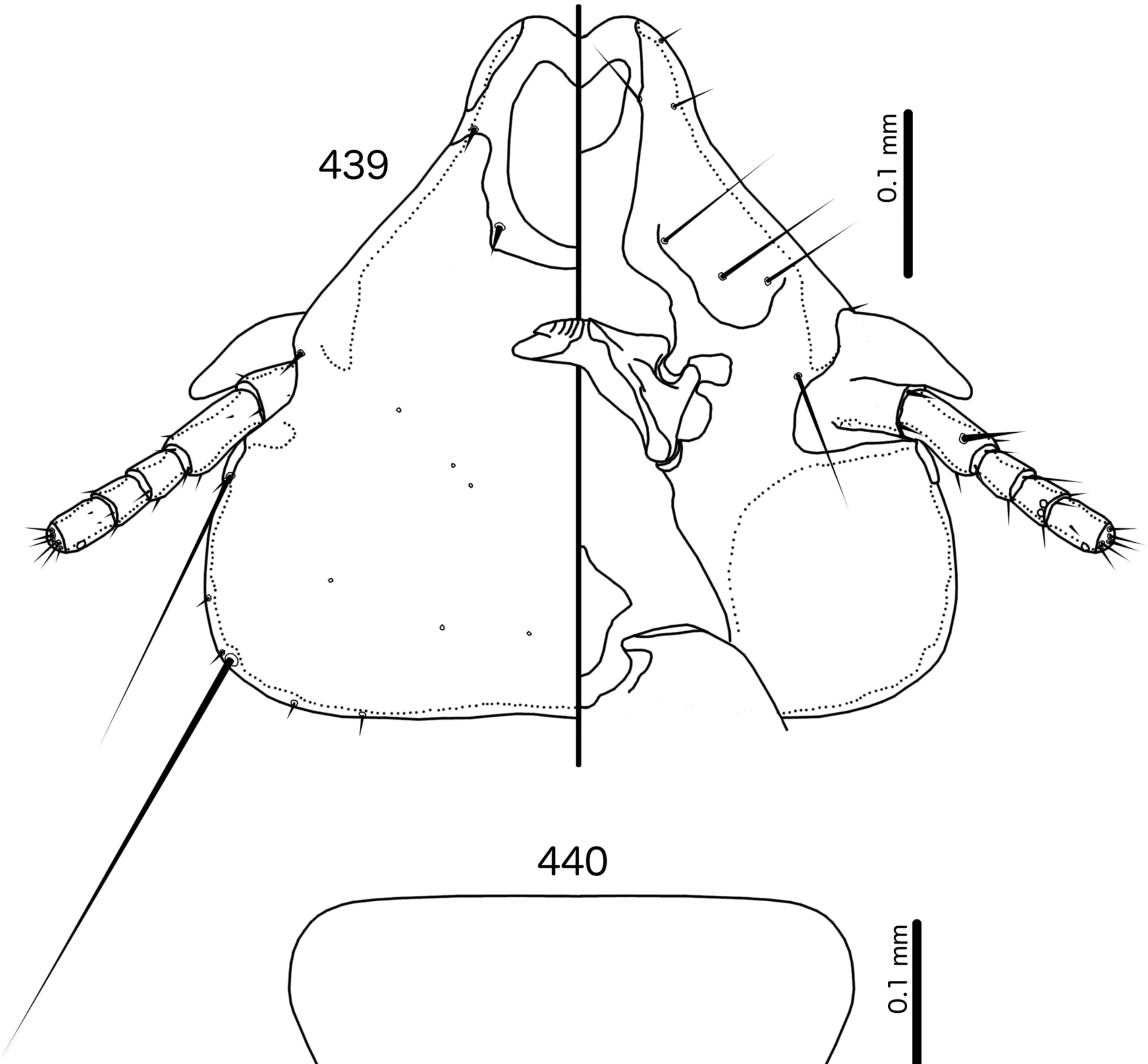
Material examined (non-types). Ex ***Passer montanus montanus*****:** 1♀, Stozice, Ljubljana, Slovenia, 10 Mar. 1958, S. Brelih, 6197 (NHML); 3♀, same locality, date, and collector as previous, 6192, 6195–6, 6198 (PMSL); 1♂, same locality and collector as previous, 29 Jan. 1962, 6568 (PMSL); 1♂, same locality as previous, 21 Jan. 1975, D. Sere, 12662 (PMSL); 1♂, 2♀, same locality and collector as previous, 30 Jan. 1975, 12712–4 (PMSL); 1♀, same locality and collector as previous, 9 Oct. 1975, 12833 (PMSL); 2♂, 2♀, Verje, Medvode, Slovenia, 14 Feb. 1954, S. Brelih, 124, 1812–4, 4056–7 (PMSL); 3♂, 5♀, same locality and collector as previous, 10 Mar. 1958, 4058–65 (PMSL); 1♂, 3♀, Tomacevo, Ljubljana, Slovenia, 30 Apr. 1969, J. Dovic, 11416–7 (PMSL); 2♀, same locality and collector as previous, 8 Nov. 1965, 10861–2 (PMSL); 1♀, Bácsalmás, Bács-Kiskun County, Hungary, 5 Nov. 1971, J. Rékási, 12041 (PMSL); 1♀, same locality and collector as previous, 17 Apr. 1969, 12061 (PMSL); 1♂, Bácsszőlős, Bács-Kiskun County, Hungary, 15 Mar. 1969, J. Rékási, 12066–7 (PMSL); 3♂, 3♀, Eichler collection, 3758 (MFNB); 1♀, Halle, Germany, 4 Mar. 1948, Kleine, ZM1233/2 (MFNB).

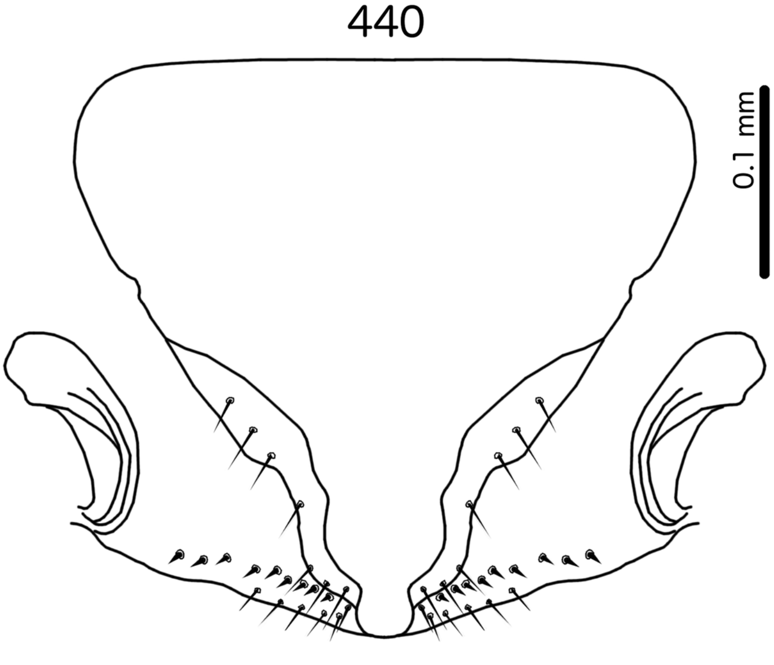
Ex ***Passer montanus malaccensis*** **[**some as ***Passer montanus*****]:** 2♂, 2♀, Bharatpur, Rajputana State, India, 13 Jan. 1962, R. Meinertzhagen, 19170, BM 1952-143 (NHML); 2♀, "Chrui ChgW', Cambodia, 12 Dec. 1966, J. Klein, Brit. Mus.1968-482 (NHML); 1♂, 1♀, Ban Chang Khian, Chiang Mai Province, Thailand, 11 Jul. 1962, K. Thonglongya, SEATO-1274 (NHML); 1♂, 1♀, same data as previous, 8187–8 on reverse (OSUS); 1♂, 1♀, same locality and collector as previous, 6 Aug. 1962, SEATO-1356 (NHML); 2♂, 2♀, same locality and collector as previous, 4 May 1962, SEATO-940 (NHML); 1♂, 1♀, same data as previous (UMSP); 1♂, 1♀, same locality and collector as previous, 4 Apr. 1962, K. Thonglongya, 702 (UMSP); 1♀, same locality and collector as holotype, 5 Apr. 1962, 711 (PMSL); 1♂, Ban Pong, San Sai District, Chiang Mai Province, Thailand, 16 Feb. 1962, K. Thonglongya, 510 (UMSP); 1♂, 1♀, same data as previous (PIPeR); 2♂, 2♀, same locality and collector as previous, 15 Feb. 1962, 506 (PIPeR); 1♂, 1♀, Ban Chiang Khian, Chiang Mai Province, Thailand, 5 Apr. 1962, K. Thonglongya, 710 (PIPeR); 2♂, Khlong Khlung, Kamphaeng Phet Province, Thailand, 15 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2435, RT-B-17908 (PIPeR); 2♀, same locality and collector as previous, 24 Apr. 1953, RE-2482, RT-B-21046 (PIPeR).

Ex *P. m. saturatus* [some as ***P. montanus*****]:** 2♂, 2♀, Ping Tung, [Ping Tung County,] Taiwan, 21 Feb. 1959, R.E. Kuntz, PF-5688 or BF-337, 8192–3 on reverse (OSUS).

Ex *P. domesticus*: 1♂, 1♀, Reúnion Island (France), 30 Sep. 1980, N. Barre, 21447–8 on reverse (OSUS); 1♀, Abu Rawash, Egypt, 7 Oct. 1966, 1427 (NMNH).

Remarks. The species limits of *Rostrinirmus ruficeps* are complicated by a morphological diversity between the material from both host species in different geographical regions. The only available illustrations of the male genitalia of *Ro. ruficeps* are those of Złotorzycka (1964a, 1997), from European *Passer montanus montanus*. In these illustrations, the parameral heads are indistinguishable from those of lice from *P. monatnus malaccensis*. However, specimens from *P. m. malaccensis* have asymmetrical mesosomes (Figs 448–449). This feature appears in specimens from different collection localities, mounted by different people; thus it is unlikely an artifact of mounting.





FIGURES 439–440. *Rostrinirmus ruficeps* (Nitzsch [in Giebel], 1866) ex *Passer montanus malaccensis*: **439,** male head, dorsal and ventral views. **440,** female subgenital plate and vulval margin, ventral view.

The hosts *Passer montanus* and *P. domesticus* also appear to be parasitised by other species of *Rostrinirmus*. For example, a male *Rostrinirmus* from *P. domesticus* from Réunion, where the host is introduced from Europe, has *os* as microsetae and male genitalia that are very dissimilar to those of *Ro. ruficeps* from European populations of *P. montanus*. Individuals of *Rostrinirmus* with very different male genitalia even appear to be living in sympatry. For example, in a collection of two male specimens from Rajputana, India (ex *P. montanus obscuratus*) from the same host individual, one has asymmetrical genitalia but the other has symmetrical genitalia. Both specimens have *os* as macrosetae, but the male with symmetrical genitalia has leg chaetotaxy similar to *Ro ruficeps* from Southeast Asia, whereas the male with asymmetrical genitalia has leg chaetotaxy that is intermediate between the two species groups (*i.e. fIII-v2* absent but *fII-v2* present). In addition, some male *Rostrinirmus* collected from *P. domesticus indicus* in Rajputana appear to belong to *Rostrinirmus boevi*, or are at least identical to males from *P*asser *hispaniolensis transcaspicus* collected at the same locality.

In summary, it appears that European *Passer montanus* and *P. domesticus* are both parasitised by *Rostrinirmus ruficeps* with symmetrical male genitalia, but outside Europe the situation is more complicated. *Passer montanus* in Southeast Asia are parasitised by *Ro. ruficeps* with asymmetrical male genitalia, and *Ro. ruficeps* with both asymmetrical and symmetrical male genitalia occur on *P. montanus* in India. *Passer domesticus* outside Europe are parasitised by different species in different geographical areas, including *Ro. boevi* in India and unidentified species of *Rostrinirmus* in Egypt and on Réunion. Our understanding of the distribution and relationships of these forms of *Rostrinirmus* are hampered by the scarce material available from Asia, and further collections are urgently needed for a genetic analysis of *Ro. ruficeps*.

Philopterus suzume was described from *P. montanus saturatus* by Uchida (1949), and the illustration shows the ocular macrosetae typical of *Rostrinirmus ruficeps*, which is not found in other *Rostrinirmus* (or other species of the *Brueelia*-complex). Uchida (1949: 548) also mentions having collected the same species of louse from *Emberiza cioides ciopsis* Bonaparte, 1850, but it was supposedly mixed with "*Bitrabeculus subflavescens*", a name used by early authors for a large number of *Philopterus* populations (see Ansari 1947: 268) and now considered unavailable (Clay & Hopkins 1950). As we cannot confirm whether Uchida's material from *E. cioides ciopsis* is *Ro. ruficeps* or another *Rostrinirmus* species, we do not list this host under *Ro. ruficeps*.

Manucodicola Gustafsson & Bush, new genus

Type species. *Manucodicola acantharx* **new species**

Diagnosis. *Manucodicola* **n. gen.** is superficially similar to *Schizosairhynchus* **n. gen.**, with which it shares the following characters: preantennal head elongated and frons deeply concave (Figs 453, 465); marginal carina widely interrupted laterally and premarginal carina absent (Figs 453, 465); *as2* absent and *dsms* located on hyaline margin (Figs 453, 465); *vss* numerous, short, often in more than one row (Figs 456, 469). The two genera can be separated by the following characters: preantennal area asymmetrical in *Manucodicola* (Fig. 454) but symmetrical in *Schizosairhynchus* (Fig. 465); dorsal anterior plate connected to main head plate in *Manucodicola* (Fig. 453) but separated from main head plate in *Schizosairhynchus* (Fig. 465); antero-lateral margins of head with fleshy, hyaline lobes in *Schizosairhynchus* (Fig. 465) but no such lobes present in *Manucodicola* (Fig. 453); temporal carinae present in *Schizosairhynchus* (Fig. 465) but absent in *Manucodicola* (Fig. 453); *ppss* medio-posterior in *Schizosairhynchus* (Figs 463–464) but postero-lateral in *Manucodicola* (Figs 451–452); pterothorax with postero-median indentation in *Schizosairhynchus* (Figs 463–464) but without such indentation in *Manucodicola* (Figs 451–452); abdominal chaetotaxy (Table 2); sternal plates absent in more anterior segments in *Manucodicola* (Figs 451–452) but present on all segments in *Schizosairhynchus* (Figs 463–464); accessory sternal plates present on at least some segments in *Schizosairhynchus* (Figs 463–464) but absent in *Manucodicola* (Figs 451–452). Most of these characters also separate *Manucodicola* from *Sturnidoecus* (Figs 377–383) and *Buphagoecus* **n. gen.** (Figs 427–436).

In both *Bizarrifrons* (Fig. 477) and *Manucodicola* (Fig. 453) the preantennal area is asymmetrical, but these genera are separated by the following characters: ventral anterior plate present in *Bizarrifrons* (Fig. 477) but absent in *Manucodicola* (Fig. 453); sternal plates absent on anterior segments in *Manucodicola* (Figs 451–452) but present on all segments in *Bizarrifrons* (Fig. 477); proximal mesosome overlapping basal apodeme in *Bizarrifrons*

(Fig. 478) but not overlapping in *Manucodicola* (Fig. 455); mesosome longer than wide in *Bizarrifrons* (Fig. 478) but wider than long in *Manucodicola* (Fig. 455).

Description. ***Both sexes***. Head bulb-shaped (Figs 453, 459). Frons deeply concave, hyaline. Frons and dorsal anterior plate asymmetrical (Figs 454, 460). Marginal carina widely interrupted medianly at *as1* where hyaline margin begins posteriorly. Ventral carinae continue farther anterior than marginal carina, not continuous with marginal carina. Dorsal preantennal suture continuous with hyaline margin, reaching *ads* but not transversally continuous. Dorsal anterior plate continuous with main head plate, deeply concave anteriorly; strongly pigmented band along anterior margin of plate. Ventral anterior plate absent. Head setae as in Figs 453, 459; *as3* absent; *pos* clearly ventral. Coni long, pointed. Antennae monomorphic. Temporal carinae faint but present. Gular plate broadly rhombic.

Prothorax rounded rectangular, almost as broad as pterothorax (Figs 451–452, 457–458); *ppss* on postero-lateral corners of pronotum. Proepimera blunt medianly, curving slightly around coxae I. Pterothorax rounded rectangular; lateral margins convex; posterior margin more or less flat; *mms* widely separated medianly. Meso- and metasterna small, not fused; one seta on postero-lateral corner of each side of each plate. Metepisterna slender, median ends blunt. Leg chaetotaxy as in Fig. 25, except *fI-v4, fI-p2* absent.

Abdomen (Figs 451–452, 457–458) oval with chaetotaxy as in Table 2 and Figs 451–452, 457–458. Tergopleurites bluntly triangular, more rectangular in females; tergopleurites II–IX+X in male and tergopleurites II–VIII and XI in female widely divided medianly. Sternal plates II–IV absent in both sexes, sternal plates V–VI medianly continuous but very small. Re-entrant heads small. Male subgenital plate broadly rectangular, reaching terminal margin of abdomen and often folding around to dorsal side. Female subgenital plate rounded triangular, with concave lateral margins, approaching vulval margin (Figs 456, 462). Vulval margin (Figs 456, 462) with long, slender *vms*, numerous short, thorn-like *vss*, and *vos* that follow lateral margins of subgenital plate; distal *vos* situated median to *vss* (Figs 456, 462).

Male genitalia partially everted in all available material from both species, and here described and illustrated only approximately (Figs 455, 461). Basal apodeme trapezoidal, narrowing markedly in proximal end; anterior margin typically diffuse. Proximal mesosome trapezoidal. Gonopore closed or open only ventrally (Figs 455, 461), broader than long, with slight distal extension. Mesosomal lobes wide, fused distally, with thickened ridge proximally; 2 sensilla visible submedianly near anterior margin on each side. Parameres distorted in all examined males, but appear to be long and tapered, with large, blunt heads (not illustrated).

Host distribution. *Manucodicola* is known only from members of two genera of birds-of-paradise (Paradisaeidae): *Manucodia* Boddaert, 1783 and *Phonygammus* Lesson and Garnot, 1826. These host genera are closely related, and together form the sister group to all other birds-of-paradise (Nunn & Cracraft 1996). Apart from the two species described below, a single female louse from *Manucodia chalybatus* (Forster, 1781) was available to us, indicating that additional undescribed species of *Manucodicola* may occur on other species of *Manucodia*. All other material from the Paradisaeidae examined by us belongs to *Guimaraesiella*.

Geographical range. Presently only from New Guinea, but the host *Phonygammus keraudrenii* also occurs in Australia.

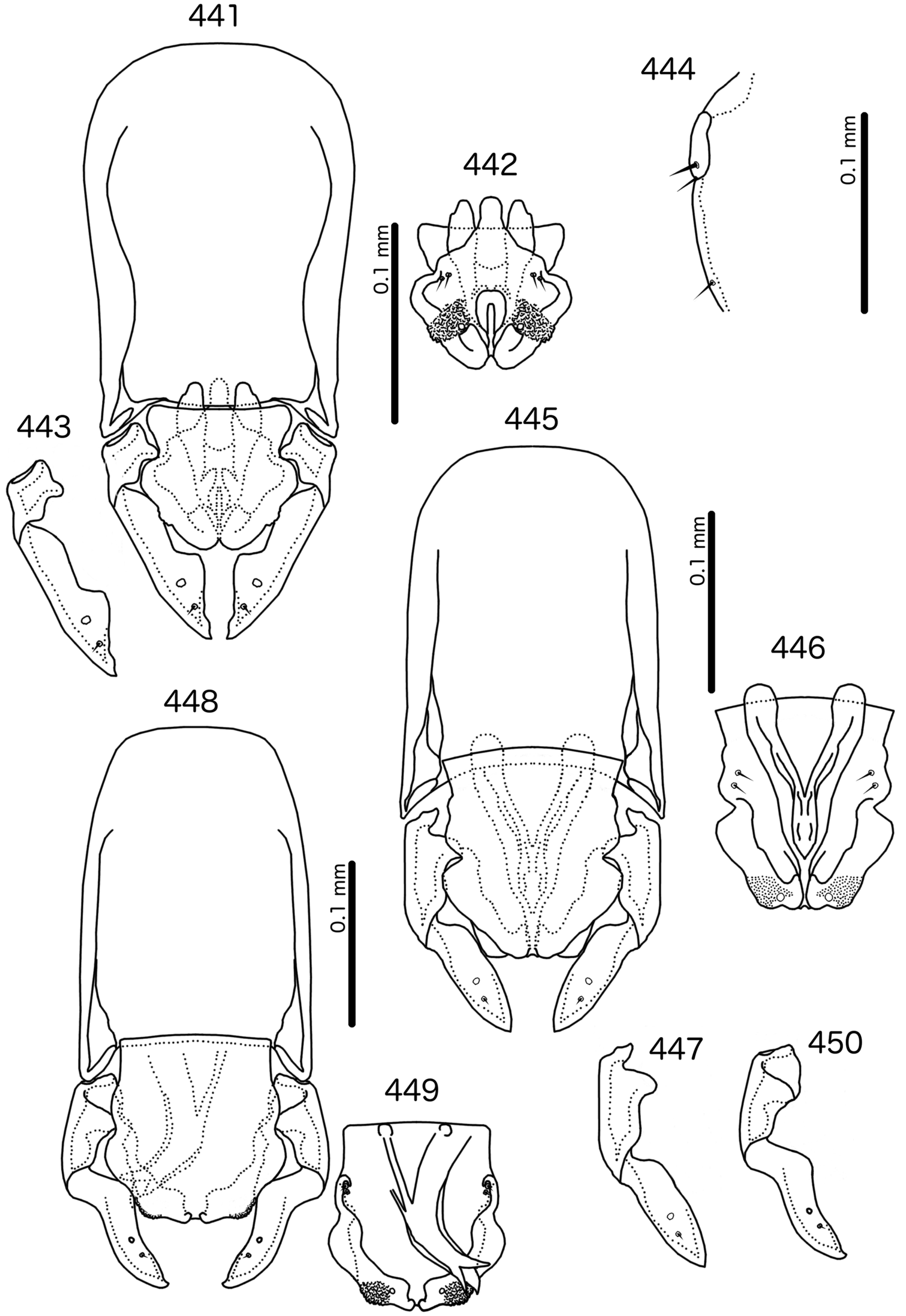
Etymology. The genus name derives from the host genus *Manucodia*, from Javanese "*manuk dewata*", meaning "bird of the gods", combined with Latin "*-cola*" for "inhabitant". Gender: feminine.

Included species
**Manucodicola acantharx* new species
Manucodicola semiramisae* **new species

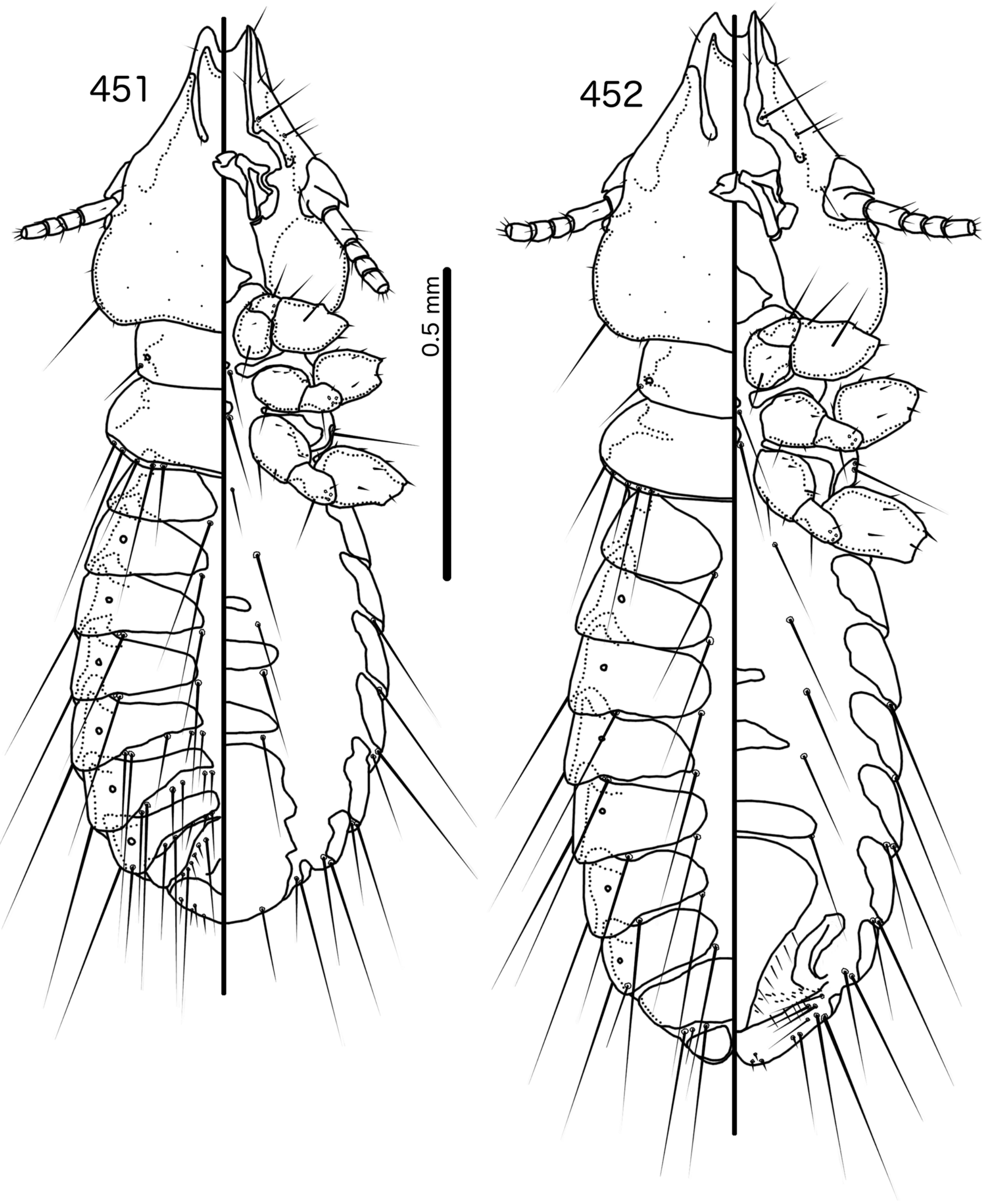
Manucodicola acantharx **Gustafsson & Bush, new species**
(Figs 451–456)

Type host. *Manucodia ater* (Lesson, 1830)—glossy-mantled manucode.
Type locality. Oriomo River, elev. 20 ft, Western District, Papua New Guinea.

Diagnosis. *Manucodicola acantharx* **n. sp.** is very similar to *Mn. semiramisae* **n. sp.**, and females are best separated by vulval chaetotaxy (Figs 456, 462), especially the *vss* where there appears to be no overlap in the

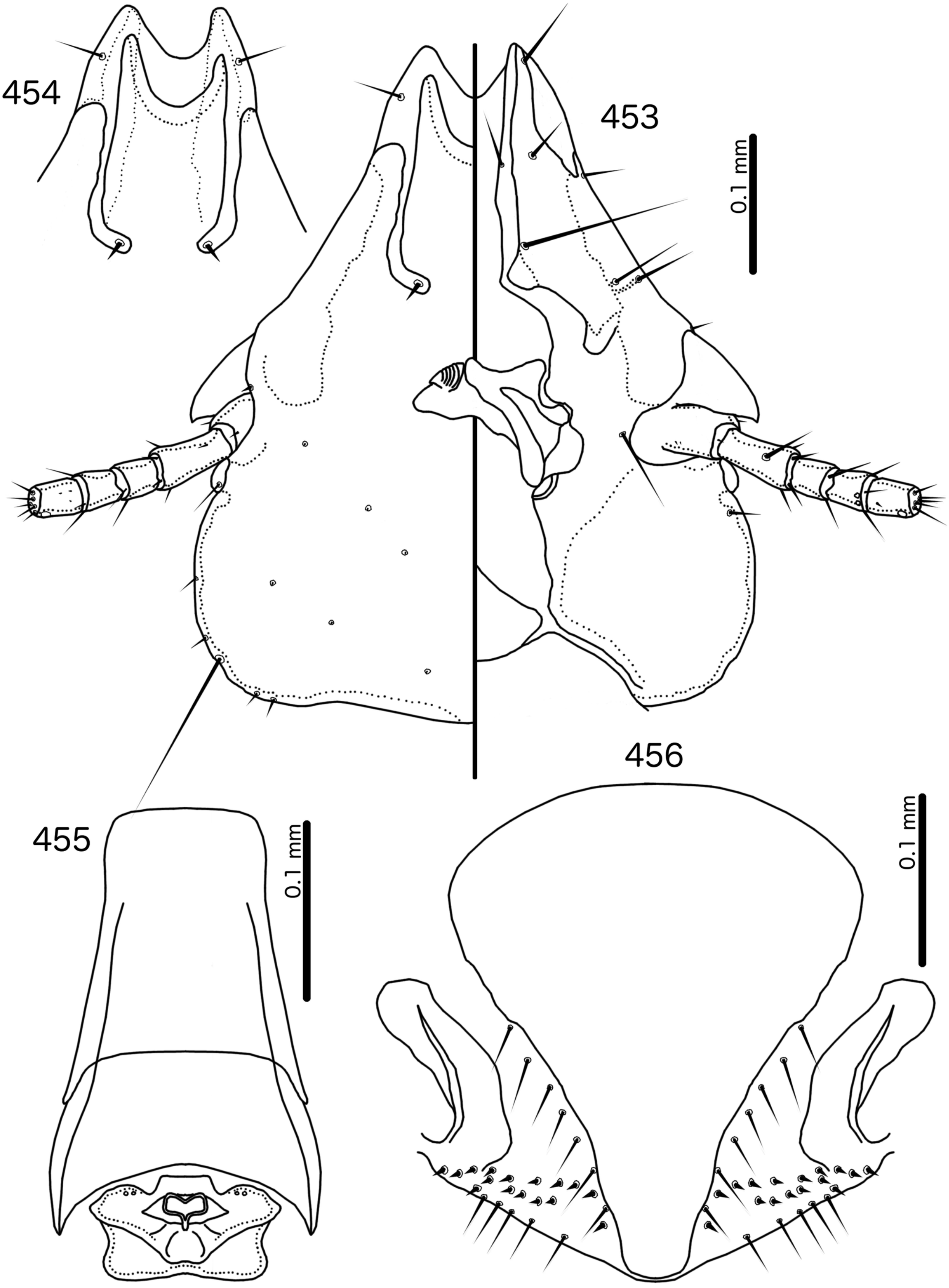


FIGURES 441–450. *Rostrinirmus buresi* (Balát, 1958) **n. comb.** ex *Emberiza bruniceps*: **441** male genitalia, dorsal view. **442,** male mesosome, ventral view. **443,** male paramere, dorsal view. *Rostrinirmus ruficeps* (Nitzsch [in Giebel], 1866) ex *Passer montanus malaccensis*: **444,** lateral head margin with *os* and *pos*, dorsal view. **445,** male genitalia, dorsal view. **446,** male mesosome, ventral view. **447,** male paramere, dorsal view. *Rostrinirmus ruficeps* (Nitzsch [in Giebel], 1866) ex *Passer montanus montanus* (Linnaeus, 1758). **448,** male genitalia, dorsal view. **449,** male mesosome, ventral view. **450,** male paramere, dorsal view.



FIGURES 451–452. *Manucodicola acantharx* **n. gen. & n. sp.** ex *Manucodia ater ater*: **451,** male habitus, dorsal and ventral views. **452,** female habitus, dorsal and ventral views.

number of setae in the material examined (9–12 in *Mn. semiramisae* and 13–17 in *Mn. acantharx*). The female subgenital plate is wider distally in *Mn. acantharx* (Fig. 456) than in *Mn. semiramisae* (Fig. 462). Sternal plate IV present in both sexes of *Mn. acantharx* (Figs 451–452), but absent in both sexes of *Mn. semiramisae* (Figs 457–458). Male genitalia hard to assess, as all examined males have partially everted genitalia. From what can be seen, males of the two species may be separated by the following characters: proximal mesosome short in *Mn. acantharx* (Fig. 455) but long in *Mn. semiramisae* (Fig. 461); mesosome square-shaped in *Mn. acantharx* (Fig. 455) but more oval in *Mn. semiramisae* (Fig. 461); gonopore open distally in *Mn. semiramisae* (Fig. 461) but closed distally in *Mn. acantharx* (Fig. 455); mesosomal lobes with fused, shallowly V-shaped thickening distal to gonopore in *Mn. acantharx* (Fig. 455) but without such thickening in *Mn. semiramisae* (Fig. 461).



FIGURES 453–456. *Manucodicola acantharx* **n. gen. & n. sp.** ex *Manucodia ater ater*: **453,** male head, dorsal and ventral views, **454,** dorsal view of frons. **455,** partial male genitalia, ventral view; (parameres exclude, distorted in all males examined). **456,** female subgenital plate and vulval margin, ventral view.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 453. Head pigmentation generally darker than in *Manicodicola semiramisae*. Thoracic and abdominal segments as in genus description and Figs 451–452. Sternal plate IV present in both sexes.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 451. Male genitalia partially everted in all specimens examined, and illustrated and described only tentatively (Fig. 455). Basal apodeme broadly trapezoidal. Proximal mesosome short, broad; anterior margin flat. Gonopore heart-shaped, closed distally. Mesosomal lobes fused distally, broad, quadratic, with large postero-lateral extensions; 2 sensilla on each side visible near anterior margin of lobes. Parameres distorted in all material examined. Measurements ex *Manucodia ater* (n = 16 except n = 15 for TL and AW): TL = 1.41–1.62 (1.50); HL = 0.46–0.51 (0.48); HW = 0.43–0.47 (0.45); PRW = 0.29–0.32 (0.30); PTW = 0.38–0.42 (0.40); AW = 0.48–0.62 (0.55).

Female. Abdominal chaetotaxy as in Table 2 and Fig. 452. Subgenital plate rounded triangular (Fig. 456), narrowing markedly near vulval margin. Vulval margin bulging, with 4–5 long, slender *vms* on each side, and 13–17 stout, thorn-like *vss* on each side (Fig. 456); most *vss* arranged in two rows; 7–8 long, slender *vos* on each side; distal 1–2 *vos* median to *vss*. Measurements ex *Manucodia ater* (n = 12): TL = 1.53–1.88 (1.70); HL = 0.49–0.54 (0.51); HW = 0.45–0.52 (0.48); PRW = 0.29–0.34 (0.32); PTW = 0.40–0.46 (0.43); AW = 0.48–0.67 (0.59).

Etymology. The species epithet is formed by Greek "*ake*" for "thorn", "*anthus*" for "flower" and Latin "*arx*" for "citadel" or "fortress", referring to the many thorny setae "guarding" the vulval margin (Fig. 456).

Type material. Ex ***Manucodia ater***: **Holotype** ♂, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 22 Feb. 1964, H. Clissold, BBM-NG-29646 (BPBM) [marked by black dot on slide]. **Paratypes:** 5♂, 4♀, same data as holotype (BPBM); 2♀, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 25 Feb. 1964, H. Clissold, BBM-NG-50018 (BPBM).

Manucodicola semiramisae Gustafsson & Bush, new species

(Figs 457–462)

Type host. *Phonygammus keraudrenii purpureoviolaceus* (Meyer, 1885)—trumpet manucode.
Type locality. Kassam Pass (Top), elev. 1300 m, Eastern Highlands District, Papua New Guinea.
Other host. *Phonygammus keraudrenii diamondi* Cracraft, 1992—trumpet manucode.

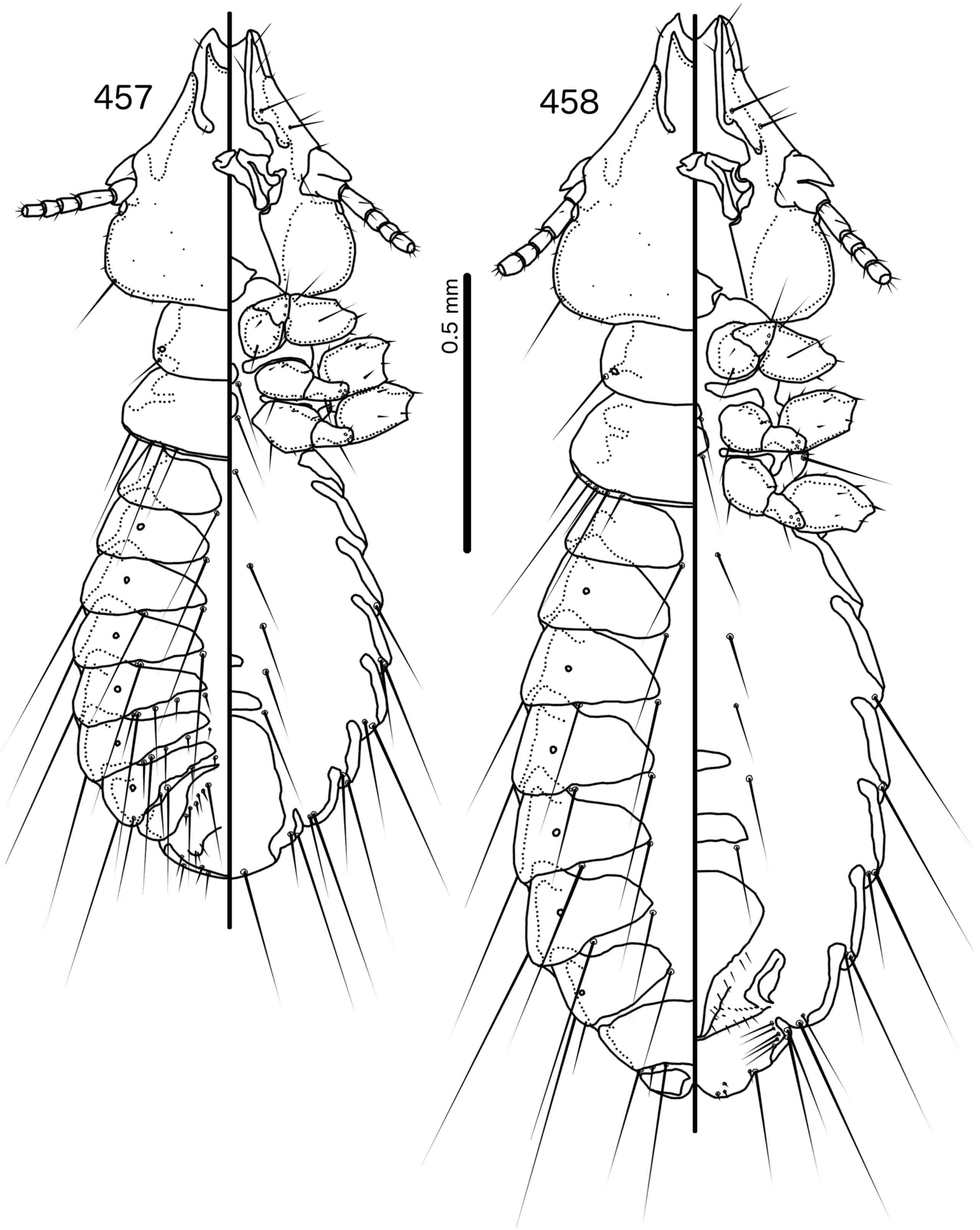
Diagnosis. Both sexes separated from *Manucodicola acantharx* **n. sp.** (Figs 451-452) by the absence in *Mn. semiramisae* **n. sp.** of sternal plate IV (Figs 457–458). *Manucodicola semiramisae* often paler than *Mn. acantharx*. Females separated by the vulval chaetotaxy and shape of subgenital plate and males may be separated by the male genitalia (see diagnosis of *Mn. acantharx* above); however, additional, well preserved male specimens are needed to properly describe these species.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 459. Thoracic and abdominal segments as in genus description and Figs 457–458. Sternal plate IV absent in both sexes.

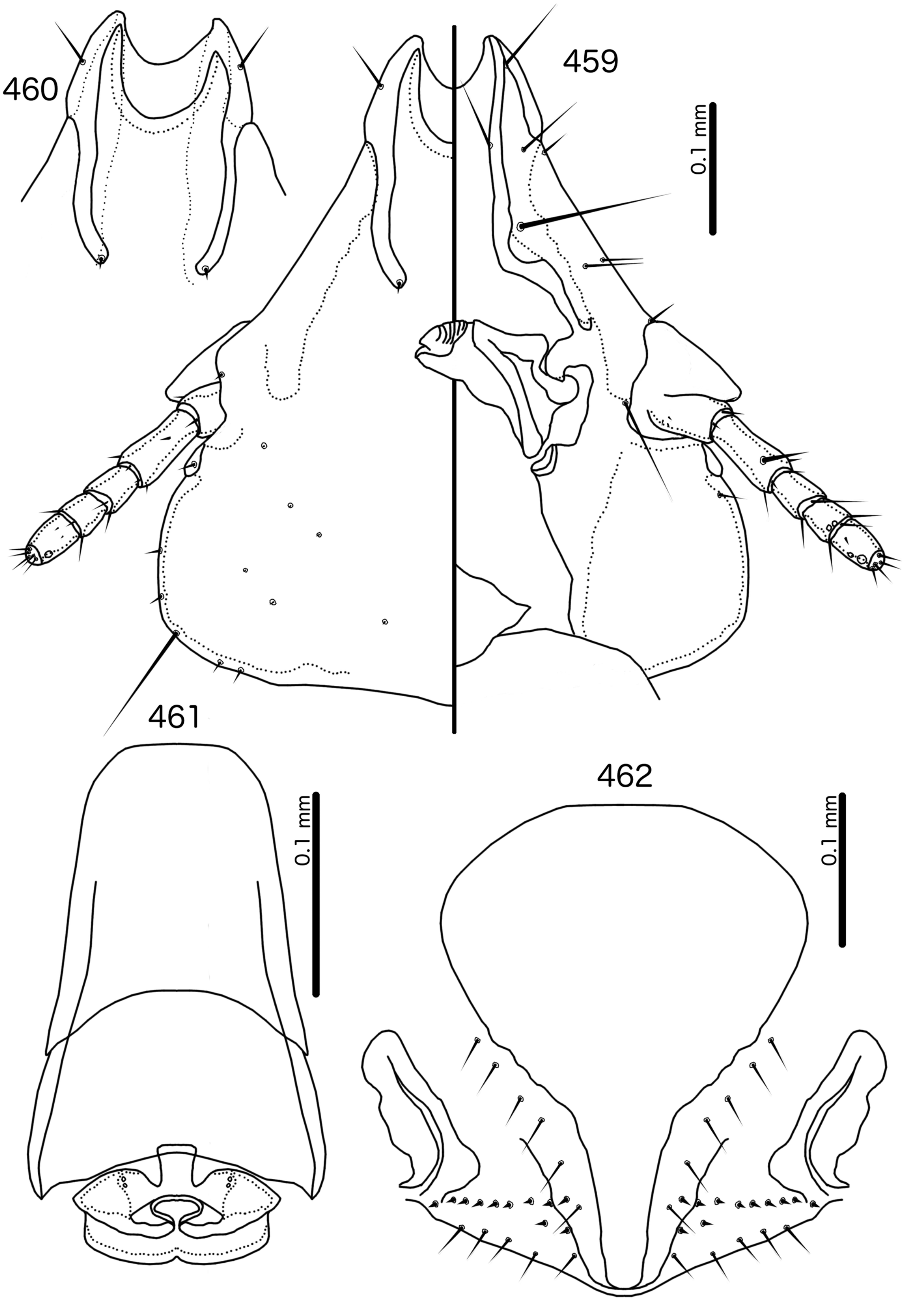
Male. Abdominal chaetotaxy as in Table 2 and Fig. 457. Male genitalia partially everted in all specimens examined, and illustrated and described only tentatively (Fig. 461). Basal apodeme broadly trapezoidal. Proximal mesosome long, slender; anterior margin flat. Gonopore oval, narrowly open distally on ventral side. Mesosomal lobes fused distally, broad, quadratic, with moderate postero-lateral extensions; 2 sensilla on each side visible near anterior margin of lobes. Parameres distorted in all material examined. Measurements ex *Phonygammus keraudrenii purpureoviolaceus* (n = 15 except n = 7 for TL): TL = 1.47–1.61; HL = 0.45–0.48 (0.47); HW = 0.42–0.47 (0.44); PRW = 0.28–0.30 (0.29); PTW = 0.36–0.42 (0.39); AW = 0.51–0.60 (0.56).

Female. Abdominal chaetotaxy as in Table 2 and Fig. 458. Subgenital plate (Fig. 462) rounded bottle-shaped, very narrow distally. Vulval margin (Fig. 462) bulging medianly, with 3–5 long, slender *vms* on each side, and 9–12 short, thorn-like *vss* on each side; only median-most *vss* arranged in two rows; 6–8 long, slender *vos* on each side; distal 1 *vos* median to *vss*. Measurements ex *Phonygammus keraudrenii purpureoviolaceus* (n = 16 except n = 15 for AW and n = 9 for TL): TL = 1.66–1.81; HL = 0.47–0.52 (0.49); HW = 0.45–0.49 (0.47); PRW = 0.29–0.32 (0.31); PTW = 0.40–0.44 (0.42); AW = 0.55–0.69 (0.60). Ex *Ph. k. diamondi* (n = 1): TL = 1.69; HL = 0.48; HW = 0.46; PRW = 0.29; PTW = 0.42; AW = 0.62.

Etymology. *M. semiramisae* **n. sp.** is named after the Assyrian queen Shammuramat (called Semiramis in Greek accounts; ruled 810–806 BCE) who, according to legend, put chastity belts on the ladies of the court to prevent them from seducing her son Adad-nirari III (ruled 806–783 BCE). While we have found no pictures of these chastity belts, the broad band of thorn-like setae submarginal to the vulval margin (Fig. 462) would seem to us to be a likely, and certainty deterring, candidate.



FIGURES 457–458 *Manucodicola semiramisae* **n. gen. & n. sp.** ex *Phonygammus keraudrenii purpureoviolaceus*: **457,** male habitus, dorsal and ventral views. **458,** female habitus, dorsal and ventral views.



FIGURES 459–462 *Manucodicola semiramisae* **n. gen. & n. sp.** ex *Phonygammus keraudrenii purpureoviolaceus*: **459,** male head, dorsal and ventral views. **460,** dorsal view of frons. **461,** partial male genitalia, ventral view (parameres excluded, distorted in all males examined). **462,** female subgenital plate and vulval margin, ventral view.

Type material. Ex *Phonygammus keraudrenii purpureoviolaceus*: Holotype ♂, Kassam Pass (Top), elev. 1300 m, Eastern Highlands District, Papua New Guinea, 25 Aug. 1967, P.H. Colman, BBM-NG-60038 (BPBM) [marked with black dot on slide]. **Paratypes:** 17♂, 21♀, same data as holotype (BPBM); 1♀, Wau, elev. 5000 ft, Nakata Ridge, Morobe District, Papua New Guinea, 18 Jul. 1963, P.J. Shanahan, BBM-NG-28570 (BPBM); 4♂, 2♀, Wau, elev. 5000 ft, Morobe District, Papua New Guinea, 21 May 1963, P.J. Shanahan, BBM-NG-27836, BBM-NG-27845 (BPBM); 5♀, Bulolo River, elev. 3000 ft, Morobe District, Papua New Guinea, 12 Jun. 1963, P.J. Shanahan, BBM-NG-28435 (BPBM).

Ex ***Phonygammus keraudrenii diamondi*:** 1♀, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 23 Feb. 1964, H. Clissold, BBM-NG-29660 (BPBM).

Schizosairhynchus Gustafsson & Bush, new genus

Sturnidoecus Eichler, 1944: 81 (*in partim*).

Type species. *Schizosairhynchus erysichthoni* **new species**

Diagnosis. Members of the genus *Schizosairhynchus* **n. gen.** (Figs 463–476) share the following characters with *Bizarrifrons* (Figs 477–478) and *Manucodicola* **n. gen.** (Figs 451–462): marginal carina widely interrupted medianly (Figs 453, 459, 465, 472, 477); premarginal carina and *as3* absent; frons hyaline posteriorly to site of *as1* (Figs 453, 459, 465, 472, 477); male subgenital plate widens distally (Figs 451, 457, 463, 470, 477); male genitalia prominent, bulky (Figs 455, 461, 466, 473, 478); *vss* numerous, long (Figs 456, 462, 469, 476); *psps* and *aps* absent on tergopleurites II–III in both sexes (Figs 451–452, 457–458, 463–464, 470–471, 477). Unlike *Schizosairhynchus*, the otherwise similar genera *Sturnidoecus* (Figs 377–426), *Rostrinirmus* (Figs 437–450) and *Buphagoecus* **n. gen.** (Figs 427–436) have the following characters: premarginal carina present; frons hyaline only median to the premarginal carina; *psps* or *aps* present on at least tergopleurite III in males (also occurring on other tergopleurites and on female tergopleurite III in some species; see the entries for these genera for details).

Schizosairhynchus is separated from *Manucodicola* and *Bizarrifrons* by the following characters: preantennal area asymmetrical in *Bizarrifrons* (Fig. 477) and *Manucodicola* (Figs 454, 460), but symmetrical in *Schizosairhynchus* (Figs 465, 472); dorsal anterior plate connected to main head plate in *Bizarrifrons* (Fig. 377) and *Manucodicola* (Figs 453, 459), but completely separated from main head plate and extended posteriorly into a pointed horn that overlaps with main head plate in *Schizosairhynchus* (Figs 465, 472); *ppss* of *Schizosairhynchus* located on the medio-posterior margin of prothorax (Figs 463–464, 470–471), but on the postero-lateral corners in *Bizarrifrons* (Fig. 477) and *Manucodicola* (Figs 451–452, 457–458); posterior margin of pterothorax with median indentation in *Schizosairhynchus* (Figs 463–464, 470–471), but without such indentation in *Manucodicola* (Figs 451–452, 457–458) and *Bizarrifrons* (Fig. 477); sternal plate II extended laterally in *Schizosairhynchus* (Figs 463–464, 470–471), but not in *Manucodicola* (Figs 451–452, 457–458) or *Bizarrifrons* (Fig. 477). The proximal mesosome substantially overlaps with basal apodeme in *Schizosairhynchus* (Figs 466, 473) and *Bizarrifrons* (Fig. 477), but this is not the case in *Manucodicola* (Figs 455, 461). However, like in *Manucodicola* (Figs 455, 461), the gonopore is located ventrally and the mesosomal lobes are fused distally in *Schizosairhynchus* (Figs 467, 474); in contrast, the gonopore is terminal and the mesosomal lobes are not fused distally in *Bizarrifrons* (Fig. 378). Rugose nodi and a ventral sclerite are present in *Schizosairhynchus* (Figs 467, 474), but absent in the two other genera (Figs 455, 461, 478). Female *Schizosairhynchus* (Figs 469, 476) have *vos* located on subgenital plate, whereas the *vos* of almost all other genera treated here, including *Manucodicola* (Figs 456, 462) and *Bizarrifrons* (not illustrated) are located lateral to the subgenital plate.

Description. *Both sexes*. Head bulb-shaped (Figs 465, 472), preantennal area narrow. Frons deeply concave, hyaline. Hyaline margin present laterally, continuous with anterior fleshy lobes. Marginal carina widely interrupted medianly. Premarginal carina absent. Ventral carinae visible to anterior end of head, extending farther anterior than marginal carina. Dorsal preantennal suture continuous with hyaline margin, extending posteriorly to position of *ads*, and medianly continuous, separating dorsal anterior plate from main head plate. Dorsal anterior plate elongated, anterior margin concave, posterior margin with distinct hardened extension that covers suture and continues posterior to suture, overlapping with main head plate. Ventral anterior plate absent. Head setae as in Fig. 465, 472; *as3* absent; *ads* and *dsms* often thorn-like; *pts* and *pns* sensilla, often hard to see. Coni long, slender, reaching beyond distal margin of scapes. Antennae monomorphic. Temporal carinae visible; *mts3* only macrosetae. Gular plate small, shape varying between species.

Prothorax rounded pentagonal, with posterior margin convergent to blunt median point (Figs 463–464, 470–471); *ppss* on medio-posterior margin. Proepimera with large, blunt median ends. Pterothorax rounded crescent-shaped; lateral margins convex, divergent; posterior margin rounded. Posterior margin of pteronotum narrowly indented at midline; indentation more extensive in male than in female and may continue for more than half the length length; *mms* narrowly interrupted medianly. Meso- and metasterna not fused, very small; 1 seta on postero-lateral corner on each side of each plate. Metepisterna slender; median ends blunt. Leg chaetotaxy as in Fig. 25, except *fI-p2* absent; *fII-a3* and *fIII-a2* dorsal. Many leg setae long and spike-like.

Abdomen (Figs 463–464, 470–471) almost circular in male, oblong in female. Tergopleurites triangular, more blunt in females than in males; tergopleurites II–IX+X in male and tergopleurites II–VIII in females moderately divided medianly. Sternal plate II in both sexes large, transversally continuous; sternal plates III–VI in both sexes small, crescent-shaped, medianly continuous; at least some sternal plates with small lateral accessory plates. Pleural incrassations moderate. Tergopleurites moderately extended onto ventral surface. Re-entrant heads large. Male subgenital plate trapezoidal, reaching posterior margin of abdomen and wrapping around to dorsal side; accessory sternal plates present lateral to subgenital plate on segments VII–VIII. Female subgenital plate roughly triangular, reaching vulval margin, either not flaring (Fig. 476) or flaring into partial cross-piece (Fig. 469); accessory sternal plates present lateral to subgenital plate on segment VII. Abdominal chaetotaxy as in Table 2, and Figs 463–464, 470–471. Vulval margin (Fig, 469, 476) with few slender *vms*, numerous thorn-like *vss*; *vos* located on and following lateral margins of the subgenital plate; distal *vos* situated median to *vss*.

Male genitalia (Figs 466–468, 473–475) prominent. Basal apodeme trapezoidal (Fig. 473) or rectangular (Fig. 466). Proximal mesosome rectangular, overlapping basal apodeme. Anterior margin may be thickened partially (Fig. 474) or entirely (Fig. 467) Gonopore small, ventral, open distally (Figs 467, 474). Mesosomal lobes large, bulging laterally, fused distal to gonopore. Rugose nodi may be present in postero-lateral corners; 2 *ames* microsetae on each side antero-lateral to gonopore; 2 *pmes* microsetae laterally on each side on lateral bulges of mesosomal lobes. Parameral heads (Figs 468, 475) folded, oblique. Parameral blades strongly curved medianly; *pst1* sensilla, central; *pst2* microsetae, central, near *pst1*.

Host distribution. Based on the three known species and undescribed material, *Schizosairhynchus* is limited to starlings of the genera *Aplonis* Gould, 1836, *Basilornis* Bonaparte, 1850, *Mino* Lesson, 1827, and *Sarcops* Walden, 1875. These four host genera are all members of the "South Asian/Pacific Starlings" clade (Lovette & Rubenstein 2007), and it is likely that *Schizosairhynchus* also parasitise other starlings belonging to this clade, such as species of *Scissirostrum* Lafresnaye, 1845*, Ampeliceps* Blyth, 1842*, Streptocitta* Bonaparte, 1850*, Enodes* Temminck, 1839, and *Gracula* Linnaeus, 1758. Additional collections are required to determine the full host range of *Schizosairhynchus*.

Geographical range. South-East Asia and Australasia.

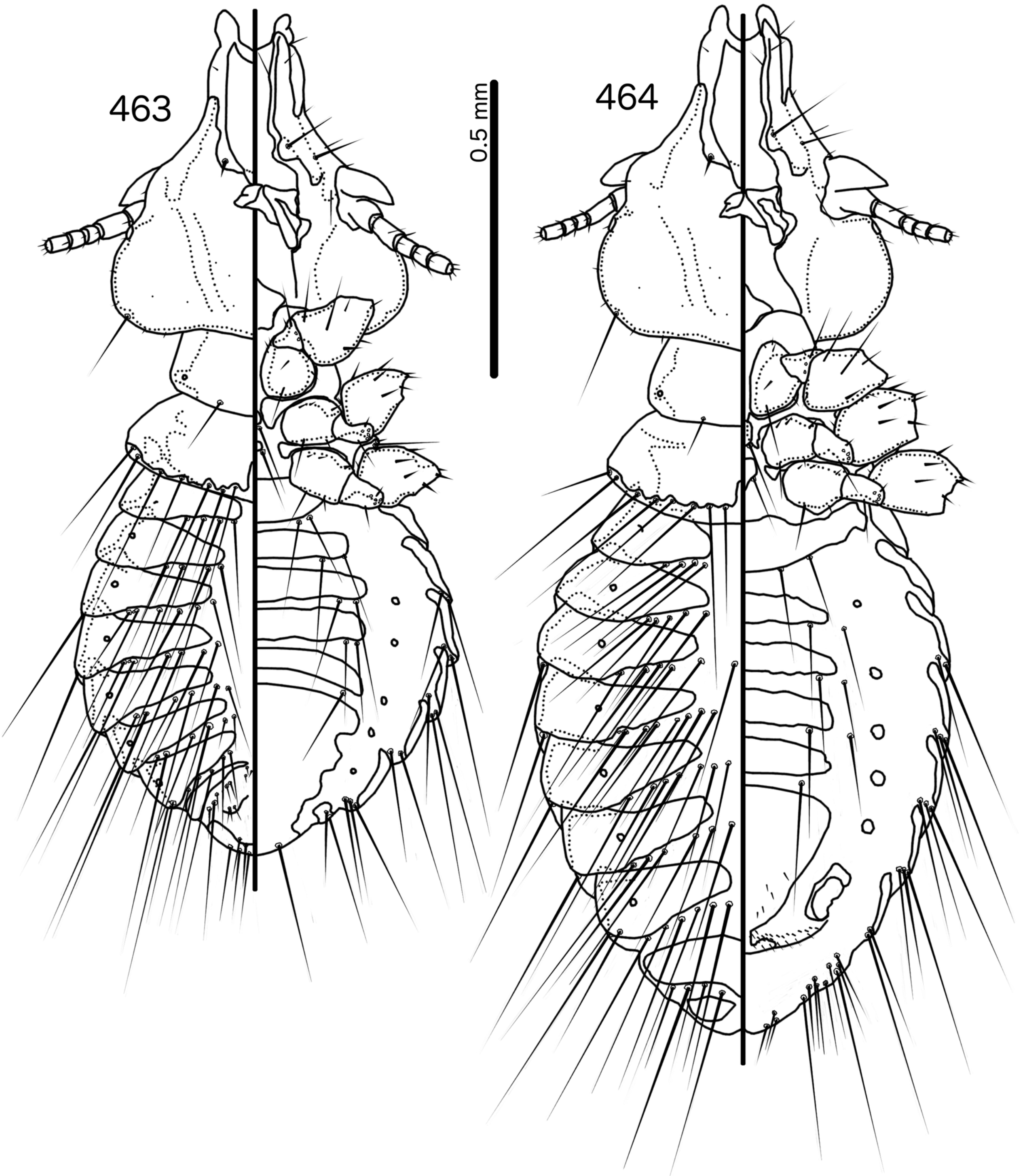
Etymology. The genus name is derived from Greek "*skhizein*" for "to split", the Okinawan martial arts weapon the *sai*, and Greek "*rhunkhos*" for "bill". A *sai* consists of a long baton ("*monouchi*") flanked on both sides with shorter prongs ("*yoku*"), which are often curved and distally pointed. A *sai* split medianly is reminiscent of the shape of the preantennal area (Figs 463–464, 470–471) of members of this genus. Gender: masculine.

Remarks. No representative of *Schizosairhynchus* was included in the phylogeny of Bush *et al.* (2016), but structure of the male genitalia suggests *Schizosairhynchus* may be most closely related to *Manucodicola* and *Bizarrifrons*. The collection of fresh, sequenceable material in the future will help clarify the relationships of *Schizosairhynchus* within the *Brueelia*-complex.

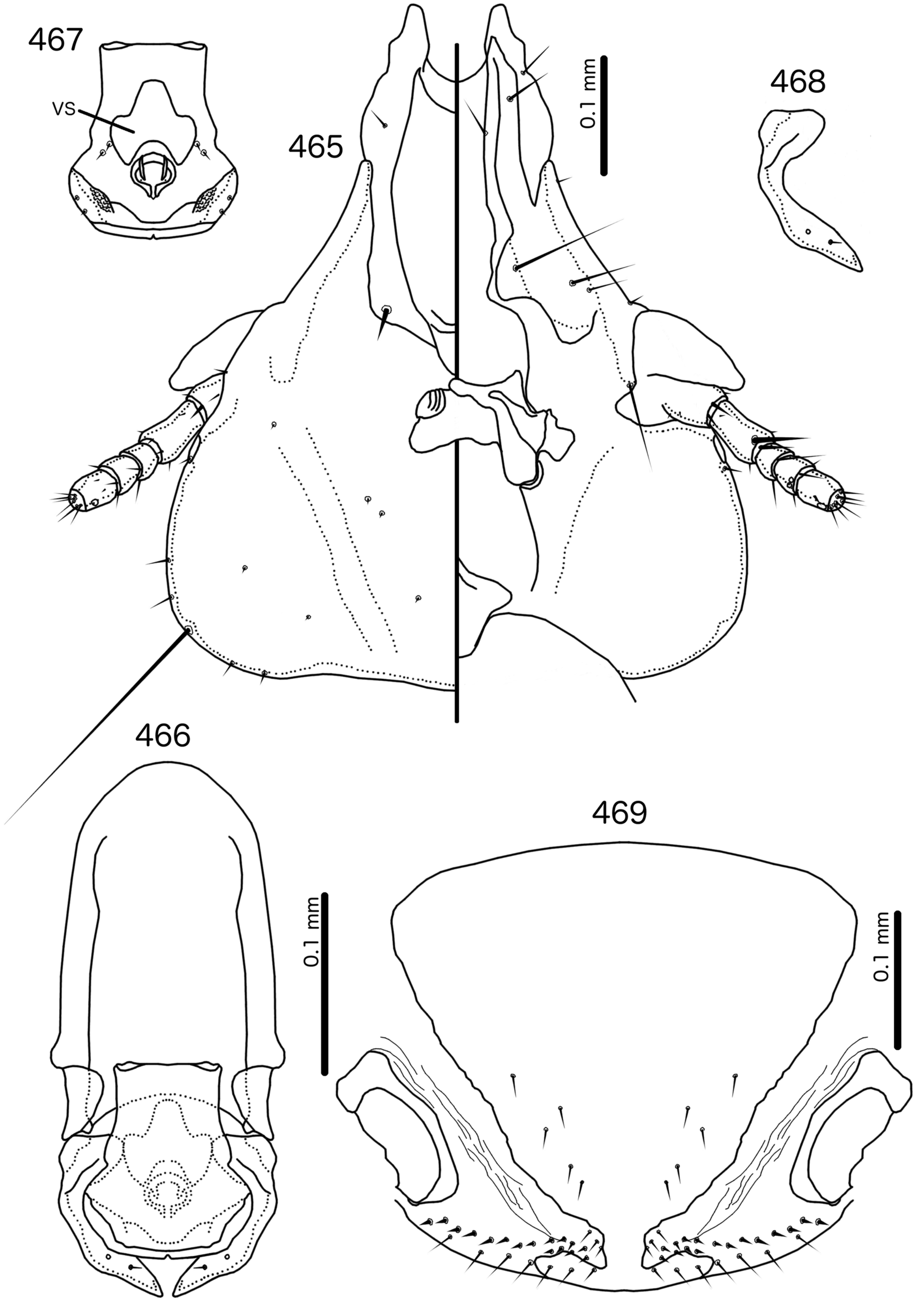
Included species
***Schizosairhynchus erysichthoni* new species**
Schizosairhynchus minovenator **new species**
Schizosairhynchus philippensis (Tandan & Kumar, 1969: 205) **n. comb.** [in *Sturnidoecus*]

Schizosairhynchus erysichthoni Gustafsson & Bush, new species
(Figs 463–469)

Type host. *Aplonis metallica metallica* (Temminck, 1824)—metallic starling.
Type locality. Morobe District, Papua New Guinea.
Other host. *Aplonis metallica nitida* (Grey, 1858)—metallic starling.



FIGURES 463–464. *Schizosairhynchus erysichthoni* **n. gen. & n. sp.** ex *Aplonis metallica metallica*: **463,** male habitus, dorsal and ventral views. **464,** female habitus, dorsal and ventral views.



FIGURES 465–469. *Schizosairhynchus erysichthoni* **n. gen. & n. sp.** ex *Aplonis metallica metallica*: **465,** male head, dorsal and ventral views. **466,** male genitalia, dorsal view. **467,** male mesosome, ventral view. **468,** male paramere, dorsal view. **469,** female subgenital plate and vulval margin, ventral view. *Abbreviation*: VS, ventral sclerite.

Diagnosis. Male *Schizosairhynchus erysichthoni* **n. sp.** is separated from the other two species in the genus by the following characters: distal mesosome relatively slender in *Sc. erysichthoni* (Fig. 467), but much wider in *Sc. minovenator* **n. sp.** (Fig. 474) and *Sc. philippensis* (the distal mesosome of undescribed species of *Schizosairhynchus* **n. gen.** on *Aplonis* spp. are similar to that of *Sc. erysichthoni*; unpub. data); ventral sclerite does not extend distal to gonopore in *Sc. erysichthoni* (Fig. 467) but does extend lateral and distal to gonopore in the other two species (Fig. 474); rugose nodi small, oblong in *Sc. erysichthoni* (Fig. 467) but larger and rounded in the other two species (Fig. 474); *pmes* situated antero-lateral to rugose nodi in *Sc. minovenator* (Fig. 474) and *Sc. philippensis*, but postero-lateral to nodi in *Sc. erysichthoni* (fig. 467); thickening of anterior margin of proximal mesosome transversally continuous in *Sc. minovenator* (Fig. 474) and *Sc. philippensis* but only lateral in *Sc. erysichthoni* (Fig. 467). Note that in the original description of *Sc. philippensis* (Tandan & Kumar 1969: fig. 7), neither the ventral sclerite, the rugose nodi, the *pmes*, or the anterior thickening of the proximal mesosome is illustrated. Yet, even in this illustration, the shape of the mesosome and the presence of the small paired nodi just distal to the gonopore separates this species from *Sc. erysichthoni*.

Female *Schizosairhynchus erysichthoni* separated from the other two species in the genus by the partial cross-piece of the subgenital plate (Fig. 469); no such cross-piece exists in *Sc. minovenator* (Fig. 476), and in *Sc. philippensis* the subgenital plate not reach the vulval margin. Both *Sc. minovenator* (Fig. 476) and *Sc. philippensis* have more than 22 *vss* on each side, whereas *Sc. erysichthoni* (Fig. 469) only has 12–16.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 465. Lateral margins of dorsal anterior plate shallowly convex. Thoracic and abdominal segments as in genus description and Figs 463–464. Tergopleural and sternal plates light brown; antero-lateral corners of tergopleurites and pleurites darker.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 463. Sternal plates IV–VI and subgenital plate with small accessory plates laterally (Fig. 463); 2 accessory plates lateral to subgenital plate on each side. Basal apodeme (Fig. 466) rounded rectangular to trapezoidal. Proximal mesosome quadratic, anterior margin flat to slightly concave, with distinct thickenings laterally. Gonopore (Fig. 467) ventral, narrowly open distally, with pair of slender sclerites attached to anterior margin. Mesosomal lobes wide, fused distally, with distal margin thickened. Rugose nodi slight, flattened. Ventral sclerite (VS in Fig. 467) does not extend distal to gonopore; sclerite not thickened anteriorly; 2 *ames* microsetae on each side of ventral sclerite; 2 *pmes* microsetae on each side, postero-lateral to rugose nodi. Parameral heads (Fig. 468) roughly triangular. Parameral blades gently curved, somewhat irregular, tapering slowly, not extended distally; *pst1–2* as in genus description. Measurements ex *Aplonis metallica metallica* (n = 15): TL = 1.25–1.37 (1.31); HL = 0.45–0.51 (0.47); HW = 0.45–0.49 (0.46); PRW = 0.26–0.30 (0.28); PTW = 0.39–0.44 (0.41); AW = 0.54–0.68 (0.61). Ex *A. m. nitida* (n = 5 except n = 4 for AW, TL): TL = 1.31–1.38; HL = 0.45–0.49; HW = 0.45–0.49; PRW = 0.27–0.31; PTW = 0.40–0.44; AW = 0.59–0.67.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 464. Sternal plates wide (Fig. 464); sternal plates III–VI and subgenital plate with small accessory plates laterally. Subgenital plate roughly triangular, but anterior margin convex (Fig. 469); distally subgenital plate reaches vulval margin and expands into partial cross-piece. Vulval margin (Fig. 469) bulging slightly medianly, with 5–7 long, slender *vms* on each side, and 12–16 short, thorn-like *vss* on each side; 7–8 short, slender *vos*; proximal 4–5 *vos* scattered on subgenital plate, and distal 3 *vos* approaching *vss*. Measurements ex *Aplonis metallica metallica* (n = 17 except n = 16 for HW and n = 15 for AW): TL = 1.49–1.74 (1.58); HL = 0.48–0.55 (0.51); HW = 0.47–0.54 (0.50); PRW = 0.29–0.34 (0.31); PTW = 0.39–0.49 (0.45); AW = 0.62–0.82 (0.70). Ex *A. m. nitida* (n = 6 except n = 4 for AW and n = 3 for TL): TL = 1.54–1.62; HL = 0.47–0.52; HW = 0.47–0.52; PRW = 0.29–0.32; PTW = 0.43–0.47; AW = 0.68–0.72.

Etymology. The species epithet is in honour of Erysichthon, the king of Thessaly who, after cutting down a sacred grove of trees devoted to Demeter, the goddess of harvests, was cursed to have Limos, the goddess of starvation, placed in his stomach. This drove him to insatiable hunger, and he eventually ate himself. While we do not suggest that this regularly happens to *Schizosairhynchus erysichthoni* (for the days of the Old Gods seem to be over), it is a fitting name for a louse species that is prepared to eat a “metallic” starling.

Type material. Ex ***Aplonis metallica metallica***: **Holotype** ♂, 12 miles NE of Lae, elev. 100 ft, Silium Village, Bupu River, Morobe District, Papua New Guinea, 20 Apr. 1970, A.B. Mirza, BBM-NG-98658 (BPBM). **Paratypes:** 3♂, 5♀, same data as holotype (BPBM); 1♂, 1♀, same data as holotype, except BBM-NG-98656 (BPBM); 1♀, 20 km N of Bulolo, elev. 1900 ft, Sum Sum, Morobe District, Papua New Guinea, 11 Feb. 1963, H. Clissold, BBM-NG-21215 (BPBM); 1♀, Sindeada, elev. 10 m, Milne Bay District, Papua New Guinea, 1 Apr. 1965, P.J. Shanahan, BBM-NG-24532 (BPBM); 1♀, Jumbora Plantation, elev. 25 m, Popondetta, Northern

District, Papua New Guinea, BBM-NG-24925 (BPBM); 5♂, 8♀, Popondetta, elev. 200 m, Northern District, Papua New Guinea, 4 Sep. 1963, P.J. Shanahan, BBM-NG-28698, 28700, 28705, 28707 (BPBM); 2♂, Popondetta, elev. 60 m, Northern District, Papua New Guinea, 7 Sep. 1963, P.J. Shanahan, BBM-NG-28706 (BPBM); 3♂, 3♀, Soputa River, elev. 200 ft, Northern District, Papua New Guinea, 28–29 Sep. 1963, H. Clissold, BBM-NG-29718, 29850 (BPBM); 1♂, 2♀, same locality and collector as previous, 4–5 Oct. 1963, BBM-NG-29838 (BPBM); 3♂, 8♀, Zenani, elev. 400 ft, Northern District, Papua New Guinea, 11 Oct. 1963, H. Clissold, BBM-NG-29946–7, 29950–1, 29954–5 (BPBM); 2♂, Ahola, elev. 150 ft, Northern District, Papua New Guinea, 7 Oct. 1963, H. Clissold, BBM-NG-29879, 29949 (BPBM); 2♂, 1♀, Cape Killerton, elev. 10 ft, Northern District, Papua New Guinea, 20 Oct. 1963, H. Clissold, BBM-NG-29728 (BPBM); 2♂, Ambunti, elev. 200 ft, West Sepik District, Papua New Guinea, 7 May 1963, P. Temple, BBM-NG-22563, BBM-NG-22565 (BPBM).

Ex ***Aplonis metallica nitida***: 3♂, 4♀, Broala, elev. 20 m, Santa Isabel Island, Solomon Islands, 24 Aug. 1964, P.J. Shanahan, BBM-SI-24282, 24210 (BPBM); 2♂, 3♀, elev. 20 m, Malaita Island, Solomon Islands, 29 Jun. 1964, P.J. Shanahan, BBM-NG-24074 (BPBM).

Remarks. We found few differences between specimens from the two host subspecies. Material from *A. metallica nitida* from Malaita Island is generally darker than that from other localities, and there are fewer *vss* (12–14 compared to 13–16 in material from *A. metallica metallica*). Many females from *A. m. nitida* have 6 median-submedian pairs of macrosetae on tergopleurites III–IV instead of the 5 pairs in material from *A. m. metallica*. Amore thorough study of the *Schizosairhynchus* from *Aplonis* starlings is needed to determine the significance of these differences. Conservatively, we treat material from both host subspecies as one species.

Schizosairhynchus minovenator Gustafsson & Bush, new species

(Figs 470–476)

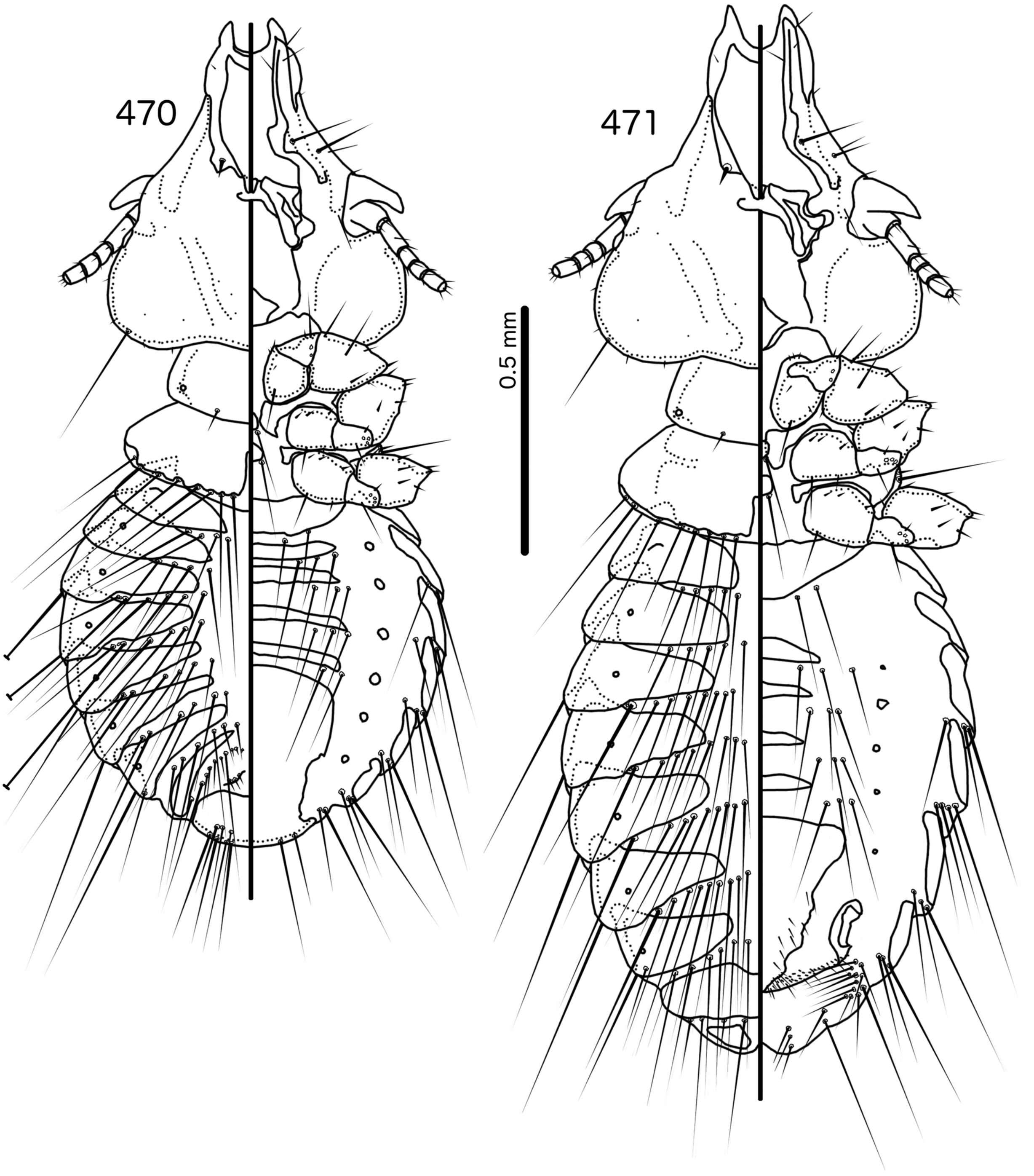
Type host. *Mino dumontii* Lesson, 1827—yellow-faced myna.
Type locality. Popondetta, elev. 200 ft, Northern District, Papua New Guinea.

Diagnosis. *Schizosairhynchus minovenator* **n. sp.** (Figs 470–476) is most similar to *Sc. philippensis* and males of these two species share the following characters (Fig. 474): distal mesosome very wide; *pmes* antero-lateral to rugose nodi; rugose nodi extensive; ventral sclerite extends distal to gonopore; paired nodi just distal to gonopore. Male *Sc. minovenator* can be told apart from male *Sc. philippensis* by the following genital characters: ventral sclerite extended towards rugose nodi in *Sc. philippensis* but not in *Sc. minovenator* (Fig. 474); rugose nodi reach lateral margins of mesosome in *Sc. philippensis* but not in *Sc. minovenator* (Fig. 474); distal thickening of mesosome with submedian triangular extensions in *Sc. philippensis* but not such extensions in *Sc. minovenator* (Fig. 474). Most variation in setal characters in *Sc. philippensis* cannot presently be assessed, as too little material has been examined. However, some differences in the setae of the female genitalia are apparent: *Sc. minovenator* typically have 25–29 *vss*, whereas *Sc. philippensis* typically have 23–24 *vss*; *Schizosairhynchus minovenator* have 13–16 *vos* (Fig. 476), whereas *Sc. philippensis* have 7–8. Differences in *vms* are not diagnostic, as there is overlap between *Sc. philippensis* and *Sc. minovenator*.

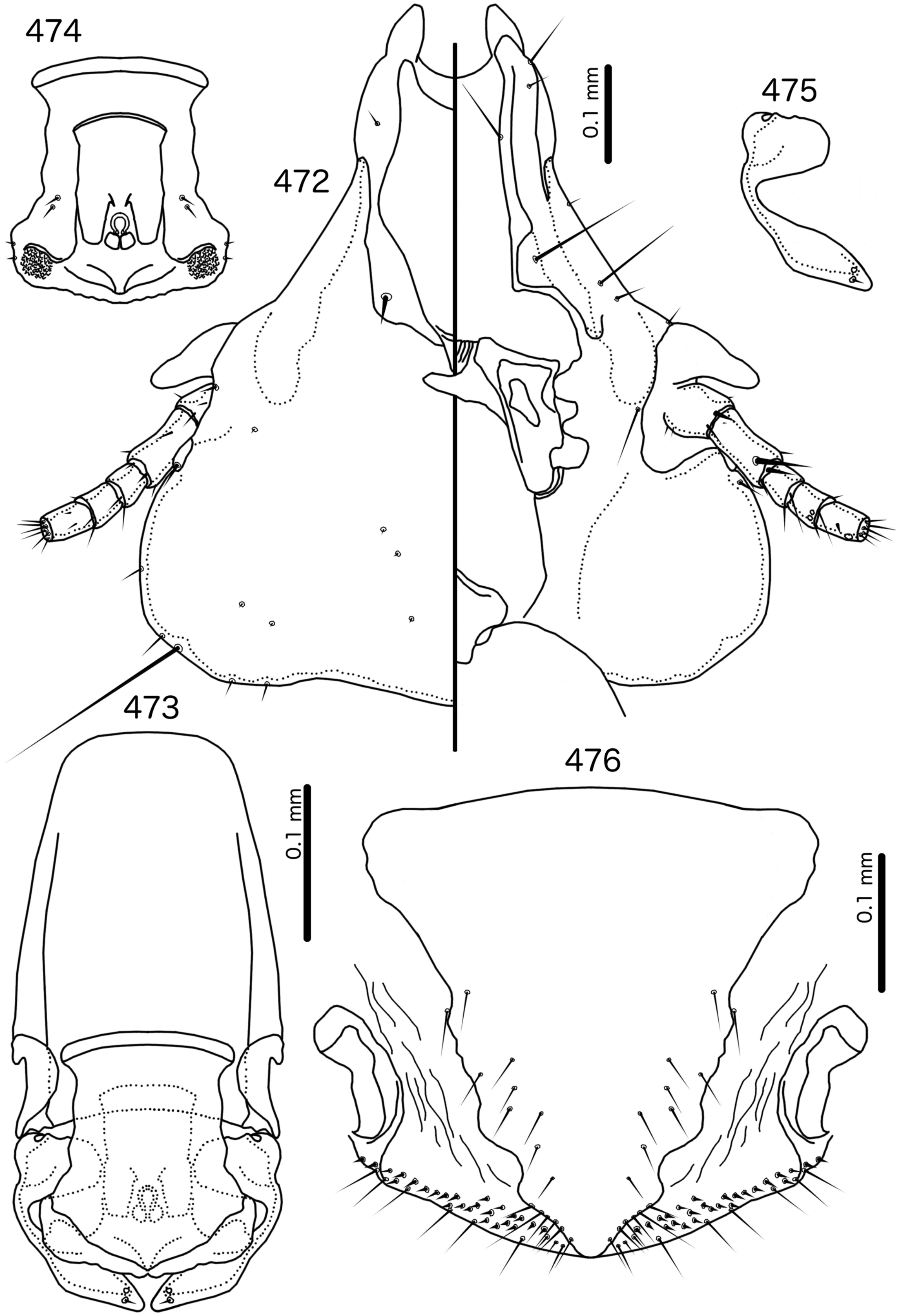
Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 472. Lateral margins of dorsal anterior plate strongly convex. Lateral bulge of preantennal area just anterior to conus prominent. Thoracic and abdominal segments as in genus description and Figs 470–471. Tergopleural and sternal plates light brown; antero-lateral tergopleurites and pleurites darker.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 470. Sternal plates III–VI each with small accessory plate laterally (Fig. 470); 2 accessory plates lateral to subgenital plate on each side. Basal apodeme rounded rectangular to trapezoidal (Fig. 473). Proximal mesosome broadly rectangular, with convex, thickened anterior margin. Gonopore ventral (Fig. 474), narrowly open distally, associated with pair of sublateral nodi just posterior to gonopore. Mesosomal lobes wide, fused distally, and with distal margin thickened. Ventral sclerite extends distal to gonopore, with thickened anterior margin. Rugose nodi extensive; 2 *ames* microsetae on each side antero-lateral to gonopore; 2 *pmes* microsetae on each side on lateral margin of mesosomal lobes antero-lateral to rugose nodi. Parameral heads wide, roughly rectangular. Parameral blades blunt distally (Fig. 475); *pst1–2* as in genus description. Measurements ex *Mino dumontii* (n = 17 except n = 15 for TL and AW): TL = 1.49–1.65 (1.56); HL = 0.54–0.59 (0.57); HW = 0.53–0.58 (0.56); PRW = 0.32–0.37 (0.34); PTW = 0.48–0.54 (0.50); AW = 0.66–0.79 (0.73).

Female. Abdominal chaetotaxy as in Table 2 and Fig. 471. Accessory sternal plates very small, not always visible, but present on segments III–VI and lateral to subgenital plate. Sternal plates not very wide (Fig. 471). Subgenital plate roughly triangular (Fig. 476), not flaring into cross-piece distally. Vulval margin gently rounded (Fig. 476), with 8–11 slender *vms* on each side; median *vms* much shorter than lateral *vms*. 25–29 short, thorn-like *vss* on each side; 13–16 long, slender *vos*; proximal 8–10 *vos* scattered on subgenital plate, distal 5–6 *vos* on distal margin of subgenital plate, median to *vss*. Measurements ex *Mino dumontii* (n = 19 except n = 18 for TL and n = 17 for AW): TL = 1.79–2.05 (1.93); HL = 0.58–0.65 (0.62); HW = 0.57–0.65 (0.62); PRW = 0.36–0.42 (0.38); PTW = 0.53–0.61 (0.56); AW = 0.83–1.06 (0.89).



FIGURES 470–471. *Schizosairhynchus minovenator* **n. gen. & n. sp.** ex *Mino dumontii*: **470,** male habitus, dorsal and ventral views. **471,** female habitus, dorsal and ventral views.



FIGURES 472–476. *Schizosairhynchus minovenator* **n. gen. & n. sp.** ex *Mino dumontii*: **472,** male head, dorsal and ventral views. **473** male genitalia, dorsal view. **474,** male mesosome, ventral view. **475,** male paramere, dorsal view. **476,** female subgenital plate and vulval margin, ventral view.

Etymology. The species epithet is formed by the genus name of the host, *Mino* Lesson, 1827, combined with the Latin "*venator*" for "hunter".

Type material. Ex *Mino dumontii*: Holotype ♂, vicinity of Popondetta, elev. 200 ft, Northern District, Papua New Guinea, 30 Sep. 1963, H. Clissold, BBM-NG-29747 (BPBM). **Paratypes:** 1♂, 1♀, same data as holotype (BPBM); 1♀, Popondetta, elev. 200 m, Northern District, Papua New Guinea, 31 Aug. 1963, P.J. Shanahan, BBM-NG-28671 (BPBM); 3♀, Jumbora Plantation, elev. 200 ft, [Popondetta,] Northern District, Papua New Guinea, 14 Sep. 1963, H. Clissold, BBM-NG-28739, 28752 (BPBM); 1♀, same locality and collectior as previous, 15–16 Sep. 1963, H. Clissold, BBM-NG-28745 (BPBM); 6♂, 4♀, same locality and collector as previous, 18 Sep. 1963, H. Clissold, BBM-NG-28774, 28795–7, 28801, 28807 (BPBM) [some slides contain unidentified *Philopterus* s. lat.]. 2♂, 3♀, same locality and collector as previous, 26 Sep. 1963, H. Clissold, BBM-NG-28739, 28748 (PIPeR) [one slide also contains unidentified *Brueelia* s. str.]. 1♂, Buka-Bara, sea level, Northern District, Papua New Guinea, 21 Sep. 1963, P.J. Shanahan, BBM-NG-28815 (BPBM); 5♂, 8♀, Soputa River, elev. 200 ft, Northern District, Papua New Guinea, 29–30 Sep. 1963, H. Clissold, BBM-NG-29916, 29730 (BPBM); 3♂, 1♀, Azarita, elev. 100 ft, Northern District, Papua New Guinea, 9 Oct. 1963, H. Clissold, BBM-NG-29915 (BPBM); 2♂, 2♀, Ambunti, elev. 200 ft, West Sepik District, Papua New Guinea, 5 May 1963, P. Temple, BBM-NG-22560 (BPBM); 2♀, Finschhafen, elev. 100 ft, Morobe District, Papua New Guinea, 11 Apr. 1963, H. Clissold, BBM-NG-27647 (BPBM); 1♂, 1♀, vicinity of Lae, elev. 30 m, Singanwa River, Morobe District, Papua New Guinea, 15 Apr. 1966, P.J. Shanahan, BBM-NG-24809 (BPBM); 1♀, Balimo, elev. 30 ft, Western District, Papua New Guinea, 28 Mar. 1964, H. Clissold, BBM-NG-50391 (BPBM); 1♂, Oriomo River, elev. 20 ft, Western District, Papua New Guinea, 9 Feb. 1964, H. Clissold, BBM-NG-29442 (BPBM); 1♂, same locality and collector as previous, 26 Feb. 1964, BBM-NG-50035 (BPBM).

Bizarrifrons Eichler, 1938

Docophorus Nitzsch, 1818: 289 (*in partim*).
Nirmus Nitzsch, 1818: 291 (*in partim*).
Bizarrifrons Eichler, 1938: 226.

Type species. *Nirmus magus* Nitzsch [in Giebel], 1866: 367, by original designation.

Diagnosis. *Biarrifrons* (Fig. 477–478) is separated from all other genera treated here except *Manuodicola* **n. gen.** (Figs 453–454, 459–460) by the asymmetrical frons. As in *Manucodicola* (Figs 451–462), the dorsal anterior plate is connected from the main head plate, the premarginal carina is absent, the ventral carinae extend farther anterior than the marginal carinae, and the female subgenital plate does not flare into cross-piece. For differences between these two genera, see *Manucodicola*.

Description. ***Both sexes***. Head roughly bulb-shaped (Fig. 477). Preantennal area more or less asymmetrical. Marginal carina widely interrupted medianly. Premarginal carina absent. Hyaline margin suspended from anterior ends of ventral carinae; continuous with dorsal preantennal suture; suture reaches posterior to *ads*, not medianly continuous posterior to dorsal anterior plate. Ventral anterior plate present. Ventral carinae extend anterior to marginal carinae. Head setae as in Fig. 477; *as3* absent. Coni often long. Antennae monomorphic. Temporal carinae not visible; *mts3* only macrosetae. Gular plate pentagonal.

Prothorax rectangular (Fig. 477); *ppss* on postero-lateral corners. Proepimera hook-shaped. Pterothorax pentagonal; lateral margins divergent; posterior margin convergent to median point; *mms* narrowly separated medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna slender; median end often pointed or hook-shaped. Leg chaetotaxy as in Fig. 25, except *fI-p2* absent.

Abdomen relatively broad, oval (Fig. 477), chaetotaxy as in Table 2. Tergopleurites rectangular or triangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female moderately separated medianly. Sternal plates rounded trapezoidal, medianly continuous, not approaching pleurites. Pleural incrassations moderate to broad. Ventral section of tergopleurites moderate. Re-entrant heads prominent. Male subgenital plate goblet-shaped; lateral margins often concave; reaches posterior margin of abdomen. Female subgenital plate triangular; lateral margins concave; approaches or reaches vulval margin but does not flare. Vulval margin (not illustrated) with slender *vms*, thorn-like *vss*; *vos* follow lateral margins of subgenital plate; distal *vos* approaching or median to *vss*.

Basal apodeme (Fig. 478) roughly rectangular, rounded anteriorly. On ventral side a transversal sclerite near distal margin of basal apodeme (not shown). Proximal mesosome broadly quadratic; overlapping basal apodeme. Gonopore (Fig. 478) small, terminal. Mesosomal lobes large, longer than wide, thickened distally, not fused distal to gonopore; 2 *ames* microsetae submedianly on each side anterior to gonopore; 2 *pmes* microsetae laterally on each side on margins of lobes. Parameral heads (Fig. 478) folded medianly across proximal mesosome, roughly rectangular. Parameral blades moderate, elongated, may curl medianly; *pst1* sensilla, rarely microsetae and if microsetae shorter than *pst2*, central; *pst2* micrsetae, central.

Host distribution. The genus *Bizarrifrons* Eichler, 1938, is known only from the New World passerine family Icteridae. It is largely restricted to the tropical genera *Psarocolius* Wagler, 1827, *Cacicus* Lacepede, 1799, and *Quiscalus* Vieillot, 1816 (see Jaramillo & Burke 1999). The two species groups proposed by Valim & Palma (2012) parasitise different genera of hosts, with the *magus*-group parasitising the genera *Psarocolius* and *Quiscalus*, and the *picturata*-group parasitising the genus *Cacicus*. In the phylogeny of Lanyon & Omland (1999), *Cacicus* is closely related to *Psarocolius,* and *Quiscalus* is more closely related to New World blackbirds (*Agelaius* Vieillot, 1816) and other genera, indicating that if these *Bizarrifrons* species-groups are monophyletic, they are not structured by host phylogeny.

Geographical range. Neotropical, with some species reaching as far North as Mexico.

Remarks. Eichler (1938) originally included all species of *Brueelia* described from the Icteridae in *Bizarrifrons*. Later, Carriker & Díaz-Ungría (1961: 44) pointed out that there is no resemblance between the species treated as *Bizarrifrons* by most subsequent authors (e.g. Hopkins & Clay 1952: 50) and the "*ornatissima*-group" of *Brueelia* s. str. that infest Icteridae (see Cicchino & Castro 1996). Notably, both of these groups have analogous pigmentation patterns, which may have influenced Eichler's taxonomic decisions.

Carriker & Díaz-Ungría (1961: 44) mentioned *Bizarrifrons* and *Sturnidoecus* as very similar, and regarded them as closest relatives to each other. The phylogeny of Bush *et al*. (2016), suggests that *Sturnidoecus* may be more closely related to *Olivinirmus* and *Guimaraesiella* than to *Bizarrifrons*; however, these placements were not strongly supported.

Bizarrifrons was recently reviewed by Valim & Palma (2012), who provided a key to the genus and a thorough redescription of the type species. We therefore do not redescribe the genus here, nor do we provide complete illustrations. We have illustrated the male of an unidentified species of *Bizarrifrons* from *Psarocolius bifasciatus yuracares* (d'Orbigny & Lafresnaye, 1838), which may be *Bi. maculatus* (Rudow, 1869) (Figs 477–478). Considering that Valim & Palma (2012) regarded *Bi. maculatus* as a *nomen dubium*, we do not identify the male illustrated here as that species until a more thorough review has been undertaken.

Arrangement into the species groups listed below follows Valim & Palma (2012).

Included species
Bizarrifrons magus species-group:
**Bizarrifrons clayae* Eichler, 1938: 228
    Bizarrifrons clayi Eichler, 1938: 228 *lapsus calami*
**Bizarrifrons francisi* (Carriker, 1903: 139) [in *Nirmus*]
**Bizarrifrons latifrons* Valim & Palma, 2012: 35
***Bizarrifrons magus (Nitzsch [in Giebel], 1866: 367) [in *Nirmus*]**
    Nirmus magus Nitzsch [in Giebel], 1861: 301 (*nomen nudum*)
    Nirmus majus Nitzsch [in Giebel], 1866: 367 (error for *magus*)
    Docophorus ambiguus Giebel, 1874: 119 *nec Docophorus ambiguus* Burmeister, 1838
**Bizarrifrons meinertzhageni* Eichler, 1938: 232
Bizarrifrons wecksteini Valim & Palma, 2012: 37

Bizarrifrons picturatus species group:
Bizarrifrons juruani Carriker & Díaz-Ungría, 1961: 46
**Bizarrifrons picturatus* Carriker & Díaz-Ungría, 1961: 44
**Bizarrifrons quasisymmetricus* Valim & Palma, 2012: 45

Nomen dubium
Bizarrifrons maculatus (Rudow, 1869: 12) [in *Docophorus*]

Meropsiella Conci, 1941

Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).

Type host. *Nirmus apiastri* Denny, 1842: 52, by original designation.

Diagnosis. *Meropsiella* is not particularly similar to any other genus treated here. *Meropsiella* was placed near *Meropoecus* and *Motmotnirmus* in the phylogeny of Bush *et al*. (2016), but this placement was not strongly supported. Morphologically, there are great differences among these three genera in many character sets; indeed, the male genitalia of *Meropsiella* and *Meropoecus* are so different that they are hard to compare. The marginal carina is interrupted submedianly in all three genera. However, the carina of *Motmotnirmus* is interrupted only submedianly (Fig. 504), whereas the carina of *Meropoecus* is reduced to a small remnant near the preantennal nodi (Figs 494, 499) and the marginal carina of *Meropsiella* is interrupted submedianly and laterally, at least on the dorsal side (Fig. 481). In *Motmotnirmus* (Fig. 504) and *Meropsiella* (Fig. 481) the dorsal preantennal suture reaches the *dsms* but not the *ads*, but in *Meropoecus* the suture reaches the *ads* as well (Figs 494, 499). The *mts2* are macrosetae in *Motmotnirmus* (Fig. 504), and *mts2* is longer than *mts1* and *mts4–5* in *Meropoecus* (Figs 494, 499), but in *Meropsiella* all *mts* except *mts3* are of equal length (Fig. 481). Gonopore is terminal in *Motmotnirmus* (Fig. 506), but ventral in *Meropsiella* (Figs 484, 487, 490), and other characters of the male genitalia are hard to compare between these three genera; the male genitalia of *Meropoecus* (Figs 495, 500) are unique within the *Brueelia*-complex, and most of the terminology introduced here to describe the male genitalia of the *Brueelia*-complex are largely inapplicable to *Meropoecus*. The female subgenital plate and vulval margin of *Meropsiella* (Fig. 482) is structurally very similar to that of *Meropoecus* (Figs 496, 501): both genera have broad lateral submarginal extensions of the subgenital plate, and in both genera, there is a distinct median extension of the subgenital plate, that may approach, but not reach, the vulval margin. Additionally, in both *Meropoecus* (Figs 496, 500) and *Meropsiella* (Fig. 482), the *vss* and *vms* are largely mixed, and do not form separate sets. All these characters are in stark contrast to *Motmornirmus* (Fig. 508), in which the subgenital plate does reach the vulval margin, but does not have lateral submarginal extensions, and in which the *vss* and *vms* are separated into distinct sets.

Description. ***Both sexes***. Head trapezoidal (Fig. 481). Marginal carina interrupted submedianly, but not completely interrupted laterally. Ventral carina continuous with marginal carina. Frons hyaline and continuous with dorsal preantennal suture that does not reach *ads*. Dorsal anterior plate continuous with main head plate. Ventral anterior plate absent. Head setae as in Fig. 481; *ads* very short, and may be absent in some species; *mds* and *pns* absent. Antennae monomorphic. Temporal carinae not visible; *mts3* only macrosetae. Temporal margin bulges distinctly between *mts3* and *mts4*. Gular plate roughly triangular.

Prothorax (Figs 479–480) rounded rectangular; *ppss* absent or minute. Proepimera with hammer- or hook-shaped median ends. Pterothorax rounded trapezoidal; lateral margins convex; posterior margin more or less flat (*contra* Denny, 1842: 133); *mms* moderately separated medianly. Meso- and metasterna not fused, setae only on postero-lateral corners of metasternum. Metepisterna with hammer-shaped median ends. Leg chaetotaxy as in Fig. 25, except *fI-v4, fI-p2, fII-v2, fIII-v2* absent; *tII-v1* and *tIII-v1* short.

Abdomen (Figs 479–480) elongated oval in both sexes, longer in female. Tergopleurites rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female moderately divided medianly. Sternal plates rectangular, medianly continuous, do not approach pleurites. Pleural incrassations moderate. Ventral section of tergopleurites moderate to wide. Re-entrant heads prominent. Anterior end of pleurite II with rectangular extensions medianly. Male subgenital plate rounded triangular, reaching posterior margin of abdomen. Female subgenital plate roughly triangular, approaching but not reaching vulval margin (Fig. 482). Lateral submarginal extensions present. Abdominal chaetotaxy as in Table 2. Vulval margin with median bulge (Fig. 482), *vss* and *vms* not forming separate rows; *vos* follow lateral margins of subgenital plate, not approaching vulval margin.

Male genitalia (Fig. 483–491) variable. Basal apodeme trapezoidal (Fig. 483), rounded rectangular (Fig. 486), or pentagonal (Fig. 489). Proximal mesosome blunt, either broad (e.g. *Meropsiella apiastri*, Fig. 484) or narrow (e.g. *Ms*. *bullockoda*, Fig. 487). Proximal mesosome overlapping basal apodeme. Gonopore with broad marginal thickening that vary in shape (Figs 484, 487, 490); open only distally. Mesosomal lobes fused distally, often square-shaped, but variable between species; 2 *ames* sensilla on each side lateral to gonopore; absent or not visible in *Ms*. *apiastri* (Fig. 484); 2 *pmes* sensilla on each side lateral or sublateral. Rugose nodi may be present as fringed or papillate sections of distal margins of mesosome (Figs 487, 490). Parameral heads bifid, but variable (Figs 485, 488, 491). Parameral blades generally broad, somewhat elongated, but those of *Ms*. *bullockoda* (Fig. 488) broad with irregular margins; *pst1–2* both sensilla, central, not near distal end of parameres.

Host distribution. Species of this genus are only known from the genus *Merops* Linnaeus, 1758, family Meropidae.

Geographic range. Occurs throughout Africa and Europe to South-East Asia and Australia.

Remarks. *Meropsiella* was erected by Conci (1941b: 104) for the slender lice parasitising Meropidae. Conci (1941b) stated that *Meropsiella* is similar to *Brueelia*, but distinguished by the almost perfectly triangular head shape, the distinct clypeal suture located at about 4/5ths of the length of the head, the presence of a long and a short seta on the frons, and the lack of setae on the posterior dorsal corners of the prothorax. He included only one species in the genus, *Ms*. *apiastri*, but suspected that *Ms*. *erythropteri*, which he was unable to examine, would be included as well. Hopkins & Clay (1952: 225) considered *Meropsiella* inseparable from *Brueelia*, a view followed also by Price *et al*. (2003: 198). In the phylogeny of Bush *et al*. (2016), *Meropsiella* was placed with strong support as a lineage sister to the main *Brueelia*-complex, together with several other genera (*Buerelius, Couala, Meropoecus,* and *Motmotnirmus*) that parasitise non-passerines. Mey & Barker (2014) suggested that *Meropsiella* should be resurrected, but offered no reasons for their opinion.

To date, the only revision of the *Brueelia*-complex species on the bee-eaters is by Williams (1981), who treated five species, three of which were newly described in that paper. However, we recognise *Brueelia bullockoda* Williams, 1981 as the only species belonging to *Meropsiella*, because we place *Br. athertona* Williams, 1981 in *Aporisticeras* **n. gen.,** and *Brueelia superciliosa* Williams, 1981 is a junior synonym of *Alcedoffula alcedinis* (Denny, 1842: 48) (see Williams 1982b). We have examined a large amount of lice from several species of bee-eaters and found small but consistent differences between material we list as *Ms. erythropteri* in Appendix III; populations of *Ms. erythropteri* on different host species may be separate species.

Included species
***Meropsiella apiastri* (Denny, 1842: 52) [in *Nirmus*]**
Meropsiella bullockoda* (Williams, 1981: 516) [in *Brueelia*] **new combination
**Meropsiella erythropteri* (Piaget, 1885: 28) [in *Nirmus*]

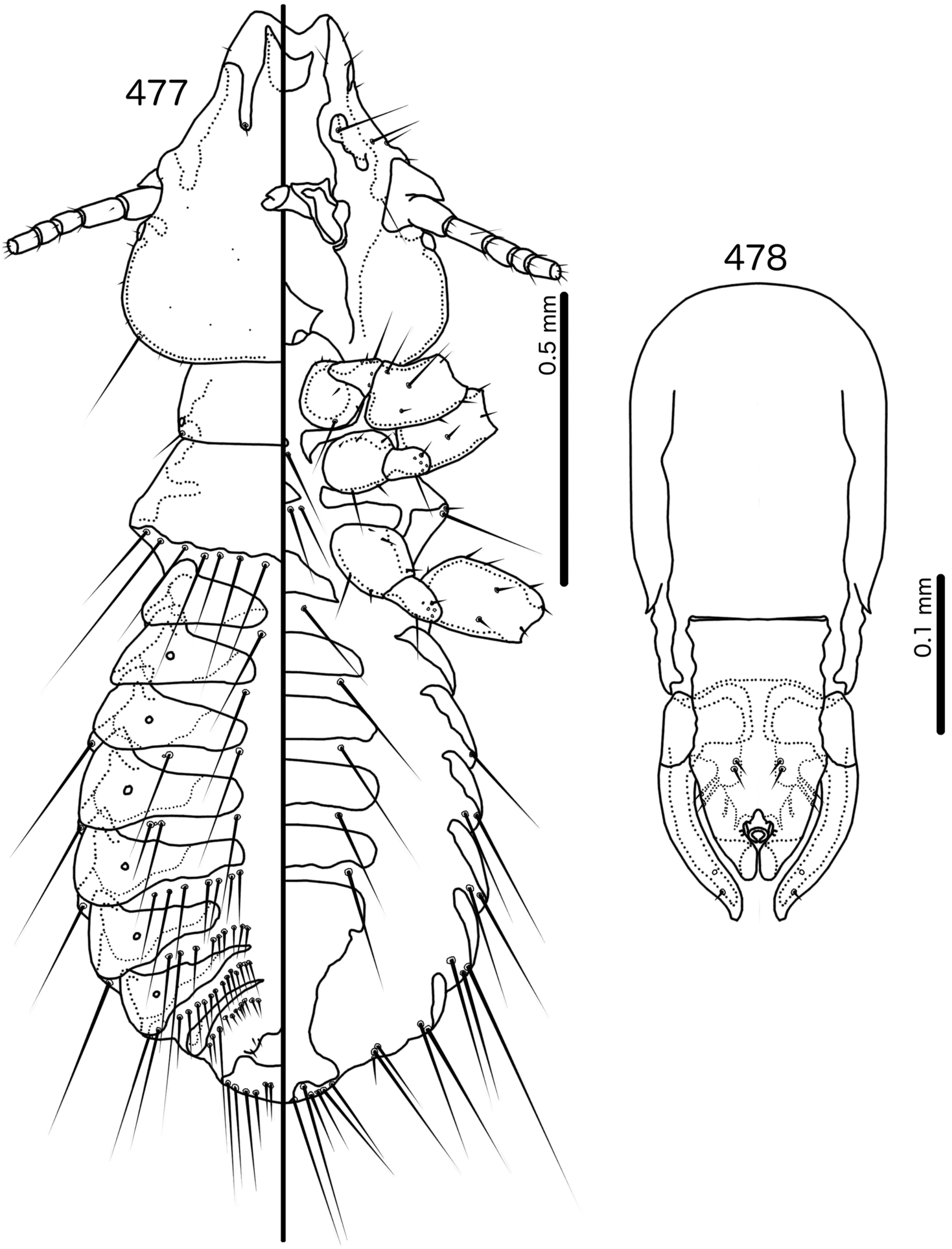
Meropsiella apiastri (Denny, 1842)
(Figs 479–485)

Nirmus apiastri Denny, 1842: 52.
Degeeriella apiastri (Denny, 1842); Harrison, 1916: 108.
Meropsiella apiastri (Denny, 1842); Conci, 1941b: 104.
Brueelia apiastri (Denny, 1842); Hopkins & Clay, 1952: 53.

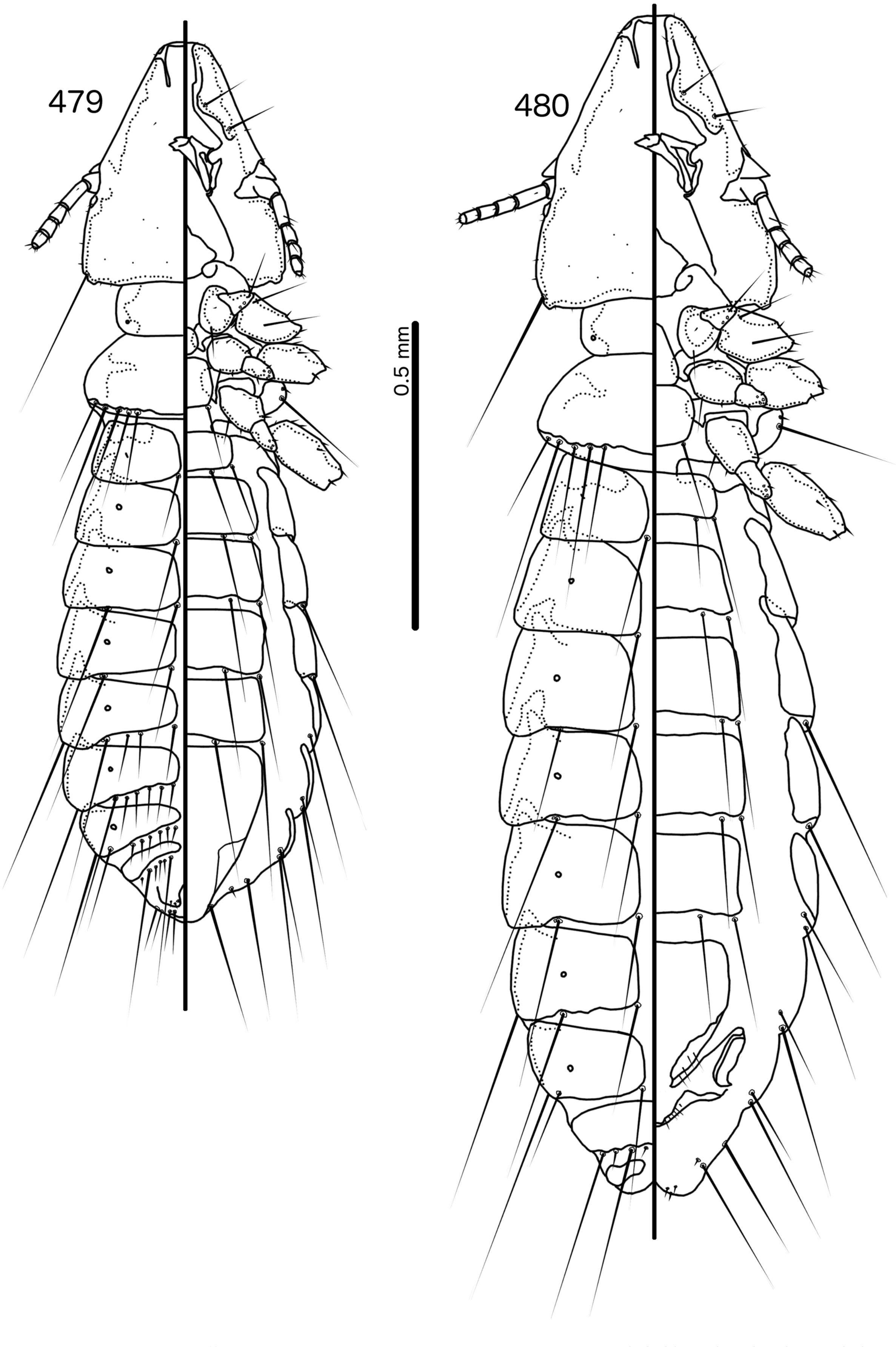
Type host. *Merops apiaster* Linnaeus, 1758—European bee-eater.
Type locality. Belfast, Northern Ireland, United Kingdom.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 481. Bulge median of *mts3* slight. Thoracic and abdominal segments as in genus description and Figs 479–480; 1 seta on each side of metasternum.

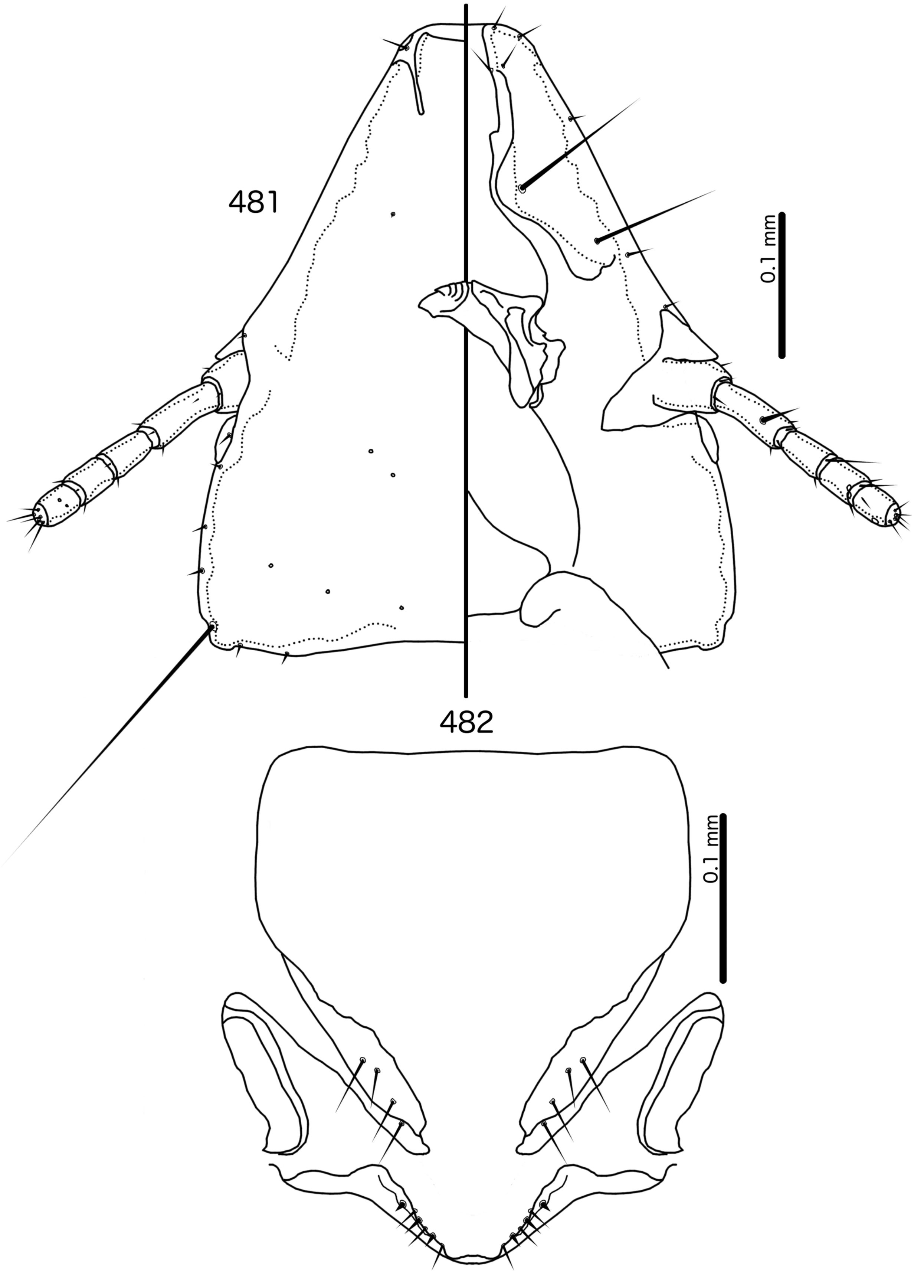
Male. Abdominal chaetotaxy as in Table 2 and Fig. 479. Male genitalia (Figs 483–485) unique within genus and the *Brueelia*-complex. Basal apodeme (Fig. 483) roughly trapezoidal. Proximal mesosome square-shaped. Gonopore (Fig. 484) ventral, narrowly open distally, with large, roughly Y-shaped thickening on each side. Mesosomal lobes rounded, fused distally. Moderate lateral nodi on ventral surface of mesosome, not reaching distal end of mesosome; 2 *pmes* microsetae on each side on these nodi. Parameral heads (Fig. 485) slender, bifid. Parameral blades gently curved around mesosome, slightly elongated distally; *pst1–2* sensilla, proximal to elongation of parameres. Measurements ex *Merops apiaster* (n = 9): TL = 1.41–1.53; HL = 0.40–0.41; HW = 0.34–0.36; PRW = 0.22–0.24; PTW = 0.33-0.35; AW = 0.42–0.46.



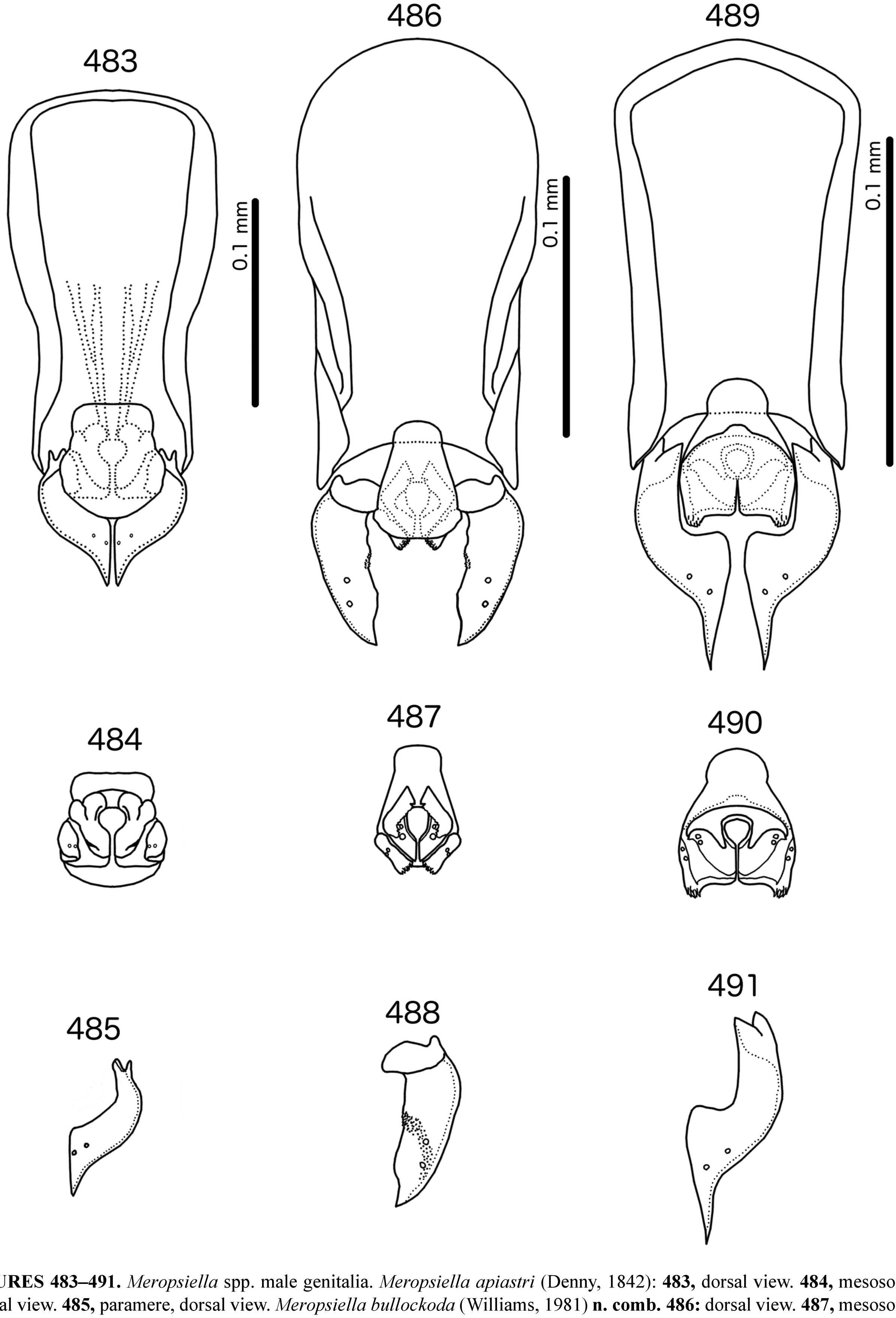
FIGURES 477–478. *Bizarrifrons sp.* ex *Psarocolius bifasciatus yuracares*: **477,** male habitus, dorsal and ventral views (thin dotted lines depict extent of pigmentation on tergites). **478,** male genitalia, dorsal view (ventral setae transposed to dorsal surface for clarity).



FIGURES 479–480. *Meropsiella apiastri* (Denny, 1842) ex *Merops apiaster*: **479,** male habitus, dorsal and ventral views. **480,** female habitus, dorsal and ventral views.



FIGURES 481–482. *Meropsiella apiastri* (Denny, 1842) ex *Merops apiaster*: **481,** male head, dorsal and ventral views. **482,** female subgenital plate and vulval margin, ventral view.



FIGURES 483–491. *Meropsiella* spp. male genitalia. *Meropsiella apiastri* (Denny, 1842): **483,** dorsal view. **484,** mesosome, ventral view. **485,** paramere, dorsal view. *Meropsiella bullockoda* (Williams, 1981) **n. comb. 486:** dorsal view. **487,** mesosome, ventral view. **488,** paramere, dorsal view. *Meropsiella cf. erythropteri* (Piaget, 1885) **n. comb.** ex *Merops philippinicus*: **489,** dorsal view. **490,** mesomere, ventral view. **491,** paramere, dorsal view.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 480. Subgenital plate (Fig. 482) flares distally, but does not reach vulval margin, forming wide cross-piece that broadens laterally. Vulval margin (Fig. 482) with distinct median bulge; 1–3 slender *vms* and 2–3 thorn-like *vss* situated on each side of bulge, mixed; 3–5 long, slender *vos* on each side; *vos* do not approach *vss*. Measurements ex *Merops apiaster* (n = 11): TL = 1.76–1.95 (1.87); HL = 0.43–0.47 (0.45); HW = 0.36–0.40 (0.38); PRW = 0.22–0.26 (0.24); PTW = 0.35–0.39 (0.37); AW = 0.50–0.57 (0.53).

Type material. Ex ***Merops apiaster*: Holotype** ♂, Belfast, Northern Ireland, United Kingdom, Denny Collection, BM 1952-98 (NHML).

Additional material examined (non-types)

Ex ***Merops apiaster***: 1♀, Agigea, [Constata County,] Romania, 2 Jul. 1958, I. Bechet, 22/a/5, 22039 on reverse (OSUS); 1♂, 1♀, Israel, 23 May 1968, C-2194 (OSUS); 1♂, 1♀, "Desert", Al Magrah, [Matruh Governate,] Egypt, 15 May 1975, HH8277 (OSUS); 1♀, Paralimni, [Famagusta District,] Cyprus, 12 May 1968, CYS-385 (OSUS); 1♂, Luanshya River, Zambia, 13 Oct. 1951, E.L. Haydoek, ML/30, Brit. Mus. 1952-149 (NHML); 1♂, Slovakia, 24 Jul. 1949, F. Balát, BM 1950-389 (NHML); 2♂, 14♀, Afghanistan, May 1937, R. Meinertzhagen, 10006 and 10086–91 (NHML); 4♂, 6♀, Quetta, Afghanistan, May 1937, R. Meinertzhagen, 2746 (NHML); 3♂, 11♀, Kabul, Afghanistan, Apr. 1937, R. Meinertzhagen, 9687 (NHML); 1♂, 1♀, Johannesburg, Transvaal, South Africa, 15 Nov. 1968, J. Ledger, Brit. Mus. 1972-382 (NHML); 1♂, 1♀, "Asia Minor", Turkey, May 1935, R.Meinertzhagen, 3885 (NHML); 2♂, 3♀, Palestine, Apr. 1953, R. Meinertzhagen, BM1953-225 (NHML); 4♂, 3♀, Defilia, near Figuig, Morocco, 12 Apr. 1966, A. Hutson, Brit. Mus. 1966-241 (NHML); 3♂, 1♀, "Southern Spain", SPAIN, 21 Apr. 1961, Varma No. A252, Brit. Mus. 1962-325 (NHML); 1♂, 3♀, Yinna [?], Mbaraza [?], Uganda, 11 Nov. 1934, G.H.E. Hopkins (NHML); 1♂, 1♀, "Stavros", unknown locality, 23 May 1918, J. Waterston, BM1930-232 (NHML); 1♀, Khuta Maji, Vwaza Marsh, Vwaza Wildlife Reserve, Malawi, 16 Oct. 2009, Jason D. Weckstein, MLW-3753, FMNH 467914, FMNH 0000 029 033, DNA voucher for sequence Brap.1.25.2011.1 (FMNH); 1♀, Metkovic, Croatia, 20 May 1963, A. Lesinger, 7554 (PMSL); 2♂, 1♀, Metkovic, Croatia, 15 Oct. 1964, A. Lesinger, 9791–9802 (PMSL); 1♂, Metkovic, Croatia, 18 May 1968, A. Lesinger, 11400 (PMSL); 1♀, Bitola, Macedonia, 15 Aug. 1928, S. Brelih, 2469 (PMSL); 1♂, Red Sea, SUDAN, 9 Sep. 1960, S. Brelih, 3225 (PMSL).

Ex **"*Merops aegyptius*"**: 1♀, Wolffhügel, IN1278/69 (MFNB).

Remarks. In the material we have examined, the parameres are not shaped as in Williams (1981: fig. 6), but are distally elongated. William's (1981: figs 4, 5) illustrations also lack the dorsal preantennal suture, which is present in our material examined.

Meropoecus Eichler, 1940

Docophorus Nitzsch, 1818: 289 (*in partim*).
Meropoecus Eichler, 1940: 102.

Type species. *Docophorus meropis* Denny, 1842: 46, by original designation.

Diagnosis. Although *Meropoecus* is not very similar to other genera treated here, the female genitalia are similar to those of *Meropsiella* (see above). However, the male genitalia of *Meropoecus* (Figs 495, 500) are unlike any other genus in the *Brueelia*-complex. The presence of more than 2 *pst* is shared within the *Brueelia*-complex only with *Aporisticeras* **n. gen.** (Fig. 529), and while some other groups treated here have papillation on the anterior end of the mesosome (e.g. the *Olivinirmus meinertzhageni* group, Fig. 335), this is not as extensive and elaborate as in *Meropoecus*.

Description. ***Both sexes***. Head broad, bulb-shaped (Figs 494, 499). Marginal carina widely interrupted medianly, postmarginal carina reaching barely one third of preantennal head. Hyaline margin wide, anteriorly concave, continues laterally for most of preantennal head. Ventral carinae continue farther anterior than marginal carina, divergent anteriorly. Ventral anterior plate present, rounded crescent-shaped. Dorsal preantennal suture continuous with hyaline margin, reaching *ads*, but diffuse posterior to this. Dorsal anterior plate may be continuous with main head plate. Head setae as in Fig. 494, 499; *dsms* and *as1* on hyaline margin; *as2–3* situated dorsally, on hyaline margin; *ads* very thick, thorn-like; *pos* ventral or lateral. Coni long, pointed. Antennae monomorphic.

Temples bulging. Temporal carinae visible, flanked medianly by a narrow dorsal postantennal suture; *mts3* only long setae (except in *Meropoecus emersoni*, see Tendeiro 1961), but *mts2* often longer than *mts1* and *mts4–5*. Gular plate short and squat.

Prothorax rectangular (Figs 492–493, 497–498); *ppss* on postero-lateral corners. Proepimera long, hooked, reaching halfway around coxae II. Pterothorax rounded trapezoidal; lateral margins rounded; posterior margin flat or slightly rounded; *mms* form continuous row. Meso- and metasterna absent or present as pair of minute plates near median end of metepisterna; 1 seta on each side on ventral pterothorax median to coxae II. Metepisterna slender; median ends blunt. Leg chaetotaxy as in Fig. 25, except *fI-v4, fI-v3, fI-p2, fII-v2, fIII-d2, fIII-v2* absent. Many leg setae long and spike-like.

Abdomen broadly oval in females and almost rounded in males (Figs 492–493, 497–498). Abdominal chaetotaxy as in Table 2. Tergopleurites triangular, more rectangular in posterior segments; tergopleurites II–IX+X in males and II–VIII in females moderately divided medianly. Sternal plates broad, may approach pleurites. Accessory sublateral plates may be present in females on segments III–VII. Pleural incrassations slender to moderate. Ventral section of tergopleurites typically slender. Re-entrant heads moderate. Male subgenital plate broad, rounded triangular, not reaching posterior margin of abdomen. Female subgenital plate broad, roughly rectangular or triangular, but does not reach vulval margin (Figs 496, 501); median section of plate with narrow, elongated bulge that may approach vulval margin. Lateral submarginal extensions present, wide. Vulval margin convergent to median point (Figs 496, 501) with numerous long, slender *vms*, numerous short, thorn-like *vss*; *vss* and *vms* not separated into distinct sets; *vos* in narrowly convergent rows, with distal *vos* approaching or median to *vss*.

Male genitalia (Figs 495, 500) dissimilar to those of other genera treated here. Basal apodeme roughly egg-shaped, wider distally. Mesosome variable in shape, but in all species consists of rounded proximal part overlapping basal apodeme, and lesser distal part located median to parameres; 1 (e.g. *Meropoecus smithi*, not illustrated) or 2 (e.g. *Mo. bartlowi* **n. sp.**, Fig. 500) narrow and densely papillate lobes in anterior end of mesosome; 2 *ames* microsetae (in some species sensilla) near antero-lateral corners of mesosome on each side, just lateral to papillate lobes; 3 *pmes* microsetae or sensilla submedianly near distal margin of mesosome. Parameres stout, strongly curved, consisting of two parts: a more heavily sclerotized proximal-lateral end, and a translucent distal-median end. Up to 4 *pst* on median margin near distal end.

Host distribution. Limited to species of bee-eaters, family Meropidae. Preliminary studies indicate that most species are monoxenous, and that there are several undescribed species in *Meropoecus*.

Geographical range. Widely distributed across the Old World.

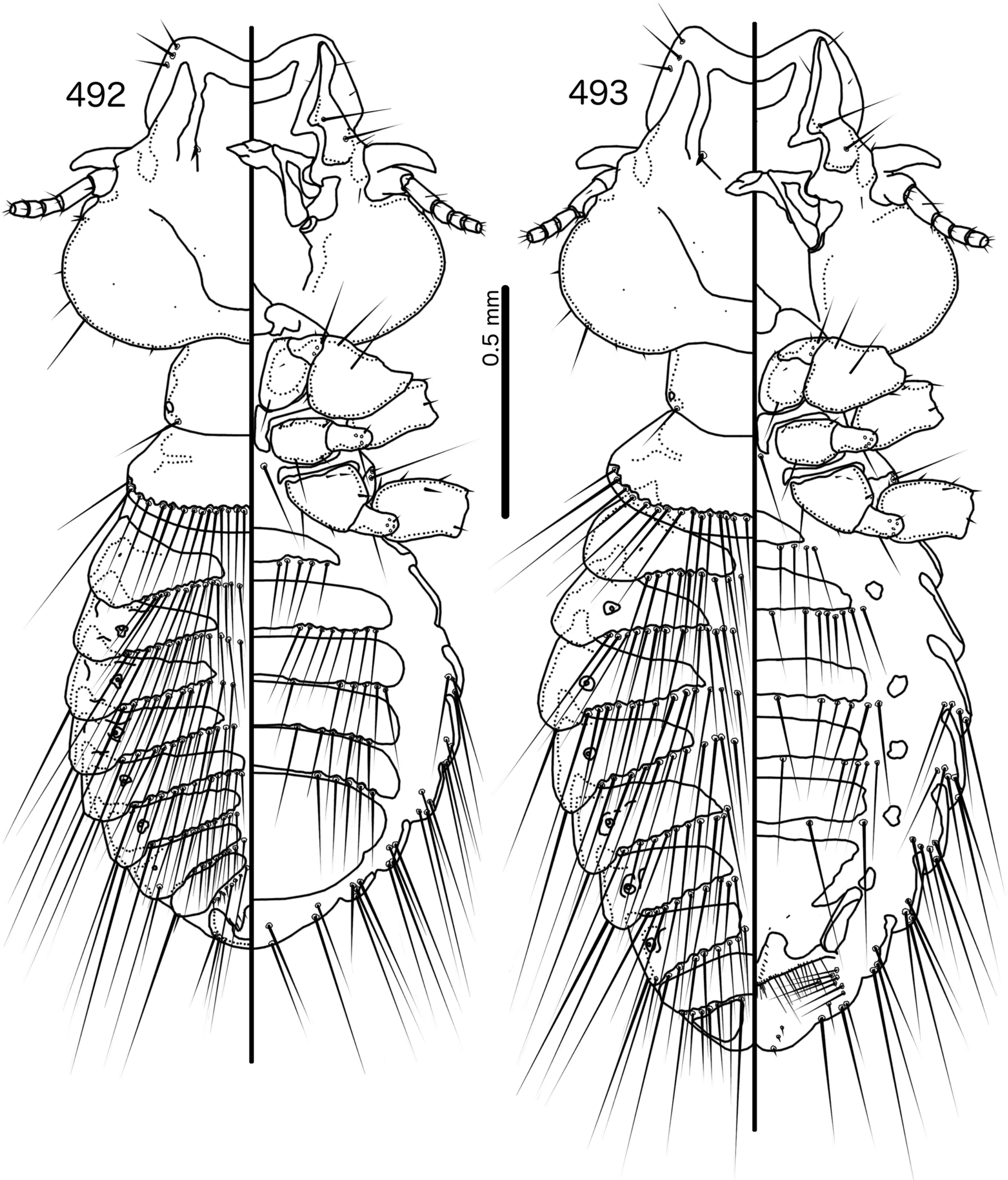
Remarks. *Meropoecus* was erected by Eichler (1940) for a single species that was characterized by its unique head structure (*Docophorus meropis* Denny, 1842). Eichler compared this species to *Cuculoecus* Ewing, 1936, and noted that *Meropoecus* has a widely bulging frontal head margin, more strongly arched portions of the marginal carina, a shorter clypeus, and a stouter and wider postantennal head. Later treatments of this genus include Emerson & Elbel's (1956) key to the four species known at the time, and the checklist of Price *et al.* (2003), which listed seven valid species of *Meropoecus*, as well as one synonymized species (*Mo. bifrons* = *Mo. meropis*).

Two specimens of *Meropoecus* were included in the phylogeny of Bush *et al.* (2016). Their placement as a sister to *Motmotnirmus*, and as a sister clade to the larger part of the *Brueelia*-complex were both strongly supported. Adam (2004) has recently redescribed and reillustrated the type species, and we do not describe it here again.

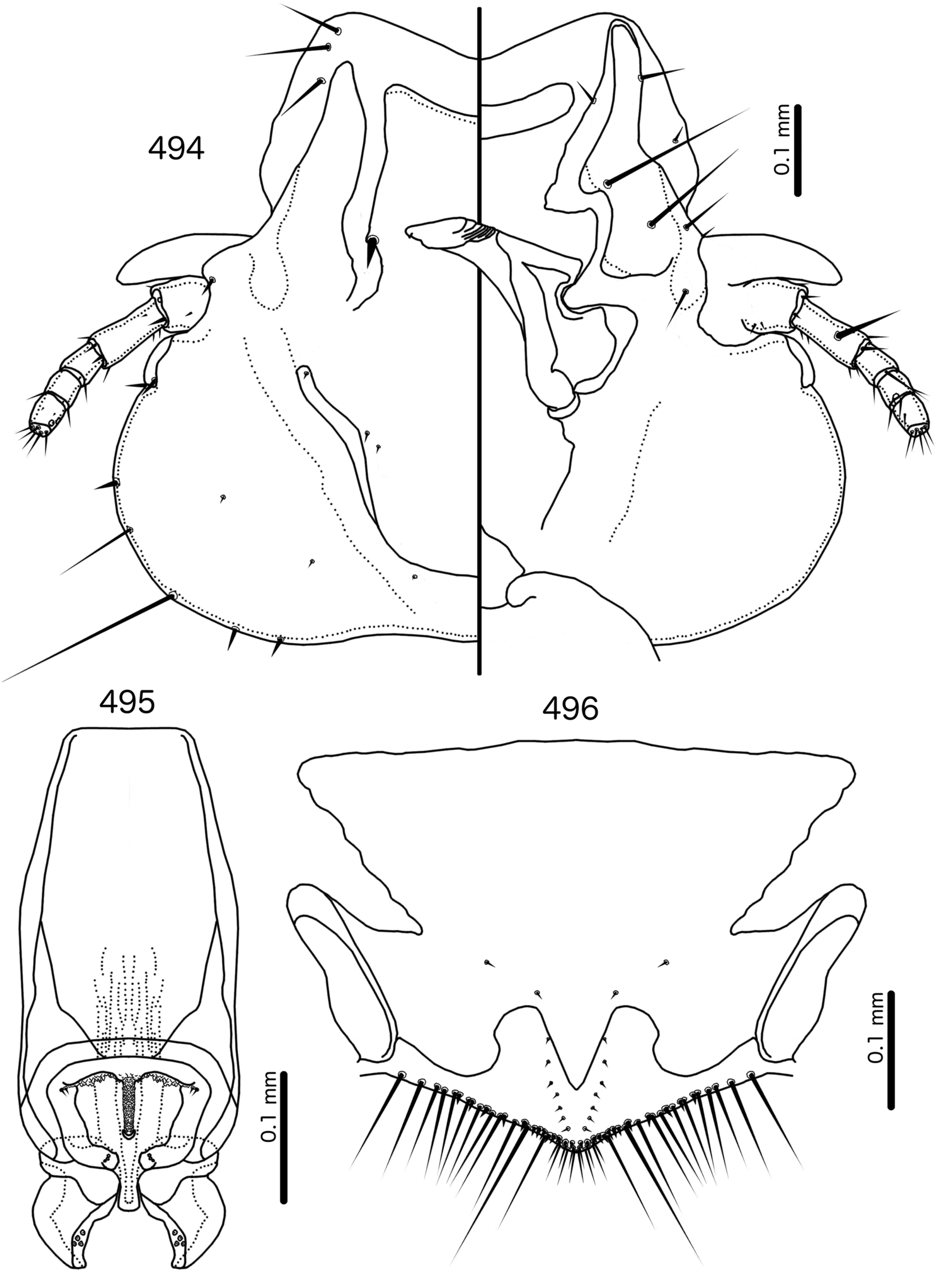
Included species
Meropoecus balisong* **new species
Meropoecus bartlowi* **new species
**Meropoecus caprai* Conci, 1941a: 102
**Meropoecus debeauxi* Conci, 1941a: 102
Meropoecus eichleri Tendeiro, 1989: 101
**Meropoecus emersoni* Tendeiro, 1961: 298
***Meropoecus meropis* (Denny, 1842: 46) [in *Docophorus*]**
    Docophorus bifrons Nitzsch, 1866: 116

Meropoecus mossambicensis Tendeiro, 1989: 100
Meropoecus smithi* Emerson & Elbel, 1956: 118 **[1]

[1] Note that, in the original illustrations of this species, all head setae have mistakenly been placed on the dorsal side.



FIGURES 492–493. *Meropoecus balisong* **n. sp.** ex *Merops americanus*: **492,** male habitus, dorsal and ventral views. **493,** female habitus, dorsal and ventral views.



FIGURES 494–496. *Meropoecus balisong* **n. sp.** ex *Merops americanus*: **494,** male head, dorsal and ventral views. **495,** male genitalia, ventral view. **496,** female subgenital plate and vulval margin, ventral view.

Meropoecus balisong Gustafsson & Bush, new species

(Figs 492–496)

Type host. *Merops americanus* Muller, 1776—rufous-crowned bee-eater.
Type locality. Balisong, Mindanao, Philippines.

Diagnosis. Male *Meropoecus balisong* **n. sp.** keys to couplet 3 in the key of Emerson & Elbel (1958), placing them near *Mo. caprai* and *Mo. debeauxi*. *Meropoecus balisong* (Fig. 492) has 6–7 short setae on each side of tergopleurite XI, placing it closer to *Mo. debeauxi*, which has 7–8 setae on each side, rather than to *Mo. caprai,* which has 9–10 setae on each side. The male genitalia of all three species are similar in that the distal section of the mesosome is much narrower than the proximal part (Fig. 495), and the parameres are similarly shaped in all three species. However, the anterior mesosome of *Mo. balisong* (Fig. 495) is rounded trapezoidal, unlike the heart-shaped mesosome of *Mo. caprai* (Emerson & Elbel 1956: fig. 4) or the transversally oval mesosome of *Mo. debeauxi* (Emerson & Elbel 1956: fig. 6). The shape of the basal apodeme in *Mo. balisong* (Fig. 495) is also trapezoidal, and unlike the more egg-shaped basal apodemes of *Mo. caprai* and *Mo. debeauxi*.

Females key to couplet 3 in the same key, placing them near *Mo. meropis* and *Mo. debeauxi*. The vulval margin of *Mo. balisong* (Fig. 496) has less than 26 long setae in total, as in these two species; *Mo. balisong* has 7–8 long setae on the lateral tubercules on each side (Fig. 493), which is more setae than either *Mo. meropis* or *Mo. debeauxi* have on the lateral tubercules (Emerson & Elbel 1956).

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description, and Fig. 494; *pos* lateral, immediately posterior to eye; *mts2* more than twice as long as *mts1*. Some specimens with narrow thickening of anterior margin of dorsal anterior plate, as in Fig. 494. Preantennal nodi short, rounded. Postantennal head much broader than preantennal head. Postantennal suture narrow, occasionally as in Fig. 494, but always present as clearly defined, medianly continuous, line (Figs 492–493). Thoracic and abdominal segments as in genus description and Figs 492–493.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 492. Male genitalia distinct (Fig. 495). Basal apodeme trapezoidal. Anterior mesosome roughly quadratic; narrow median section extended distally. Distal margin of extension flat or slightly convex. Anterior end of mesosome with distinct, papillate ridge; ridge extends medianly into slender, very rugose finger; 2 *ames* microsetae on each side lateral to rugose ridge; 2–3 *pmes* sensilla on each side near distal margin of mesosome. Parameres curved, very stout, with small distal translucent section. Parameral heads very large; 3–4 *pst* sensilla near median margin of each paramere. Measurements ex *Merops americanus* (n = 6 except n = 4 for TL): TL = 1.78–1.86; HL = 0.55–0.62; HW = 0.77–0.82; PRW = 0.36–0.46; PTW = 0.53–0.64; AW = 0.72–0.83.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 493. Median extension of subgenital plate narrow, pointed distally (Fig. 496). Vulval margin convergent (Fig. 496), with distinct median bulge. Bulge with 5–6 short, slender *vms* and 3–4 short, thorn-like *vss* on each side. Lateral to bulge 12–13 long, stout *vms* on each side and 9–11 short, thorn-like *vss* on each side; 8–9 short, slender *vos* on each side; distal *vos* near *vss*. Measurements ex *Merops americanus* (n = 5 except n = 3 for TL and n = 2 for AW): TL = 2.08–2.12; HL = 0.60–0.64; HW = 0.84–0.88; PRW = 0.38–0.40; PTW = 0.61–0.64; AW = 0.84–0.88.

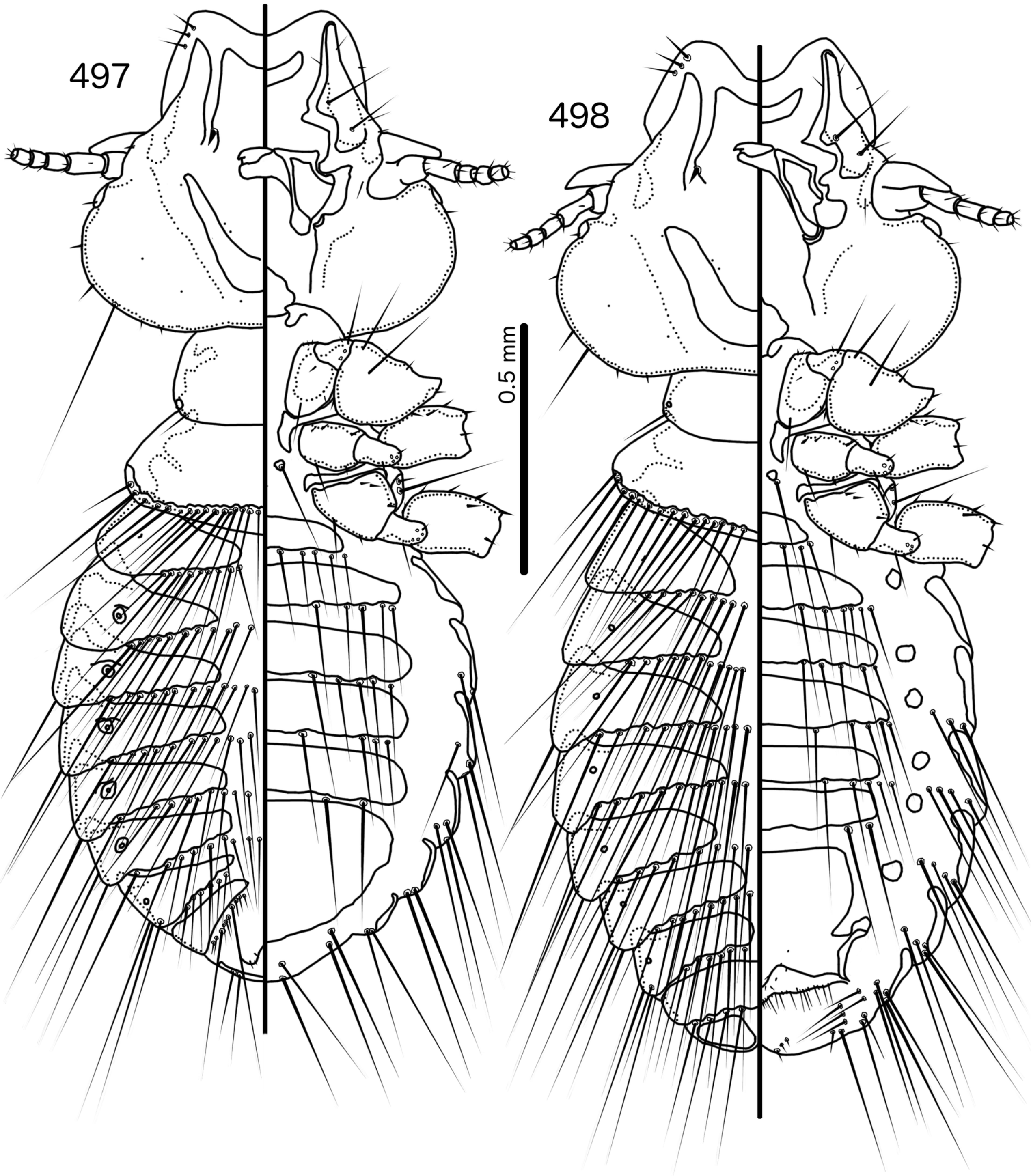
Etymology. The species epithet is derived from the type locality. In addition, a "*balisong*" is a form of Philippine knife in which the blade is hidden between two revolving handles, which is reminiscent of the shape of the male genitalia (Fig. 495).

Type material. Ex *Merops americanus*: Holotype ♂, Balisong, Mindanao, Philippines, N. Wilson, SUBBM-1231 (NHML). **Paratypes:** 8♂, 7♀, same data as holotype (PIPeR) [several slides contain unidentified menoponids].

Meropoecus bartlowi Gustafsson & Bush, new species

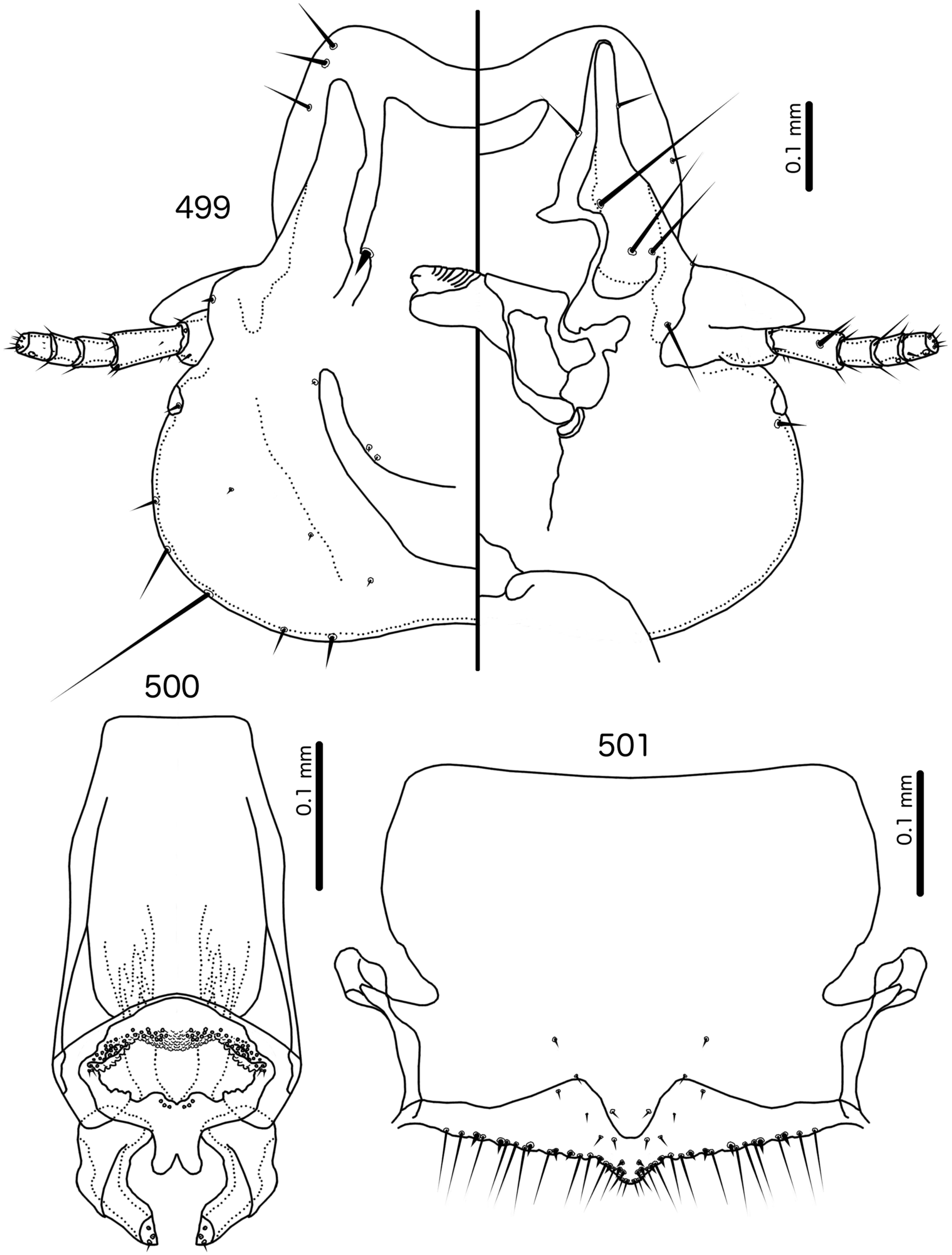
(Figs 392–396)

Type host. *Merops ornatus* Latham, 1802—rainbow bee-eater.
Type locality. Ambunti, elev. 200 ft, West Sepik District, Papua New Guinea.



FIGURES 497–498. *Meropoecus bartlowi* **n. sp.** ex *Merops ornatus*: **497,** male habitus, dorsal and ventral views. **498,** female habitus, dorsal and ventral views.

Diagnosis. Male *Meropoecus bartlowi* **n. sp.** keys to couplet 3 in the key of Emerson & Elbel (1956), but with 8 medium-sized setae on each side of tergopleurite IX, *Mo. bartlowi* (Fig. 499) is intermediate between *Mo. caprai* with 7–8 setae and *Mo. debeauxi* with 9–10 setae. Anterior mesosome is transversally oval in both *Mo. bartlowi* (Fig. 500) and *Mo. debeauxi* (Emerson & Elbel 1956: fig. 6), separating these from *Mo. caprai*, which has a heart-shaped mesosome (Emerson & Elbel 1956: fig. 4). The distal extension of the mesosome is longer in *Mo. bartlowi* (Fig. 500) than in *Mo. debeauxi*, and the distal margin of the extension is deeply concave in *Mo. bartlowi* (Fig. 500) but shallowly concave in *Mo. debeauxi*.



FIGURES 499–501. *Meropoecus bartlowi* **n. sp.** ex *Merops ornatus*: **499,** male head, dorsal and ventral views. **500,** male genitalia, ventral view. **501,** female subgenital plate and vulval margin, ventral view.

Female *Meropoecus bartlowi* keys to couplet 3 in the key of Emerson & Elbel (1956), and the number of setae lateral to the vulval margin in *Mo. bartlowi* (n = 4–5, Fig. 498) makes it intermediate between *Mo. meropis* and *Mo. debeauxi*.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 499; *pos* clearly ventral, sublateral, just posterior to eye; *mts2* about twice as long as *mts1*. Preantennal nodi short, elongated, pointed. Postantennal suture wide but anterior margin generally diffuse. Thoracic and abdominal segments as in genus description and Figs 497–498.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 497. Male genitalia distinct (Fig. 500). Basal apodeme trapezoidal. Mesosome irregularly oval, wider than long; broad median extension posteriorly, with distal margin of extension deeply concave. Anterior section of mesosome with a densely papillate transversal ridge, connected medianly to a papillate area with a gently rounded posterior margin; 2 *ames* microsetae on each side lateral to papillate ridge; 3 *pmes* sensilla on each side as in Fig. 500. Parameres stout, angled. Distal translucent section of parameres very large; 3 *pst* sensilla near distal end of parameres. Measurements ex *Merops ornatus* (n = 6): TL = 1.59–1.88; HL = 0.52–0.59; HW = 0.68–0.75; PRW = 0.33–0.40; PTW = 0.51–0.62; AW = 0.71–0.82.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 498. Median extension of subgenital plate short, blunt (Fig. 501). Vulval margin slightly convergent medianly, with median section distinctly bulging (Fig. 501). Bulge with 3–4 short, stout *vms* and 4–5 short, thorn-like *vss* on each side. Lateral to bulge 9–10 long, slender *vms* on each side and 5–6 short, thorn-like *vss* on each side; 6–7 short, slender *vos* forming broadly convergent rows, with distal *vos* approaching *vss*. Measurements ex *Merops ornatus* (n = 3): TL = 1.75–2.27; HL = 0.58–0.62; HW = 0.76–0.84; PRW = 0.37–0.40; PTW = 0.57–0.63; AW = 0.79–1.00.

Etymology. The species epithet is in honour of Andrew Bartlow, University of Utah, Salt Lake City, Utah, in recognition of his work on the distribution and dispersal of bird and mammal parasites.

Type material. Ex *Merops ornatus*: Holotype ♂, Ambunti, elev. 200 ft, West Sepik District, Papua New Guinea, 8 May 1963, P. Temple, BBM-NG-22568 (BPBM) [marked with black dot on slide]. **Paratypes:** 3♂, same data as holotype (BPBM); 1♀, 10 miles W of Garaina, elev. 2350 ft, Morobe District, Papua New Guinea, 11 Aug. 1970, A.B. Mirza, BBM-NG-98917 (BPBM); 3♂, 1♀, Jumbora Plantation, elev. 200 ft, Popondetta, Northern Province, Papua New Guinea, 17–18 Sep. 1963, H. Clissold, BBM-NG-28767 (BPBM).

Motmotnirmus Mey & Barker, 2014

Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).
"*Momotiella*" Eichler, 1946 *nomen nudum*.
Motmotnirmus Mey & Barker, 2014: 94.

Type species. *Nirmus marginellus* Nitzsch [in Giebel], 1866: 368, by original designation.

Diagnosis. *Motmotnirmus* was placed, with strong support, as sister to *Meropoecus* in the phylogeny of Bush *et al.* (2016). In both *Motmotnirmus* (Fig. 504) and *Meropoecus* (Figs 494, 499), *mts2* is longer than *mts1*, but *Motmotnirmus* and *Meropoecus* are otherwise not very similar. In *Meropoecus* (Figs 496, 501) the female subgenital plate has broad lateral submarginal extensions, and the *vss* and *vms* are mixed and do not form separate sets, whereas in *Motmotnirmus* (Fig. 508) there are no lateral submarginal extensions, and the *vss* and *vms* form separate sets. The male genitalia of *Motmotnirmus* (Figs 505–507) are more similar to those of *Brueelia* s. str. (Figs 45–47) than to those of *Meropoecus* (Figs 495, 500). The placement of *Motmotnirmus* near *Meropoecus* in the phylogeny of Bush *et al.* (2016) is inconsistent with morphological characters, and warrants further investigation.

Description. ***Both sexes***. Head rounded pentagonal (Fig. 504). Marginal carina narrowly interrupted only dorsally, deeply displaced at clypeo-labral suture. The displaced section of the marginal carina is roughly U-shaped. Dark but diffuse arch often present anterior to displaced section of marginal carina. Ventral carinae almost reach anterior end of head, but not continuous with the marginal carina. Dorsal preantennal suture very slender, interrupting marginal carina only dorsally, and only reaching *dsms*; in older material this suture is often hard to see. Ventral anterior plate absent. Head setae as in Fig. 504; *pns* absent. Preantennal nodi large. Coni small, conical. Antennae monomorphic. Temporal carinae not visible; *mts2–3* both macrosetae. Gular plate spade-shaped.

Prothorax rectangular (Figs 502–503); *ppss* on postero-lateral corners. Proepimera broad; median ends hammer-shaped. Pterothorax pentagonal; lateral margins widely divergent, bulging slightly at postero-lateral corners; posterior margin vaguely convergent to rounded median point, which is more obvious in females than in males; *mms* narrowly separated medianly. Metepisterna associated with large lateral nodi; median ends blunt. Meso- and metasterna not fused, the former with 1 seta on each side, and the latter with 2 setae on each side. Leg chaetotaxy as in Fig. 25 except *fI-p2–4, fI-v4, fII-v2, fIII-v2* absent.

Abdomen oval (Figs 502–503), weakly pigmented. Tergopleurites rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly divided medianly. Sternal plates absent, but ventral tegument with reticulations. Pleural incrassations large. Ventral section of tergo-pleurites wide. Re-entrant heads large, blunt. Male subgenital plate trapezoidal, reaching posterior margin of abdomen. Female abdominal plate roughly triangular, reaching vulval margin but does not flare into cross-piece (Fig. 508). Abdominal chaetotaxy as in Table 2. Vulval margin (Fig. 508) with short, slender *vms*, thorn-like *vss*; *vos* follow lateral margins of subgenital plate; distal *vos* situated on plate, median to *vss*.

Basal apodeme (Fig. 505) long, rectangular. Proximal mesosome half-oval, overlapping basal apodeme. Gonopore (Fig. 506) narrowly open distally. Mesosomal lobes relatively small, rugose, thickened distally; 2 *pmes* sensilla on each side postero-lateral to gonopore. Parameral heads (Fig. 507) bifid. Parameral blades wide, roughly triangular; *pst1* sensilla, central; *pst2* microsetae, central to submarginal on lateral margin of parameres.

Host distribution. Species of *Motmotnirmus* are limited to members of the family Momotidae, where they are known from the genera *Momotus* Brisson, 1760 and *Baryphthengus* Cabanis & Heine, 1859. *Motmotnirmus guatemalensis* (Dalgleish, 1971) was described from a single pair of lice collected from *Campephilus guatemalensis* (Hartlaub, 1844), a woodpecker (Piciformes), but it is possible that they were contaminants or stragglers.

Geographical range. Neotropics.

Remarks. *Motmotnirmus* Mey & Barker, 2014 was erected for the *Brueelia* s. lat. parasitising species of Momotidae. In the phylogeny of Bush *et al.* (2016), *Motmotnirmus* was placed as sister to *Meropoecus* but, morphologically, it does not appear to be particularly close to *Meropoecus*. Both of these genera parasitise birds in the order Coraciiformes, but the host family Momotidae is not closely related to the Meropidae (Espinosa de los Monteros 1999), the host family parasitised by *Meropoecus*.

All species of *Motmotnirmus* are very similar, especially the females. Nevertheless, there are small, consistent differences among material collected from different host-species, suggesting that there may be many undescribed species in this genus. Molecular data will be particularly helpful in determining whether *Motmotnirmus* lice infesting multiple host species exhibit intraspecific variation, or they are distinct species.

Included species
Motmotnirmus guatemalensis* (Dalgleish, 1971: 140) [in *Brueelia*] **[1]
**Motmotnirmus humphreyi* (Oniki & Emerson, 1982: 263) [in *Brueelia*]
**Motmotnirmus marginellus* (Nitzsch [in Giebel], 1866: 368) [in *Nirmus*] [2]
Motmotnirmus xilitla* (Carriker, 1954: 200) [in *Brueelia*] **[3]

[1] The male genitalia and other characters of this species are very similar to those of *Mt. marginellus*, and it seems likely that Dalgleish's specimens were contaminants or stragglers. Mey & Barker (2014) suggested that *Mt. guatemalensis* may be a synonym of *Mt. marginellus*; however, these two species differ in abdominal chaetotaxy (male *Mt. marginellus* do not have *tps* on tergopleurite VI, whereas *Mt. guatemalensis* have *tps* on this segment). We recognise both species as valid until additional material from the type hosts can be studied to establish their correct status.

[2] Eichler (1952) tentatively included *Mt. marginellus* in his new genus *Allobrueelia*, but no justification was provided for that placement. We here place the genus *Allobrueelia* as a junior synonym of *Guimaraesiella* (see above). Morphologically, *Mt. marginellus* is only superficially similar to *Guimaraesiella*, but genetically is very distantly related to *Guimaraesiella* (Bush *et al*. 2016, specimen 138).

[3] Oniki & Emerson (1982) considered *Br. marginella xilitla* a synonym of *Br. marginella*, but Price *et al*. (2003) considered it a separate species. Mey & Barker (2014) noted this discrepancy, but retained *Mt. xilitla* as a separate species, without further comment. We follow Price *et al*. (2003) in regarding it as a dictinct species.

Motmotnirmus marginellus (Nitzsch [in Giebel], 1874)
(Figs 502–508)

Nirmus marginellus Nitzsch [in Giebel], 1866: 368.
Degeeriella marginella (Nitzsch [in Giebel], 1866); Harrison, 1916: 117.
Brueelia marginella (Nitzsch [in Giebel], 1866); Hopkins & Clay, 1952: 58.
Motmotnirmus marginellus (Nitzsch in Giebel, 1866); Mey & Barker 2014: 96.

Type host. *Momotus momota natteri* Sclater, 1858 [Ref.: Mey & Barker 2014: 96]—Amazonian motmot.
Type locality. Río Solacama, Bolivia (locality of neotype designated by Mey & Barker 2014: 97).
Other hosts. *Momotus momota momota* (Linnaeus, 1766)—Amazonian motmot. *Momotus subrufescens* Sclater, 1853 [Ref.: Carriker 1954: 200]—whooping motmot. *Momotus subrufescens spatha* Wetmore, 1946 [Ref.: Carriker 1954: 200]—whooping motmot. *Momotus subrufescens reconditus* Ridgway, 1914 [Ref.: Carriker 1954: 200]—whooping motmot. *Momotus aequatorialis chlorolaemus* Berlepsch & Stolzmann, 1902 [Ref.: Carriker 1954: 200]—Andean motmot.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 504. Anterior section of marginal carina of irregular width and often very hard to see; individual variation appears to be large. In some specimens displaced section of marginal carina at clypeo-labral suture cannot be seen. Preocular nodi very long, in some specimens clearly defined almost to posterior point of preantennal nodi. Postocular nodi large, rounded. Gular plate pointed medianly and laterally. Thoracic and abdominal segments as in genus description and Figs 502–503. Pleurites very broad.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 502. Male genitalia as in genus description (Figs 505–507). Proximal mesosome small, rounded. Gonopore large (Fig. 506), spanning more than half of mesosome width and a third of mesosome length, narrowly open distally, with large, triangular thickenings distally. Mesosomal lobes thickened distally, rugose; 2 *pmes* sensilla on each lobe. Parameral heads bifid (Fig. 507). Parameral blades roughly triangular; *pst1–2* as in genus description. Measurements ex *Momotus momota momota* (n = 6 except n = 5 for TL): TL = 1.65–1.78; HL = 0.48–0.50; HW = 0.50–0.54; PRW = 0.28–0.31; PTW = 0.45–0.49; AW = 0.59–0.65.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 503. Subgenital plate (Fig. 508) rounded trapezoidal, reaching vulval margin but not flaring into cross-piece (*contra* Mey & Barker 2014: fig. 28). Vulval margin (Fig. 508) gently rounded with 3–4 small *vms* on each side, and 3–5 stout, short, but not thorn-like *vss* on each side; 7–10 long, slender *vos*; the distal 2–3 *vos* on posterior margin of subgenital plate, and median to *vss*. Measurements ex *Momotus momota momota* (n = 6): TL = 1.86–2.08; HL = 0.51–0.55; HW = 0.54–0.60; PRW = 0.31–0.34; PTW = 0.49–0.54; AW = 0.67–0.72.

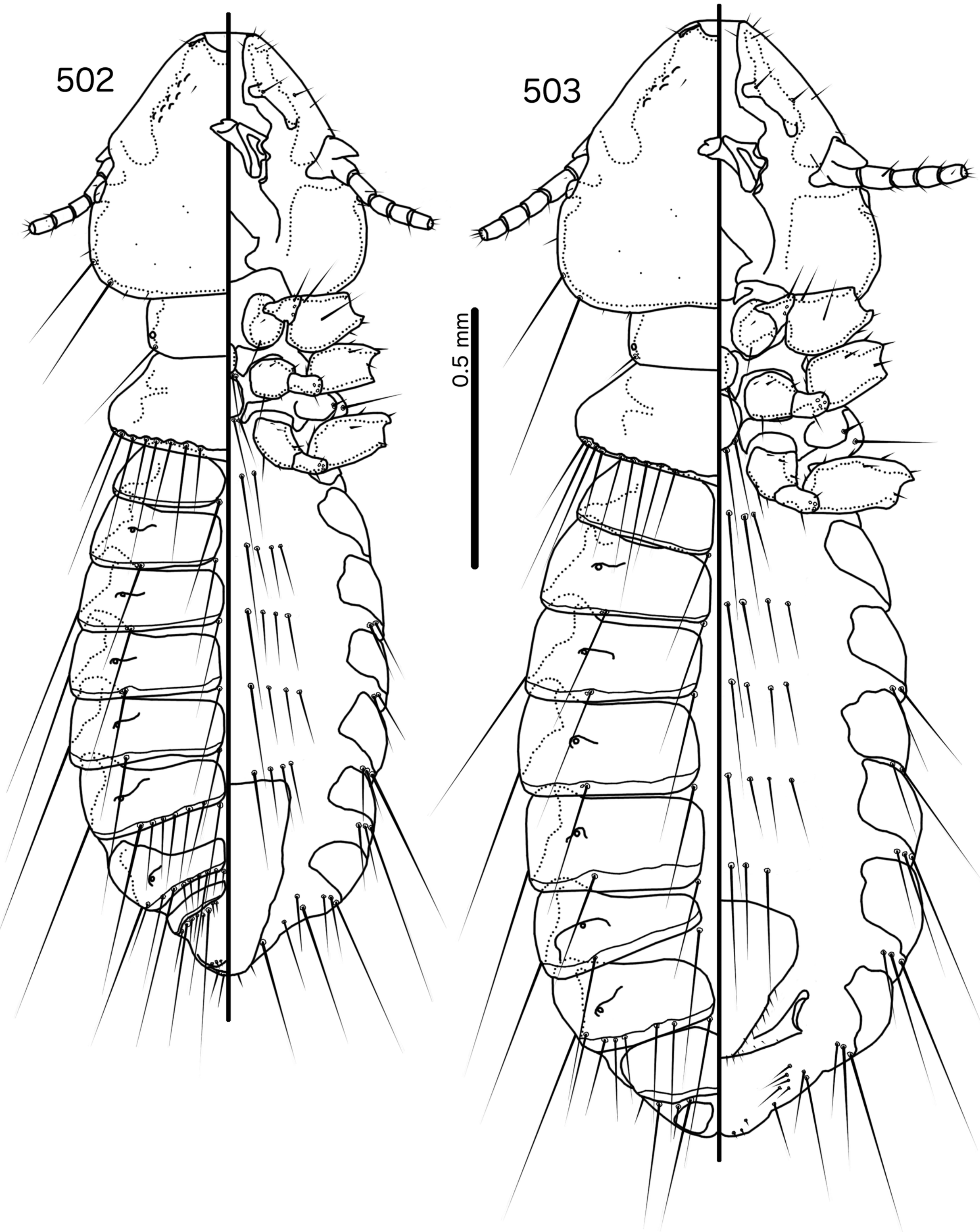
Material examined (non-types). **Ex *Momotus momota momota***: 2♂, 3♀, Kanaku Mountains, Rupununni, Guyana, 27 Feb. 1960, T. Clay, 173, Brit. Mus. 1961-188 (NHML); 4♂, 3♀, Brazil, R. Meinertzhagen, 13454 (NHML); 1♂, 1♀, Yaviza, Darien Province, Panama, 19 Nov. 1966, G.N. Lab (OSUS).

Remarks. Giebel (1866) compared this species with "Drosselschmaling", meaning a slender louse on a thrush (*Turdus*). The only *Nirmus* from *Turdus* spp. he discussed were *Nirmus* (= *Brueelia*) *intermedia* and *Nirmus* (= *Guimaraesiella*) *marginata*, and he could be referring to either of these species, most likely *Gu. marginata.* Giebel (1866) separated *Brueelia marginellus* from the slender thrush louse by its more triangular head pointed anteriorly, larger and redder preantennal nodi, and the lack of a median point of the posterior margin of the pterothorax.

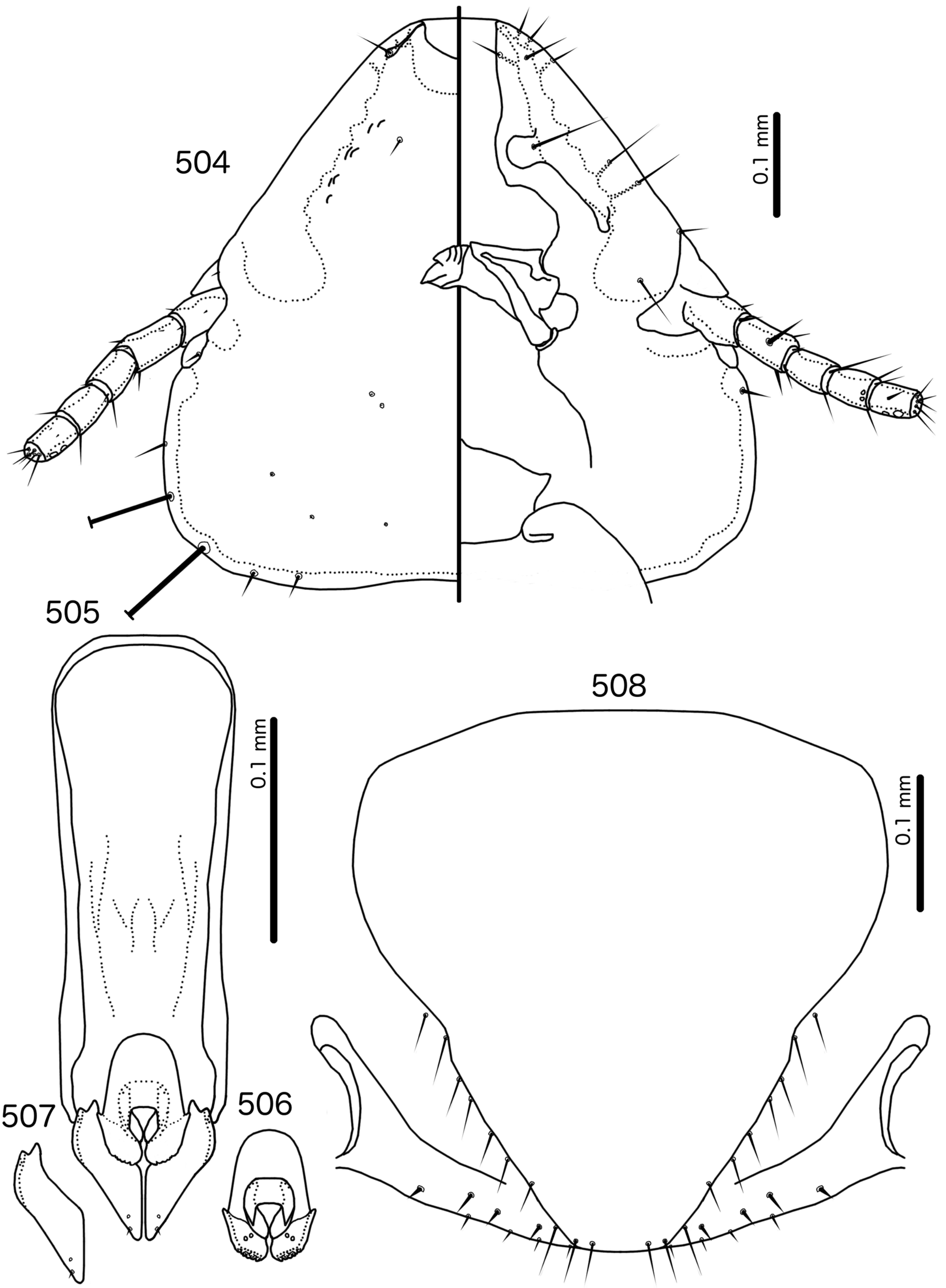
Giebel (1866) did not provide any illustrations of *Nirmus marginellus*. Carriker (1954: figs 18–19) provided the first illustration of this species, which differs from material available to us in several respects, especially in the abdominal chaetotaxy and plates. The male genitalia in Carriker's (1954) illustration are only barely recognizable as those of *Mt. marginellus*.

Carriker (1954: 200) stated that material from *Momotus momota subrufescens* (as *Momotus subrufescens* ssp.), *M. momota spatha* (as *M. subrufescens spatha*) and *M. momota chlorolaemus* (as *M. aequatorialis chlorolaemus*) were identical to material from *M. momota momota*. None of these hosts were listed by Price *et al.* (2003), and we tentatively recognise these species as hosts of *Motmotnirmus marginellus*. Carriker (1954) also noted that material from *M. momota reconditus* (as *M. subrufescens reconditus*) was intermediate between *Brueelia marginella* sens. str. and *Brueelia marginella xilitla*, but we also tentatively recognise that bird as a host of *Mt. marginellus*.

Oniki & Emerson (1982: 264) considered *Motmotnirmus xilitla* to be synonymous with *Mt. marginellus*, as they could find no significant differences between them that could not "be [attributed] to age or maturity of the specimens or how they were mounted". A small number of specimens of *Mt, xilitla* were available to us, including two paratypes from *Momotus coeruliceps coeruliceps*, which are largely indistinguishable from material from *M. momota momota*, except for the shape of the preantennal nodi, which narrow considerably as they approach the marginal carina. Given this difference, we tentatively retain *Mt. xilitla* as a separate species, until a more thorough study of motmot lice can be made. We recommend that future work on the group considers samples from a wide range of host species, populations, and geographic locations.



FIGURES 502–503. *Motmotnirmus marginellus* (Nitzsch [in Giebel], 1866) ex *Momotus momota momota*: **502,** male habitus, dorsal and ventral views. **503,** female habitus, dorsal and ventral views.



FIGURES 504–508. *Motmotnirmus marginellus* (Nitzsch [in Giebel], 1866) ex *Momotus momota momota*: **504,** male head, dorsal and ventral views. **505,** male genitalia, dorsal view. **506,** male mesosome, ventral view. **507,** male paramere, dorsal view. **508,** female subgenital plate and vulval margin, ventral view.

Mey & Barker (2014: 96) erected a neotype for *Nirmus marginellus* from the subspecies *Momotus momota natteri*, which has a very limited geographical distribution and is unlikely to be the same host subspecies as that from which Nitzsch's original material was collected. Illustrations presented here are of material from the nominate host subspecies from Brazil. Unlike the illustrations of Mey & Barker (2014), but as in illustrations of Valim & Cicchino (2015), *vsms1–2* are ventral in all specimens examined.

In the material examined by us, the abdominal chaetotaxy, dimensions, and head shape differ slightly among specimens from different host populations and localities, thus these populations may ultimately prove to be different species of *Motmotnirmus*. Unfortunately, the material available is too scarce to determine at present whether these different populations of *Motmotnirmus* on different host taxa deserve recognition as separate species, or if their differences are due to intraspecific variation.

***Buerelius* Clay & Tandan, 1967**

Docophorus Nitzsch, 1818: 289 (*in partim*).
Buerelius Clay & Tandan, 1967: 34.

Type species. *Docophorus longiceps* Piaget, 1880: 663, by original designation.

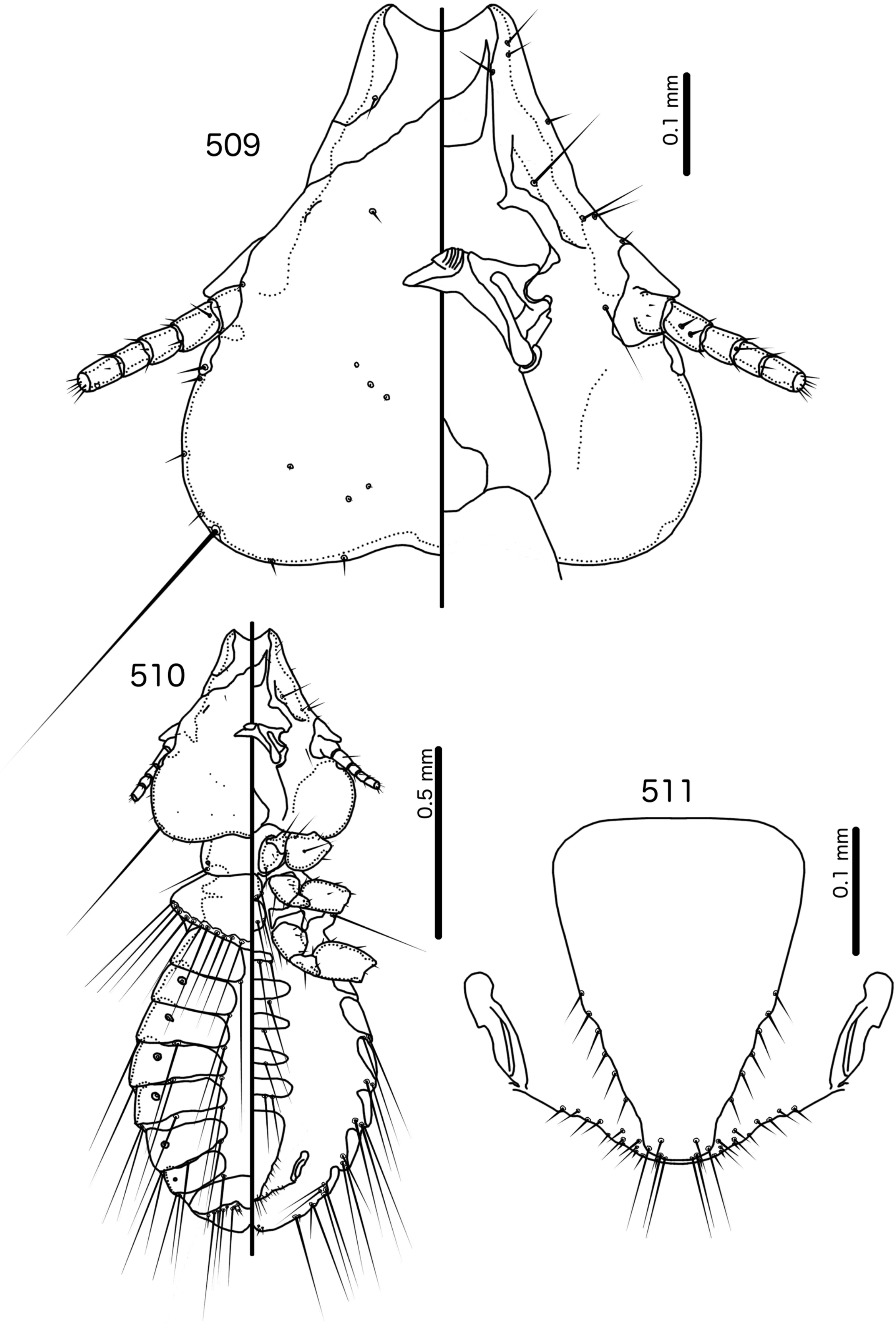
Diagnosis. In the phylogeny of Bush *et al.* (2016), *Buerelius* was placed as a sister to *Couala* **n. gen.** Both of these genera share the following characters: female subgenital plate (Figs 511, 517, 523) broad, trapezoidal, not reaching vulval margin, cross-pieces absent; *vos* much longer than *vms* (Figs 511, 517, 523); mesosome at least partially fused to basal apodeme (Figs 516, 522). However, the two genera are separated by the following characters: marginal carina interrupted medianly in *Buerelius* (Fig. 509) but not in *Couala* (Figs 514, 520); dorsal preantennal suture and ventral anterior plate present in *Buerelius* (Fig. 509) but absent in *Couala* (Figs 514, 520); *mst2* ventral, thorn-like or curved in *Couala* (Figs 514, 520), but lateral microseta in *Buerelius* (Fig. 509); parameres fused to mesosome in *Couala* (Figs 516, 522) but not in *Buerelius* (Clay & Tandan 1967: figs 5–7). The shape of the dorsal preantennal suture of *Buerelius* (Fig. 509), the presence of a clearly delimited ventral anterior plate combined with the absence of a dorsal anterior plate are unique within the *Brueelia*-complex. The male genitalia of *Buerelius* (not illustrated) are also dissimilar to those of any other genus treated here.

Description. ***Both sexes***. Head bulb-shaped (Fig. 509). Marginal carina completely interrupted medianly. Hyaline margin continuous with broad dorsal preantennal suture that reaches to lateral margin of head, but not *ads*. Pattern of suture unique within the *Brueelia*-complex. Premarginal carina plates present. Ventral anterior plate present, crescent-shaped. Ventral carinae diffuse anterior to pulvinus, not clearly continuous with marginal carina. Head setae as in Fig. 509; *as3* absent. Coni large, pointed. Antennae monomorphic. Temporal carinae diffuse but present; *mts3* only macrosetae. Gular plate spade-shaped, not prominent.

Prothorax rectangular (Fig. 510); *ppss* on postero-lateral corners. Proepimera broad, median ends blunt. Pterothorax pentagonal; lateral margins divergent; posterior margin convergent to median point; *mms* moderately separated medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner of mesosternum on each side; 2–3 setae on postero-lateral corner of metasternum on each side. Metepisterna broad, median ends blunt. Leg chaetotaxy as in Fig. 25, except *fI-p2–4, fI-v4, fII-v2, fIII-v2, fIII-a4* absent.

Abdomen broadly oval (Fig. 510). Abdominal chaetotaxy as in Table 2. Tergopleurites rectangular; tergopleurites II–X+X in male and tergopleurites II–VIII in female moderately separated medianly. Sternal plates small, crescent-shaped, not approaching pleurites. Pleural incrassations slender. Ventral sections of tergo-pleurites moderate. Re-entrant heads small, blunt. Male subgenital plate long, rectangular, reaching terminal margin of abdomen. Female subgenital plate slender, triangular, approaching vulval margin. Vulval margin (Fig. 511) with short, slender *vms*, long, slender *vss*; *vos* follow lateral margins of subgenital plate; distal *vos* median to *vss*.

Basal apodeme (not illustrated, see Clay & Tandan, 1967) rectangular, anterior margin rounded. Proximal mesosome small, quadratic, often indistinct, may be partially fused to basal apodeme. Gonopore terminal, open distally. Mesosomal lobes small, with wide marginal thickenings; 2–3 *ames* microsetae antero-lateral to gonopore; 2 *pmes* microsetae on postero-lateral margins of mesosome. Parameral heads bluntly cup-shaped. Parameral blades broad, finger-like; *pst1–2* sensilla, both central.



FIGURES 509–511. *Buerelius longiceps* (Piaget, 1880) ex *Brachypteracias leptosomus*: **509,** female head, dorsal and ventral views. **510,** female habitus, dorsal and ventral views. **511,** female subgenital plate and vulval margin, ventral view.

Host distribution. Known only from *Brachypteracias leptosomus* (Lesson, 1833), which is host to both species of *Buerelius*. Species of this louse genus may also occur on other members of the Brachypteraciidae, but more collections are needed to test that hypothesis.

Geographical range. Madagascar.

Remarks. *Buerelius* was well described and illustrated by Clay & Tandan (1967) and the species are not redescribed or fully illustrated here. Clay & Tandan (1967: 39) described the second species "with some hesitation", owing the unusual peculiarity of having two closely related louse species from the same host species. The two species are very similar except for the preantennal area (see photos in Clay & Tandan 1967). We illustrate only the female of *Bu. longiceps* (Figs 509–511), as the male of this species was well illustrated by Clay & Tandan (1967).

Included species
***Buerelius longiceps* (Piaget, 1880: 663) [in *Docophorus*]**
**Buerelius subsimus* Clay & Tandan, 1967: 38

Couala Gustafsson & Bush, new genus

Nirmus Nitzsch, 1818: 291 (*in partim*).
Degeeriella Neumann, 1906: 60 (*in partim*).
Brueelia Kéler, 1936a: 257 (*in partim*).

Type species. *Couala dodekopter* **new species**

Diagnosis. *Couala* **n. gen.** is not particularly similar to any other genus in the *Brueelia*-complex, but was placed as a sister to *Buerelius* in the phylogeny of Bush *et al.* (2016). This placement was strongly supported, as was its placement as one of several sister lineages to the core *Brueelia*-complex. The male genitalia of these two genera share the following characters (Figs 515–516, 521–522 for *Couala*; male genitalia of *Buerelius* illustrated by Clay & Tandan (1967: figs 5–7): mesosome at least partially fused to basal apodeme; gonopore terminal but elongated; parameres widest at head; *pst1–2* near distal end of parameres; basal apodeme much elongated. *Couala* (Figs 514, 520) is primarily separated from *Buerelius* (Fig. 509; Clay & Tandan 1967: figs 1–4) by the following differences in head structure: preantennal area gently rounded in *Couala*, but elongated in *Buerelius*; dorsal preantennal suture absent in *Couala*, but present and uniquely shaped in *Buerelius*; marginal carina uninterrupted in *Couala*, but interrupted medianly in *Buerelius*; antennal canal present in *Couala*, but absent in *Buerelius*; *mts2* thorn-like in *Couala*, but microsetae in *Buerelius*; ventral anterior plate absent in *Couala*, but present in *Buerelius*; temples angular in *Couala* n. gen, but gently rounded in *Buerelius*; coni folded ventrally in *Couala*, but not folded in *Buerelius*. Abdominal chaetotaxy (Table 2) is similar between the two genera, however *tps* are absent on segments II–VIII in *Buerelius* (Fig. 510) but present in *Couala* (Figs 512–513, 518–519). Females of both *Buerelius* (Fig. 511) and *Couala* (Figs 517, 523) have highly convex vulval margins, subgenital plates that are roughly trapezoidal, lack cross-pieces, and have some long *vos* on distal margin median to the *vss*. However, the *vms* are thorn-like and the *vss* microsetae in all *Couala*, whereas the *vms* are microsetae and the *vss* are mesosetae in *Buerelius*.

Description. ***Both sexes***. Head bell-shaped (Figs 514, 520). Marginal carina uninterrupted, displaced posteriorly and dorsally at osculum. Ventral carina broad, continuous with marginal carina, but may be diffuse anteriorly. Dorsal preantennal suture, dorsal anterior plate, and ventral anterior plate absent. Head chaetotaxy as in Figs 514, 520; *as3* absent. Coni very large, folded ventral to scapes, and typically pointing directly or obliquely to the posterior. Preantennal nodi prominent. Antennae monomorphic. Pre- and postocular nodi very large, especially in *Couala angulata* (Fig. 520). Preocular nodi, if long, ventrally divided by the "antennal canal" (AC in Fig. 520). Ventral side of the preocular nodi continues posteriorly as ridge that ends at posterior margin of head. Antennae in many mounted specimens fit through the AC and along this ridge. Temporal and occipital carinae not visible; *mts3* only macrosetae, *mts2* spine-like or hooked, ventral. Gular plates large, shape varies between species.

Prothorax rectangular (Figs 512–513, 518–519); *ppss* on postero-lateral corners. Proepimera broad, hook-shaped medianly. Pterothorax roughly pentagonal; lateral sides widely divergent; posterior margin convergent to median point; *mms* widely separated medianly. Meso- and metasterna not fused; 1 seta on postero-lateral corner on each side of each plate. Metepisterna broad, blunt but diffuse medianly; large nodi laterally. Leg chaetotaxy as in Fig. 25, except *cI-v3, fI-p2, fI-v4, fII-v2, fIII-v2* absent; *fI-p3* absent in *Couala dodekopter* **n. sp.** (Figs 405–406).

Abdomen oval, broad (Figs 512–513, 518–519). Terminal segment in females very short, and tergopleurite IX+X may project median to tergopleurites XI (Fig. 519). Tergopleurites rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female narrowly divided medianly. Female tergopleurites III–VIII with increasingly slanted posterior margins; tergopleurite IX large, shield-like. Sternal plates wide, rectangular, not reaching pleurites, often pale or diffuse. Pleural incrassations wide. Ventral sections of tergopleurites wide, angular. Re-entrant heads elaborate. Male subgenital plate triangular, reaching to terminal end of abdomen. Abdominal chaetotaxy as in Table 2 and Figs 512–513, 518–519. Female subgenital plate broadly triangular, may approach vulval margin (Figs 517, 523), but does not flare into cross-piece. Vulval margin (Figs 517, 523) highly convex, with spine-like *vms*, minute *vss*; *vos* follow lateral margins of subgenital plate; distal *vos* at or near vulval margin.

Male genitalia variable (Figs 515–516, 521–522), but mesosome, basal apodeme, and parameres are all fused at least partially. Basal apodeme elongated, anterior margin rounded. Proximal mesosome fused to basal apodeme, and not distinguishable. Gonopore terminal (Figs 516, 522), prominently located in anterior portion of mesosome; distal ends of gonopore elongated. Mesosomal lobes large, distally fused with parameres, and in *Couala dodokopter* (Fig. 516) not distinguishable from parameral heads. Lobes may be smooth (Figs 515–516) or densely papillate and rugose (Figs 521–522); 2 *ames* sensilla on each side in translucent grooves antero-lateral to gonopore; 2 *pmes* sensilla or microsetae on each side postero-lateral to gonopore. Parameral heads (Figs 515, 521) fused to mesosomal lobes. Parameral blades attenuating, divergent (Fig. 408) or convergent (Fig. 413); *pst1* sensilla, central near distal end of paramere; *pst2* microsetae, marginal near distal end of paramere.

Host distribution. Known only from species of the Malagasy cuckoo genus *Coua* Schinz, 1821. Hughes (1996, 2000) suggested that the genus *Coua* is close to other ground-living cuckoos, such as *Centropus* Illiger, 1811, but no similar lice are known from these host genera.

Geographical range. Madagascar.

Etymology. *Couala* refers to the generic name of the host with the arbitrary ending *–la*. Also, *Couala* is a pun suggesting similarities to the koala, *Phascolarctos cinereus* (Goldfuss, 1817), as both are somewhat chubby, largely rounded in all parts, and live their lives clinging to something much larger, which they also eat. Gender: feminine.

Included species
Couala angulata* (Piaget, 1880: 134) **n. comb. [in *Nirmus*]
****Couala dodekopter* new species**
Couala goniodes* (Piaget, 1880: 665) **n. comb. [in *Nirmus*]
    Nirmus goniocotes Piaget, 1885: 33 **new synonymy** [in *Nirmus*] **[1]**

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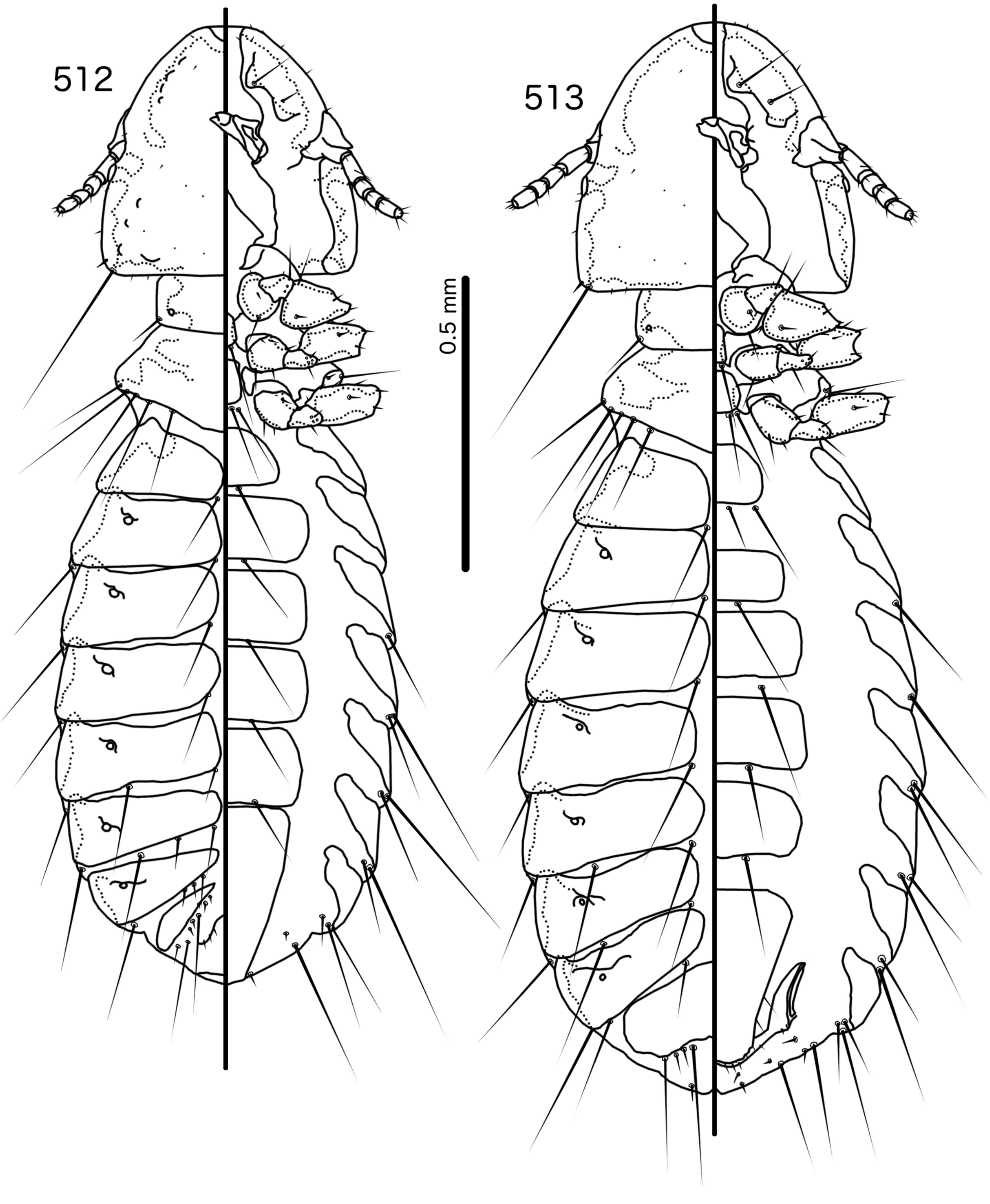
[1] *Nirmus goniocotes* was described from "*Dacelo gigas* de Madagascar (Museum de Leide)". This species is today known as the laughing kookaburra *Dacelo novaeguineae* (Hermann, 1783) and is endemic to Australasia (Fry *et al*. 1999). There are no large kingfishers on Madagascar, and it appears that either the type host identity, its geographical origin, or both are erroneous. The syntypes of *Nirmus goniocotes* in the Piaget collection at NHML are indistinguishable from those of *N. goniodes*, although Piaget's material of both taxa is poorly preserved. Therefore, we place *N. goniocotes* as a junior synonym of *Cl. goniodes*, implying that the type locality of *Nirmus goniocotes* is correct, but that its type host was misidentified.

Couala dodekopter Gustafsson & Bush, new species
(Figs 512–517)

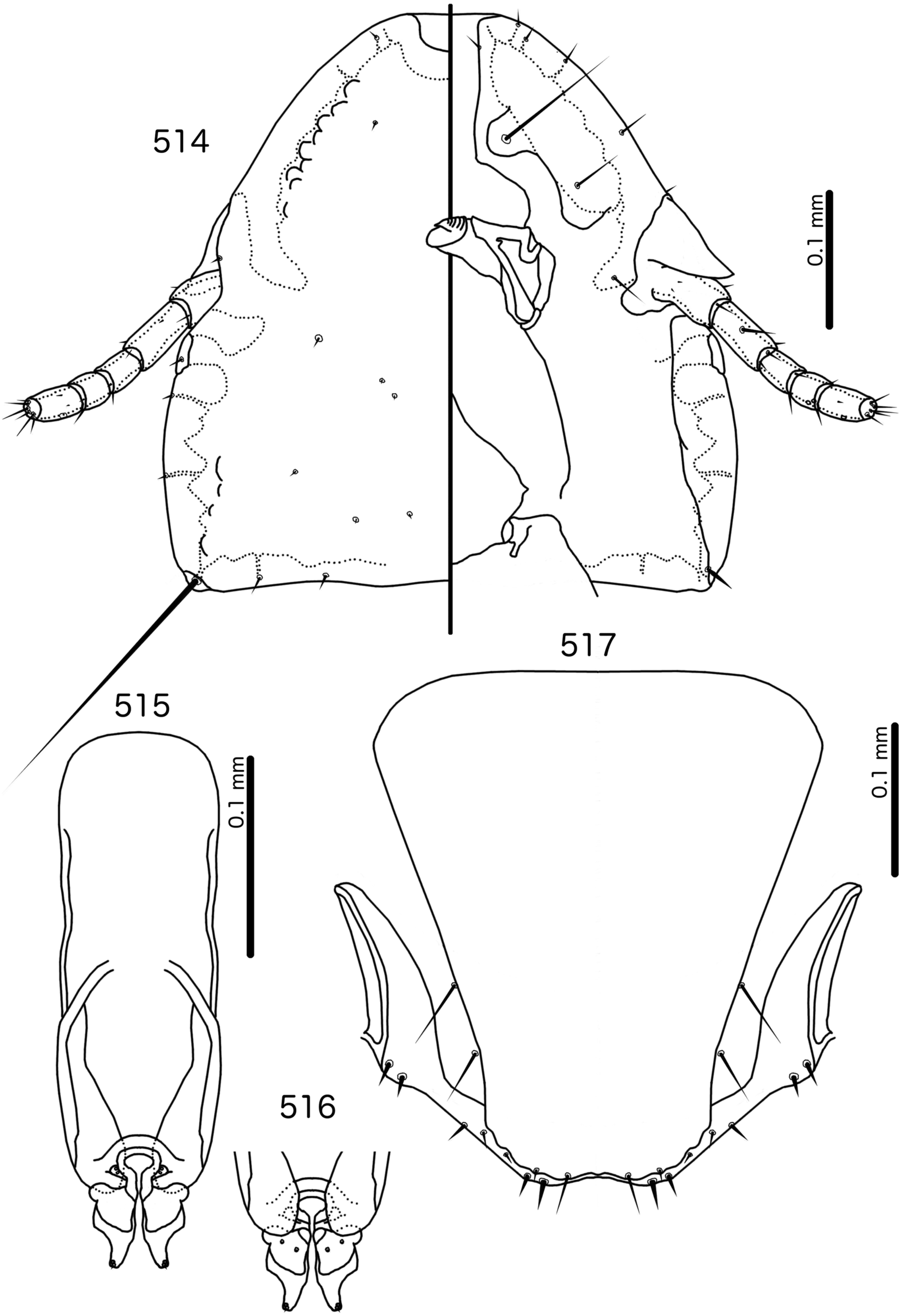
Type host. *Coua cristata pyropyga* Grandidier, 1867—crested coua.
Type locality. Betioky, Atsimo-Andrefana Region, Madagascar.

Diagnosis. *Couala dodekopter* **n. sp.** is not particularly similar to either of the other two species in the genus, and can be separated from these by the following charaters: temporal angle of *Cl. goniodes* and *Cl. angulata* (Fig. 520) acute, whereas that of *Cl. dodekopter* (Fig. 514) is right or slightly obtuse; marginal carina is shallowly displaced at the osculum in *Cl. goniodes* and *Cl. angulata* (Fig. 520), but deeply displaced in *Cl. dodokopter* (Fig. 514); the *mts2* is ventral, curved, and very thick in the former two species (Fig. 520), but dorsal, thorn-like, and straight in

Cl. dodekopter (Fig. 514). Abdominal and thoracic characters are also more similar between *Cl. angulata* (Figs 518–519) and *Cl. goniodes* than either of them are to *Cl. dodekopter* (Figs 512–513). For instance, the female abdomen is short and wide in both *Cl. goniodes* and *Cl. angulata* (Fig. 519), and the ventral sections of the tergopleurites of both these species are large and rectangular, whereas the female abdomen in *Cl. dodekopter* (Fig. 513) is more elongated and slender, and the ventral sections of the tergopleurites are more triangular.



FIGURES 512–513. *Couala dodekopter* **n. gen. & n. sp.** ex *Coua cristata pyropyga*: **512,** male habitus, dorsal and ventral views. **513,** female habitus, dorsal and ventral views.



FIGURES 514–517. *Couala dodekopter* **n. gen. & n. sp.** ex *Coua cristata pyropyga*: **514,** male head, dorsal and ventral views. **515,** male genitalia, dorsal view. **516,** distal male genitalia, ventral view. **517,** female subgenital plate and vulval margin, ventral view.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 514. Temples somewhat angular, occiput more or less flat. Marginal and marginal temporal carinae broad. Preantennal, preocular, and post-ocular nodi large. Ventral carina slender anterior to pulvinus, and clearly continuous with marginal carina. Coni long, but not reaching beyond distal margin of scape. Lateral margin of antennal canal clearly demarcated, reaching posterior margin of head between *mts2–3*; median margin of canal not clear anteriorly; *mts2* spine-like, not curved, ventral or marginal. Gular plate spade-shaped. Thoracic and abdominal segments as in genus description and Figs 512–513.

Male. Subgenital plate broadly trapezoidal. Abdominal chaetotaxy as in Table 2 and Fig. 512. Male genitalia distinctive (Figs 515–516). Basal apodeme long, slender. Mesosome fused to basal apodeme, proximal mesosome visible only as arched thickening. Gonopore large (Fig. 516), wider than long, widely open distally. Mesosomal lobes fused to parameres and cannot be distinguished from these; 2 *ames* sensilla on each side lateral to gonopore; 2 *pmes* sensilla on each side postero-lateral to gonopore. Parameral blades divergent, shaped as in Fig. 515; *pst1–2* as in genus description. Measurements ex *Coua cristata pyzopyga* (n = 10 except n = 9 for TL): TL = 1.44–1.54; HL = 0.39–0.41 (0.40); HW = 0.39–0.41 (0.40); PRW = 0.24–0.26 (0.25); PTW = 0.35–0.39 (0.37); AW = 0.49–0.58 (0.53).

Female. Abdominal chaetotaxy as in Table 2 and Fig. 513. Subgenital plate (Fig. 517) trapezoidal, reaching vulval margin but not flaring into cross-piece. Vulval margin (Fig. 517) widely bulging medianly; 4–5 stout, thorn-like *vms* on each side, and 2–3 minute, slender *vss* on each side, restricted to median section; 2–3 long, slender *vos*; 1 long, slender *vos* median to *vms* on each side. Measurements ex *Coua cristata pyzopyga* (n = 7): TL = 1.63–1.83; HL = 0.41–0.44; HW = 0.43–0.46; PRW = 0.25–0.27; PTW = 0.37–0.42; AW = 0.58–0.68.

Etymology. The species epithet is formed by Greek "*dódeka*" for "twelve" and "*pteron*" for "wing", referring to the wing-like folded pleurites on abdominal segments III–VIII (Figs 512–513).

Type material. Ex *Coua cristata pyropyga*: Holotype ♂, Betioky, [Atsimo-Andrefana Region], Madagascar, 29 Nov. 1965, C.[P.] Blanc, Brit. Mus. 1974-513 (NHML). **Paratypes:** 3♂, 4♀, same data as holotype (NHML); 6♂, 3♀, "Madagascar Sud", Madagascar, 20 Jun. 1965, C.P. Blanc, Brit. Mus. 1974-513 (NHML).

Couala angulata (Piaget, 1880)

(Figs 518–523)

Nirmus angulatus Piaget, 1880: 134.
Degeeriella angulata (Piaget, 1880); Harrison, 1916: 108.
Brueelia angulata (Piaget, 1880); Hopkins & Clay, 1952: 53.

Type host. *Asio flammeus* (Pontoppidan, 1763)—short-eared owl (in **Error**).
Type locality. Zoological Garden, Rotterdam.
Other host. *Coua caerulea* (Linnaeus, 1766)—blue coua.

Description. ***Both sexes***. Head shape, structure, and chaetotaxy as in genus description and Fig. 520. Temples acutely angular, occiput deeply concave. Marginal and marginal temporal carinae very broad. Preantennal, preocular, and postocular nodi very large. Ventral carina broad and diffuse anterior to pulvinus. Coni long, reaching well beyond distal margin of scape. Lateral margin of antennal canal clearly demarcated, continuing to posterior margin of head, which it reaches just median to *mts3*; median margin of antennal canal clearly demarcated for anterior fourth; *mts2* curved, spine-like, just lateral to *mts3*, and clearly ventral. Gular plate pointed. Thoracic and abdominal segments as in genus description and Figs 518–519.

Male. Subgenital plate (Fig. 518) trapezoidal, narrowing at posterior extreme. Abdominal chaetotaxy as in Table 2 and Fig. 518. Male genitalia (Figs 521–522) distinct. Basal apodeme long, slender. Proximal mesosome fused to and not distinguishable from basal apodeme. Gonopore elongated, open distally, with anterior extension on ventral side (Fig. 522). Mesosomal lobes large, quadratic, intensely papillate and rugose on dorsal surface and median, distal, and lateral margins; 2 *ames* sensilla on each side lateral to gonopore; 2 *pmes* microsetae on each side marginal on postero-lateral corner of rugose area on lobes, where the mesosome is fused to the parameres; *pmes* often hard to see due to papillation. Parameral heads (Fig. 522) fused to postero-lateral mesosomal lobes, but lateral ends of heads not fused, angular. Parameral blades strongly curved, convergent; *pst1–2* as in genus description. Measurements ex *Coua caerulea* (n = 22): TL = 1.17–1.30 (1.24); HL = 0.35–0.39 (0.37); HW = 0.42–0.49 (0.45); PRW = 0.24–0.27 (0.25); PTW = 0.37–0.41 (0.39); AW = 0.49–0.61 (0.54).

Female. Abdominal chaetotaxy as in Table 2 and Fig. 519. Subgenital plate broadly rounded trapezoidal (Fig. 523), not approaching vulval margin. Vulval margin (Fig. 523) with broad, rounded rectangular bulge medianly; 5–8 large, spine-like *vms* on each side, and 3–5 minute *vss* on each side, restricted to median section of vulval margin; 4–5 long, slender *vos*; 1 *vos* median to *vms*, near vulval margin. Measurements ex *Coua caerulea* (n = 25): TL = 1.38–1.63 (1.50); HL = 0.40–0.44 (0.42); HW = 0.48–0.55 (0.51); PRW = 0.27–0.29 (0.28); PTW = 0.39–0.45 (0.41); AW = 0.52–0.68 (0.61).

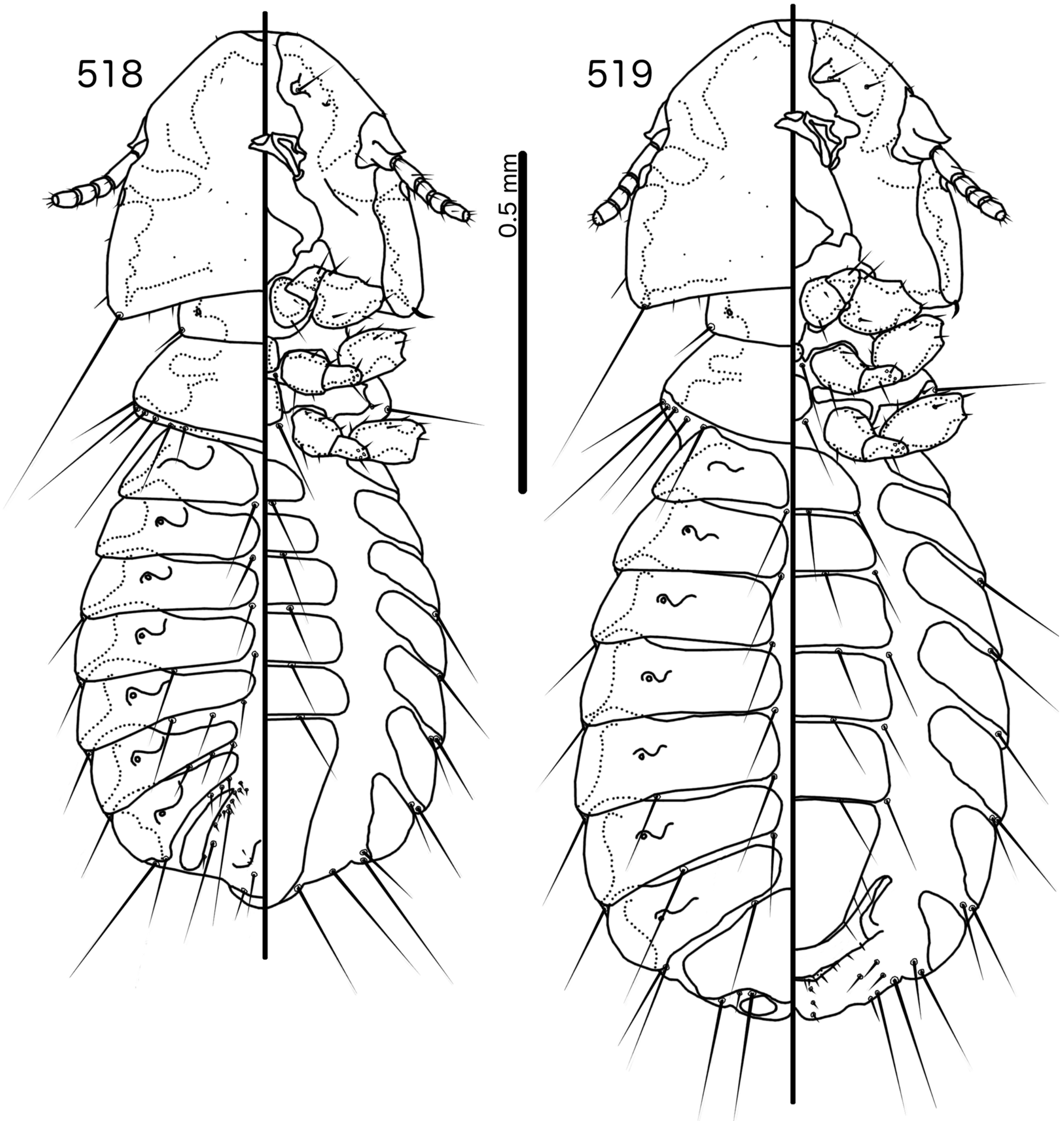
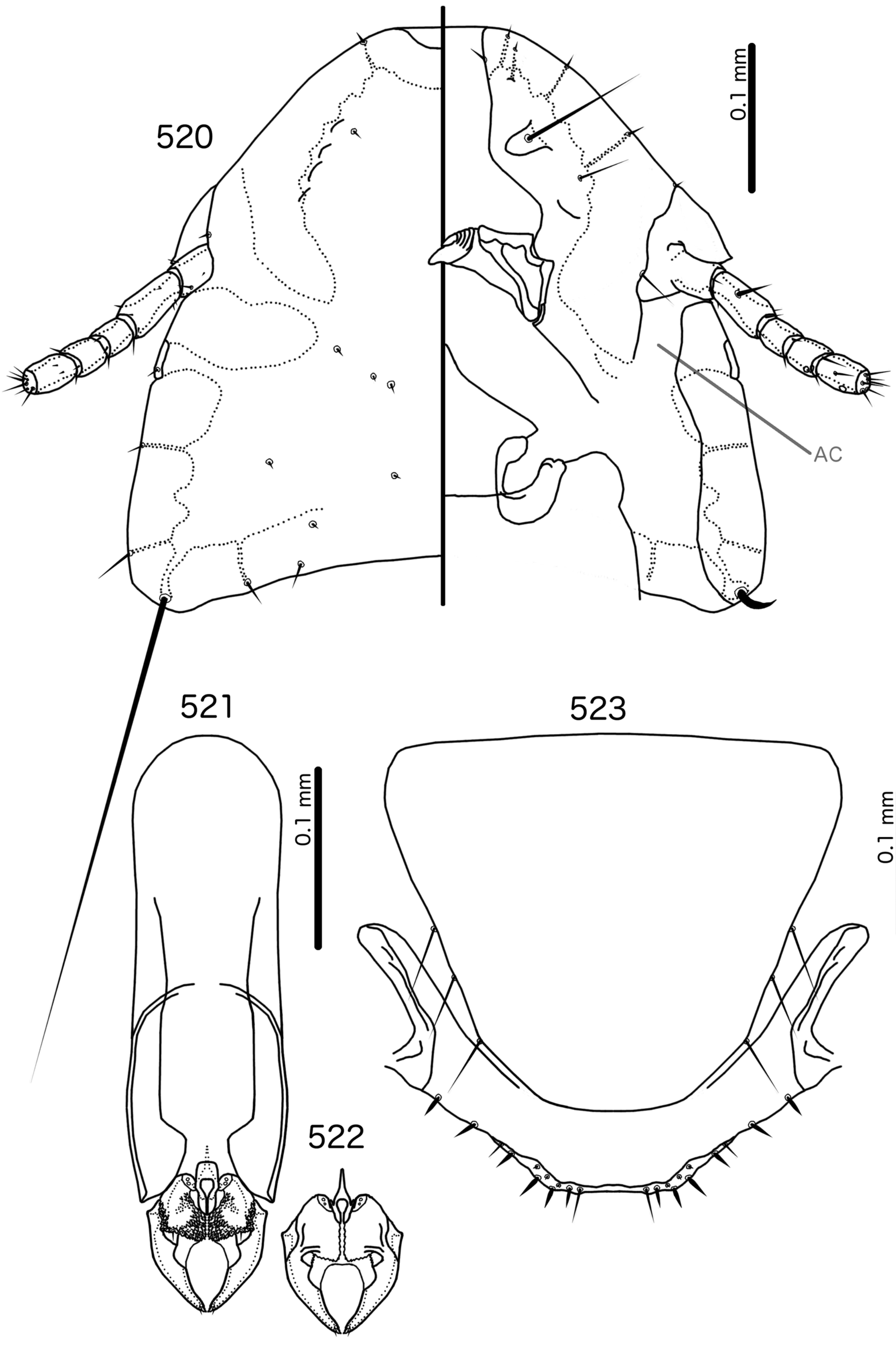


FIGURE 518–519 *Couala angulata* (Piaget, 1880) **n. comb.** ex *Coua caerulea*: **518,** male habitus, dorsal and ventral views. **519,** female habitus, dorsal and ventral views.



FIGURES 520–523 *Couala angulata* (Piaget, 1880) **n. comb.** ex *Coua caerulea*: **520,** male head, dorsal and ventral views. **521,** male genitalia, dorsal view. **522,** male mesosome and parameres, ventral view. **523,** female subgenital plate and vulval margin, ventral view.

Type material. Ex *Asio otus*: **Holotype** ♂, Piaget Collection, 1013 (NHML).

Additional material examined (non-types)

Ex ***Coua caerulea***: 37♂, 38♀, Madagascar, R. Meinertzhagen, 16648 (NHML).

Remarks. The type host was given by Piaget (1880: 135) as *Strix flammea* [= *Asio flammeus* (Pontoppidan, 1763)] from the Zoological Garden in Rotterdam, but *Asio flammeus* does not occur in Madagascar, only *Asio madagascariensis* (A. Smith, 1834). The holotype of *Couala angulata* is identical to material from *Coua caerulea* (Linnaeus, 1766). Considering that all the hosts of species of *Couala* **n. gen.** are from Madagascar, we believe that either Piaget was mistaken about the host, or that contamination had occurred at the zoological garden.

Aporisticeras Gustafsson & Bush, new genus

Brueelia Kéler, 1936a: 257 (*in partim*).

Type species. *Brueelia athertona* Williams, 1981

Diagnosis. *Aporisticeras* **n. gen.** is most similar to *Couala* **n. gen.**, but both genera are very distinct, and similarities may be superficial. No representative of *Aporisticeras* was included in the phylogeny of Bush *et al.* (2016), and its position within the *Brueelia*-complex is unknown.

Aporisticeras (Fig. 526) and *Couala* (Figs 514, 520) share the following head characters: dorsal preantennal suture absent; ventral carinae continuous with marginal carina; marginal carina displaced at osculum; *pns* present, microsetae; preocular nodi prominent; mandibular adductor muscles prominent. In addition, while the proximal mesosome does not appear to be fused to the basal apodeme in *Aporisticeras* (Figs 527–528) as it is in *Couala* (Figs 515–516, 521–522), the structure is very similar between the two genera, especially between *Aporisticeras* and *Couala dodekopter* **n. sp.** (Figs 515–516), as is the fact that the mesosomal lobes are not very prominent, much wider than long, and both have gonopores that are similar in size relative to the mesosome. However, there are differences in the abdominal chaetotaxy (Table 2), and head chaetotaxy, with *as3* present in *Aporisticeras* (Fig. 526), but absent in *Couala* (Figs 514, 520). Antennal canals are absent in *Aportisticeras* (Fig. 526), but present in *Couala* (Figs 514, 520), and while the *mst2* is modified in *Couala*, it is not in *Aportisticeras*. The female subgenital plate in *Aporisticeras* (Fig. 531) forms a broad cross-piece at the vulval margin, but no such cross-piece is present in *Couala* (Figs 517, 523); however, in both genera the *vss* are microsetae, and not thorn-like. Many of the characters of the male genitalia of *Aporisticeras* (Figs 527–530) are unique within the *Brueelia*-complex, and these characters separate *Aporisticeras* from all other genera treated here: parameres wrinkled with diaphanous median margins (Fig. 530); ventral transversal sclerite connected to anterior portion of main mesosome (Fig. 528); small hole penetrating dorsal surface of mesosome dorsal to gonopore; 3 *pst* present on each paramere, two sensilla and one terminal microseta.

Description. ***Both sexes***. Head broad, rounded triangular (Fig. 526). Marginal carina uninterrupted; displaced dorsally and posteriorly at osculum. Dorsal preantennal suture absent. Ventral anterior plate absent. Ventral carinae continuous with marginal carina. Head setae as in Fig. 526. Coni small. Antennae monomorphic. Temporal carinae not visible; *mts3* only macrosetae. Gular plate pentagonal, with prominent median point.

Prothorax (Figs 524–525) rectangular. *ppss* on posteto-lateral corners. Proepimera slender; median ends blunt or hook-shaped. Pterothorax trapezoidal; lateral margins divergent; posterior margin flat or slightly rounded; *mms* widely separated medianly. Meso- and metasterna fused; 2 setae on each side. Metepisterna moderate; median ends blunt. Leg chaetotaxy as in Fig. 25, except *fI-p2, fI-v4, fII-v2, fIII-v2,* absent.

Abdomen oblong (Figs 524–525). Abdominal chaetotaxy as in Table 2 and Figs 524–525. Tergopleurites rectangular; tergopleurites II–IX+X in male and tergopleurites II–VIII in female moderately separated medianly; tergopleurites IX+X and XI fused in female. Sternal plates rectangular, do not approach pleurites. Pleural incrassations large. Ventral section of tergo-pleurites broad. Re-entrant heads slight, broad. Male subgenital plate roughly rectangular, lateral margins irregular, reaching posterior margin of abdomen. Female subgenital plate oval, reaching vulval margin where it flares into broad cross-piece (Fig. 531). Vulval margin with slender *vms*, thorn-like *vss*; *vos* follow lateral margins of subgenital plate, not approaching *vss* (Fig. 531).

Basal apodeme (Fig. 527) rounded rectangular. Proximal mesosome small, convex. Anterior transverse sclerite (ATS in Fig. 528) across proximal mesosome unique in *Brueelia*-complex. Gonopore (Fig. 528) prominent, terminal, margins not thickened, open distally. Mesosomal lobes wide, overlapping parameres. Distal transverse sclerite (DTS in Fig. 528) just posterior and dorsal to gonopore unique in *Brueelia*-complex; *ames* absent; 2 *pmes* microsetae on lateral margins of mesosomal lobes. Parameral heads (Figs 529–530) blunt, with distinct grove into which the lateral ends of mesosomal lobes fit. Parameral blades convergent, median margin diaphanous in proximal section, lateral margin with ventral wrinkles; 3 *pst* per paramere, 2 as central sensilla and 1 as a terminal microseta.

Host distribution. *Aporisticeras* is monotypic, known only from two species of bee-eaters in the genus *Nyctyornis* Jardine & Selby, 1830.

Geographical range. South and Southeast Asia.

Etymology. *Aporisticeras* is formed by the Greek prefix "*aporeía*" for "puzzlement, confusion", referring to the general structure of the male genitalia (Fig. 527), which are very different from those of other members of the *Brueelia*-complex and difficult to interpret, together with the Greek suffixes "*istío*" for "sail" and "*kérato*" for horn, referring to the sail-shaped parameres (Figs 529–530). Gender: masculine.

Included species

***Aporisticeras athertona* (Williams, 1981: 517) n. comb. [in *Brueelia*]**

Aporisticeras athertona (Williams, 1981)

(Figs 417–420)

Brueelia athertona Williams, 1981: 517.

Type host. *Nyctyornis athertoni athertoni* (Jardine & Selby, 1828)—blue-bearded bee-eater.
Type locality. Bengal, India.
Other host. *Nyctyornis amicta* (Temminck, 1824)—red-bearded bee-eater.

Description. ***Both sexes***. Head structure, shape, and chaetotaxy as in genus description and Fig. 526. Thoracic and abdominal segments as in Figs 524–525; pteronotum with 5–6 *mms* of about equal length on each side.

Male. Abdominal chaetotaxy as in Table 2 and Fig. 524. Basal apodeme diffuse anteriorly (Fig. 527), with lateral folds that widen distally. Near posterior margin of basal apodeme there is a transversal, thickened ventral arch (anterior transversal sclerite, ATS in Fig. 528), connected to or articulating with lateral ends of mesosomal lobes. Proximal mesosome small, square-shaped. Gonopore (Fig. 528) large, terminal, open distally. Mesosomal lobes wide, triangular; *ames* absent; 2 *pmes* microsetae on lateral margins of mesosomal lobes. Dorsal and posterior to gonopore a second transversal sclerite (distal transversal sclerite, DTS in Fig. 528). Parameral heads (Figs 529–530) bifid, with grove into which lateral ends of mesosome fits (Fig. 527). Parameral blades with a thickened, wrinkled lateral section and a diaphanous median "sail" along most of the length of the paramere; *pst* as in genus description. Measurements ex *Nyctyornis athertoni* (Thailand) (n = 6): TL = 1.51–1.62; HL = 0.40–0.43; HW = 0.42–0.47; PRW = 0.25–0.27; PTW = 0.42–0.45; AW = 0.53–0.57. Ex *Nyctyornis athertoni* (India) (n = 3 except n = 1 for TL): TL = 1.654; HL = 0.41–0.44; HW = 0.46–0.49; PRW = 0.25–0.27; PTW = 0.43–0.47; AW = 0.59–0.63. Ex *Nyctyornis amicta* (n = 1): TL = 1.61; HL = 0.42; HW = 0.44; PRW = 0.26; PTW = 0.45; AW = 0.68.

Female. Abdominal chaetotaxy as in Table 2 and Fig. 525. Subgenital plate roughly oval, reaching vulval margin where it flares into broad cross-piece (Fig. 531). Vulval margin with 2–3 median *vms* and 5–7 more lateral thorn-like *vms* on each side (Fig. 531); 2–4 minute *vss* on each side. 3–4 slender *vos* on each side, not approaching *vss*. ex *Nyctyornis athertoni* (Thailand) (n = 7): TL = 1.76–2.01; HL = 0.43–0.46; HW = 0.48–0.50; PRW = 0.26–0.28; PTW = 0.46–0.48; AW = 0.60–0.73. Ex *Nyctyornis athertoni* (India) (n = 3): TL = 2.03–2.09; HL = 0.49–0.51; HW = 0.54–0.57; PRW = 0.29–0.31; PTW = 0.53–0.55; AW = 0.77–0.84. Ex *Nyctyornis amicta* (n = 2): TL = 1.76–2.00; HL = 0.42–0.45; HW = 0.45–0.50; PRW = 0.27; PTW = 0.43–0.48; AW = 0.67–0.68.

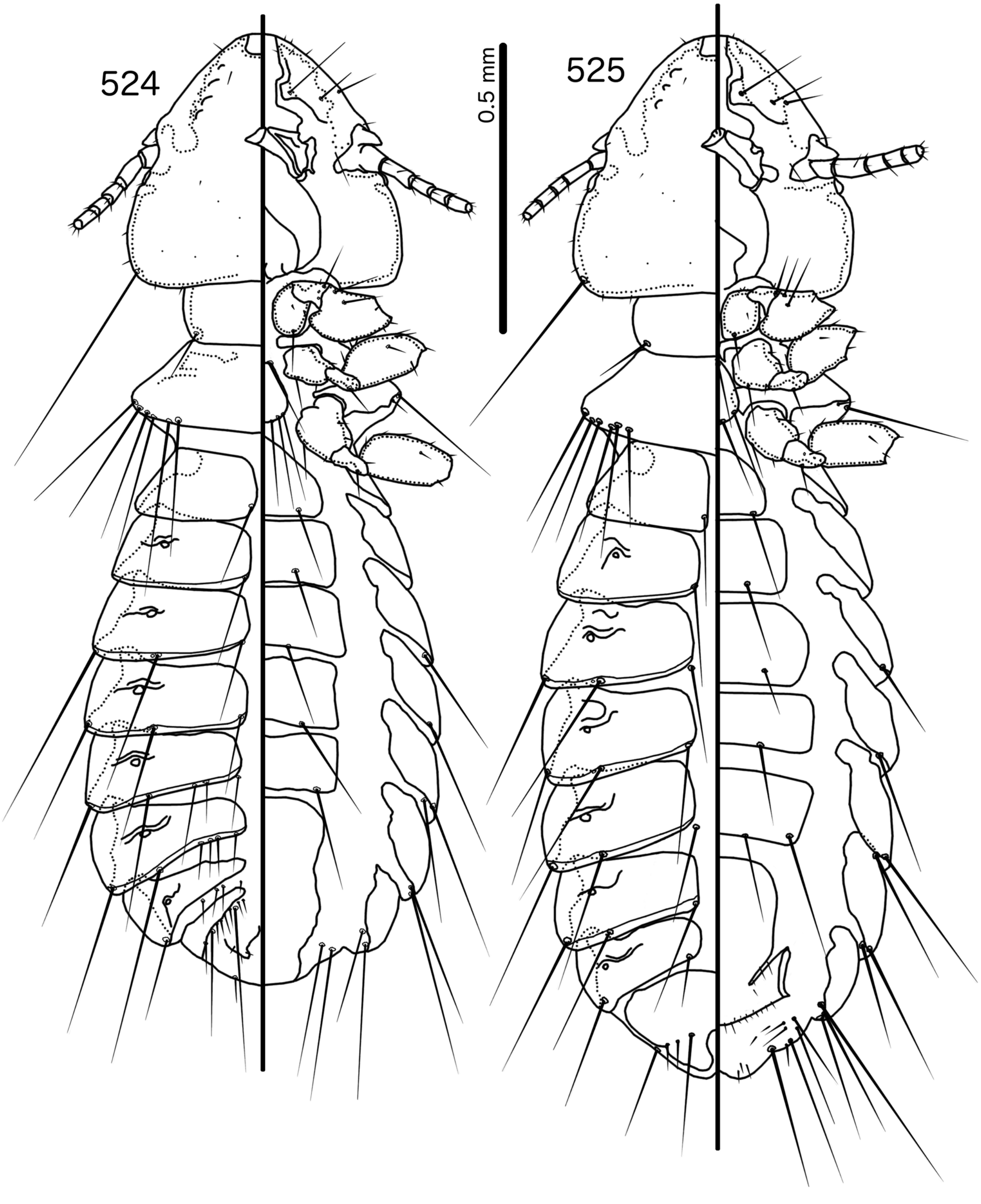
Type material. Ex ***Nyctyornis athertoni athertoni*: Holotype** ♂, Bengal, India, Jan. 1926, R. Meinertzhagen, 2748 (NHML). **Paratypes:** 1♂, 1♀, same data as holotype (NHML); 1♂, 2♀, same data as holotype (OSUS).

Additional material examined (non-types)

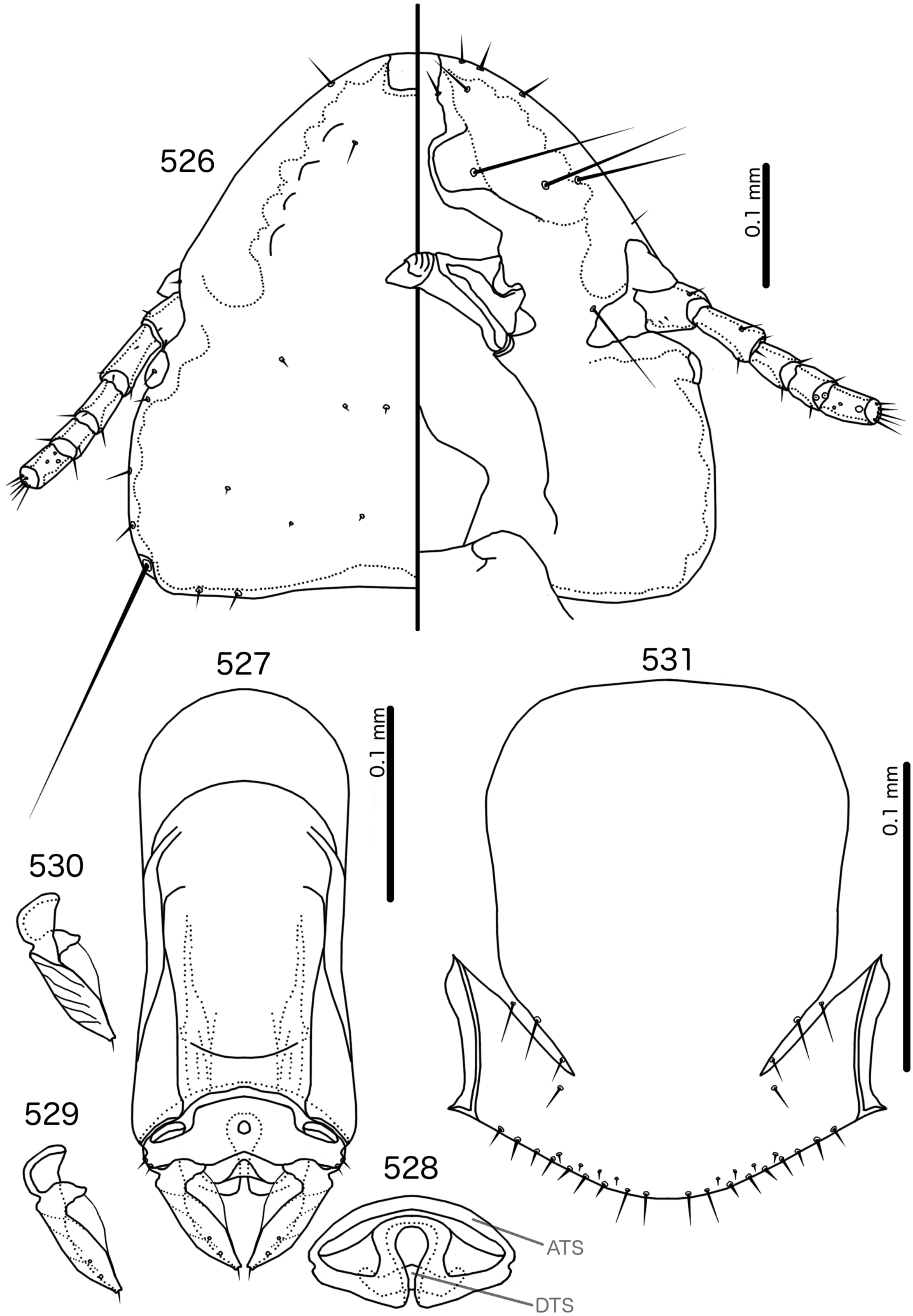
Ex ***Nyctyornis athertoni athertoni***: 3♂, 3♀, Dehra Dun, [Uttarakhand], India, Jan. 1940, R. Meinertzhagen, 13940 (NHML); 3♂, 3♀, Hinlaem, Thakanun, Kanachanaburi Province, Thailand, 28 Oct. 1952, R.E. Elbel & H.G.

Deignan, RE-1317, RT-B-15809 (OSUS); 2♂, 2♀, Hinlaem, Thakanun, Kanachanaburi Province, Thailand, 28 Oct. 1952, R.E. Elbel & H.G. Deignan, RE-1317, RT-B-15809 (PIPeR);1♀, 10 km East of Prae border, Pangnamun, Ban Yun, Nan Province, Thailand, 25 Jan. 1953, R.E. Elbel & H.G. Deignan, RE-2205, RT-B-17729 (PIPeR).

Ex ***Nyctyornis amicta***: 1♀, Huai Yang, Prachuap Khiri Khan Province, Thailand, 27 Dec. 1952, R.E. Elbel & H.G. Deignan, RE-2079, RT-B-17696 (NHML); 1♂, 1♀, Huai Yang, Prachuap Khiri Khan Province, Thailand, 27 Dec. 1952, R.E. Elbel & H.G. Deignan, RE-2079, RT-B-17696 (PIPeR).



FIGURES 524–525. *Aporisticeras athertona* (Williams, 1981) **n. comb.** ex *Nyctyornis athertoni athertoni*: **524,** male habitus, dorsal and ventral views. **525,** female habitus, dorsal and ventral views.



FIGURES 526–531. *Aporisticeras athertona* (Williams, 1981) **n. comb.** ex *Nyctyornis athertoni athertoni*: **526,** male head, dorsal and ventral views. **527,** male genitalia, dorsal view. **528,** male mesosome, ventral view. **529,** male paramere, dorsal view. **530,** male paramere, ventral view. **531.** female subgenital plate and vulval margin, ventral view. *Abbreviations*: ATS, anterior transverse sclerite; DTS, distal transverse sclerite.

Remarks. The type host, *Nyctyornis athertoni*, occurs in two discontinuous areas, with one population inhabiting peninsular India, and another (including two subspecies) ranging from Bengal to Cambodia and Vietnam (Fry *et al*. 1999). Specimens from peninsular India are typically larger than those from Thailand, this feature being more striking in females than in males. Therefore, we have included measurements of specimens from both host populations separately. Too little material was examined to draw any taxonomic conclusions from the size differences found between the two *Aporisticeras* populations from *N. athertoni*. Specimens examined from *N. amicta* are inseparable from those of the type host, but samples sizes from both host species are small.

Species *incertae sedis*

Docophorus acuminatus Piaget, 1888

Type host. *Tauraco persa* (Linnaeus, 1758)—Guinea turaco.

Remarks. Both Hopkins & Clay (1952: 344) and Price *et al*. (2003: 242) suggested that the host is erroneous. The type was not examined by us, and the only slide bearing this name in the Piaget collection at the NHML is from another host (*Podoa* [= *Podica*?] *senegalensis*) and is an unidentified female of *Sturnidoecus*. We were unable to ascertain if this specimen actually belongs to the type series of *Docophorus acuminatus*.

Nirmus brasiliensis Giebel, 1874

Type host. *Tangara mexicana brasiliensis* (Linnaeus, 1766)—turquoise tanager.

Remarks. The first mention of this species (Giebel, 1866: 367) only reads that it is "yellowish, without markings" (our translation). Later, Giebel (1874: 134) provided additional information with enough detail to be considered a formal description. Hence we consider the proper author and date of *Nirmus brasiliensis* to be Giebel, 1874. Unfortunately, even with the additional information provided by Piaget (1880: 160), the description of this species is not good enough to allow us to place it into any genera of the *Brueelia*-complex. Only one individual was ever collected (Giebel, 1866: 367), but it was in the destroyed with the Halle Collection (Clay & Hopkins 1955). Additional collections from the type host are necessary to determine the taxonomic placement of this enigmatic species.

Nirmus eustigma Kellogg, 1896

Type host. *Calypte anna* (Lesson, 1829)—Anna's hummingbird.

Remarks. In the original illustration of this species, the head is reminiscent of *Brueelia* s. str., but the abdominal chaetotaxy differs markedly from *Brueelia* s. str. The holotype is very poorly preserved, and virtually all important characters are impossible to discern. The head shape appears most similar to that commonly found in *Motmotnirmus*, but the description states that it has only one pair of temporal macrosetae; the state of the *mts* is hard to assess in the type, but *mts2* does not appear to be a macroseta on either side of the head. Thus, the type cannot be identified with certainty even to genus, and we cannot presently include it in any of the genera treated here. Considering that no species of the *Brueelia*-complex is known from hummingbirds, it seems likely that the holotype is an unidentifiable straggler or contaminant.

Boyd *et al*. (1956) identified lice collected from *Cyanocitta cristata* (Linnaeus, 1758) as *Degeeriella eustigma*, with which they synonymized with *Degeeriella picturata* (Osborn, 1896). Since no illustrations or descriptions were provided from their material, we do not accept this synonymy as we cannot ascertain whether their material was conspecific with either of these species, or with *Olivinirmus clayae*, which regularly occurs on *Cyanocitta cristata*.

Nirmus hecticus Nitzsch [in Giebel], 1866

Type host. *Sericulus chrysocephalus* (Lewin, 1808)—regent bowerbird.

Remarks. Giebel (1866: 366) claimed that this species is close to *Nirmus mundus* Nitzsch [in Giebel], 1866 [here *Maculinirmus mundus*]. *Nirmus hecticus* was known from a single female only, which was lost with the Halle collection (Clay & Hopkins 1955). The original description states that the head is quite yellow, elongated, rounded anteriorly, and has almost straight temporal carinae. This description, unfortunately, does not allow us to place this species in any of the genera treated here. The type host is a bowerbird (Ptilonorhynchidae), which is not known to host *Maculinirmus*. Typically, bowerbirds are hosts to *Guimaraesiella*, but the described head shape suggests that this species could belong to *Indoceoplanetes*. Since the holotype is lost and no other material from the type host is available, it seems prudent not to place this species in any of the genera treated here.

Nirmus nudus Giebel, 1874

Type host. *Seleucidis melanoleuca* (Daudin, 1800)—twelve-wired bird-of-paradise.

Remarks. *Nirmus nudus* Giebel, 1879 was described as being "without any particularly striking peculiarities" (Giebel 1879: 475), distinguishable from the most similar species only by its short and overall very sparse hairs. Unfortunately, the species considered "most similar" was not identified by Giebel. Also, the type/s is/are lost making it impossible to know what *Nirmus nudus* was, or whether it is synonymous with *Guimaraesiella setifer* (Piaget, 1880) from another bird-of-paradise species.

Almost all of the lice of the Brueelia-complex examined by us from birds-of-paradise belong to species of *Guimaraesiella*. In the absence of an actual specimen we cannot establish whether Giebel's (1879) observation that the setae are very sparse is the actual condition of this louse, or a result of poor preservation, as is so often the case in oldslide- mounted lice. With only an extremely vague description, no illustration, and no remaining specimens, this species must be considered *incertae sedis*.

Nirmus ovalis Neumann, 1890

Type host. *Psittrichas fulgidus* (Lesson, 1830)—Pesquet's parrot.
Other host. *Eclectus roratus polychlorus* (Scopoli, 1786)—eclectus parrot.

Remarks. This species was collected from two Melanesian parrot species: *Dasyptilus pecqueti* [= *Psittrichas fulgidus* (Lesson, 1830)] and *Eclectus polychlorus* [= *Eclectus roratus polychlorus* (Scopoli, 1786)]. It was described only in vague terms, and cannot be accurately placed in any of the genera treated here. Hopkins & Clay (1952: 59) regarded it as a valid species of *Brueelia*, followed by Price *et al*. (2003) We examined additional material from an eclectus parrot [*Eclectus roratus*] and a song parrot [*Geoffreyus heteroclitus* (Hombron & Jacquinot, 1841)] from the Solomon Islands, but these specimens are largely white, not light brown as *Nirmus ovalis* was described. Therefore, we regard this species as *incertae sedis*.

Species removed from the *Brueelia*-complex

Emersoniella coniceps (Piaget, 1880), new combination

Nirmus coniceps Piaget, 1880: 136.
Brueelia coniceps (Piaget), 1880; Hopkins & Clay 1952: 54.

Type host. *Aceros cassidix* (Temminck, 1823)—knobbed hornbill.

Remarks. We studied the single female (the holotype) in the Piaget collection at NHML, and conclude that it belongs to *Emersoniella*. Using the key in Gustafsson & Bush (2014), it can be identified as either *E. crassicarina* Gustafsson & Bush, 2014 or *E. regis* Emerson & Price, 1978. However, that single female cannot be reliably placed in either species, because *Emersoniella* is a poorly known genus with many more species likely to be discovered. Therefore, we make no attempt to place this name in synonymy wuth any better known spcis. Since no *Emersoniella* lice are known from other members of the Bucerotidae, this female holotype is likely a straggler, a contaminant, or its host has been misidentified.

Emersoniella docophoroides (Piaget, 1885), new combination

Nirmus docophoroides Piaget, 1885: 19.
Brueelia docophoroides (Piaget), 1885; Hopkins & Clay 1952: 55.

Type host. *Terpsiphone paradisi* (Linnaeus, 1758)—Asian paradise-flycatcher.

Remarks. Piaget (1885: 19) believed this species to be close to his *Nirmus coniceps* Piaget, 1880. The single male (the holotype) in the Piaget collection at NHML is an *Emersoniella*, while all other material from this host examined by us belong to *Guimaraesiella*. As the preceding species, it keys out to either *E. crassicarina* or *E. regis* in the key of Gustafsson & Bush (2014), but the male genitalia differ from both, and thus appears to be a species from an unknown host. As only one male is available, we cannot ascertain whether it is the same species as one of the other species here transferred to *Emersoniella* or a different species. Piaget's type is likely a straggler, contaminant, or its host was misidentified.

Emersoniella paraboliceps (Piaget, 1880), new combination

Nirmus paraboliceps Piaget, 1880: 135.
Brueelia pataboliceps (Piaget), 1880; Hopkins & Clay 1952: 60.

Type host. *Probosciger aeterrimus* (Gmelin, 1788)—palm cockatoo.

Remarks. The single male (the holotype) in the Piaget collection at NHML belongs to *Emersoniella*. This genus is normally found on kingfishers (Alcedinidae), and the occurrence on a parrot is most likely the result of an incorrect host association due to a misidentification of the host, a contamination, or a straggling event. Using the key of Gustafsson & Bush (2014), it keys out to *E. crassicarina*, but differs from this species in the male genitalia, head shape and abdominal chaetotaxy. Therefore, we believe it is likely another species from an unknown host.

Penenirmus quadrilineatus (Nitzsch, 1866), new combination

Nirmus quadrilineatus Nitzsch, 1866: 117.
Degeeriella quadrilineata (Nitzsch), 1866; Harrison, 1916: 121.
Sturnidoecus quadrilineatus (Nitzsch), 1866; Hopkins & Clay, 1952: 345.

Type host. *Aegithalos caudatus* (Linnaeus, 1758)—long-tailed tit.

Remarks. No material of this species was examined by us. The original description is brief and vague, but Giebel's (1874) redescription mentions that it has three pairs of very long setae on the temples, indicating that this is a member of the *Philopterus*-complex or *Penenirmus*. The coni ("Balken") are said to be slender and long, which would fit better with *Penenirmus* than *Philopterus*, and we interpret the three very long temporal setae seen by Giebel (1874) as being the *os* and two *mts*.

We refer this species to *Penenirmus*, despite Złotorzycka's (1997: 225) claim that this species belongs to *Sturnidoecus*. It may be a junior synonym of *Penenirmus pari* (Denny, 1842), but further study is needed to determine whether synonymization is appropriate in this case.

Penenirmus chendoola (Ansari, 1955), new combination

Sturnidoecus chendoola Ansari, 1955b: 59.
Sturnidoecus chendoola Ansari, 1956e: 396.
Sturnidoecus chendoola Ansari, 1958b: 79.

Type host. *Galerida cristata iwanowi* (Zarudny and Loudon, 1903)—crested lark (*iwanowi*).

Remarks. No material of this species was examined, and the first two descriptions (Ansari 1955b, 1956e) are quite vague. Later illustrations by Ansari (1958b) show that this species has two temporal macrosetae, no sternal plates, and male genitalia of the type commonly found in *Penenirmus*, and it is hereby refered to this genus.

Penenirmus guldum (Ansari, 1955), new combination

Sturnidoecus guldum Ansari, 1955b: 59.
Sturnidoecus guldum Ansari, 1956e: 396.
Sturnidoecus guldum Ansari, 1958b: 78.

Type host. *Pycnonotus cafer intermedius* Blyth, 1846—red-vented bulbul.

Remarks. No material of this species was examined, but the illustrations of Ansari (1958b) show a species with posteriorly pointed dorsal anterior plate, no sternal plates, and male genitalia that are more typical of *Penenirmus* than *Sturnidoecus*.

Penenirmus irritans (Ansari, 1955), new combination

Sturnidoecus irritans Ansari, 1955b: 60.
Sturnidoecus irritans Ansari, 1956e: 396.
Sturnidoecus irritans Ansari, 1958: 80.

Type host. *Saxicola maurus indicus* (Blyth, 1847)—Siberian stonechat.

Remarks. We have not examined any material of this species, but refer it to *Penenirmus* based on the illustrations of Ansari (1958b), which show a species with elongated *os* and *pos*, multiple *mts* macrosetae, no sternal plates, and male genitalia of the type commonly found in *Penenirmus*.

Penenirmus saleimi (Ansari, 1955b), new combination

Sturnidoecus saleimi Ansari, 1955b: 60.
Sturnidoecus saleimi Ansari, 1956e: 396.
Sturnidoecus saleimi Ansari, 1958b: 80.

Type host. *Oenanthe picata* (Blyth, 1847)—variable wheatear.

Remarks. No material of this species was examined by us, but Ansari's (1958b) illustrations show that it has elongated *os* and *pos*, multiple *mts* macrosetae, no sternal plates, and male genitalia of the type commonly found in *Penenirmus*.

Philopterus aenas (Piaget, 1885), new combination

Docophorus aenas Piaget, 1885: 5.
Sturnidoecus aenas (Piaget), 1885; Hopkins & Clay, 1952: 344.

Type host. *Motacilla alba* Linnaeus, 1758—pied wagtail.

Remarks. Only one female with this name was examined by us, and it is a member of the *Philopterus*-complex, though Hopkins & Clay (1952) assigned this species to *Sturnidoecus*. The original description (Piaget, 1885) agrees well with our specimen, including the statement by Piaget (1885: 6) that it has two pairs of setae on the temporal margin, one long and one short. In the female examined by us, the *mts1* is shorter than the *mts3*, but both are considerably longer than the remaining *mts*. Piaget (1885: 6) also mentions that the clypeal signature of this species gradually fades posteriorly, which is typical for the *Philopterus*-complex, but not seen in *Sturnidoecus*. We therefore conclude that *Docophorus aenas* is a member of the *Philopterus-compl*ex, and may be a junior synonym of *Philopterus passerinus* (Denny, 1842), but no comparison with other material from the type host was made to ascertain this.

Philopterus capitis (Ansari, 1955), new combination

Sturnidoecus capitis Ansari, 1955b: 61.
Sturnidoecus capitis Ansari, 1956e: 397.
Sturnidoecus capitis Ansari, 1958b: 82.

Type host. *Copsychus fulicata cambaiensis* (Latham, 1790)—Indian robin.

Remarks. No material of this species was examined. The first two descriptions (Ansari, 1955b, 1956e) are not useful for species identification, but the illustrations of Ansari (1958b) clearly show a species with three *mts* macrosetae, trabeculae, a posteriorly pointed dorsal anterior plate, and short, blunt parameres, all features commonly found in the *Philopterus-compl*ex, to which we hereby transfer it.

Philopterus chilchil (Ansari, 1955), new combination

Sturnidoecus chilchil Ansari, 1955b: 59.
Sturnidoecus chilchil Ansari, 1956e: 396.
Sturnidoecus chilchil Ansari, 1958b: 77.

Type host. *Turdoides caudata caudata* (Dumont, 1823)—common babbler.

Remarks. No material of this species was examined by us. While Ansari's (1955b, 1956e) descriptions are too vague to accurately identify this species, the illustrations of his third description (Ansari 1958b) show that it has elongated *os* and *pos*, multiple *mts* macrosetae, trabeculae, posteriorly pointed dorsal anterior plate, no sternal plates, and male genitalia, all typical of the *Philopterus*-complex.

Philopterus annae (Złotorzycka & Eichler, 1984)

Prunellides annae Złotorzycka & Eichler, 1984: 219.
Brueelia annae (Złotorzycka & Eichler); Price et al. 2003: 153.
Philopterus modularis (Denny, 1842); Mey 2004: 164.

Type host. *Prunella modularis modularis* (Linnaeus, 1758)—dunnock.

Remarks. Mey (2004: 164) established that this species is a junior synonym of *Philopterus modularis* (Denny, 1842), but it is included here only because it was listed under *Brueelia* in the checklist of Price *et al.* (2003).

Formicaphagus rhamphasti (Carriker, 1903)

Nirmus rhamphasti Carriker, 1903: 135.
Degeeriella rhamphasti (Carriker, 1903); Harrison, 1916: 122.
Brueelia rhamphasti (Carriker, 1903); Hopkins & Clay, 1952: 60.
Formicaphagus grallariae Carriker, 1957: 426.
Sturnidoecus rhamphasti (Carriker, 1903); Carriker [in Emerson], 1967: 106.
Formicaphagus rhamphasti (Carriker, 1903); Price *et al*. 2003: 180.

Type host. *Ramphastos tocard* = *Ramphastos swainsonii* Gould, 1833 [Ref.: Emerson 1981]—chestnut-mandibles toucan.

Remarks. Emerson (1981) examined the type material of *Nirmus rhamphasti* and compared it to the type material of *Formicaphagus grallariae*, which he determined to be a junior synonym of *Nirmus rhamphasti*. Price *et al*. (2003: 180) followed Emerson (1981) regarding *Nirmus rhamphasti* as a valid species of *Formicaphagus* and listed *F. grallariae* as a junior synonym of the former. Mey & Barker (2014: 93, 100) argued that *Nirmus rhamphasti* Carriker 1903 should be placed in *Sturnidoecus*. We have not examined any material of this species, but include it here because it has been associated by various authors with genera we recognized as belonging to the *Brueelia*-complex.

Quadraceps nesiotes (Kellogg & Mann, 1912), new combination

Nirmus nesiotes Kellogg & Mann, 1912: 60
Brueelia nesiotes (Kellogg & Mann), 1912; Hopkins & Clay 1952: 59

Type host. *Haematopus bachmani* Audubon, 1838—black oystercatcher.

Remarks. This species is known from a single male (the holotype) taken from an oystercatcher and is not illustrated. Hopkins & Clay (1952) believed its true host may be some member of the Ramphastidae, a family that does not occur in the collection locality: San Martin Island, Baja California, Mexico.

The type is very poorly preserved, with male genitalia, virtually all setae, and preantennal area are all obscured. Based on the characters that can be interpreted, it is very similar to *Quadraceps auratus* (Haan, 1829), a species widely distributed on several species of *Haematopus*, including *H. bachmani* (see Price *et al*. 2003: 289). However, the poor condition of the holotype and does not allow a proper comparison with *Quadraceps auratus* to ascertain a possible synonymy.

Nomina nuda

Names published by Gurlt (1857)

Gurlt (1857) mentions a number of novel names—all placed in *Nirmus* and from suitable hosts—which may refer to lice of the Brueelia-complex. None of these names were ever formally described and all of them were regarded as *nomina nuda* by Harrison (1916). Also, none of them were listed by Hopkins & Clay (1952) or Price *et al*. (2003). These names are: *"Nirmus catenatus* Schilling", "*Nirmus graculae* G.", "*Nirmus lamprotornis* G.", "*Nirmus orioli* G.", and "*Nirmus sylviae* Gurlt". Of these names, the only one that has subsequently been mentioned in the literature (except for Harrison's 1916 checklist) is "*Nirmus catenatus*", which Piaget (1880: 154) placed in his *Nirmus interruptofasciatus* group. However, Piaget did not provide any description, only referred to Gurlt's list, and thus this name must also remain a *nomen nudum*.

"Brueelia beroica Touleshkov" *and "Picicola berojica* Touleshkov"

Host: *Picus viridis* Linnaeus, 1758—green woodpecker.

Remarks. "*Brueelia beroica"* was first mentioned by Touleshkov (1962) and again as "*Picicola berojica*" by Touleshkov (1964). Ilieva (2009) noted that this species has never been described and that it is a *nomen nudum*. The lice that Touleshkov (1962, 1964) intended, but failed to describe, may be common on hosts in Bulgaria, considering that Touleshkov (1962, 1964) reported a total of 61 speciemsn from several localities.

"*Brueelia seta* (Eichler)"

Assumed hosts: *Muscicapa* sp. *Muscicapa striata* (Pallas, 1764)—spotted flycatcher. *Ficedula hypoleuca* (Pallas, 1764)—pied flycatcher.

Remarks. "*Brueelia seta* Eichler" has a convoluted history. Both Balát (1955: 503) and Złotorzycka (1964a: 261) refer to Eichler [*in* Niethammer] (1937) listing this species as the *Brueelia* of *Muscicapa striata* (Pallas, 1764). Further, Balát (1955: 503) and Złotorzycka (1968b: 111) note that a subspecies of "*Br. seta* Eichler" lives on *Ficedula hypoleuca* (Pallas, 1764). The name was used last in a faunistic report on the lice of the Balkan Mountains (Touleshkov 1974).

Balát (1955) ascribes this name to "Eichler, 1945", but in his list of references only cites Eichler's *Acta Mallophagologica*, a series of multigraphed papers issued by Eichler between 1938 and 1946, which were never validly published (see Hopkins, undated). These were eventually compiled into the *Phthirapterarum Mundi Catalogus* (Eichler 1946), where *"Brueelia seta*" is listed as species no. 432. In this compilation, the author of *Br. seta* is given as Piaget, but the page reference is to Harrison (1916).

The species listed by Harrison (1916) as *Lipeurus seta* Piaget was described from an unidentified *Muscicapa* sp. in the addendum to Piaget's (1880), and was compared by Piaget to *Lipeurus baculus* [= *Columbicola bacillus* (Giebel, 1866)]. Hopkins & Clay (1952: 87) treated this species under *Columbicola*, noting that the host was in error, the type specimen a nymph, and that the species was thus unidentifiable. Price *et al.* (2003: 168) agreed with this, and Adams *et al.* (2005: 3608) considered this name a *nomen dubium*. While *Columbicola seta* (Piaget, 1880) is an available name, "*Brueelia seta* Eichler" is not.

We have not seen Eichler [in Niethammer] (1937), but the first reference to Eichler being the author appears to be Balát (1955). Balát did not seem to have had any material of this species, and it appears only in a list of previously recorded lice from Czech hosts. Złotorzycka (1964a) had not seen any material of the species either, but Złotorzycka (1968b) refers to a letter from Eichler, in which he stated that the *Brueelia* species of *Ficedula hypoleuca* and *Muscicapa striata* are so similar that he had only identified them as different subspecies. No subsequent publication of Eichler's is known to us in which this was demonstrated. We could not find any material from either host species at the MFNB, although large parts of Eichler's collections are in severe disorder, with no labels, some slides without cover slips, and with labels containing only numerical references to a presumed notebook that is now lost (J. Deckert, pers. comm.). If Eichler had any material of this species, it must now be regarded as lost.

Touleshkov (1974: 210) is the first person after Eichler who supposedly had material of *Brueelia* from *Muscicapa* spp., listing a single female from Bulgaria under the name "*Brueelia seta* Eichler". However, Ilieva (2009: 47) considered it a *species inquirenda*. Touleshkov never described his material, which belongs to *Guimaraesiella* (identification based on photos kindly provided by M. Ilieva), and consequently "*Brueelia seta* Eichler" is still a *nomen nudum*. We include it here for completeness and noting that, if a species of the *Brueelia*–complex is found from *Muscicapa striata* or *Ficedula hypoleuca*, the describer is under no obligation to use the name "*Br. seta* Eichler", as that name has no nomenclatorial existence.

Discussion

It is our hope that, with this revision, the *Brueelia*-complex has become less complex. The classification proposed here is based on morphology, with shared features of the head, male and female genitalia, and chaetotaxy governing the proposed taxonomic framework. Several genera are quite variable, and some contain discrete, morphologically recognizable subgroups that may ultimately be elevated to higher taxonomic levels. Despite this variation, none of the generic concepts proposed here grade into each other. The genera of the *Brueelia*-complex are all clearly separated, and are diagnosable with several distinct sets of characters.

The taxonomic framework proposed here is largely supported by the molecular phylogenetic reconstruction of Bush *et al.* (2015, 2016), which included sequences from 333 specimens of the *Brueelia*-complex. The phylogeny of Bush *et al*. (2016) included 22 of the genera included in this revision, 37 described species and 50 or more undescribed species (based on OTU analyses). Despite the large scope of this study, less than half of the genera and less than a quarter of the species recognised here as members of the *Brueelia*-complex were represented in that phylogeny. Drawing from the available molecular data and the larger pool of morphological data (available for all species), we note several emergent patterns regarding the relationships of lice within the complex, the relationships of lice with their hosts, and their geographical distributions. We summarise these patterns below.

Host specificity in the *Brueelia*-complex. As is typical with chewing lice (Clayton *et al*. 2016), lice of the *Brueelia*-complex are fairly host specific. Some genera (e.g. *Buerelius*, *Buphagoecus*, *Corvonirmus* and *Couala*) are limited to species of a single host genus. Several genera are limited to members of a single host families (e.g. *Acronirmus*, *Mirandofures*), or groups of hosts in closely related families (e.g. *Priceiella*, *Olivinirmus*). Based on the morphological revision, the 426 species of lice currently placed in the *Brueelia*-complex are found on 498 host species; i.e. each louse species parasitises 1.2 host species on average (Appendix II). This estimate of host specificity is remarkably similar to estimates of host specificity of the *Brueelia*-complex in Bush *et al.* (2016) that used molecular species delineation methods (5%OTU and bGMYC) and determined that "species" of lice in this complex infested 1.35–1.53 host species, on average.

In contrast, several louse genera are widely distributed across large numbers of host families. Both *Brueelia* s. str. and *Sturnidoecus* occur on species of more than ten host families each (Appendix II), but the genus *Guimaraesiella* covers the greatest range of hosts within the complex. This genus has been recorded from a total of 23 host families in two orders (Appendix II). Undescribed material in the phylogeny of Bush *et al*. (2016) indicates that species of *Guimaraesiella* also occur on another 30 host families that had been previously unrecorded. Moreover, we examined undescribed slide-mounted specimens from an additional 13 host families (unpub. data). In summary, approximately half of all songbird families (Passeriformes), as well as trogons (Trogoniformes) are parasitised by species of *Guimaraesiella*. At the generic level, this broad host distribution is unprecedented among ischnoceran lice.

If we examine the specificity of lice from the perspective of the host, we note that there are several host families parasitised by only a single genus of the *Brueelia*-complex. For instance, members of Hirundinidae are only parasitised by species of *Acronirmus*, and those of Motacillidae are only parasitised by species of *Brueelia* s. str. In contrast, several host families are parasitised by more than one genus of lice of the Brueelia-complex (e.g. Sylviidae, Pycnonotidae, Sturnidae). This is perhaps most evident among the Turdidae, which host species of *Brueelia* s. str., *Guimaraesiella*, *Turdinirmus* and *Sturnidoecus*, and among the Corvidae, which hosts species of *Brueelia* s. str., *Olivinirmus*, *Corvonirmus, Hecatrishula* and *Priceiella* (*Thescelovora*).

Geographic and host distribution. Lice of the *Brueelia*-complex appear to live anywhere their hosts occur (Appendix III). Collectively, they occur almost globally, from Tasmania and New Zealand in the south (e.g. *Tu. australissimus*, *Melibrueelia*) to the islands of the Arctic Ocean (Haarløv 1977), being only absent in Antarctica. Lice in this complex even occur on remote islands where suitable hosts live, such as the Falkland Islands, Hawaiian Islands, Inaccessible Island, and the Galápagos Islands.

Apart from odd natural stragglers, lice of the *Brueelia*-complex occur on five avian orders: Coraciiformes, Cuculiformes, Passeriformes, Piciformes, and Trogoniformes. However, with over 5000 species worldwide, songbirds (Passeriformes) is by far the largest order of birds parasitised by species of the *Brueelia*-complex. To date, we recognise lice of the *Brueelia*-complex associated with 360 species of songbirds (Appendix II), which is less than 10% of the potential hosts in this host order, and mainly due to lack of sampling. Although it is possible that not all songbirds are infested with lice of this complex, it is highly likely that hundreds, if not thousands, of species of the *Brueelia*-complex still remain undiscovered. Thus, lice of the *Brueelia*-complex may well constitute the majority of ischnoceran diversity.

There are a few cases where host-switching or dispersal among different host taxa seem to be the most likely explanations for the current distribution of groups within the *Brueelia*-complex (see below). Lice in this complex are known to be phoretic, i.e. they hitch rides on more mobile and less host-specific ectoparasites, such as hippoboscid flies (Keirans 1975; Bush *et al*. 2016). This mean of dispersal implies that lice may transfer to host species different from their original host. This phenomenon also occurs among other genera of avian Ischnocera (Harbison *et al*. 2009; Clayton *et al*. 2016). Lice may also transfer between different host species that serially use the same nest holes (Clayton 1990), or among hosts in foraging flocks of mixed-species (Chen & Hsieh 2002; Kotagama & Goodall 2004; Thomson & Ferguson 2007). Notably, these mixed foraging flocks often contain suboscine or non-passeriform bird species which are also known to harbour lice of the *Brueelia*-complex, such as woodpeckers, trogons, and broadbills.

Oscines. Passeriformes are thought to have originated in Gondwana during the late Cretaceous (Ericson *et al*. 2002, Cracraft & Barker 2009), and much of the early radiation of oscine songbirds is thought to have occurred in the Australasian region (Ericson *et al*. 2002; Barker *et al*. 2004; Jønsson *et al.* 2008, 2016; Aggerbeck *et al.* 2014). One of the earliest branches of this radiation is a clade of New Zealand wrens (Acanthisittidae), which diverged from the rest of the Passeriformes as New Zealand broke from Gondwana around 82 mya (Barker *et al*. 2002, 2004; Beresford *et al*. 2005; Cracraft & Barker 2009). No lice of the *Brueelia*-complex are known from New Zealand wrens yet.

The rest of the Passeriformes are divided into two major lineages: the oscines and the suboscines, both of which are infested with lice of the *Brueelia*-complex. Lice of this complex occur on all major radiations of oscine songbirds, and louse species are known from all the oscine family clades or higher level denoted in the phylogeny of Barker *et al.* (2004) (Appendix II, and unpub. data), except two very small families, the Picathartidae and the Orthonychidae. The apparent absence of *Brueelia*-complex lice from these families may be a consequence of lack of sampling.

The oscines are divided into two major clades: the Passerida and the Corvoidea, with some taxa falling outside these monophyletic clades. The Passerida, including the most diverse radiations of Passeriformes (Clements *et al*. 2015), is thought to have dispersed from Australasia to Eurasia and Africa about 40–45 mya (Barker *et al*. 2004; Jønsson & Fjeldså 2006), with several subsequent dispersal events to the New World (Barker *et al*. 2004; Fuchs *et al.* 2006; Jønsson & Fjeldså 2006), and with occasional dispersal events back to Australasia. The Corvides (sensu Jønsson *et al*. 2016) are thought to have radiated in the Australasian region and spread from there into Asia approximately 40 mya, and then subsequently into the rest of the world (Ericson *et al*. 2002; Jønsson & Fjeldså 2006). The majority of the diversity within this clade is limited to the Australasian region even today (Clements *et al.* 2015).

The geographic distribution of *Brueelia* s. str. largely mirrors the current and historical biogeography of the Passerida. Most species of *Brueelia* s. str. (including undescribed material) occur in the Holarctic and Afrotropical regions, where the Passerida are also abundant and diverse. Moreover, species of *Brueelia* s. str. are widely distributed across all of the major radiations within this clade (e.g. Sylvoidea, Muscicapoidea, Passeroidea; see Johansson *et al*. 2008). Outside the Holarctic, species of *Brueelia* s. str. also occur mainly on Passerida hosts, with only a few exceptions on the Corvides, but almost all exceptions are from host families that are also widely distributed in the Holarctic (Corvidae, Laniidae) (Appendix II). By contrast, lice of *Brueelia* s. str. are unknown from most exclusively tropical host families that are placed outside the Passerida (e.g. Campephagidae, Malaconotidae, Monarchidae, Pachycephalidae). The Passerida have dispersed from the Old World to the New World several times (Barker *et al.* 2004). Enigmatically, the New World taxa of *Brueelia* s. str. do not form a monophyletic clade within the phylogenetic reconstruction of Bush *et al*. (2016), but the basal nodes within this clade are not supported. More data are needed to determine whether this distribution of *Brueelia* s. str. is a consequence of a single or multiple dispersal events to the New World.

In contrast to species of *Brueelia* s. str., those of *Guimaraesiella* are much more widely distributed. This genus occurs on members of both Passerida and Corvides, as well as most of the smaller oscine clades that do not belong to either of these radiations (e.g. Meliphagoidea sensu Gardner *et al.* 2010). However, *Guimaraesiella* is morphologically less variable on hosts of the Passerida than on other oscine hosts. On Passerida, *Guimaraesiella* can be divided into three major morphological groups, with the group found primarily on thrushes (Turdidae) being, by far, the most common. Many of the *Guimaraesiella* species found on Passerida occur on hosts of the Australasian or Indo-Malayan regions, which are close to the presumed origin of Passerida. However, outside these regions, *Guimaraesiella* species collected from Passerida are typically genetically similar to lice collected from Corvides (Bush *et al.* 2016). This pattern suggests that the host distribution of *Guimaraesiella* on Passerida is due, at least in part, to recent host switching events from Corvides hosts. On oscine hosts outside Passerida, *Guimaraesiella* species are divided into over a dozen different morphological groups, many of which are limited to a single host family or a single geographical area, bur several of them are still undescribed (unpub. data). In summary, the gross distribution and morphological variation of *Guimaraesiella* approximately corresponds with an origin within Passeriformes but outside Passerida. It seems likely that *Guimaraesiella* originated on Corvides, but its wide distribution within and outside Corvides makes it difficult to accurately unveil the evolutionary history of the genus.

Species of the four genera of head lice found on songbirds within the *Brueelia*-complex exhibit a strikingly different pattern from that of either *Brueelia* s. str. or *Guimaraeisella*. Morphologically, all four of these genera (*Buphagoecus*, *Rostrinirmus*, *Schizosairhynchus* and *Sturnidoecus*) belong to a group of genera with medianly folded parameral heads. These four genera are not each other's closest relatives; however, they all appear within a much larger monophyletic group that predominantly parasitises Corvides (Bush *et al.* 2016: fig. 2, clade A–H). Intriguingly, all four genera of head lice occur exclusively or predominantly on hosts in the Passerida. In each of these cases, the evolution of the head louse ecomorph may be the result of a host-switch from Corvides to Passerida that was followed by the adaptation of lice to a novel microhabitat on the novel host species. Notably, many of the host families where species of these four louse genera occur are not parasitised by members of the *Philopterus*-complex, the more common group of head lice found on passeriforms. Head lice have evolved repeatedly among avian Ischnocera (Johnson *et al.* 2012). In experimental host-switches conducted with a different group of avian lice (*Columbicola* Ewing, 1929, from pigeons and doves), some lice transferred to novel hosts shifted to their heads, an area protected from preening, which is the main defense behaviour perform by birds against lice (Bush 2009). Host distribution patterns observed within the *Brueelia*-complex suggest that host-switches and subsequent adaptations to novel hosts may have been a major factor driving the evolution of head louse ecomorphs across Phthiraptera.

Suboscines. Suboscines are generally parasitised by lice of the *Degeeriella*- or *Rallicola*-complexes (Carriker 1956a,b; Somadder & Tandan 1977; Price & Clayton 1993, 1994), as well as the genera *Furnariphilus*, *Formicaphagus* and *Formicaricola* (Price & Clayton 1995a,b, 1997), which are considered closely related to the *Brueelia*-complex as defined here (e.g. Mey & Barker 2014). This placement is also supported by molecular data (Bush *et al.* 2016). Suboscines are also parasitised by lice of the *Brueelia*-complex (species of *Brueelia* s. str., *Guimaraesiella* or *Psammonirmus*) but their distribution among these hosts is patchy. Species of *Brueelia* s. str. that live on these hosts are morphologically typical for the genus, and occur disjunctly on hosts of the families Tyrannidae and Furnariidae, but not from any other suboscine family (Appendix II). This pattern suggests that the species of *Brueelia* s. str. from suboscine hosts are the result of multiple, relatively recent, switches from oscines to suboscines.

Species of *Guimaraesiella* also appear to have repeatedly colonized the suboscines. In the New World, a few species of this genus are known from the Tyrannidae (Appendix II), but none are known from any other suboscine hosts. Species of *Guimaraesiella* from the Tyrannidae are morphologically typical for the genus, suggesting that these host-louse associations are the result of a recent host switch from oscine to suboscine songbirds. Another host switch may have occurred in the Old World among *Guimaraesiella* from oscines to ancestors of the suboscine families Calyptomenidae and Eurylaimidae (unpub. data), two host families that are closely related within the Eurylaimides (Moyle *et al.* 2006). Species of *Guimaraesiella* from these suboscine hosts were nested deeply within the *Guimaraesiella* clade (Bush *et al.* 2016: fig. 3a, clade A-1). However, these lice are morphologically distinct, despite being nested within a clade of morphologically similar lice. Similar to head lice of the *Brueelia*-complex that appear to have changed body form following a host switch, the switch from oscine to suboscine hosts also appears to have lead to another unique form. More research is needed to test whether and how the morphology of this group of lice is an adaptation to novel host associations.

The third genus of the *Brueelia*-complex that occurs on suboscines, *Psammonirmus*, is morphologically different from all other genera in the complex, and may be an older colonization on the Eurylaimidae, perhaps predating the divergence between the oscines and the suboscines (approx. 71 Myr ago; Ericson *et al.* 2002). This conclusion is based solely on morphology, as no representative of *Psammonirmus* was included in the phylogeny of Bush *et al.* (2016).

Non-passerine hosts. Species of at least 10 genera included in the *Brueelia*-complex naturally occur on non-passerine hosts (Appendix II). Among them, five genera (*Buerelius*, *Couala, Meropsiella*, *Meropoecus* and *Motmotnirmus*) were supported as the sister group to the rest of the core *Brueelia*-complex in the phylogeny of Bush *et al.* (2016: fig. 3f, clade O). Another genus, *Aporisticeras*, which was not sequenced, appears to be most closely related to *Meropsiella*, *Meropoecus* or *Motmotnirmus* based on morphology. The hosts of all species of these genera are closely related to passeriforms (Hackett *et al*. 2008). The sister-group relationship between Bush *et al*'s (2016) "clade O" and the rest of the *Brueelia*-complex suggests that either this is the result of a much older host-switch from passeriform to non-passeriform hosts with considerable subsequent diversification, or that the genera of "clade O" (possibly including *Aporisticeras*) are a relict diversification on this host group (clade D in the phylogeny of Hackett *et al*. 2008: fig. 2). Available data are not sufficient to establish which of these scenarios is most likely. However, several sister clades outside the core *Brueelia*-complex occur on members of the Psittaciformes (e.g. *Echinophilopterus* Ewing, 1927, *Forficuloecus*, *Neopsittaconirmus*, *Paragoniocotes, Psittaconirmus*, *Psittoecus* and *Theresiella*), which has been suggested as the sister-group of Passeriformes (e.g. Hackett *et al*. 2008; McCormack *et al*. 2013).

Three other genera (*Brueelia* s. str., *Guimaraesiella* and *Traihoriella*) that contain species occurring on non-passeriform hosts were nested within the core of the *Brueelia*-complex based on molecular data (Bush *et al*. 2016). Species of *Brueelia* s. str. on woodpeckers are morphologically typical for the genus and were nested inside it (Bush *et al*. 2016: fig. 3e, clade I-1). Species of *Guimaraesiella* on trogons are morphologically distinct from other *Guimaraesiella*, but were nested inside the genus in the Bush *et al*. (2016: fig. 3b, clade A-3) phylogeny. This suggests that the occurrence of lice of the *Brueelia*-complex on these hosts is the result of host switches from passeriform to non-passeriform hosts that have occurred only after the radiation of the genera in the core *Brueelia*-complex. No molecular data was available for species of the genus *Harpactrox* found on Trogoniformes, but this genus appears to be morphologically most closely related to *Saepocephalum* or *Traihoriella*.

Nearly all of the non-passeriform hosts of lice of the *Brueelia*-complex are from orders that are considered to be relatively closely related to the Passeriformes (e.g. Hackett *et al*. 2008: fig. 2, clade F). However, the *Brueelia*-complex is not evenly distributed across these related non-passeriform orders. Lice of the *Brueelia*-complex occur on some, but not all, families of both Coraciiformes and Piciformes (Appendix II; see Johansson & Ericson 2003; Hackett *et al*. 2008), suggesting that at least three host switches from passeriform to non-passeriform hosts are necessary to explain this pattern. In addition, some lice of the *Brueelia*-complex occur on Cuculiformes, which is a much more distantly related avian order.

Conclusions

From the phylogenetic data in Bush *et al*. (2016) and the morphological data presented here, it is now possible to sketch outlines of an evolutionary history of the *Brueelia*-complex. The complex appears to have originated on ancestral passeriforms, possibly after the split between the oscines and the suboscines, and the two major radiations (clades A–H and I–K in the phylogeny of Bush *et al*. 2016) may have originated on Australasian Corvides and Holarctic Passerida, respectively. However, host switching appears to be frequent even among major host clades: between Passerida and Corvides, between oscine and suboscine songbirds, and even between passeriforms and non-passeriforms. Some of these host switches have subsequently resulted in extensive radiations (e.g. "clade O" in Bush *et al*. 2016).

Moreover, both the radiations here proposed one originated on Passerida and another possibly on Corvides have extended their ranges to cover virtually all parts of the globe. The patterns of geographical distribution revealed by Bush *et al*. (2016) are often complex, with closely related species occuring in very different parts of the world. In other cases, geography appears to override host relatedness, as distantly related hosts occurring in the same region share the same, or closely related, species of lice of the *Brueelia*-complex. Interestingly, this echoes the interplay between geography and host relatedness for structuring the phylogeny of lice seen in two other groups of lice from songbirds, the *Philopterus*-complex (see Mey 2004) and the amblyceran genus *Menacanthus* (see Martinů *et al*. 2015). A concerted effort to study the evolution of these groups would have great potential to reveal common patterns and important differences in the large-scale evolutionary history of avian lice. More detailed studies, both morphological and genetic of the *Brueelia*-complex and its close relatives may form an important scaffold for such comparisons, following the available phylogeny of Bush *et al*. (2016) and this morphological revision as a basis.

The extensive interplay of biogeography and host relationships in the establishment and structuring of louse populations and their relationships will undoubtedly make untangling the evolutionary history of the *Brueelia*-complex a difficult task. This problem is exacerbated by the partial nature of available data. An accurate assessment of the phylogeography of this group requires a more extensive examination of *Brueelia*-complex lice from understudied and undersampled host taxa, especially from key, understudied geographical areas. In particular, lice from the Australasian and Afrotropical regions are poorly known, as are the lice from the oscine hosts outside the Passerida and Corvides. Uncovering the morphology and relationships of lice from those regions and hosts will undoubtedly be instrumental in understanding host-switching, co-radiation events, and other factors that have shaped the evolutionary history of the *Brueelia*-complex.

Key to genera and subgenera included in the *Brueelia*-complex

1. Clypeo-labral suture does not reach frons (Fig. 116); ventral anterior plate, if present, fused to marginal carina (Fig. 240) . . . 2
- Clypeo-labral suture reaches frons; ventral anterior plate, if present, separate from marginal carina 4
2. Dorsal preantennal suture medianly continuous, separating dorsal anterior plate posteriorly (Fig. 248); antennae not sexually dimorphic (Fig. 248); accessory preantennal nodi present (Fig. 248); tergopleurites reach ventral side (Figs 246–247); no *mts* macrosetae (Fig. 248), but *mts3* may be mesosetae (Fig. 255); no cross-piece at vulval margin (Fig. 252) . . . . *Harpactrox*
- Dorsal preantennal suture absent (Fig. 116) or if present limited to site of *ads* (Fig. 240), dorsal anterior plate not separated; antennae sexually dimorphic (Figs 116–117, 240–241); no accessory preantennal nodi (Figs 116, 240); tergopleurites do not reach ventral side (Figs 114–115, 238–239); *mts3* macrosetae (Figs 116, 240); cross-piece present (Figs 121, 245) 3
3. Ventral carinae with finger-like median extensions (Fig. 116); male flagellomeres much swollen compared to female flagellomeres (Figs 116–117); tergopleurites much reduced (Figs 114–115); parameral heads without median folds (Fig. 120); distal mesosome densely rugose (Fig. 119); cross-piece medianly displaced but lateral sections not separate from subgenital plate (Fig. 121) . . . . *Anarchonirmus*
- Ventral carinae without finger-like median extensions (Fig. 240); male flagellomeres not swollen (Figs 240–241); tergopleurites entire (but do not reach lateral margins of abdomen) (Figs 238–239); parameral heads with median folds (Fig. 244); distal mesosome without rugose area (Fig. 243); female subgenital plate reaches vulval margin medianly but lateral sections separated from subgenital plate (Fig. 245). . . . . *Saepocephalum*
4. Hyaline margin extends posteriorly for most of preantennal area (Figs 494, 499); dorsal postantennal suture present (Figs 494, 499); male genitalia of unique shape (Figs 495, 500). . . . . *Meropoecus*
- Hyaline margin, if present, does not reach posterior of *as1*; dorsal post-antennal suture absent; male genitalia not shaped as in Figs 494, 499. 5
5. All *mts* except *mts3* microsetae. 6
- At least one *mts* other than *mts3* modified 40
6. *ppss* absent (Figs 479–480); posterior margin of head with slight bulge median to *mts3* (Fig. 481) . . . . *Meropsiella*
- *ppss* present; no such bulge on posterior margin of head 7
7. *ppss* medio-posterior (Figs 463–464, 470–471); posterior margin of pteronotum with median indentation (Figs 463–464, 470–471); sternal plate II much different from other sternal plates, modified to wide band almost reaching ventral tergopleurites(Figs 463–464, 470–471); accessory sternal plates on at least abdominal segments IV–VI (Figs 463–464, 470–471); dorsal anterior plate with posterior “horn” that overlaps with main head plate (Figs 465, 472). . . . . *Schizosairhynchus*
- *ppss* on latero-posterior corner; no median indentation of posterior margin of pteronotum; sternal plate II not modified as above, or if wide (Fig. 277) not different in shape from more posterior sternal plates; no accessory sternal plates on abdominal segments IV–VI; dorsal anterior plate, if present, without such “horn” 8
8. Prentannal area asymmetrical (Figs 454, 460) 9
- Preantennal area symmetrical 10
9. Ventral anterior plate present (Fig. 477); sternal plates present on all abdominal segments (Fig. 477); mesosome longer than wide (Fig. 478) . . . . *Bizarrifrons*
- Ventral anterior plate absent (Figs 453, 459): sternal plates absent on at least abdominal segments II–III (Figs 451–452, 457–458); mesosome wider than long (Figs 455, 461). . . . . *Manucodicola*
10. At least 1 seta apart from *ss* and *ps* on each side of tergopleurite II. 11
- No setae on tergopleurite II, or *ss* and *ps* only setae on tergopleurite II. 15
11. Dorsal preantennal suture absent (Figs 132, 140); mesosome with wide lateral extensions overlapping with parameres ventrally (Figs 134–135, 142–143) . . . . *Hecatrishula*
- Dorsal preantennal suture present; mesosome without such lateral extensions 12
12. Dorsal preantennal suture completely separates dorsal anterior plate posteriorly (Figs 379, 439); antennae not sexually dimorphic (Figs 379, 439); female subgenital plate reaches or approaches vulval margin (Figs 383, 440) 13
- Dorsal anterior plate continuous with main head plate (Figs 124, 340); antennae sexually dimorphic (Figs 124–125, 340–341); female subgenital plate does not approach vulval margin (Figs 129, 345). 14
13. Dorsal preantennal suture with postero-lateral extensions at *ads* (Fig. 379); *pns* absent (Fig. 379); dorsal anterior plate with roughly rectangular posterior end (Fig. 379); steal rows present on at least some tergopleurites (Figs 377–378); gonopore terminal (Fig. 381). . . . . *Sturnidoecus*
- Dorsal preantennal suture without such extensions (Fig. 439); *pns* present (Fig. 439); dorsal anterior plate with rounded posterior end (Fig. 439); no setal rows on any tergopleurite (Figs 437–438); gonopore ventral (Figs 442, 446, 449) . . . . *Rostrinirmus*

14. Accessory sternal setae on at least some abdominal segments in both sexes (Figs 338–339, 346–347); ventral anterior plate present (Figs 340, 348); *s3* microsetae (Figs 340, 348); parameral heads not swollen, not bifid, and with median or ventral fold (Figs 344, 352–353); female subgenital plate triangular, with median indentation of posterior margin (Figs 345, 353) .... *Nemuus*

- No accessory sternal setae on any abdominal segment (Figs 122–123); ventral anterior plate absent (Fig. 124); *s3* mesosetae (Fig. 124); parameral heads swollen, bifid, but not folded medianly or ventrally (Fig. 128); female subgenital plate oval, without median indentation of posterior margin (Fig. 129) .... *Osculonirmus*

15. Pterothorax with more or less parallel lateral margins (Figs 168–169); at least sternal plate II with antero-lateral thickening (Figs 168–169); male abdominal segment XI extended into triangular tail (Fig. 168) .... *Aratricerca*

- Pterothorax with lateral margins divergent; no antero-lateral thickening on any sternal plate; male abdominal segment XI not forming triangular tail (but may protrude as in *Priceiella sternotypica* (Fig. 277) 16

16. Dorsal preantennal suture diagonal on each side, forming unique pattern (Fig, 509); sclerotized roof of head forming anterior angle (Fig. 509) .... *Buerelius*

- Dorsal preantennal suture absent or not shaped as in Fig. 509; sclerotized head plate not forming anterior angle 17

17. Female subgenital plate detached from cross-piece 18

- Female subgenital plate without cross-piece or if with cross-piece this is continuous with subgenital plate 19

18. Dorsal preantennal suture absent (Fig. 108); male with setal rows of tergopleurites IV–VIII (Fig. 106); female without *psps* on all tergopleurites (Fig. 107); parameres slender, extended distally (Fig. 112) .... *Sychraella*

- Dorsal preantennal suture present (Fig. 177); male without setal rows on all tergopleurites (Fig.175); female with *psps* on at least some tergopleurites (Fig. 176); parameres short, not extended distally (Fig. 180) .... *Turdinirmoides*

19. Dorsal preantennal suture transversally continuous, but not connected to hyaline margin (Figs 92, 100) .... *Mirandofures*

- Dorsal preantennal suture absent, not transversally continuous, or if transversally continuous also connected to hyaline margin 20

20. Dorsal preantennal suture absent.......... 21

- Dorsal preantennal suture present 22

21. Tergopleurites much reduced, not or barely reaching lateral margins of abdomen, but never ventral side of absomen (Figs 319–320); male genitalia roughly as in Figs 323–325; *as3* absent (Fig. 321) .... *Corvonirmus*

- Tergopleurites not reduced as in Figs 319–320, extending to ventral side of abdomen (Figs 524–525); male genitalia of unique structure (Figs 527–530); *as3* present (Fig. 526) .... *Aporisticeras*

22. Female tergopleurite IX+X fused with tergopleurite XI 23

- Female tergopleurites IX+X and XI not fused 28

23. Dorsal preantennal suture completely separates dorsal anterior plate (Fig. 148) 24

- Dorsal anterior plate medianly continuous with main head plate (Fig. 226) 25

24. Ventral anterior plate present; *pns* present; antennae sexually dimorphic; mesosome without lateral extensions; females with *ss* on tergopleurites II–VIII .... *Melibrueelia*

- Ventral anterior plate absent (Fig. 148); antennae not sexually dimorphic (Figs 146–147); mesosome with lateral extensions overlapping with parameres (Figs 149–150); females without *ss* on all tergopleurites (Fig. 147) .... *Psammonirmus*

25. *pos* present (Fig. 226), but may be ventral (Fig. 184); female subgenital plate without lateral extensions (Figs 230, 188) 26

- *pos* absent (Fig. 155); female subgenital plate with lateral extensions (Figs 160, 167) 27

26. Temples angular (Figs 184, 191); *pns* microsetae (Figs 184, 191) .... *Turdinirmus*

- Temples rounded (Figs 226, 233); *pns* mesosetae (Figs 226, 233) .... *Indoceoplanetes* (*Capnodella*)

27. Antennae not sexually dimorphic (Figs 161–162); male tergopleurites II–VI with *ss* (Fig. 161); distal mesosome without large, brush-like extensions (Fig. 165); ventral anterior plate absent (Fig. 163) .... *Resartor*

- Antennae sexually dimorphic (Figs 155–156); male tergopleurites II–VI without *ss* (Fig. 153); distal mesosome with large, brush-like extensions (Fig. 158); ventral anterior plate present (Fig. 155) .... *Ceratocista*

28. Multiple *sts* on each side on at least sternal plate VI (multiple *sts* may also be present on more anterior segments) 29

- Each sternal plate with at most 1 *sts* on each side.......... 30

29. Dorsal preantennal suture present (Fig. 198); ventral anterior plate present (Fig. 198); *pns* sensilla or microsetae (Fig. 198) .... *Maculinirmus*

- Dorsal preantennal suture absent (Fig. 219); ventral anterior plate absent (Fig. 219); *pns* mesosetae (Fig. 219) .... *Indoceoplanetes* (*Indoceoplanetes*)

30. Parameral heads folded medianly or with finger-like median extensions; *tps* absent on male tergopleurites V–VIII; *psps* present on female tergopleurite IV 31

- Parameral heads bifid or blunt, not folded medianly, and without finger-like median extensions; *tps* present on at least some of male tergopleurites V–VIII; *psps* absent on female tergopleurite IV 38

31. Dorsal preantennal suture with postero-lateral extensions posterior to *ads* (Fig. 429); male subgenital plate not reaching distal end of abdomen (Fig. 427); tergopleurites of both sexes without ventral section on all abdominal segments (Fig. 427); *pns* absent (Fig. 429) .... *Buphagoecus*

- Dorsal preantennal suture absent, or if present without postero-lateral extensions posterior to *ads*; male subgenital plate reaches distal end of abdomen; tergopleurites of both sexes with ventral sections at least on abdominal segments II–VI; *pns* present 32

32. Dorsal preantennal suture present, interrupting marginal carina at least submedianly (Figs 362–364), or, if not interrupting marginal carina submedianly (as in *Gu. cicchinoi*) with neither *ads* nor *dsms* situated in suture (Fig. 361) .... *Guimaraesiella*

- Dorsal preantennal suture absent, or if present not interrupting marginal carina and with either *ads*, *dsms* or both situated in suture 33

33. Female subgenital plate does not cross-piece at vulval margin (Figs 269, 333) 34

- Female subgenital plate forms cross-piece at vulval margin (Fig. 284) 35

34. Mesosomal lobes wide and of complicated structure (Figs 334–337), fused distal to ventral gonopore; ventral sections of tergopleurites slender, may be absent on abdominal segments VII–VIII (Figs 327–328) . . . . *Olivinirmus*

- Mesosomal lobes slight, without ridges, thickenings, nodi, or rugose areas, not fused distal to terminal gonopore (Figs 267, 274); ventral sections of tergopleurites wide, present on segments II–VIII (Figs263–264, 270–271) . . . . *Traihoriella*

35. Sternal plates and antero-lateral section of subgenital plates of both sexes with distinct modifications (Figs 277–278); accessory sternal plate present lateral to male subgenital plate (Fig. 277); proximal mesosome very slender (Fig. 282); distal mesosome small, roughly triangular (Fig. 282) . . . . *Priceiella* (*Priceiella*)

- Sternal plates and subgenital plate without modifications; no accessory sternal plates lateral to male subgenital plate; proximal mesosome wide; distal mesosome wide, of varying shapes (Figs 289, 304, 312) 36

36. Dorsal preantennal suture, if present, arising around *dsms* and may continue posteriorly to *ads* (Fig. 302); male tergopleurites IV–VI without *aps* (Fig. 300); parameres parallel distally (Fig. 303) . . . . *Priceiella* (*Thescelovora*)

- Male tergopleurites IV–VI with *aps* (Figs 277, 305); dorsal preantennal suture, if present, restricted to around *ads* (Fig. 279); parameres divergent distally (Figs 290, 313) 37

37. Male tergopleurite III with *aps* (Fig. 307); proximal mesosome does not overlap with basal apodeme (Fig. 311) . . . . *Priceiella* (*Torosinirmus*)

- Male tergopleurite III without *aps* (Figs 285, 292); proximal mesosome overlaps with basal apodeme (Figs 288, 296) . . . . *Priceiella* (*Camurnirmus*)

38. Female subgenital plate with at least partial cross-piece but without reticulation (Figs 48, 89); *s4* absent (Figs 44, 85); *ps* absent on female abdominal segment II (43, 84) 39

- Female subgenital plate without cross-piece, but with reticulation (Fig. 82); *s4* present (Fig. 77); *ps* present on female abdominal segment II (Fig. 76) . . . . *Teinomordeus*

39. Female subgenital plate with complete cross-piece (Fig. 48); *as2, pos*, and *mts1* present (Fig. 44) . . . . *Brueelia* s. str.

- Female subgenital plate with partial cross-piece (Fig. 89); *as2, pos*, and *mts1* absent (Fig. 85) . . . . *Acronirmus*

40. *mts2* modified (Figs 504, 514); *mts4–5* microsetae (Figs 504, 514); female tergopleurite IX+X not fused with tergopleurite XI (Figs 503, 513); gonopore close proximally (Figs 506, 516) 41

- *mts2* not modified (Fig. 512); *mts4–5* mesosetae in male and *mts4* mesosetae in female (Figs 210–211); female tergopleurite IX+X fused with tergopleurite XI (Fig. 211); gonopore open proximally (Fig. 214) . . . . *Titanomessor*

41. Dorsal preantennal suture present (Fig. 504); temples rounded (Fig. 504); antennal canals absent (Fig. 504); sternal plates II–VI absent (Figs 502–502); *psps* present on tergopleurites III–V in both sexes (Figs 502–503); parameres not fused to mesosome (Figs 505–506); female tergopleurite VIII with setal row (Fig. 503) . . . . *Motmotnirmus*

- Dorsal preantennal suture absent (Figs 514, 520); temples angular (Figs 514, 520), antennal canals present (Figs 514, 520); sternal plates II–VI present (Figs 512–513, 518–519); *psps* absent on tergopleurites III–V in both sexes (Figs 512–513, 518–519); parameres fused to mesosome (Figs 516, 522); female tergopleurite VIII without setal row (Figs 513, 519) . . . . *Couala*

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APPENDIX I

Checklist of louse species in the *Brueelia*-complex with host associations

This checklist is ordered alphabetically by louse genus and species names. New nomenclatorial acts are indicated in **boldface**, as established in the main text. Names of associated hosts are indented below each louse taxon. Host-louse records without a reference have been taken from Price *et al*. (2003), unless stated otherwise. Host nomenclature follows Clements *et al*. (2015). Names of host species and subspecies are followed by author and date, plus order and family within square brackets [ ] abbreviated by the omission of "-iformes" in the orders, and of "-idae" in the families.

The question mark in "?host" indicates that we believe the name of the host given by the author of the louse taxon cannot be identified as any host listed by Clements *et al.* (2015). The word "straggler?" indicates that, while the host name is valid, we believe that (1) the host was misidentified, or (2) the lice were found on the host as a result of a contamination by human agency, or (3) the lice were found on the host as the result of naturally occurring straggling events.

PHTHIRAPTERA Haeckel, 1896

Ischnocera Kellogg, 1896

Philopteridae Burmeister, 1838

***Acronirmus* Eichler, 1953**
Acronirmus albiventris (Carriker, 1963) **new combination**
Tachycineta albiventer (Boddaert, 1783) [Passer.: Hirundin.]
Acronirmus crusculus (Carriker, 1963) **new combination**
Tachycineta albilineata (Lawrence, 1783) [Passer.: Hirundin.]
Acronirmus gracilis (Burmeister, 1838)
Cecropsis abyssinica puella (Temminck & Schlegel, 1845) **new host record** [Passer.: Hirundin.]
Cecropsis abyssinica unitatis (Sclater & Mackworth-Praed, 1942) **new host record** [Passer.: Hirundin.]
Cecropsis badia Cassin, 1853, **new host record** [Passer.: Hirundin.]
Cecropsis daurica erythropygia (Sykes, 1832) **new host record** [Passer.: Hirundin.]
Cecropis daurica japonica (Temminck & Schlegel, 1845) **new host record** [Passer.: Hirundin.]
Cecropis daurica rufula (Temminck, 1835) **new host record** [Passer.: Hirundin.]
Cecropsis senegalensis saturatior (Bannerman, 1923) **new host record** [Passer.: Hirundin.]
Delichon dasypus cashmirense (Gould, 1858) **new host record** [Passer.: Hirundin.]
Delichon dasypus dasypus (Bonaparte, 1850) **new host record** [Passer.: Hirundin.]
Delichon urbicum urbicum (Linnaeus, 1758) [Passer.: Hirundin.]
Hirundo aethiopica amadoni White, 1956, **new host record** [Passer.: Hirundin.]
Hirundo angolensis Bogace, 1868, **new host record** [Passer.: Hirundin.]
Hirundo rupestris (Scopoli, 1769) [Ref.: Blagoveshtchensky 1951] **new host record** [Passer.: Hirundin.]
Hirundo rustica erythrogaster (Boddaert, 1783) **new host record** [Passer.: Hirundin.]
Hirundo rustica rustica Linnaeus, 1758, **new host record** [Passer.: Hirundin.]
Hirundo rustica savignyii Stephens, 1817, **new host record** [Passer.: Hirundin.]
Hirundo rustica tytleri Jerdon, 1864, **new host record** [Passer.: Hirundin.]
Hirundo tahitica javanica Sparrmann, 1789, **new host record** [Passer.: Hirundin.]
Riparia diluta indica Ticehurst, 1916, **new host record** [Passer.: Hirundin.]
Acronirmus longus (Kellogg, 1896) **new combination**
Petrochelidon pyrrhonota Vieillot, 1817 [Passer.: Hirundin.]
Tachycineta bicolor (Vieillot, 1808) [Passer.: Hirundin.]
Tachycineta leucopyga (Meyer, 1834) [Passer.: Hirundin.]
Acronirmus neotropicalis (Carriker, 1963) **new combination**
Progne tapera tapera (Linnaeus, 1766) [Passer.: Hirundin.]
Acronirmus subis (Carriker, 1963) **new combination**
Progne subis subis (Linnaeus, 1758) [Passer.: Hirundin.]
Acronirmus tenuis (Burmeister, 1838) **new combination**
Riparia riparia riparia (Linnaeus, 1758) [Passer.: Hirundin.]

***Anarchonirmus* new genus**

Anarchonirmus albovittatus **new species**

Pomatostomus temporalis strepitans (Mayr & Rand, 1935) [Passer.: Pomatostom.]

***Aporisticeras* new genus**

Aporisticeras athertona (Williams, 1981) **new combination**

Nyctyornis amicta (Temminck, 1824) [Coraci.: Merop.]
Nyctyornis athertoni athertoni (Jardine & Selby, 1828) [Coraci.: Merop.]

***Aratricerca* new genus**

Aratricerca cirithra **new species**

Ptiloprora guisei guisei (De Vis, 1894) [Passer.: Meliphag.]

***Bizarrifrons* Eichler, 1938**

Bizarrifrons clayae Eichler, 1938
Psarocolius montezuma (Lesson, 1830) [Passer.: Icter.]
Bizarrifrons francisi (Carriker, 1903)
Psarocolius wagleri ridgwayi (van Rossem, 1934 [Passer.: Icter.]
Bizarrifrons juruani Carriker & Diaz-Ungría, 1961
Cacicus haemorrhous (Linnaeus, 1766) [Passer.: Icter.]
Bizarrifrons latifrons Valim & Palma, 2012
Psarocolius angustifrons alfredi (Des Murs, 1856) [Passer.: Icter.]
Bizarrifrons maculatus (Rudow, 1869)
Psarocolius bifasciatus yuracares (d'Orbigny & Lafresnaye, 1838) [Passer.: Icter.]
Bizarrifrons magus (Nitzsch [in Giebel], 1866)
Psarocolius decumanus decumanus (Pallas, 1769) [Passer.: Icter.]
Psarocolius decumanus melanterus (Todd, 1917) **new host record** [Passer.: Icter.]
Bizarrifrons meinertzhageni Eichler, 1938
Quiscalus mexicanus mexicanus (Gmelin, 1788) [Passer.: Icter.]
Bizarrifrons picturatus Carriker & Diaz-Ungría, 1961
Cacicus cela (Linnaeus, 1758) [Passer.: Icter.]
Cacicus cela vitellinus Lawrence, 1865 [Passer.: Icter.]
Bizarrifrons quasisymmetricus Valim & Palma, 2012
Cacicus solitarius (Vieillot, 1816 [Passer.: Icter.]
Bizarrifrons wecksteini Valim & Palma, 2012
Psarocolius bifasciatus bifasciatus (Spix, 1824) [Passer.: Icter.]

***Brueelia* Kéler, 1936**

Brueelia abbasi Carriker, 1956 = *Guimaraesiella abbasi* (Carriker, 1956) **new combination**
Brueelia abluda (Złotorzycka, 1964) = *Guimaraesiella turdinulae* (Ansari, 1956)
Brueelia abrupta (Osborn, 1896)
Colinus virginianus (Linnaeus, 1758) straggler? [Gall.: Odontophor.]
Brueelia acuminata Cicchino, 1982
Sicalis flaveola pelzelni Sclater, 1872 [Passer.: Thraup.]
Brueelia acutangulata (Piaget, 1880)
Gracula religiosa Linnaeus, 1758 [Passer.: Sturn.]
Gracula religiosa intermedia Hay, 1845, **new host record** [Passer.: Sturn.]
Gracula religiosa palawanensis (Sharpe, 1890) **new host record** [Passer.: Sturn.]
Brueelia addoloratoi Cicchino, 1986 = *Guimaraesiella addoloratoi* (Cicchino, 1986) **new combination**
Brueelia affinis (Nitzsch [in Giebel], 1874) = *Olivinirmus glandarii* (Denny, 1842)
Brueelia affinis Carriker, 1963 = *Olivinirmus paraffinis* **nom. nov.**
Brueelia afzali Ansari, 1957 = *Corvonirmus afzali* (Ansari, 1957) **new combination**
Brueelia aguilarae **new species**
Euplectes fransiscanus (Isert, 1789) [Passer.: Ploce.]
Brueelia albida (Rudow, 1869)
Lamprotornis nitens (Linnaeus, 1766) [Passer.: Sturn.]

Brueelia albiventris (Carriker, 1963) = *Acronirmus albiventris* (Carriker, 1963) **new combination**
Brueelia alexandrii Eichler, 1953
    Petronia petronia barbara Erlanger, 1899 [Passer.: Passer.]
    Petronia petronia brevirostris Taczanowski, 1874, **new host record** [Passer.: Passer.]
    Petronia petronia puteicola Festa, 1894, **new host record** [Passer.: Passer.]
Brueelia alophoixi Sychra [in Sychra *et al.*], 2009
    Alophoixus pallidus (Swinhoe, 1870) [Passer.: Pycnonot.]
Brueelia altaica Mey, 1982
    Montifringilla nivalis nivalis (Linnaeus, 1766) [Passer.: Passer.]
    Montifringilla nivalis alpicola (Pallas, 1811) [Passer.: Passer.]
Brueelia amandavae Rékási & Saxena, 2005 = *Mirandofures amandavae* (Rékási & Saxena, 2005) **new combination**
Brueelia amazonae Stafford, 1943
    Amazona ochrocephala (Gmelin, 1788) straggler? [Psittac.: Psittac.]
Brueelia americana Cicchino & Castro, 1996
    Molothrus ater artemisiae Grinnell, 1909 [Passer.: Icter.]
    Molothrus ater ater (Boddaert, 1783) [Passer.: Icter.]
Brueelia amsel (Eichler, 1961) = *Guimaraesiella amsel* (Eichler, 1951) **new combination**
Brueelia anamariae Cicchino, 1980
    Troglodytes aedon bonariae Hellmayr, 1919 [Passer.: Troglodyt.]
    Troglodytes aedon musculus Naumann, 1823 [Passer.: Troglodyt.]
Brueelia angulata (Piaget, 1880) = *Couala angulata* (Piaget, 1880) **new combination**
Brueelia angustifrons (Carriker, 1902)
    Chondestes grammacus strigatus Swainson, 1827 [Passer.: Emberiz.]
Brueelia antennata Ansari, 1956 = *Ceratocista antennata* (Ansari, 1956) **new combination**
Brueelia antimarginalis Eichler, 1951
    Turdus pilaris Linnaeus, 1758 [Passer.: Turd.]
Brueelia antiqua Ansari, 1956 = *Guimaraesiella antiqua* (Ansari, 1956) **new combination**
Brueelia anumbii Cicchino, 1981
    Anumbius anumbi (Vieillot, 1817) [Passer.: Furnari.]
Brueelia apiastri (Denny, 1842) = *Meropsiella apiastri* (Denny, 1842) **new combination**
Brueelia argentina Cicchino, 1981
    Furnarius rufus rufus (Gmelin, 1788) [Passer.: Furnari.]
Brueelia argulus (Burmeister, 1838) = *Corvonirmus argulus* (Burmeister, 1838)
Brueelia astrildae Tendeiro & mendes, 1994 = *Mirandofures astrildae* (Tendeiro & Mendes, 1994) **new combination**
Brueelia atherae Ansari, 1957 = *Hecatrishula atherae* (Ansari, 1957) **new combination**
Brueelia athertona Williams, 1981 = *Aporisticeras athertona* (Williams, 1981) **new combination**
Brueelia atricapilla Cicchino, 1983 = *Guimaraesiella atricapilla* (Cicchino, 1983) **new combination**
Brueelia atricapillae (Soler Cruz, Alcántara Ibañez & Florido-Navío, 1984) = *Guimaraesiella tovornikae* (Balát, 1981) **new combination**
Brueelia atricapillae Soler Cruz, Alcántara Ibañez & Florido-Navío, 1984
    Sylvia atricapilla (Linnaeus, 1758) [Passer.: Sylvi.]
Brueelia audax (Kellogg, 1899) = *Califeelia audax* (Kellogg, 1899) **new combination**
Brueelia avinus Ansari, 1956 = *Guimaraesiella avinus* (Ansari, 1956) **new combination**
Brueelia badia Cicchino & Castro, 1996
    Agelaioides badius Vieillot, 1819 [Passer.: Icter.]
Brueelia balati Kristofík, 1999
    Remiz pendulinus pendulinus (Linnaeus, 1758) [Passer.: Remiz.]
Brueelia bicurvata (Piaget, 1880)
    Vidua paradisaea (Linnaeus, 1758) [Passer.: Vidu.]
Brueelia biguttata (Kellogg & Paine, 1914) = *Hecatrishula biguttata* (Kellogg & Paine, 1914) **new combination**
Brueelia binhchauensis Najer & Sychra [in Najer *et al.*], 2014) = *Traihoriella binhchauensis* (Najer & Sychra [in Najer *et al.*], 2014) **new combination**
Brueelia biocellata (Piaget, 1880) = *Hecatrishula biocellata* (Piaget, 1880) **new combination**
Brueelia bipunctata (Rudow, 1870) = *Hecatrishula bipunctata* (Rudow, 1870) **new combination**
Brueelia bisetacea (Piaget, 1885) = *Guimaraesiella bisetacea* (Piaget, 1885) **new combination**

Brueelia blagovescenskyi Balát, 1955
    Emberiza schoeniclus (Linnaeus, 1758) [Passer.: Emberiz.]
    Emberiza spodocephala spodocephala Pallas, 1776 [Passer.: Emberiz.]
Brueelia boae Cicchino & Castro, 1996
    Sturnella loyca loyca (Molina, 1782) [Passer.: Icter.]
Brueelia bonariensis Cicchino & Castro, 1996
    Molothrus bonariensis bonariensis (Gmelin, 1789) [Passer.: Icter.]
Brueelia borini Lunkaschu, 1970
    Sylvia borin (Boddaerts, 1783) [Passer.: Sylvi.]
Brueelia brachythorax (Giebel, 1874)
    Bombycilla garrulus garrulus (Linnaeus, 1758) [Passer.: Bombycill.]
    Bombycilla garrulus pallidiceps Reichenow, 1908, **new host record** [Passer.: Bombycill.]
Brueelia brasiliensis Giebel, 1874 = *Brueelia*-complex *incertae sedis*
Brueelia breueri Balát, 1955
    Chloris chloris aurantiiventris (Cabanis, 1851) **new host record** [Passer.: Fringill.]
    Chloris chloris chloris (Linnaeus, 1758) [Passer.: Fringill.]
Brueelia brevicolor Ansari, 1956
    Turdus migratorius propinquus Ridgway, 1877 [Passer.: Turd.]
Brueelia brevipennis Ansari, 1956
    Turdoides squamiceps squamiceps (Cretzschmar, 1827) [Passer.: Leiothrich.]
Brueelia brevipes (Piaget, 1880) = *Acronirmus gracilis* (Burmeiser, 1838) **new synonymy**
Brueelia brueliodes Ansari, 1956 = *Priceiella* (*Torosinirmus*) *brueliodes* (Ansari, 1956) **new combination**
Brueelia brunneinucha Cicchino, 1983 = *Guimaraesiella brunneinucha* (Cicchino, 1983) **new combination**
Brueelia buettikeri (Eichler, 1953) = *Acronirmus gracilis* (Burmeister, 1838) **new synonymy**
Brueelia bullockoda Williams, 1981 = *Meropsiella bullockoda* (Williams, 1981)
Brueelia busharae Ansari, 1955 = *Guimaraesiella busharae* (Ansari, 1955) **new combination**
Brueelia calandrellae Fedorenko, 1975
    Calandrella cinerea (Gmelin, 1789) [Passer.: Alaud.]
Brueelia callaeincola Valim & Palma, 2015 = *Guimaraesiella callaeincola* (Valim & Palma, 2015) **new combination**
Brueelia cambayensis Ansari, 1955
    Copsychus fulicatus cambaiensis (Latham, 1790) [Passer.: Muscicap.]
Brueelia cantans Sychra [in Sychra *et al*.], 2010
    Euodice cantans (Gmelin, 1789) [Passer.: Estrild.]
Brueelia capitus Ansari, 1955 = *Guimaraesiella capitus* (Ansari, 1955) **new combination**
Brueelia carrikeri Ansari, 1955 = *Traihoriella carrikeri* (Ansari, 1955) **new combination**
Brueelia cedrorum (Piaget, 1880)
    Bombycilla cedrorum Vieillot, 1808 [Passer.: Bombycill.]
Brueelia cela Stafford, 1943
    Cacicus cela (Linnaeus, 1758) [Passer.: Icter.]
Brueelia chalcomitrae Najer & Sychra [in Najer *et al*.] 2012
    Chalcomitra senegalensis (Linnaeus, 1766) [Passer.: Nectarin.]
Brueelia chayanh Ansari, 1955
    Acridotheres tristis (Linnaeus, 1766) [Passer.: Sturn.]
Brueelia chelydensis Hopkins, 1951
    Camarhynchus pallidus productus Ridgway, 1894 [Passer.: Thraup.]
    Camarhynchus parvulus (Gould, 1837) [Passer.: Thraup.]
    Camarhynchus psittacula affinis Ridgway, 1894 [Passer.: Thraup.]
    Camarhynchus psittacula habeli Sclater & Salvin, 1870 [Passer.: Thraup.]
    Certhidea fusca becki Gould, 1837 [Passer.: Thraup.]
    Certhidea olivacea olivacea Gould, 1837 [Passer.: Thraup.]
    Geospiza conirostris conirostris Ridgway, 1890 [Passer.: Thraup.]
    Geospiza difficilis debilirostris Ridgway, 1894 [Passer.: Thraup.]
    Geospiza fortis Gould, 1837 [Passer.: Thraup.]
    Geospiza fuliginosa Gould, 1837 [Passer.: Thraup.]
    Geospiza magnirostris Gould, 1837 [Passer.: Thraup.]
    Geospiza scandens intermedia Ridgway, 1894 [Passer.: Thraup.]

Brueelia chiguanca Cicchino, 1986 = *Guimaraesiella chiguanca* (Cicchino, 1986) **new combination**
Brueelia chilchil Ansari, 1955
    Turdoides caudata eclipes (Hume, 1877) [Passer.: Leiothrich.]
Brueelia chopi Valim & Cicchino, 2015
    Gnorimopsar chopi (Vieillot, 1819) [Passer.: Icter.]
Brueelia chrysomystris (Blagoveshtchensky, 1940)
    Spinus spinus (Linnaeus, 1758) [Passer.: Fringill.]
Brueelia cicchinoi Valim & Weckstein, 2011 = *Guimaraesiella cicchinoi* (Valim & Weckstein, 2011) **new combination**
Brueelia clara Gustafsson & Bush, 2015
    Lamprotornis australis (A. Smith, 1836) [Passer.: Sturn.]
Brueelia clayae Ansari, 1957 = *Olivinirmus clayae* (Ansari, 1957) **new combination**
Brueelia concavus (Eichler [in Niethammer], 1956) = *Guimaraesiella concave* (Eichler [in Niethammer], 1956) **new combination**
Brueelia conocephala (Blagoveshtchensky, 1940)
    Sitta europaea caesia Wolf, 1810 [Passer.: Sitt.]
    Sitta europaea caucasica Reichenow, 1901 [Passer.: Sitt.]
    Sitta europaea rubiginosa Tschusi & Zarydny, 1905 [Passer.: Sitt.]
Brueelia coquimbana Cicchino & González-Acuña, 2008
    Phrygilus gayi (Gervais, 1834) [Passer.: Thraup.]
Brueelia corydalla Timmermann, 1950
    Anthus pratensis pratensis (Linnaeus, 1758) **new host record** [Passer.: Motacill.]
    Anthus pratensis whistleri Clancey, 1942 [Passer.: Motacill.]
    Anthus spinoletta (Linnaeus, 1758) [Passer.: Motacill.]
    Anthus spinoletta blakistoni Swinhoe, 1863, **new host record** [Passer.: Motacill.]
Brueelia coryliventer Gustafsson & Bush, 2015
    Creatophora cinerea (Meuschen, 1787) [Passer.: Sturn.]
Brueelia cruciata (Burmeister, 1838)
    Lanius collurio Linnaeus, 1758 [Passer.: Lani.]
    Lanius phoenicuroides (Schalow, 1875) [Ref.: Blagoveshchensky 1951] [Passer.: Lani.]
Brueelia cruscula (Carriker, 1963) = *Acronirmus crusculus* (Carriker, 1963) **new combination**
Brueelia cryptoleuca Ansari, 1957 = *Hecatrishula cryptoleuca* (Ansari, 1957) **new combination**
Brueelia cubana Cicchino, 1983 = *Guimaraesiella cubana* (Cicchino, 1983) **new combination**
Brueelia cucphuongensis Najer & Sychra [in Najer *et al.*], 2012) = *Guimaraesiella cucphuongensis* (Najer & Sychra [in Najer *et al.*], 2012) **new combination**
Brueelia cucullata Cicchino, 1982
    Coryphospingus cucullatus rubescens (Swainson, 1825) [Passer.: Thraup.]
Brueelia currucae Bechet, 1961
    Sylvia curruca blythi Ticehurst & Whistler, 1933, **new host record** [Passer.: Sylvi.]
    Sylvia curruca curruca (Linnaeus, 1758) [Passer.: Sylvi.]
    Sylvia minula Hume, 1873, **new host record** [Passer.: Sylvi.]
Brueelia cyaneus Carriker, 1963 = *Olivinirmus cyaneus* (Carriker, 1963) **new combination**
Brueelia cyanopa Cicchino, 2004
    Agelaius cyanopus cyanopus Vieillot, 1819 [Passer.: Icter.]
Brueelia cyclothorax (Burmeister, 1838)
    Passer domesticus domesticus (Linnaeus, 1758) [Passer.: Passer.]
    Passer hispaniolensis hispaniolensis (Temminck, 1820) [Ref.: Blagoveshtchensky 1940] [Passer.: Passer.]
    Passer montanus montanus (Linnaeus, 1758) [Passer.: Passer.]
    Passer montanus saturatus Stejneger, 1885 [Passer.: Passer.]
Brueelia daumae (Clay, 1936) = *Turdinirmus daumae* (Clay, 1936)
Brueelia decumana Cicchino & Castro, 1996
    Molothrus oryzivora oryzivora (Gmelin, 1788) [Passer.: Icter.]
    Psarocolius decumanus maculosus (Chapman, 1920) [Passer.: Icter.]
Brueelia deficiens (Piaget, 1885) **[1]**
    Cyanopica cooki Bonaparte, 1850 [Passer.: Corv.]
Brueelia delicata (Nitzsch [in Giebel], 1866)
    Emberiza citrinella caliginosa Clancey, 1940, **new host record** [Passer.: Emberiz.]

Emberiza citrinella citrinella Linnaeus, 1758 [Passer.: Emberiz.]
Emberiza leucocephalos leucocephalos Gmelin, 1771 [Passer.: Emberiz.]
Emberiza rustica Pallas, 1776 [Passer.: Emberiz.]
Brueelia densilimba (Nitzsch [in Giebel], 1866)
Carduelis carduelis carduelis (Linnaeus, 1758) [Passer.: Fringill.]
Carduelis carduelis niediecki Reichenow, 1907, **new host record** [Passer.: Fringill.]
Brueelia diaprepes (Kellogg & Chapman, 1902) = *Guimaraesiella diaprepes* (Kellogg & Chapman, 1902) **new combination**
Brueelia dicruri Ansari, 1955 = *Guimaraesiella dicruri* (Ansari, 1955) **new combination**
Brueelia diucae Cicchino & González-Acuña, 2009
Diuca diuca diuca (Molina, 1782) [Passer.: Thraup.]
Brueelia docilis Ansari, 1956 = *Hecatrishula docilis* (Ansari, 1956) **new combination**
Brueelia domestica (Kellogg & Chapman, 1899) = *Acronirmus gracilis* (Burmeister, 1838) **new combination**
Brueelia dorsale Williams, 1983 **[2]**
Toxostoma crissale crissale Henry, 1858 [Passer.: Mim.]
Brueelia ductilis (Kellogg & Chapman, 1899)
Empidonax difficilis Baird, 1858 [Passer.: Tyrann.]
Brueelia effronte Ansari, 1956 = *Resartor effronte* (Ansari, 1956) **new combination**
Brueelia eichleri Lakshminarayana, 1969 = *Mirandofures muniae* (Eichler, 1957) **new combination**
Brueelia eichleri (Mey, 1982) = *Turdinirmus eichleri* Mey, 1982
Brueelia elegans Ansari, 1957 = *Olivinirmus semiannulatus* (Piaget, 1883) **new combination**
Brueelia embernagrae Cicchino & Castro, 1980
Embernagra platensis platensis (Gmelin, 1789) [Passer.: Thraup.]
Brueelia emersoni Cicchino & Castro, 1996
Euphagus carolinus (Muller, 1776) [Passer.: Icter.]
Brueelia erythrophthalma Cicchino, 1983 = *Guimaraesiall erythrophthalma* (Cicchino, 1983) **new combination**
Brueelia erythropteri (Piaget, 1885) = *Meropsiella erythropteri* (Piaget, 1885)
Brueelia eustigma (Kellogg, 1896) = *Brueelia*-complex *incertae sedis*
Brueelia exigua (Nitzsch [in Giebel], 1866)
Phoenicurus ochruros gibraltariensis (Gmelin, 1789) [Passer.: Muscicap.]
Brueelia fasciata Sychra [in Sychra *et al.*], 2010 = *Mirandofures fasciata* (Sychra [in Sychra *at el.*], 2010) **new combination**
Brueelia ferianci Balát, 1955
Anthus trivialis trivialis (Linnaeus, 1758) [Passer.: Motacill.]
Brueelia flavala Najer & Sychra [in Najer *et al.*], 2012 = *Guimaraesiella flavala* (Najer & Sychra [in Najer *et al.*], 2012) **new combination**
Brueelia flinti Cicchino & Castro, 1996
Quiscalus major (Vieillot, 1819) [Passer.: Icter.]
Quiscalus mexicanus mexicanus (Gmelin, 1788 [Passer.: Icter.]
Quiscalus mexicanus prosopidicola (Lowery, 1938) **new host record** [Passer.: Icter.]
Brueelia fulmeki Eichler, 1957
Aplonis panayensis panayensis (Scopoli, 1786) **new host record** [Passer.: Sturn.]
Aplonis panayensis strigata (Horsfield, 1821) [Passer.: Sturn.]
Brueelia fuscopleura (Blagoveshtchensky, 1951)
Pastor roseus (Linnaeus, 1758) [Passer.: Sturn.]
Brueelia galapagensis (Kellogg & Kuwana, 1902) = *Guimaraesiella galapagensis* (Kellogg & Kuwana, 1902) **new combination**
Brueelia ginginianus Ansari, 1955
Acridotheres ginginianus (Latham, 1790) [Passer.: Sturn.]
Brueelia glandarii (Denny, 1842) = *Olivinirmus glandarii* (Denny, 1842)
Brueelia glizi Balát, 1955
Fringilla montifringilla Linnaeus, 1758 [Passer.: Fringill.]
Brueelia gobiensis Mey, 1982
Bucanetes mongolicus (Swinhoe, 1870) [Passer.: Fringill.]
Brueelia goertae Dalgleish, 1971
Dendropicos goertae (Müller, 1776) [Pic.: Pic.]
Brueelia goniocotes (Piaget, 1885) = *Couala goniodes* (Piaget, 1880) **new synonymy**
Brueelia goniodes (Piaget, 1880) = *Couala goniodes* (Piaget, 1880) **new combination**

Brueelia gracilis (Burmeister, 1838) = *Acronirmus gracilis* (Burmeister, 1838)

Brueelia granatensis (Soler Cruz, Rodríguez, Florido-Navío & Muñoz Parra, 1987) = *Guimaraesiella granatensis* (Soler Cruz, Rodríguez, Florido-Navío & Muñoz Parra, 1987) **new combination**

Brueelia grandalae (Clay, 1936) = *Turdinirmoides grandalae* (Clay, 1936) **new combination**

Brueelia guatemalensis Dalgleish, 1971 = *Motmotnirmus guatemalensis* (Dalgleish, 1971)

Brueelia guldum Ansari, 1955

Pycnonotus cafer intermedius Blyth, 1846 [Passer.: Pycnonot.]

Brueelia haftorni Balát, 1981 = *Guimaraesiella haftorni* (Balát, 1981) **new combination**

Brueelia hamatofasciata (Piaget, 1890) = *Corvonirmus hamatofasciatus* (Piaget, 1890) **new combination**

Brueelia hectica (Nitzsch [in Giebel], 1866) = *Brueelia*-complex *incertae sedis*

Brueelia hopkinsi Ansari, 1956 = *Olivinirmus hopkinsi* (Ansari, 1956) **new combination**

Brueelia hrabali Najer & Sychra [in Najer *et al*.], 2012) = *Turdinirmoides hrabali* (Najer & Sychra [in Najer *et al*.], 2012) **new combination**

Brueelia humphreyi Oniki & Emerson, 1982 = *Mormotnirmus humphreyi* (Oniki & Emerson, 1982)

Brueelia husaini Ansari, 1956 = *Olivinirmus husaini* (Ansari, 1956) **new combination**

Brueelia iliaci (Denny, 1842)

Turdus atrogularis Jarocki, 1819 [Passer.: Turd.]

Turdus boulboul (Latham, 1790) **new host record** [Passer.: Turd.]

Turdus iliacus coburni Sharpe, 1901 [Passer.: Turd.]

Turdus iliacus iliacus Linnaeus, 1758 [Passer.: Turd.]

Turdus philomelos clarkei Hartert, 1909 [Passer.: Turd.]

Brueelia ilmasae Ansari, 1956 = *Guimaraesiella ilmasae* (Ansari, 1956) **new combination**

Brueelia immaculata (Piaget, 1890)

Burhinus oedicnemus, straggler? (Linnaeus, 1758) [Charadri.: Burhin.]

Brueelia imponderabilica Eichler, 1954

Lanius excubitor excubitor Linnaeus, 1758 [Passer.: Lani.]

Lanius meridionalis algeriensis Lesson, 1839, **new host record** [Passer.: Lani.]

Lanius meridionalis aucheri Bonaparte, 1853, **new host record** [Passer.: Lani.]

Lanius meridionalis buryi Lorenz von Liburnau & Hellmayr, 1901, **new host record** [Passer.: Lani.]

Lanius meridionalis elegans Swainson, 1832, **new host record** [Passer.: Lani.]

Brueelia impressifrons Ansari, 1956 = *Resartor impressifrons* (Ansari, 1956) **new combination**

Brueelia incerta Cicchino, 1983 = *Guimaraesiella incerta* (Cicchino, 1983) **new combination**

Brueelia indonesiana Eichler, 1947 = *Indoceoplanetes* (*Indoceoplanetes*) *indonesiana* (Eichler, 1957) **new combination**

Brueelia infrequens (Carriker, 1902)

Calcarius lapponicus lapponicus (Linnaeus, 1758) [Passer.: Calcari.]

Brueelia infuscata Cicchino, 1979

Melanerpes candidus (Otto, 1796) [Pic.: Pic.]

Brueelia insolita Cicchino, 1983 = *Guimaraesiella insolita* (Cicchino, 1983) **new combination**

Brueelia intermedia (Nitzsch [in Giebel], 1866)

Turdus torquatus alpestris (Brehm, 1831) [Passer.: Turd.]

Turdus torquatus torquatus Linnaeus, 1758 [Passer.: Turd.]

Brueelia jacarinae Valim & Palma, 2006

Volatinia jacarina (Linnaeus, 1766) [Passer.: Thraup.]

Brueelia jacobi Eichler, 1951

Turdus merula merula Linnaeus, 1758 [Passer.: Turd.]

Brueelia juno (Giebel, 1874)

Coccothraustes coccothraustes coccothraustes (Linnaeus, 1758) [Passer.: Fringill.]

Coccothraustes coccothraustes humii Sharpe, 1886 [Ref.: Blagoveshtchensky 1951] [Passer.: Fringill.]

Brueelia kalkalichi (Ansari, 1955)

Dicrurus macrocercus macrocercus Vieillot, 1817, straggler? [Passer.: Dicrur.]

Brueelia keleri Carriker, 1963 = *Olivinirmus keleri* (Carriker, 1963) **new combination**

Brueelia kistiakowskyi Fedorenko, 1975

Anthus campestris campestris (Linnaeus, 1758) [Passer.: Motacill.]

Anthus campestris griseus Nicoll, 1920 **new host record** [Passer.: Motacill.]

Brueelia kluzi Balát, 1955

Fringilla coelebs africana Levaillant, 1850, **new host record** [Passer.: Fringill.]

Fringilla coelebs coelebs Linnaeus, 1758 [Passer.: Fringill.]
    Fringilla coelebs gengleri Kleinschmidt, 1909, **new host record** [Passer.: Fringill.]
Brueelia koslovae (Clay, 1936) = *Hecatrishula koslovae* (Clay, 1936) **new combination**
Brueelia kratochvili Balát, 1958
    Motacilla flava Linnaeus, 1758 [Passer.: Motacill.]
    Motacilla flava feldegg Michahelles, 1830 [Passer.: Motacill.]
    Motacilla tschutschensis macronyx (Stresemann, 1920) **new host record** [Passer.: Motacill.]
Brueelia lais (Giebel, 1874) = *Guimaraesiella lais* (Giebel, 1874) **new combination**
Brueelia laticeps (Piaget, 1888) = *Traihoriella laticeps* (Piaget, 1888) **new combination**
Brueelia latifasciata (Piaget, 1880) = *Corvonirmus latifasciatus* (Piaget, 1880) **new combination**
Brueelia latiuscula (Kellogg & Chapman, 1899)
    Amphispiza belli (Cassin, 1850) ? host [Passer.: Emberiz.]
Brueelia leucocephalus (Nitzsch [in Giebel], 1866) = *Corvonirmus leucocephalus* (Nitzsch [in Giebel], 1866) **new combination**
Brueelia limbata (Burmeister, 1838)
    Loxia curvirostra curvirostra Linnaeus, 1758 [Passer.: Fringill.]
    Loxia curvirostra japonica Ridgway, 1884 [Passer.: Fringill.]
    Loxia curvirostra stricklandi Ridgway, 1885, **new host record** [Passer.: Fringill.]
Brueelia limnothlypiae Valim & Reiley, 2015
    Limnothlypis swainsonii (Audubon, 1834) [Passer.: Parul.]
Brueelia limpidus (Mey, 1982) = *Osculonirmus limpidus* Mey, 1982
Brueelia locustellae Fedorenko, 1975
    Locustella luscinoides (Savi, 1824) [Passer.: Megalur.]
Brueelia lonchurae Tendeiro & Mendes, 1994 = *Mirandofures lonchurae* (Tendeiro & Mendes, 1994) **new combination**
Brueelia longiabdominalis (Eichler, 1949) = *Guimaraesiella papuana* (Giebel, 1879) **new combination**
Brueelia longifrons Carriker, 1956
    Poecile atricapillus (Linnaeus, 1766) [Passer.: Par.]
Brueelia longipes (Piaget, 1880)
    Scissirostrum dubium (Latham, 1802) [Passer.: Sturn.]
Brueelia longisterna Ansari, 1956 = *Priceiella* (*Priceiella*) *longisterna* (Ansari, 1956) **new combination**
Brueelia lullulae Bechet, 1880
    Lullula arborea arborea (Linnaeus, 1758) [Passer.: Alaud.]
Brueelia magellanica Cicchino, 1986 = *Guimaraesiella magellanica* (Cicchino, 1986) **new combination**
Brueelia magnini Ansari, 1956
    Turdoides fulva acaciae (Lichtenstein, 1823) [Passer.: Leiothrich.]
Brueelia mahrastan Ansari, 1956 = *Priceiella* (*Priceiella*) *mahrastan* (Ansari, 1956) **new combination**
Brueelia malacocincla Najer & Sychra [in Najer *et al.*], 2014 = *Priceiella* (*Thescelovora*) *malacocincla* (Najer & Sychra [in Najer *et al.*], 2014) **new combination**
Brueelia mandarinus (Giglioli, 1864) = *Turdinirmus merulensis* (Denny, 1842)
Brueelia marcoi Cicchino & Castro, 1996
    Curaeus curaeus curaeus (Molina, 1782) [Passer.: Icter.]
Brueelia marginalis (Burmeister, 1838) = *Guimaraesiella marginata* (Bumeister, 1838) **new combination**
Brueelia marginata (Burmeister, 1838) = *Guimaraesiella marginata* (Burmeister, 1838) **new combination**
Brueelia marginella (Nitzsch [in Giebel], 1866) = *Motmotnirmus marginellus* (Nitzsch [in Giebel], 1866)
Brueelia matvejevi Balát, 1981
    Turdus viscivorus viscivorus Linnaeus, 1758 [Passer.: Turd.]
Brueelia mauroi Cicchino & Castro, 1996
    Molothrus aeneus (Wagler, 1829) [Passer.: Icter.]
Brueelia mediterranea Cicchino, 1981
    Furnarius cristatus Burmeister, 1888 [Passer.: Furnari.]
Brueelia meinertzhageni Ansari, 1956 = *Olivinirmus meinertzhageni* (Ansari, 1956) **new combination**
Brueelia melanococa (Carriker, 1903) = *Guimaraesiella melanococa* (Carriker, 1903) **new combination**
Brueelia melanocoryphae Bechet, 1966
    Melanocorypha calandra calandra (Linnaeus, 1766) [Passer.: Alaud.]
    Melanocorypha calandra psammochroa Hartert, 1904, **new host record** [Passer.: Alaud.]
Brueelia menura (Le Souëf & Bullen, 1902) = *Guimaraesiella menuraelyrae* (Coinde, 1859) **new combination**

Brueelia menuraelyrae (Coinde, 1859) = *Guimaraesiella menuraelyrae* (Coinde, 1859) **new combination**
Brueelia merulae (Denny, 1852) = *Turdinirmus merulensis* (Denny, 1842)
Brueelia merulensis (Denny, 1842) = *Turdinirmus merulensis* (Denny, 1842)
Brueelia mimas Cicchino & Castro, 1996
    Pseudoleistes virescens (Vieillot, 1819) [Passer.: Icter.]
Brueelia minor Lunkaschu, 1970
    Lanius minor Gmelin, 1788 [Passer.: Lani.]
Brueelia mirabile Carriker, 1963
    Molothrus oryzivora oryzivora (Gmelin, 1788) [Passer.: Icter.]
Brueelia modularis (Piaget, 1880)
    Prunella modularis (Linnaeus, 1758) [Passer.: Prunell.]
Brueelia mollii Ansari, 1957 = *Corvonirmus mollii* (Ansari, 1957) **new combination**
Brueelia mongolica Mey, 1982
    Carduelis flavirostris altaica (Sushkin, 1925) [Passer.: Fringill.]
    Carduelis flavirostris flavirostris (Linnaeus, 1758) **new host record** [Passer.: Fringill.]
    Carduelis flavirostris montanella (Hume, 1873) **new host record** [Passer.: Fringill.]
    Carduelis flavirostris pipilans (Latham, 1787) **new host record** [Passer.: Fringill.]
Brueelia moreli Ansari, 1957
    Ptilostomus afer (Linnaeus, 1766) [Passer.: Corv.]
Brueelia morionus Carriker, 1963 = *Olivinirmus morionus* (Carriker, 1963) **new combination**
Brueelia multipunctata (Clay, 1936) = *Hecatrishula multipunctata* (Clay, 1936) **new combination**
Brueelia munia Ansari, 1955 = *Mirandofures munia* (Ansari, 1955) **new combination**
Brueelia muniae Eichler, 1957 = *Mirandofures muniae* (Eichler, 1957) **new combination**
Brueelia munda (Nitzsch [in Giebel], 1866) = *Maculinirmus mundus* (Nitzsch [in Giebel], 1866)
Brueelia museiberolinensis (Eichler, 1957)
    Mino kreffti Sclater, 1869 [Passer.: Sturn.]
Brueelia myiophoneae (Clay, 1936) = *Guimaraesiella myiophoneae* (Clay, 1936) **new combination**
Brueelia nawabi Ansari, 1957 = *Hecatrishula nawabi* (Ansari, 1957) **new combination**
Brueelia nebulosa (Burmeister, 1838)
    Sturnus vulgaris caucasicus Lorentz, 1887 [Ref.: Blagoveshtchensky 1951] [Passer.: Sturn.]
    Sturnus vulgaris poltaratskyi Finsch, 1878 [Passer.: Sturn.]
    Sturnus vulgaris vulgaris Linnaeus, 1758 [Passer.: Sturn.]
    Sturnus vulgaris zetlandicus Hartert, 1918, **new host record** [Passer.: Sturn.]
Brueelia neoatricapillae Price, Hellenthal & Palma, 2003 = *Guimaraesiella tovornikae* (Balát, 1871) **new combination**
Brueelia neodaumae Najer & Sychra [in Najer *et al*.], 2012 = *Guimaraesiella neodaumae* (Najer & Sychra [in Najer *et al*.], 2012) **new combination**
Brueelia neoeichleri Price, Hellenthal & Palma, 2003 = *Turdinirmus eichleri* Mey, 1982 **new synonymy**
Brueelia neotropicalis (Carriker, 1963) = *Acronirmus neotropicalis* (Carriker, 1963) **new combination**
Brueelia nigrosignata (Piaget, 1880) = *Guimaraesiella nigrosignata* (Piaget, 1880) **new combination**
Brueelia nipalensis Ansari, 1956 = *Priceiella* (*Camurnirmus*) *nipalensis* (Ansari, 1956) **new combination**
Brueelia niquitaoi Carriker, 1963 = *Guimaraesiella niquitaoi* (Carriker, 1963) **new combination**
Brueelia nitzschi (Kéler, 1938) = *Olivinirmus nitzschi* (Kéler, 1938) **new combination**
Brueelia nitzschii (Ponton, 1871) = *Guimaraesiella nitzschii* (Ponton, 1871) **new combination**
Brueelia nivalis (Giebel, 1874)
    Plectrophenax nivalis nivalis (Linnaeus, 1758) [Passer.: Calcari.]
    Plectrophenax nivalis vlasovae Portenko, 1937 [Passer.: Calcari.]
Brueelia nivea Ansari, 1956 = *Priceiella* (*Torosinirmus*) *nivea* (Ansari, 1956) **new combination**
Brueelia novofacies Ansari, 1956 = *Resartor novofacies* (Ansari, 1956) **new combination**
Brueelia nuda (Giebel, 1874) = *Brueelia*-complex *incertae sedis*
Brueelia olivacea (Burmeister, 1838) = *Olivinirmus olivaceus* (Burmeister, 1838)
Brueelia ornatissima (Giebel, 1874)
    Agelaius phoeniceus neutralis Ridgway, 1901 [Passer.: Icter.]
    Agelaius phoeniceus nevadensis Grinnell, 1914, **new host record** [Passer.: Icter.]
    Agelaius phoeniceus phoeniceus (Linnaeus, 1766) **new host record** [Passer.: Icter.]
    Dolichonyx oryzivora (Linnaeus, 1758) [Passer.: Icter.]
    Molothrus ater (Boddaert, 1783) [Passer.: Icter.]

Quiscalus quiscula (Linnaeus, 1758) [Passer.: Icter.]
Quiscalus quiscula stonei Chapman, 1935, **new host record** [Passer.: Icter.]
Quiscalus quiscula versicolor Vieillot, 1819, **new host record** [Passer.: Icter.]
Brueelia oudhensis Ansari, 1956 = *Guimaraesiella oudhensis* (Ansari, 1956) **new combination**
Brueelia ovalis (Neumann, 1890) = *Brueelia*-complex *incertae sedis*
Brueelia oxypyga (Giebel, 1874)
Amblyramphus holosericeus (Scopoli, 1814) [Passer.: Icter.]
Brueelia pagodarum Ansari, 1955
Temenuchus pagodarum (Gmelin, 1789) [Passer.: Sturn.]
Brueelia pakistanaise Ansari, 1955
Lanius vittatus Valenciennes, 1826 [Passer.: Lani.]
Brueelia pallida (Piaget, 1880) = *Guimaraesiella pallida* (Piaget, 1880) **new combination**
Brueelia pallida (Osborn, 1896) = *Guimaraesiella pallidula* (Harrison, 1916) **new combination**
Brueelia pallidula (Harrison, 1916) = *Guimaraesiella pallidula* (Harrison, 1916) **new combination**
Brueelia papuana (Giebel, 1879) = *Guimaraesiella papuana* (Giebel, 1879) **new combination**
Brueelia paraboliceps (Piaget, 1890) = *Guimaraesiella menuraelyrae* (Coinde, 1859) **new combination**
Brueelia parabolocybe (Carriker, 1903)
Pitangus sulphuratus argentinus Todd, 1952, **new host record** [Passer.: Tyrann.]
Pitangus sulphuratus bolivianus (Lafresnaye, 1852) [Passer.: Tyrann.]
Tyrannus melancholicus melancholicus Vieillot, 1819 [Passer.: Tyrann.]
Tyrannus melancholicus satrapa (Cabanis & Heine, 1859) [Passer.: Tyrann.]
Tyrannus tyrannus (Linnaeus, 1758) [Passer.: Tyrann.]
Tyrannus verticalis Say, 1822, **new host record** [Passer.: Tyrann.]
Brueelia paradoxa Valim & Cicchino, 2015
Sturnella superciliaris (Bonaparte, 1850) [Passer.: Icter.]
Brueelia parae Ansari, 1955
Anthus rufulus Vieillot, 1818 [Passer.: Motacill.]
Brueelia parviguttata (Blagoveshtchensky, 1940)
Alauda arvensis cantarella Bonaparte, 1850 [Passer.: Alaud.]
Galerida cristata iwanowi Zarudny & Loudon, 1903 [Ref.: Blagoveshtchensky 1951] [Passer.: Alaud.]
Brueelia pelikani Balát, 1958
Emberiza melanocephala Scopoli, 1769 [Passer.: Emberiz.]
Brueelia pengya (Ansari, 1947)
Turdoides striata striata (Dumont, 1823) **new host record** [Passer.: Leiothrich.]
Turdoides striata sindianus (Ticehurst, 1920) [Passer.: Leiothrich.]
Brueelia peninsularis (Kellogg, 1899)
Phainopepla nitens lepida Van Tyne, 1925 [Passer.: Ptiliogonat.]
Phainopepla nitens nitens (Swainson, 1838) **new host record** [Passer.: Ptiliogonat.]
Brueelia perisoreus (Ansari, 1956) = *Olivinirmus perisoreus* (Ansari, 1956)
Brueelia persimilis Cicchino, 1987 = *Guimaraesiella persimilis* (Cicchino, 1987) **new combination**
Brueelia perwienae Ansari, 1957 = *Corvonirmus perwienae* (Ansari, 1957) **new combination**
Brueelia phasmasoma **new species**
Coereba flaveola luteola (Cabanis, 1850) [Passer.; Thraup.]
Brueelia picturata (Osborn, 1896)
Sturnella magna argutula Bangs, 1899 [Passer.: Icter.]
Sturnella magna magna (Linnaeus, 1758) [Passer.: Icter.]
Brueelia piechockii Mey, 1982
Prunella fulvescens dahurica (Taczanowski, 1874) [Passer.: Prunell.]
Brueelia plocea (Lakshminarayana, 1968)
Ploceus philippinus burmanicus Ticehurst, 1832 [Passer.; Ploce.]
Brueelia pointu Ansari, 1955 = *Guimaraesiella pointu* (Ansari, 1955) **new combination**
Brueelia polyglotta Williams, 1983 = *Guimaraesiella polyglotta* (Williams, 1983) **new combination**
Brueelia pontoni (Johnston & Harrison, 1912) = *Guimaraesiella nitzschii* (Ponton, 1871) **new combination**
Brueelia priniae Najer & Sychra [in Najer *et al.*], 2012
Prinia subflava (Gmelin, 1789) [Passer.: Cisticol.]

Brueelia propinqua (Giebel, 1874)
  Loxia pytyopsittacus Borkhausen, 1793 [Passer.: Fringill.]
Brueelia pseudognatha **new species**
  Pycnonotus nigricans superior Clancey, 1959 [Passer.: Pycnonot.]
Brueelia pseudopicturata Cicchino, 1986
  Sturnella neglecta confluenta Rathbun, 1917, **new host record** [Passer.: Icter.]
  Sturnella neglecta neglecta Audubon, 1844 [Passer.: Icter.]
Brueelia ptiliogonis (Carriker, 1903) = *Guimaraesiella ptiliogonis* (Carriker, 1903) **new combination**
Brueelia punjabensis (Ansari, 1947) = *Traihoriella punjabensis* Ansari, 1947
Brueelia pyrrhularum Eichler, 1954
  Pyrrhula pyrrhula europoea Vieillot, 1816 [Passer.: Fringill.] **new host record**
  Pyrrhula Pyrrhula pileata MacGillivray, 1837 [Passer.: Fringill.] **new host record**
  Pyrrhula pyrrhula pyrrhula (Linnaeus, 1758) [Passer.: Fringill.]
Brueelia quadrangularis (Rudow, 1869) = *Corvonirmus quadrangularis* (Rudow, 1869) **new combination**
Brueelia quelea Sychra & Barlev [in Sychra *et al*.], 2010
  Quelea quelea lathami (Smith, 1836) **new host record** [Passer.: Ploce.]
  Quelea quelea quelea (Linnaeus, 1758) [Passer.: Ploce.]
Brueelia rhamphocelii Cicchino, 1983 = *Guimaraesiella rhamphocelii* (Cicchino, 1983) **new combination**
Brueelia rhinocichlae (Eichler, 1957) = *Priceiella* (*Camurnirmus*) *rhinocichlae* (Eichler, 1957) **new combination**
Brueelia rhipidura (Thompson, 1941)
  Rhipidura cockerelli cockerelli (Ramsay, 1879) [Passer.: Rhipidur.]
  Rhipidura leucophrys melaleuca (Quoy & Gaimard, 1830) [Passer.: Rhipidur.]
Brueelia rigbyi Gustafsson & Bush, 2015
  Corvinella melanoleuca (Jardine, 1831) [Passer. Lani.]
Brueelia rosickyi Balát, 1955
  Sylvia nisoria nisoria (Bechstein, 1792) [Passer.: Sylvi.]
Brueelia rotundata (Osborn, 1896) = *Corvonirmus rotundatus* (Osborn, 1896) **new combination**
Brueelia rotundifrons Cicchino, 1981
  Anumbius anumbi (Vieillot, 1817) [Passer.: Furnari.]
  Mimus saturninus modulator (Gould, 1836) [Passer.: Mim.]
  Mimus thenca (Molina, 1782) [Passer.: Mim.]
  Oreoscoptes montanus (Townsend, 1837) [Passer.: Mim.]
Brueelia rotundifrontalis (Eichler, 1949) = *Guimaraesiella papuana* (Giebel, 1879) **new combination**
Brueelia ruficapilla Cicchino, 1990
  Agelaius ruficapillus ruficapillus Vieillot, 1819 [Passer.: Icter.]
Brueelia saghirae Ansar, 1955 = *Guimaraesiella saghirae* (Ansari, 1955) **new combination**
Brueelia saliemi Ansari, 1957 = *Corvonirmus saliemi* (Ansari, 1957) **new combination**
Brueelia sallei Carriker, 1963
  Icterus nigrogularis nigrogularis (Hahn, 1819) [Passer.: Icter.]
Brueelia saltatora Carriker, 1956 = *Guimaraesiella saltatora* (Carriker, 1956) **new combination**
Brueelia satelles (Nitzsch [in Giebel], 1866) = *Guimaraesiella satelles* (Nitzsch [in Giebel], 1866) **new combination**
Brueelia sayacae Cicchino, 1982
  Thraupis sayaca sayaca (Linnaeus, 1766) [Passer.: Thraup.]
Brueelia schistacea Cicchino, 1983 = *Guimaraesiella schistacea* (Cicchino, 1983) **new combination**
Brueelia scotocercae (Blagoveshtchensky, 1951)
  Scotocerca inquieta platyura (Severtzov, 1873) [Passer.: Cett.]
Brueelia sehri Ansari, 1955 = *Guimaraesiella sehri* (Ansari, 1955) **new combination**
Brueelia semiannulatus (Piaget, 1883) = *Olivinirmus semiannulatus* (Piaget, 1883) **new combination**
Brueelia senegala Sychra [in Sychra *et al*.], 2010
  Lagonosticta senegala (Linnaeus, 1766) [Passer.: Estrild.]
Brueelia setifer (Piaget, 1885) = *Guimaraesiella setifer* (Piaget, 1885) **new combination**
Brueelia sexmaculata (Piaget, 1880) = *Guimaraesiella sexmaculata* (Piaget, 1880) **new combination**
Brueelia sexytanum (Soler Cruz, Rodríguez, Florido-Navío & Muñoz Parra, 1987)
  Serinus serinus (Linnaeus, 1766) [Passer.: Fringill.]
Brueelia sibirica Mey, 1982
  Acanthis flammea flammea (Linnaeus, 1758) [Passer.: Icter.]

Brueelia similis Cicchino, 1986 = *Guimaraesiella similis* (Cicchino, 1986) **new combination**
Brueelia solitaria Cicchino, 1990
    Cacicus solitarius (Vieillot, 1816 [Passer.: Icter.]
Brueelia stadleri Eichler, 1954
    Carduelis cannabina cannabina (Linnaeus, 1758) [Passer.: Fringill.]
Brueelia stenozona (Kellogg & Chapman, 1902) = *Mirandofures stenozona* (Kellogg & Chapman, 1902) **new combination**
Brueelia sternotransversa Ansari, 1956 = *Priceiella* (*Priceiella*) *sternotransversa* (Ansari, 1956) **new combination**
Brueelia sternotypica Ansari, 1956 = *Priceiella* (*Priceiella*) *sternotypica* (Ansari, 1956) **new combination**
Brueelia straminea (Denny, 1842) **[3]**
    Dendrocopos leucotos (Bechstein, 1802) [Pic.: Pic.]
    Dendrocopos leucotos lilfordi (Sharpe & Dresser, 1871) **new host record** [Pic.: Pic.]
    Dendrocopos major major (Linnaeus, 1758) [Pic.: Pic.]
    Dendrocopos major pinetorum (Brehm, 1831) [Pic.: Pic.]
    Dendrocopos major poelzami (Bogdanov, 1879) [Pic.: Pic.]
    Dendrocopos medius medius (Linnaeus, 1758) **new host record** [Pic.: Pic.]
    Dendrocopos syriacus (Hemprich & Ehrenberg, 1833) **new host record** [Pic.: Pic.]
    Jynx ruficollis Wagler, 1830 [Pic.: Pic.]
    Jynx torquilla (Linnaeus, 1758) [Pic.: Pic.]
Brueelia stresemanni (Clay, 1936) = *Turdinirmus stresemanni* (Clay, 1936)
Brueelia subacuta (Piaget, 1880) = *Guimaraesiella subacuta* (Piaget, 1880) **new combination**
Brueelia subalbicans (Piaget, 1885) = *Guimaraesiella papuana* (Giebel, 1879) **new combination**
Brueelia subalbicans alpha (Piaget, 1885) = *Guimaraesiella papuana* (Giebel, 1879) **new combination**
Brueelia subalbicans beta (Piaget, 1885) = *Guimaraesiella papuana* (Giebel, 1879) **new combination**
Brueelia subis (Carrikr, 1963) = *Acronirmus subis* (Carriker, 1963) **new combination**
Brueelia submarginalis Jonston & Harrison, 1912 = *Guimaraesiella menuraelyrae* (Coinde, 1859) **new combination**
Brueelia submarginellus (Nitzsch [in Giebel], 1866) = *Guimaraesiella menuraelyrae* (Coinde, 1859) **new combination**
Brueelia subtilis (Nitzsh [in Giebel], 1874) = *Brueelia cyclothorax* (Burmeister, 1838) **new synonymy**
Brueelia subtilis obligatus Eichler, 1954 = *Brueelia cyclothorax* (Burmeister, 1838)
Brueelia sueta Valim & Weckstein, 2011 = *Guimaraesiella sueta* (Valim & Weckstein, 2011) **new combination**
Brueelia tasniemae Ansari, 1957 = *Corvonirmus tasniemae* (Ansari, 1957)
Brueelia taulis Eichler [in Niethammer], 1956 = *Guimaraesiella taulis* (Eichler [in Niethammer], 1956) **new combination**
Brueelia tenuis (Burmeister, 1838) = *Acronirmus tenuis* (Burmeister, 1838) **new combination**
Brueelia tersinae Cicchino, 1982
    Tersina viridis viridis (Illiger, 1811) [Passer.: Thraup.]
Brueelia theresae Ansari, 1957 = *Corvonirmus theresae* (Ansari, 1957) **new combination**
Brueelia thilia Cicchino, 2004
    Agelaius thilius petersi Laubmann, 1934 [Passer.: Icter.]
Brueelia tkachi Gustafsson & Bush, 2015
    Spreo albicapillus albicapillus Blyth, 1856 [Passr.: Sturn.]
Brueelia tovornikae Balát, 1981 = *Guinaraesiella tovornikae* (Balát, 1981) **new combination**
Brueelia trinidadensis Cicchino & Castro, 1996
    Molothrus bonariensis minimus Dalmas, 1900 [Passer.: Icter.]
Brueelia tristis (Giebel, 1874) = *Guimaraesiella tristis* (Giebel, 1874) **new combination**
Brueelia trithorax (Burmeister, 1838)
    Paroaria coronata (Miller, 1776) [Passer.: Cardinal.]
Brueelia turdinulae Ansari, 1956 = *Guimaraesiella turdinulae* (Ansari, 1956)
Brueelia turdinulae eternitatus Ansari, 1956 = *Guimaraesiella turdinulae* (Ansari, 1956)
Brueelia uncinosa (Burmeister, 1838) = *Corvonirmus uncinosus* (Burmeister, 1838)
Brueelia uncinosa plena Ansari, 1957 = *Corvonirmus uncinosus* (Burmeister, 1838)
Brueelia vaneki Balát, 1982
    Acrocephalus schoenobaenus (Linnaeus, 1758) [Passer.: Acrocephal.]
Brueelia varia (Burmeister, 1838) = *Hecatrishula varia* (Burmeister, 1838) **new combination**
Brueelia variegata Ansari, 1957 = *Corvonirmus variegatus* (Ansari, 1957) **new combination**
Brueelia ventrata Ansari, 1956 = *Priceiella* (*Priceiella*) *ventrata* (Ansari, 1956) **new combination**
Brueelia violacea Carriker, 1963 = *Olivinirmus violaceus* (Carriker, 1963) **new combination**

Brueelia virgata (Kellogg, 1899)
    Amblycercus holosericeus (Deppe, 1830) [Passer.: Icter.]
Brueelia viscivori (Denny, 1842) = *Guimaraesiella viscivori* (Denny, 1842)
Brueelia vulgata (Kellogg, 1896) **[4]**
    Junco hyemalis hyemalis (Linnaeus, 1758) [Passer.: Emberiz.]
Brueelia wallacei Mey & Barker, 2014 = *Guimaraesiella wallacei* (Mey & Barker, 2014) **new combination**
Brueelia weberi Balát, 1982
    Parus major major Linnaeus, 1758 [Passer.: Par.] **[5]**
Brueelia xanthocephali (Osborn, 1896)
    Xanthocephalus xanthocephalus (Bonaparte, 1827) [Passer.: Icter.]
Brueelia xanthocollis Ansari, 1955
    Petronia xanthocollis xanthocollis (Burton, 1838) [Passer.: Passer.]
Brueelia xilitla Carriker, 1954 = *Motmotnirmus xilitla* (Carriker, 1954)
Brueelia yal Cicchino & González-Acuña, 2008
    Phrygilus fruticeti (Kittlitz, 1833) [Passer.: Thraup.]
Brueelia yncas Carriker, 1963 = *Olivinirmus hopkinsi* (Ansari, 1956) **new combination**
Brueelia zavattariornis Ansari, 1956
    Zavattariornis stresemanni Moltoni, 1938 [Passer.: Corv.]
Brueelia zeropunctata Ansari, 1957 = *Guimaraesiella antiqua* (Ansari, 1956) **new synonymy**
Brueelia zohrae Ansari, 1956
    Ptilostomus afer (Linnaeus, 1766) [Passer.: Corv.]
Brueelia zootherae (Clay, 1936) = *Turdinirmus zootherae* (Clay, 1936)

***Buerelius* Clay & Tandan, 1967**
Buerelius longiceps (Piaget, 1880)
    Brachyptreacias leptosomus (Lesson, 1833) [Coraci.: Brachypteraci.]
Buerelius subsimus Clay & Tandan, 1967
    Brachyptreacias leptosomus (Lesson, 1833) [Coraci.: Brachypteraci.]

***Buphagoecus* new genus**
Buphagoecus husaini (Ansari, 1968) **new combination**
    Buphagus africanus Linnaeus, 1766 [Passer.: Buphag.]
Buphagoecus prominens (Ansari, 1968) **new combination**
    Buphagus erythrorhynchus (Stanley, 1814) [Passer.: Buphag.]

***Ceratocista* new genus**
Ceratocista antennata (Ansari, 1956) **new combination**
    Grammatoptila striata sikkimensis (Ticehurst, 1924) [Passer.: Leiothrich.]

***Sychraella* new genus**
Sychraella sinsutura **new species**
    Pomatostomus isidorei calidus Rothschild, 1931 [Passer.: Pomatostom.]
    Pomatostomus isidorei isidorei Lesson, 1827 [Passer.: Pomatostom.]

***Couala* new genus**
Couala angulata (Piaget, 1880) **new combination**
    Asio flammeus (Pontoppidan, 1763) straggler? [Strig.: Strig.]
    Coua caerulea (Linnaeus, 1766) [Cucul.: Cucul.]
Couala dodekopter **new species**
    Coua cristata pyropyga Grandidier, 1867 [Cucul.: Cucul.]
Couala goniodes (Piaget, 1880) **new combination**
    Coua serriana Pucheran, 1845 [Cucul.: Cucul.]

***Corvonirmus* Eichler, 1944**
Corvonirmus afzali (Ansari, 1957) **new combination**
    Corvus cryptoleucus Couch, 1854 [Passer.: Corv.]

Corvonirmus argulus (Burmeister, 1838)
    Corvus corax kamtschaticus Dybowski, 1883 [Passer.: Corv.]
    Corvus corax tibetanus Hodgson, 1849, **new host record** [Passer.: Corv.]
    Corvus corax tingitanus Irby, 1874 [Passer.: Corv.]
Corvonirmus hamatofasciatus (Piaget, 1890) **new combination**
    Penelopides manillae (Boddaerts, 1783) straggler? [Coraci.: Bucerot.]
Corvonirmus latifasciatus (Piaget, 1880) **new combination**
    Corvus enca mangoli Vaurie, 1958 [Passer.: Corv.]
    Corvus enca pusillus Tweeddale, 1878, **new host record** [Passer.: Corv.]
Corvonirmus leucocephalus (Nitzsch [in Giebel], 1866) **new combination**
    Corvus albicollis Latham, 1790 [Passer.: Corv.]
    Corvus capensis capensis Lichtenstein, 1823 [Passer.: Corv.]
Corvonirmus mollii (Ansari, 1957) **new combination**
    Corvus macrorhyncos colonorum Swinhoe, 1864 [Passer.: Corv.]
    Corvus macrorhynchos culminatus Sykes, 1832, **new host record** [Passer.: Corv.]
    Corvus macrorhynchos hainanus Stresemann, 1916, **new host record** [Passer.: Corv.]
    Corvus macrorhynchos intermedius Adams, 1859 [Passer.: Corv.]
    Corvus macrorhynchos levaillantii Lesson, 1831, **new host record** [Passer.: Corv.]
    Corvus macrorhynchos macrorhynchos Wagler, 1827 [Passer.: Corv.]
    Corvus macrorhynchos philippinus (Bonaparte, 1853) **new host record** [Passer.: Corv.]
Corvonirmus perwienae (Ansari, 1957) **new combination**
    Corvus nasicus Temminck, 1826 [Passer.: Corv.]
Corvonirmus quadrangularis (Rudow, 1869) **new combination**
    Corvus albus Müller, 1776 [Passer.: Corv.]
Corvonirmus rotundatus (Osborn, 1896) **new combination**
    Corvus brachyrhynchos brachyrhynchos Brehm, 1822 [Passer.: Corv.]
    Corvus brachyrhynchos hesperis Ridgway, 1887, **new host record** [Passer.: Corv.]
    Corvus brachyrhynchos pascuus Coues, 1899 [Passer.: Corv.]
    Corvus caurinus Baird, 1858 [Passer.: Corv.]
    Corvus ossifragus Wilson, 1812 [Passer.: Corv.]
Corvonirmus saliemi (Ansari, 1957) **new combination**
    Corvus splendens insolens Hume, 1874, **new host record** [Passer.: Corv.]
    Corvus splendens maldevicius Reichenow, 1904, **new host record** [Passer.: Corv.]
    Corvus splendens splendens Vieillot, 1817 [Passer.: Corv.]
    Corvus splendens zugmeyeri Laubmann, 1913, **new host record** [Passer.: Corv.]
Corvonirmus tasniemae (Ansari, 1957) **new combination**
    Corvus frugilegus frugilegus Linnaeus, 1758 [Passer.: Corv.]
Corvonirmus theresae (Ansari, 1957) **new combination**
    Corvus rhipidurus Hartert, 1918 [Passer.: Corv.]
Corvonirmus uncinosus (Burmeister, 1838)
    Corvus cornix cornix Linnaeus, 1758 [Passer.: Corv.]
    Corvus cornix pallescens (Madarasz, 1904) **new host record** [Passer.: Corv.]
    Corvus cornix sharpii Oates, 1889 [Ref.: Blagoveshtchensky 1951] [Passer.: Corv.]
    Corvus corone corone Linnaeus, 1758 [Passer.: Corv.]
Corvonirmus variegatus (Ansari, 1957) **new combination**
    Corvus capensis capensis Lichtenstein, 1823 [Passer.: Corv.]
    Corvus capensis kordofanensis Laubmann, 1919, **new host record** [Passer.: Corv.]

***Guimaraesiella* Eichler, 1949**
Guimaraesiella abbasi (Carriker, 1956) **new combination**
    Thraupis abbas (Deppa, 1830) [Passer.: Thraup.]
Guimaraesiella addoloratoi (Cicchino, 1986) **new combination**
    Turdus rufiventris rufiventris Vieillot, 1818 [Passer.: Turd.]
Guimaraesiella amsel (Eichler, 1951) **new combination**
    Turdus merula aterrimus (Madarasz, 1903) [Passer.: Turd.]
    Turdus merula merula Linnaeus, 1758 [Passer.: Turd.]

  - *Turdus merula mauretanicus* Hartert, 1902, **new host record** [Passer.: Turd.]
  - *Turdus merula syriacus* Hemprich & Ehrenberg, 1833, **new host record** [Passer.: Turd.]
- *Guimaraesiella antiqua* (Ansari, 1956) **new combination**
  - *Catharus fuscescens* (Stephens, 1817) **new host record** [Passer.: Turd.]
  - *Catharus guttatus faxoni* (Bangs & Penard, 1921) [Passer.: Turd.]
  - *Catharus guttatus nanus* (Audubon, 1839) **new host record** [Passer.: Turd.]
  - *Catharus minimus minimus* (Lafresnaye, 1848) **new host record** [Passer.: Turd.]
  - *Catharus ustulatus* (Nuttall, 1840) [Passer.: Turd.]
- *Guimaraesiella atricapilla* (Cicchino, 1983) **new combination**
  - *Donacobius atricapillus albovittatus* Lafresnaye & d'Orbigny, 1837 [Passer.: Donacobi.]
- *Guimaraesiella avinus* (Ansari, 1956) **new combination**
  - *Trochalopteron subunicolor subunicolor* (Blyth, 1843) [Passer.: Leiothrich.]
- *Guimaraesiella bisetacea* (Piaget, 1885) **new combination**
  - *Euryceros prevostii* Lesson, 1831 [Passer.: Vang.]
- *Guimaraesiella brunneinucha* (Cicchino, 1983) **new combination [6]**
  - *Arremon brunneinucha* (Lafresnaye, 1839) [Passer.: Emberiz.]
  - *Melanotis hypoleucus* Hartlaub, 1852 [Passer.: Mim.]
  - *Mimus gilvus gilvus* (Vieillot, 1808) [Passer.: Mim.] **new host record**
  - *Mimus gilvus melanopterus* Lawrence, 1849 [Passer.: Mim.]
  - *Mimus gundlachii gundlachii* Cabanis, 1855 [Passer.: Mim.]
  - *Mimus longicaudatus albogriseus* lesson, 1844 [Passer.: Mim.]
  - *Ramphocinclus brachyurus sanctaeluciae* Cory, 1887 [Passer.: Mim.]
- *Guimaraesiella busharae* (Ansari, 1955) **new combination**
  - *Entomodestes leucotis* (Tschudi, 1844) [Passer.: Turd.]
- *Guimaraesiella callaenicola* (Valim & Palma, 2015) **new combination**
  - *Callaeas cinerea* (Gmelin, 1788) [Passer.: Callae.]
  - *Callaeas wilsoni* (Bonaparte, 1851) [Passer.: Callae.]
  - *Philesturnus carunculatus* (Gmelin, 1789) [Passer.: Callae.]
  - *Philesturnus rufusater* (Lesson, 1828) [Passer.: Callae.]
- *Guimaraesiella capitus* (Ansari, 1955) **new combination**
  - *Turdus fuscater quindio* Chapman, 1925 [Passer.: Turd.]
- *Guimaraesiella chiguanca* (Cicchino, 1986) **new combination**
  - *Turdus chiguanco anthracinus* Burmeister, 1858 [Passer.: Turd.]
- *Guimaraesiella cicchinoi* (Valim & Weckstein, 2011) **new combination**
  - *Pharomachrus pavoninus* (Spix, 1824) [Trogon.: Trogon.]
  - *Trogon collaris* Vieillot, 1817 [Trogon.: Trogon.]
  - *Trogon massena* Gould, 1838 [Trogon.: Trogon.]
  - *Trogon melanocephalus* Gould, 1836 [Trogon.: Trogon.]
  - *Trogon melanurus* Swainson, 1838 [Trogon.: Trogon.]
  - *Trogon viridis* Linnaeus, 1766 [Trogon.: Trogon.]
- *Guimaraesiella concava* (Eichler [in Niethammer], 1956) **new combination**
  - *Catharus fuscater caniceps* Chapman, 1924 [Passer.: Turd.]
- *Guimaraesiella cubana* (Cicchino, 1983) **new combination**
  - *Tiaris canora* (Gmelin, 1789) [Passer.: Thraup.]
- *Guimaraesiella cucphuongensis* (Najer & Sychra [in Najer *et al.*], 2012) **new combination**
  - *Pycnonotus finlaysoni* Strickland, 1844 [Passer.: Pycnonot.]
- *Guimaraesiella diaprepes* (Kellogg & Chapman, 1902) **new combination**
  - *Drepanis coccinea* (Forster, 1780) [Passer.: Fringill.]
- *Guimaraesiella dicruri* (Ansari, 1955) **new combination**
  - *Dicrurus caerulescens caerulescens* (Linnaeus, 1758) **new host record** [Passer.: Dicrur.]
  - *Dicrurus macrocercus albirictus* (Hodgson, 1836) [Passer.: Dicrur.]
  - *Dicrurus macrocercus macrocercus* Vieillot, 1817 **new host record** [Passer.: Dicrur.]
  - *Dicrurus macrocercus thai* Kloss, 1921, **new host record** [Passer.: Dicrur.]
- *Guimaraesiella erythrophthalma* (Cicchino, 1983) **new combination**
  - *Pipilo erythrophthalmus griseipygus* van Rossem, 1934 [Passer.: Emberiz.]

Guimaraesiella flavala (Najer & Sychra [in Najer *et al.*], 2012) **new combination**
Hemixos flavala Blyth, 1845 [Passer.: Pycnonot.]
Guimaraesiella galapagensis (Kellogg & Kuwana, 1902) **new combination**
Geospiza fuliginosa (Gould, 1837) [Passer.: Thraup.]
Nesomimus melanotis (Gould, 1837) [Passer.: Mim.]
Nesomimus parvulus bauri Ridgway, 1894 [Passer.: Mim.]
Nesomimus parvulus barringtoni Rothschild, 1898 [Passer.: Mim.]
Nesomimus parvulus parvulus (Gould, 1837) [Passer.: Mim.]
Nesomimus parvulus personatus Ridgway, 1890 [Passer.: Mim.]
Nesomimus trifasciatus (Gould, 1837) [Passer.: Mim.]
Guimaraesiella granatensis (Soler Cruz, Rodríguez, Florido-Navío & Muñoz Parra, 1987) **new combination**
Carduelis cannabina cannabina (Linnaeus, 1758) [Passer.: Fringill.]
Guimaraesiella haftorni (Balát, 1981) **new combination**
Turdus iliacus iliacus Linnaeus, 1758 [Passer.: Turd.]
Guimaraesiella ilmasae (Ansari, 1956) **new combination**
Turdus olivaceus pondoensis Reichenow, 1917 [Passer.: Turd.]
Guimaraesiella incerta (Cicchino, 1983) **new combination**
Myiozetetes similis (Spix, 1825) [Passer.: Tyrann.]
Guimaraesiella insolita (Cicchino, 1983) **new combination**
Trogon mexicanus Swainson, 1827 [Trogon.: Trogon.]
Guimaraesiella interposita (Kellogg, 1899) **new combination**
Dendroica pensylvanica (Linnaeus, 1766) [Passer.: Parul.]
Setophaga petechia aureola (Gould, 1839) [Passer.: Parul.]
Setophaga petechia bryanti Ridgway, 1873 [Passer.: Parul.]
Setophaga petechia erithachoides Baird, 1858 [Passer.: Parul.]
Camarhynchus psittacula habeli Sclater & Salvin, 1870 [Passer.: Thraup.]
Camarhynchus psittacula psittacula (Gould, 1837) [Passer.: Thraup.]
Geospiza difficilis debilirostris Ridgway, 1894 [Passer.: Thraup.]
Geospiza difficilis difficilis Sharpe, 1888 [Passer.: Thraup.]
Geospiza fortis Gould, 1837 [Passer.: Thraup.]
Geospiza fuliginosa Gould, 1837 [Passer.: Thraup.]
Geospiza magnirostris Gould, 1837 [Passer.: Thraup.]
Platyspiza crassiostris (Gould, 1837) [Passer.: Thraup.]
Guimaraesiella lais (Giebel, 1874) **new combination**
Luscinia megarhynchos megarhynchos (Brehm, 1831) [Passer.: Muscicap.]
Guimaraesiella magellanica (Cicchino, 1986) **new combination**
Turdus falcklandii falcklandii Quoy & Gaimard, 1824, **new host record** [Passer.: Turd.]
Turdus falcklandii magellanicus King, 1831 [Passer.: Turd.]
Guimaraesiella marginata (Burmeister, 1838) **new combination**
Turdus atrogularis Jarocki, 1819 [Ref.: Blagoveshtchensky 1951] [Passer.: Turd.]
Turdus pilaris Linnaeus, 1758 [Passer.: Turd.]
Turdus torquatus torquatus Linnaeus, 1758 [Passer.: Turd.]
Guimaraesiella melanococa (Carriker, 1903) **new combination**
Piranga bidentata sanguinolenta Lafresnaye, 1839 [Passer.: Thraup.]
Guimaraesiella menuraelyrae (Coinde, 1859) **new combination**
Menura novaehollandiae edwardi Chisholm, 1921, **new host record** [Passer.: Menur.]
Menura novaehollandiae novaehollandiae Latham, 1802 [Passer.: Menur.]
Guimaraesiella myiophoneae (Clay, 1936) **new combination**
Myophonus caeruleus temminckii Vigors, 1832 [Passer.: Turd.]
Guimaraesiella neodaumae (Najer & Sychra [in Najer *et al.*], 2012) **new combination**
Zoothera dauma dauma (Latham, 1790) [Passer.: Turd.]
Guimaraesiella nigrosignata (Piaget, 1880) **new combination**
Gracula religiosa Linnaeus, 1758 [Passer.: Sturn.]
Guimaraesiella niquitaoi (Carriker, 1963) **new combination**
Mecocerculus stictopterus albocaudatus Phelps & Gilliard, 1941 [Passer.: Tyrann.]

Guimaraesiella nitzschii (Ponton, 1871) **new combination**
    Ptilonorhynchus violaceus (Vieillot, 1816) [Passer.: Ptilonorhynch.]
Guimaraesiella oudhensis (Ansari, 1956) **new combination**
    Turdus simillimus nigropileus Lafresnaye, 1840 [Passer.: Turd.]
Guimaraesiella pallida (Piaget, 1880) **new combination**
    Ailuroides buccoides buccoides (Temminck, 1836) **new host record** [Passer.: Ptilonorhynch.]
    Ailuroedus buccoides oorti Rothschild & Hartert, 1929 [Passer.: Ptilonorhynch.]
Guimaraesiella pallidula (Harrison, 1916) **new combination**
    Pheucticus ludovicianus (Linnaeus, 1766) [Passer.: Cardinal.]
Guimaraesiella pandolura **new species**
    Pericrocotus speciosus semiruber Whistler & Kinnear, 1933 [Passer.: Campephag.]
Guimaraesiella papuana (Giebel, 1879) **new combination**
    Cicinnurus magnificus hunsteini (A.B. Meyer, 1885) **new host record** [Passer.: Paradisae.]
    Colluricincla ferruginea clara (A.B. Meyer, 1894) **new host record** [Passer.: Pachycephal.]
    Paradisaea apoda novaeguineae D'Albertis & Salvadori, 1879, **new host record** [Passer.: Paradisae.]
    Paradisaea minor finschi Meyer, 1885, **new host record** [Passer.: Paradisae.]
    Paradisaea minor minor Shaw, 1809 [Passer.: Paradisae.]
    Paradisaea raggiana augustaevictoriae Cabanis, 1888, **new host record** [Passer.: Paradisae.]
    Paradiseae raggiana raggiana P.L. Sclater, 1873, **new host record** [Passer.: Paradisae.]
    Paradisaea raggiana salvadorii Mayr & Rand, 1935, **new host record** [Passer.: Paradisae.]
    Paradisaea rubra Daudin, 1800, **new host record** [Passer.: Paradisae.]
    Parotia lawesii E.P. Ramsay, 1885, **new host record** [Passer.: Paradisae.]
    Phonygammus keraudrenii purpureoviolaceus (A.B. Meyer, 1885) **new host record** [Passer.: Paradisae.]
    Ptiloris magnificus magnificus (Vieillot, 1819) **new host record** [Passer.: Paradisae.]
Guimaraesiella persimilis (Cicchino, 1987) **new combination**
    Turdus amaurochalinus Cabanis, 1850 [Passer.: Turd.]
Guimaraesiella pointu (Ansari, 1955) **new combination**
    Turdus nudigenis nudigenis Lafresnaye, 1848 [Passer.: Turd.]
Guimaraesiella polyglotta (Williams, 1983) **new combination [7]**
    Mimus polyglottos polyglottos (Linnaeus, 1758) [Passer.: Mim.]
Guimaraesiella ptiliogonis (Carriker, 1903) **new combination**
    Ptiliogonys caudatus Cabanis, 1861 [Passer.: Ptiliogonat.]
Guimaraesiella rhamphocelii (Cicchino, 1983) **new combination**
    Ramphocelus passerinii Bonaparte, 1831 [Passer.: Thraup.]
Guimaraesiella saghirae (Ansari, 1955) **new combination**
    Turdus serranus fuscobrunneus (Chapman, 1912) [Passer.: Turd.]
Guimaraesiella saltatora (Carriker, 1956) **new combination**
    Saltator coerulescens vigorsii Gray, 1844 [Passer.: Cardinal.]
Guimaraesiella satelles (Nitzsch [in Giebel], 1866) **new combination**
    Ptiloris paradisaeus Swainson, 1825 [Passer.: Paradisae.]
Guimaraesiella schistacea (Cicchino, 1983) **new combination**
    Atlapetes schistaceus (Boissoneau, 1840) [Passer.: Emberiz.]
Guimaraesiella sehri (Ansari, 1955) **new combination**
    Trochalopteron lineatum lineatum (Vigors, 1831) [Passer.: Leiothrich.]
    Trochalopteron lineatum setafer (Hodgson, 1836) [Passer.: Leiothrich.] **new host record**
Guimaraesiella setifer (Piaget, 1885) **new combination**
    Seleucides melanoleuca (Daudin, 1800) [Passer.: Paradisae.]
Guimaraesiella sexmaculata (Piaget, 1880) **new combination**
    Dicrurus aeneus aeneus Vieillot, 1817, **new host record** [Passer.: Dicrur.]
    Dicrurus remifer (Temminck, 1823) [Passer.: Dicrur.]
    Dicrurus remifer peracensis (Baker, 1918) **new host record** [Passer.: Dicrur.]
Guimaraesiella similis (Cicchino, 1986) **new combination**
    Turdus subalaris (Seebohm, 1887) [Passer.: Turd.]
Guimaraesiella subacuta (Piaget, 1880) **new combination**
    Scissirostrum dubium (Latham, 1802) [Passer.: Sturn.]

Guimaraesiella sueta (Valim & Weckstein, 2011) **new combination**
    Pharomachrus pavoninus (Spix, 1824) [Trogon.: Trogon.]
Guimaraesiella taulis (Eichler [in Niethammer], 1956) **new combination**
    Tangara viridicollis (Taczanowski, 1884) [Passer.: Thraup.]
Guimaraesiella tovornikae (Balát, 1981) **new combination**
    Sylvia atricapilla (Linnaeus, 1758) [Passer.: Sylvi.]
Guimaraesiella tristis (Giebel, 1874) **new combination**
    Erithacus rubecula melophilus Hartert, 1901, **new host record** [Passer.: Muscicap.]
    Erithacus rubecula rubecula (Linnaeus, 1758) [Passer.: Muscicap.]
Guimaraesiella turdinulae (Ansari, 1956) **new combination**
    Turdus philomelos clarkei Hartert, 1909 [Passer.: Turd.]
    Turdus philomelos philomelos Brehm, 1831 [Passer.: Turd.]
Guimaraesiella viscivori (Denny, 1842) **new combination**
    Turdus viscivorus viscivorus Linnaeus, 1758 [Passer.: Turd.]
Guimaraesiella wallacei (Mey & Barker, 2014) **new combination**
    Irena cyanogastra melanochlamys Sharpe, 1877 [Passer.: Iren.]
    Irena puella crinigera Sharpe, 1877 [Passer.: Iren.]
    Irena puella puella (Latham, 1790) **new host record** [Passer.: Iren.]

Harpactrox **new genus**
Harpactrox geminodus **new species**
    Harpactes erythrocephalus erythrocephalus (Gould, 1834) [Trogon.: Trogon.]
Harpactrox loeiensis **new species**
    Harpactes erythrocephalus annamensis (Robinson & Kloss, 1919) [Trogon.: Trogon.]
Harpactrox pontifrons **new species**
    Harpactes ardens ardens (Temminck, 1826) [Trogon.: Trogon.]

Hecatrishula **new genus**
Hecatrishula atherae (Ansari, 1957) **new combination**
    Corvus corax laurencei Hume, 1873 [Passer.: Corv.]
    Corvus corax corax Linnaeus, 1758 [Passer.: Corv.]
    Corvus corax tibetanus Hodgson, 1849 [Passer.: Corv.]
Hecatrishula biguttata (Kellogg & Paine, 1914) **new combination**
    Pyrrhocorax graculus digitatus Ehrenberg, 1833 [Passer.: Corv.]
    Pyrrhocorax graculus graculus (Linnaeus, 1766) [Ref.: Ansari 1956d] [Passer.: Corv.]
    Pyrrhocorax pyrrhocorax docilis (Gmelin, 1774) [Passer.: Corv.]
    Pyrrhocorax pyrrhocorax erythroramphos (Vieillot, 1817) [Ref.: Ansari 1956d] [Passer.: Corv.]
    Pyrrhocorax pyrrhocorax himalayanus (Gould, 1862) [Ref.: Ansari 1956d] [Passer.: Corv.]
Hecatrishula biocellata (Piaget, 1880) **new combination**
    Pica hudsonia (Sabine, 1823) [Passer.: Corv.]
    Pica nuttalli (Audubon, 1837) [Passer.: Corv.]
    Pica pica bactriana Bonaparte, 1850 [Ref.: Blagoveshtchensky 1951] [Passer.: Corv.]
    Pica pica leucoptera Gould, 1862 [Passer.: Corv.]
Hecatrishula bipunctata (Rudow, 1870) **new combination**
    Corvus albus Müller, 1776 [Passer.: Corv.]
Hecatrishula cryptoleuca (Ansari, 1957) **new combination**
    Corvus corax sinuatus Wagler, 1824, **new host record** [Passer.: Corv.]
    Corvus cryptoleucus Couch, 1854 [Passer.: Corv.]
Hecatrishula docilis (Ansari, 1956) **new combination**
    Pyrrhocorax graculus digitatus Ehrenberg, 1833, **new host record** [Passer.: Corv.]
    Pyrrhocorax graculus graculus (Linnaeus, 1766) **new host record** [Passer.: Corv.]
    Pyrrhocorax pyrrhocorax barbarus Vaurie, 1954 [Passer.: Corv.]
    Pyrrhocorax pyrrhocorax docilis (Gmelin, 1774) [Passer.: Corv.]
    Pyrrhocorax pyrrhocorax pyrrhocorax (Linnaeus, 1758) [Passer.: Corv.]
Hecatrishula koslovae (Clay, 1936) **new combination**
    Podoces biddulphi Hume, 1874 [Passer.: Corv.]

Podoces hendersoni Hume, 1871 [Passer.: Corv.]
Hecatrishula multipunctata (Clay, 1936) **new combination**
Nucifraga multipunctata Gould, 1849 [Passer.: Corv.]
Hecatrishula nawabi (Ansari, 1957) **new combination**
Corvus capensis capensis Lichtenstein, 1823 [Passer.: Corv.]
Hecatrishula varia (Burmeister, 1838) **new combination**
Corvus corone corone Linnaeus, 1758 [Passer.: Corv.]
Corvus corone orientalis Eversmann, 1841 [Passer.: Corv.]
Corvus dauuricus (Pallas, 1776) **new host record** [Passer.: Corv.]
Corvus frugilegus frugilegus Linnaeus, 1758 [Passer.: Corv.]
Corvus frugilegus pastinator Gould, 1845, **new host record** [Passer.: Corv.]
Corvus monedula monedula Linnaeus, 1758 [Passer.: Corv.]
Corvus monedula soemmeringii (Fischer von Waldheim, 1811) **new host record** [Passer.: Corv.]
Corvus monedula spermologus (Vieillot, 1817) **new host record** [Passer.: Corv.]

Indoceoplanetes **new genus**
Capnodella **new subgenus**
Indoceoplanetes (*Capnodella*) *laurocorythes* **new species**
Edolisoma holopolium holopolium (Sharpe, 1888) [Passer.: Campephag.]
Indoceoplanetes (*Capnodella*) *loboccupatrix* **new species**
Lobotos oriolinus Bates, 1909 [Passer.: Campephag.]
Indoceoplanetes **new subgenus**
Indoceoplanetes (*Indoceoplanetes*) *indonesiana* (Eichler, 1947) **new combination**
Coracina striata difficilis (Hartert, 1895) **new host record** [Passer.: Campephag.]
Coracina striata panayensis (Steere, 1890) **new host record** [Passer.: Campephag.]
Coracina striata sumatrensis (Müller, 1843) [Passer.: Campephag.]

Maculinirmus **Złotorzycka, 1964**
Maculinirmus ljosalfar **new species**
Oriolus chinensis diffusus Sharpe, 1877 [Passer.: Oriol.]
Maculinirmus mundus (Nitzsch [in Giebel], 1866)
Oriolus oriolus oriolus (Linnaeus, 1758) [Passer.: Oriol.]

Manucodicola **new genus**
Manucodicola acantharx **new species**
Manucodia ater (Lesson, 1830) [Passer.: Paradisae.]
Manucodicola semiramisae **new species**
Phonygammus keraudrenii diamondi Cracraft, 1992 [Passer.: Paradisae.]
Phonygammus keraudrenii purpureoviolaceus (A.B. Meyer, 1885) [Passer.: Paradisae.]

Melibrueelia **Valim & Palma, 2015**
Melibrueelia novaeseelandiae Valim & Palma, 2015
Anthornis melanura melanura (Sparrman, 1786) [Passer.: Meliphag.]
Anthornis melanura oneho Bartle & Sagar, 1987 [Passer.: Meliphag.]
Anthornis melanura obscura Falla, 1948 [Passer.: Meliphag.]
Prosthemadera novaeseelandiae novaeseelandiae (Gmelin, 1788) [Passer.: Meliphag.]

Meropoecus **Eichler, 1940**
Meropoecus balisong **new species**
Merops americanus Muller, 1776 [Coraci.: Merop.]
Meropoecus bartlowi **new species**
Merops ornatus Latham, 1802 [Coraci.: Merop.]
Meropoecus caprai Conci, 1941
Merops orientalis ferrugeiceps Anderson, 1879, **new host record** [Coraci.: Merop.]
Meropoecus caprai Conci, 1941 [Coraci.: Merop.]
Meropoecus debeauxi Conci, 1941

Merops orientalis viridissimus Swainson, 1837, **new host record** [Coraci.: Merop.]
Merops pusillus pusillus Müller, 1776 [Coraci.: Merop.]
Merops revoilii Oustalet, 1882, **new host record** [Coraci.: Merop.]
Meropoecus eichleri Tendeiro, 1989
Merops nubicoides Des Murs & Pucherans, 1846 [Coraci.: Merop.]
Meropoecus emersoni Tendeiro, 1961
Merops bulocki bulocki Vieillot, 1817 [Coraci.: Merop.]
Meropoecus meropis (Denny, 1842)
Merops apiaster Linnaeus, 1758 [Coraci.: Merop.]
Merops persicus persicus Pallas, 1773, **new host record** [Coraci.: Merop.]
Meropoecus mossambicensis Tendeiro, 1989
Merops bullockoides Smith, 1834 [Coraci.: Merop.]
Meropoecus smithi Emerson & Elbel, 1956
Merops leschenaulti leschenaulti Vieillot, 1817 [Coraci.: Merop.]

***Meropsiella* Conci, 1941**
Meropsiella apiastri (Denny, 1842)
Merops apiaster Linnaeus, 1758 [Coraci.: Merop.]
Meropsiella bullockoda (Williams, 1981) **new combination**
Merops bullockoides Smith, 1834 [Coraci.: Merop.]
Merospiella erythropteri (Piaget, 1885)
Merops albicollis Vieillot, 1817 [Coraci.: Merop.]
Merops americanus Muller, 1776, **new host record** [Coraci.: Merop.]
Merops bulocki bulocki Vieillot, 1817 [Coraci.: Merop.]
Merops gularis gularis Shaw, 1798, **new host record** [Coraci.: Merop.]
Merops hirundineus Lichtenstein, 1793 [Coraci.: Merop.]
Merops leschenaulti leschenaulti Vieillot, 1817 [Coraci.: Merop.]
Merops nubicoides Des Murs & Pucherans, 1846, **new host record** [Coraci.: Merop.]
Merops nubicus Gmelin, 1788 [Coraci.: Merop.]
Merops oreobates (Sharpe, 1892) **new host record** [Coraci.: Merop.]
Merops orientalis ferrugeiceps Anderson, 1879, **new host record** [Coraci.: Merop.]
Merops orientalis orientalis Latham, 1802 [Coraci.: Merop.]
Merops orientalis viridissimus Swainson, 1837, **new host record** [Coraci.: Merop.]
Merops ornatus Latham, 1802, **new host record** [Coraci.: Merop.]
Merops persicus persicus Pallas, 1773, **new host record** [Coraci.: Merop.]
Merops philippinus Linnaeus, 1767, **new host record** [Coraci.: Merop.]
Merops pusillus pusillus Müller, 1776 [Coraci.: Merop.]
Merops pusillus meridionalis (Sharpe, 1892)**new host record** [Coraci.: Merop.]
Merops revoilii Oustalet, 1882 [Coraci.: Merop.]
Merops superciliosus Linnaeus, 1766 [Coraci.: Merop.]
Merops variegatus variegatus Vieillot, 1817 [Coraci.: Merop.]
Merops viridis Linnaeus, 1758 [Coraci.: Merop.]

***Mirandofures* new genus**
Mirandofures altoguineae **new species**
Oreostruthes fuliginosa De Vis, 1898 [Passer.: Estrild.]
Mirandofures amandavae (Rékási & Saxena, 2005) **new combination**
Amandava amandava amandava (Linnaeus, 1758) [Passer.: Estrild.]
Amandava amandava punicea (Horsfield, 1821) **new host record** [Passer.: Estrild.]
Mirandofures astrildae (Tendeiro & Mendes, 1994) **new combination**
Estrilda astrild sousae Reichenow, 1904 [Passer.: Estrild.]
Mirandofures fasciata (Sychra [in Sychra *et al.*], 2010) **new combination**
Amadina fasciata (Gmelin, 1789) [Passer.: Estrild.]
Mirandofures kamena **new species**
Erythrura trichroa sigillifer (De Vis, 1897) [Passer.: Estrild.]

Mirandofures lonchurae (Tendeiro & Mendes, 1994) **new combination**
    Lonchura cucullata cucullata (Swainson, 1837) [Passer.: Estrild.]
Mirandofures munia (Ansari, 1955) **new combination**
    Euodice malabarica (Linnaeus, 1758) [Passer.: Estrild.]
Mirandofures muniae (Eichler, 1957) **new combination**
    Lonchura maja (Linnaeus, 1766) [Passer.: Estrild.]
Mirandofures stenozona (Kellogg & Chapman, 1902) **new combination**
    Lonchura punctulata nisoria (Temminck, 1830) [Passer.: Estrild.]
    Lonchura punctulata topela (Swinhoe, 1863) **new host record** [Passer.: Estrild.]

***Motmotnirmus* Mey & Barker, 2014**
Motmotnirmus guatemalensis (Dalgleish, 1971)
    Campephilus guatemalensis (Hartlaub, 1844) straggler? [Pic.: Pic.]
Motmotnirmus humphreyi (Oniki & Emerson, 1982)
    Baryphthengus ruficapillus (Vieillot, 1818) [Coraci.: Momot.]
Motmotnirmus marginellus (Nitzsch [in Giebel], 1866)
    Momotus aequatorialis chlorolaemus Berlepsch & Stolzmann, 1902 [Coraci.: Momot.]
    Momotus momota momota (Linnaeus, 1766) [Coraci.: Momot.]
    Momotus momota natteri Sclater, 1858 [Coraci.: Momot.]
    Momotus subrufescens Sclater, 1853 [Coraci.: Momot.]
    Momotus subrufescens reconditus Ridgway, 1914 [Coraci.: Momot.]
    Momotus subrufescens spatha Wetmore, 1956 [Coraci.: Momot.]
Motmotnirmus xilitla (Carriker, 1954)
    Momotus coeruliceps coeruliceps (Gould, 1836) [Coraci.: Momot.]

***Nemuus* new genus**
Nemuus hoedhri **new species**
    Artamus fuscus Vieillot, 1817 [Passer.: Artam.]
Nemuus imperator **new species**
    Artamus maximus Meyer, 1874 [Passer.: Artam.]

***Olivinirmus* Złotorzycka, 1964**
Olivinirmus clayae (Ansari, 1957) **new combination**
    Cyanocitta cristata (Linnaeus, 1758) [Passer.: Corv.]
    Cyanocitta stelleri (Gmelin, 1788) [Passer.: Corv.]
    Cyanocitta stelleri coronata (Swainson, 1827) [Passer.: Corv.]
Olivinirmus cyaneus (Carriker, 1963) **new combination**
    Cyanocorax cayanus (Linnaeus, 1766) [Passer.: Corv.]
Olivinirmus glandarii (Denny, 1842)
    Garrulus glandarius albipectus Kleinschmidt, 1920, **new host record** [Passer.: Corv.]
    Garrulus glandarius atricapillus Geoffroy Saint-Hilaire, 1832, **new host record** [Passer.: Corv.]
    Garrulus glandarius fernandi Keve-Kleiner, 1944 [Passer.: Corv.]
    Garrulus glandarius glandarius (Linnaeus, 1758) [Passer.: Corv.]
    Garrulus glandarii graecus Keve-Kleiner, 1939 [Passer.: Corv.]
    Garrulus glandarius krynicki Kaleniczenko, 1839 [Passer.: Corv.]
    Garrulus glandarius leucotis Hume, 1874, **new host record** [Passer.: Corv.]
    Garrulus glandarius rufotergum Hartert, 1903 [Passer.: Corv.]
    Garrulus glandarius whitakeri Hartert, 1903 **new host record** [Passer.: Corv.]
Olivinirmus hopkinsi (Ansari, 1956) **new combination**
    Cyanocorax yncas (Boddaert, 1783) [Passer.: Corv.]
    Cyanocorax yncas galeatus (Ridgway, 1900) [Passer.: Corv.]
    Cyanocorax yncas guatimalensis (Bonaparte, 1850) [Passer.: Corv.]
Olivinirmus husaini (Ansari, 1956) **new combination**
    Urocissa erythroryncha occipitalis (Blyth, 1846) [Passer.: Corv.]
    Urocissa flavirostris cucullata Gould, 1861 [Passer.: Corv.]

Olivinirmus keleri (Carriker, 1963) **new combination**
  Cyanocorax chrysops chrysops (Vieillot, 1818) [Passer.: Corv.]
Olivinirmus meinertzhageni (Ansari, 1956) **new combination**
  Dendrocitta vagabunda (Latham, 1790) [Passer.: Corv.]
  Dendrocitta vagabunda kinneari Baker, 1922, **new host record** [Passer.: Corv.]
  Dendrocitta vagabunda sakeratensis Gyldenstolpe, 1920, **new host record** [Passer.: Corv.]
Olivinirmus morionus (Carriker, 1963) **new combination**
  Cyanocorax morio (Wagler, 1829) [Passer.: Corv.]
Olivinirmus nitzschi (Kéler, 1938) **new combination**
  Cyanocorax cyanomelas (Vieillot, 1818) [Passer.: Corv.]
Olivinirmus olivaceus (Burmeister, 1838)
  Nucifraga caryocatactes caryocatactes (Linnaeus, 1758) [Passer.: Corv.]
  Nucifraga caryocatactes macrorhynchos Brehm, 1823, **new host record** [Passer.: Corv.]
Olivinirmus paraffinis **nom. nov.**
  Cyanocorax affinis affinis Pelzeln, 1856 [Passer.: Corv.]
Olivinirmus perisoreus (Ansari, 1956)
  Perisoreus infaustus infaustus (Linnaeus, 1758) [Passer.: Corv.]
Olivinirmus semiannulatus (Piaget, 1883) **new combination**
  Cracticus argenteus colletti Mathews, 1912, **new host record** [Passer.: Cractic.]
  Gymnorhina tibicen Latham, 1802 [Passer.: Cractic.]
  Gymnorhina tibicen dorsalis Campbell, 1895, **new host record** [Passer.: Cractic.]
  Gymnorhina tibicen eylandtensis White, 1922, **new host record** [Passer.: Cractic.]
  Gymnorhina tibicen longirostris Milligan, 1903, **new host record** [Passer.: Cractic.]
  Gymnorhina tibicen telonocua Schodde & Mason, 1999, **new host record** [Passer.: Cractic.]
  Gymnorhina tibicen tyrannica Schodde & Mason, 1999 [Passer.: Cractic.]
  Strepera graculina (Shaw, 1790) **new host record** [Passer.: Cractic.]
  Strepera versicolor arguta Gould, 1846, **new host record** [Passer.: Cractic.]
  Strepera versicolor plumbea Gould, 1846, **new host record** [Passer.: Cractic.]
Olivinirmus violaceus (Carriker, 1963) **new combination**
  Cyanocorax violaceus violaceus Du Bus de Gisignies, 1847 [Passer.: Corv.]

***Osculonirmus* Mey, 1982**
Osculonirmus limpidus Mey, 1982
  Eremophila alpestris adusta (Dwight, 1890) **new host record** [Passer.: Alaud.]
  Eremophila alpestris albigula (Bonaparte, 1850) **new host record** [Passer.: Alaud.]
  Eremophila alpestris brandti (Dresser, 1874) [Passer.: Alaud.]
  Eremophila alpestris utahensis (Behle, 1938) **new host record** [Passer.: Alaud.]

***Priceiella* new genus**
  ***Camurnirmus* new subgenus**
Priceiella (*Camurnirmus*) *hwameicola* **new species**
  Garrulax taewanus Swinhoe, 1859 [Passer.: Leiothrich.]
Priceiella (*Camurnirmus*) *nipalensis* (Ansari, 1956) **new combination**
  Grammatoptila striata sikkimensis (Ticehurst, 1924) [Passer.: Leiothrich.]
Priceiella (*Camurnirmus*) *paulbrowni* **new species**
  Garrulax leucolophus belangeri Lesson, 1831 [Passer.: Leiothrich.]
  Garrulax leucolophus diardi (Lesson, 1831) [Passer.: Leiothrich.]
Priceiella (*Camurnirmus*) *rhinocichlae* (Eichler, 1957) **new combination**
  Ianthocincla mitrata major (Robinson & Kloss, 1919) [Passer.: Leiothrich.] **new host record**
  Ianthocincla mitrata mitrata (Muller, 1836) [Passer.: Leiothrich.]
  ***Priceiella* new subgenus**
Priceiella (*Priceiella*) *longisterna* (Ansari, 1956) **new combination**
  Cutia nipalensis nipalensis Hodgson, 1837 [Passer.: Leiothrich.]
Priceiella (*Priceiella*) *mahrastan* (Ansari, 1956) **new combination**
  Turdoides striata somervillei (Sykes, 1832) [Passer.: Leiothrich.]
  Turdoides striata striata (Dumont, 1823) [Passer.: Leiothrich.]

Priceiella (*Priceiella*) *sternotransversa* (Ansari, 1956) **new combination**
    Ianthocincla albogularis albogularis (Gould, 1836) [Passer.: Leiothrich.]
Priceiella (*Priceiella*) *sternotypica* (Ansari, 1956) **new combination**
    Ianthocincla pectoralis pectoralis (Gould, 1936) [Passer.: Leiothrich.]
    Ianthocincla pectoralis subfusa Kinnear, 1924 [Passer.: Leiothrich.]
Priceiella (*Priceiella*) *ventrata* (Ansari, 1956) **new combination**
    Garrulax ruficollis (Jardine & Selby, 1838) [Passer.: Leiothrich.]
    ***Thescelovora* new subgenus**
Priceiella (*Thescelovora*) *alliocephala* **new species**
    Platylophus galericulatus ardesiacus (Bonaparte, 1850) [Passer.: Corv.]
Priceiella (*Thescelovora*) *malacocincla* (Najer & Sychra [in Najer *et al.*], 2014) **new combination**
    Turdinus abbotti Blyth, 1845 [Passer.: Pellorne.]
    ***Torosinirmus* new subgenus**
Priceiella (*Torosinirmus*) *brueliodes* (Ansari, 1956) **new combination**
    Turdoides aylmeri aylmeri (Shelley, 1885) [Passer.: Leiothrich.]
Priceiella (*Torosinirmus*) *koka* **new species**
    Turdoides tenebrosa (Hartlaub, 1883) [Passer.: Leiothrich.]
Priceiella (*Torosinirmus*) *nivea* (Ansari, 1956) **new combination**
    Turdoides hartlaubii (Bocage, 1868) [Passer.: Leiothrich.]

***Psammonirmus* new genus**
Psammonirmus lunatipectus **new species**
    Serilophus lunatus aphobus Deignan, 1948 [Passer.: Eurylaim.]
    Serilophus lunatus lunatus (Gould, 1834) [Passer.: Eurylaim.]

***Resartor* new genus**
Resartor effronte (Ansari, 1956) **new combination**
    Trochalopteron squamatum (Gould, 1835) [Passer.: Leiothrich.]
Resartor impressifrons (Ansari, 1956) **new combination**
    Trochalopteron affine affine (Blyth, 1843) [Passer.: Leiothrich.]
    Trochalopteron affine bethelae (Rand & Flemming, 1956) [Passer.: Leiothrich.]
Resartor novofacies (Ansari, 1956) **new combination**
    Trochalopteron subunicolor subunicolor (Blyth, 1843) [Passer.: Leiothrich.]

***Rostrinirmus* Złotorzycka, 1964**
Rostrinirmus boevi (Balát, 1958) **new combination**
    Passer domescticus indicus Jardine & Selby, 1831, **new host record** [Passer.: Passer.]
    Passer hispaniolensis hispaniolensis (Temminck, 1820) [Passer.: Passer.]
    Passer hispaniolensis trancaspicus Tschusi, 1902, **new host record** [Passer.: Passer.]
Rostrinirmus buresi (Balát, 1958) **new combination**
    Emberiza bruniceps Brandt, 1841 [Passer.: Emberiz.]
    Emberiza hortulana Linnaeus, 1758 [Passer.: Emberiz.]
    Emberiza melanocephala Scopoli, 1769 [Passer.: Emberiz.]
    Sylvia mystacea Menetries, 1832 [Passer.: Sylvi.]
Rostrinirmus carpodaci Balát, 1981
    Carpodacus erythrinus erythrinus (Pallas, 1770) [Passer.: Fringill.]
Rostrinirmus hudeci Balát, 1981
    Parus major major Linnaeus, 1758 [Passer.: Par.]
Rostrinirmus pflegeri Balát, 1981
    Acrocephalus palustris (Bechstein, 1798) [Passer.: Acrocephal.]
Rostrinirmus raji (Ansari, 1947) **new combination**
    Petronia xanthocollis xanthocollis (Burton, 1838) [Passer.: Passer.]
Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866)
    Emberiza bruniceps Brandt, 1841 [Ref.: Blagoveshtchensky 1951] [Passer.: Emberiz.]
    Emberiza stewarti (Blyth, 1845) [Ref.: Blagoveshtchensky 1951] [Passer.: Emberiz.]
    Passer domesticus domesticus (Linnaeus, 1758) [Passer.: Passer.]

Passer hispaniolensis transcaspicus Tschusi, 1902 [Ref.: Blagoveshtchensky 1951] [Passer.: Passer.]
Passer montanus montanus (Linnaeus, 1758) [Passer.: Passer.]
Passer montanus malaccensis Dubois, 1887, **new host record** [Passer.: Passer.]
Passer montanus obscuratus Jacobi, 1923, **new host record** [Passer.: Passer.]
Passer montanus saturatus Stejneger, 1885, **new host record** [Passer.: Passer.]

***Saepocephalum* new genus**
Saepocephalum stephenfryi **new species**
Corcorax melanorhamphos (Vieillot, 1817) [Passer.: Corcorac.]

***Schizosairhynchus* new genus**
Schizosairhynchus erysichthoni **new species**
Aplonis metallica metallica (Temminck, 1824) [Passer.: Sturn.]
Aplonis metallica nitida (Grey, 1858) [Passer.: Sturn.]
Schizosairhynchus minovenator **new species**
Mino dumontii Lesson, 1827 [Passer.: Sturn.]
Schizosairhynchus philippensis (Tandan & Kumar, 1969) **new combination**
Basilornis miranda (Hartert, 1903) [Passer.: Sturn.]

***Sturnidoecus* Eichler, 1944**
Sturnidoecus acuminatus (Piaget, 1880) = *Brueelia*-complex *incertae sedis*
Sturnidoecus acutifrons (Uchida, 1949)
Hypsipetes amaurotis ogawae Hartert, 1907 [Passer.: Pycnonot.]
Sturnidoecus acutifrons Ansari, 1968 = *Sturnidoecus neoacutifrons* Price, Hellenthal & Palma, 2003
Sturnidoecus aenas (Piaget, 1885) = *Philopterus aenas* (Piaget, 1885) **new combination**
Sturnidoecus affinis (Piaget, 1880)
Acridotheres javanicus Cabanis, 1851 [Passer.: Sturn.]
Sturnidoecus afzali Ansari, 1968
Creatophora cinerea (Meuschen, 1787) [Passer.: Sturn.]
Sturnidoecus atharea Ansari, 1968
Luscinia svecicus svecicus (Linnaeus, 1758) [Passer.: Muscicap.]
Sturnidoecus australafricanus **new species**
Corvinella melanoleuca expressa (Clancey, 1961) [Passer.: Lani.]
Sturnidoecus avivorax Ansari, 1968
Onychognathus tristrami (Sclater, 1858) [Passer.: Sturn.]
Sturnidoecus bannoo Ansari, 1955
Acridotheres cristatellus cristatellus (Linnaeus, 1758) [Passer.: Sturn.]
Acridotheres cristatellus formosanus (Hartert, 1912) [Passer.: Sturn.]
Acridotheres fuscus fuscus (Wagler, 1827) [Passer.: Sturn.]
Acridotheres ginginianus (Latham, 1790) [Passer.: Sturn.]
Acridotheres tristis (Linnaeus, 1766) [Passer.: Sturn.]
Sturnidoecus bannoo avinus Ansari, 1968 = *Sturnidoecus bannoo* Ansari, 1955
Sturnidoecus bannoo laticephalum Ansari, 168 = *Sturnidoecus bannoo* Ansari, 1955
Sturnidoecus basilewskyi Tendeiro, 1963
Ploceus cucullatus bohndorffi Reichenow, 1887 [Passer.: Ploce.]
Ploceus cucullatus cucullatus (Müller, 1776) [Passer.: Ploce.]
Ploceus cucullatus nigriceps (Layard, 1867) [Passer.: Ploce.]
Sturnidoecus basilewskyi minor Tendeiro, 1963 = *Sturnidoecus basilewskyi* Tendeiro, 1963 **new synonymy**
Sturnidoecus bituberculatus (Giebel, 1874)
Dicrurus macrocercus Vieillot, 1817 [Passer.: Dicrur.]
Sturnidoecus blandus Zlotorzycka, 1964
Carduelis carduelis carduelis (Linnaeus, 1758) [Passer.: Fringill.]
Sturnidoecus boevi (Balát, 1958) = *Rostrinirmus boevi* (Balát, 1958) **new combination**
Sturnidoecus borobodur Mey, 1989
Acridotheres melanopterus (Daudon, 1800) [Passer.: Sturn.]

Sturnidoecus caligineus (Carriker, 1903)
    Turdus grayi casius (Bonaparte, 1855) [Passer.: Turd.]
Sturnidoecus capensis (Giebel, 1874)
    Acridotheres fuscus torquatus Davison, 1892, **new host record** [Passer.: Sturn.]
    Acridotheres grandis Moore, 1858, **new host record** [Passer.: Sturn.]
    Acridotheres tristis (Linnaeus, 1766) [Passer.: Sturn.]
    Acridotheres tristis melanosturnus Legge, 1879 [Passer.: Sturn.]
    Gracupica contra contra (Linnaeus, 1758) **new host record** [Passer.: Sturn.]
    Gracupica contra floweri (Sharpe, 1897) **new host record** [Passer.: Sturn.]
    Gracupica contra jalla (Horsfield, 1821) **new host record** [Passer.: Sturn.]
    Gracupica contra superciliaris (Blyth, 1863) **new host record** [Passer.: Sturn.]
Sturnidoecus capitis Ansari, 1955 = *Philopterus capitis* (Ansari, 1955) **new combination**
Sturnidoecus carpodaci (Balát, 1981) = *Rostrinirmus carpodaci* Balát, 1981
Sturnidoecus carrikeri Ansari, 1968
    Turdus olivater sanctaemartae (Todd, 1913) [Passer.: Turd.]
Sturnidoecus chendoola Ansari, 1955 = *Penenirmus chendoola* (Ansari, 1955) **new combination**
Sturnidoecus chilchil Ansari, 1955 = *Philopterus chilchil* (Ansari, 1955) **new combination**
Sturnidoecus clayae Ansari, 1968
    Onychognathus blythii (Hartlaub, 1859) [Passer.: Sturn.]
Sturnidoecus continuus (Piaget, 1880)
    Porphyrio indicus Horsfield, 1821, straggler? [Gru.: Rall.]
Sturnidoecus distinguendus Ansari, 1968
    Lamprotornis iris (Oustalet, 1879) [Passer.: Sturn.]
Sturnidoecus eichleri Ansari, 1968
    Lamprotornis chalybaeus Hemprich & Ehrenberg, 1828 [Passer.: Sturn.]
    Lamprotornis chalybaeus nordmanni (Hartert & Neumann, 1914) **new host record** [Passer.: Sturn.]
Sturnidoecus femoratus (Piaget, 1880)
    Actenoides princeps (Reichenbach, 1851) straggler? [Coraci.: Alcedin.]
Sturnidoecus fragilis Ansari, 1968 = *Sturnidoecus capensis* (Giebel, 1874) **new synonymy**
Sturnidoecus galbula Tendeiro, 1963
    Ploceus galbula Rüppell, 1840 [Passer.: Ploce.]
Sturnidoecus graculae (Piaget, 1880)
    Gracula religiosa Linnaeus, 1758 [Passer.: Sturn.]
Sturnidoecus guldum Ansari, 1955 = *Penenirmus guldum* (Ansari, 1955) **new combination**
Sturnidoecus hudeci (Balát, 1981) = *Rostrinirmus hudeci* Balát, 1981
Sturnidoecus husaini Ansari, 1968 = *Buphagoecus husaini* (Ansari, 1968) **new combination**
Sturnidoecus illustris Ansari, 1968
    Onychognathus tenuirostris theresae Meinertzhagen, 1937 [Passer.: Sturn.]
Sturnidoecus incomptus Ansari, 1955
    Turdus grayi incomptus (Bangs, 1898) [Passer.: Turd.]
Sturnidoecus intermedius Ansari, 1955
    Turdus serranus atrosericus (Lafresnaye, 1848) [Passer.: Turd.]
    Turdus serranus serranus Tschudi, 1844 [Passer.: Turd.]
Sturnidoecus irritans Ansari, 1955 = *Penenirmus irritans* (Ansari, 1955) **new combination**
Sturnidoecus leontodon (Nitzsch, 1818) = *Sturnidoecus sturni* (Schrank, 1776)
Sturnidoecus lopesi Tendeiro, 1963 = *Sturnidoecus basilewskyi* Tendeiro, 1963 **new synonymy**
Sturnidoecus meinertzhageni Ansari, 1968
    Lamprotornis splendidus bailundensis (Neumann, 1920) [Passer.: Sturn.]
    Lamprotornis splendidus splendidus (Vieillot, 1822) [Passer.: Sturn.]
Sturnidoecus melodicus (Eichler, 1951)
    Turdus philomelos philomelos Brehm, 1831 [Passer.: Turd.]
Sturnidoecus mexicanus Carriker, 1956
    Turdus infuscatus (Lafresnaye, 1844) [Passer.: Turd.]
Sturnidoecus migratorii Peters, 1935 = *Sturnidoecus simplex* (Kellogg, 1896)
Sturnidoecus mon **new species**
    Euplectes hordeaceus (Linnaeus, 1758) [Passer.: Ploce.]

Sturnidoecus neoacutifrons Price, Hellenthal & Palma, 2003
    Sturnia malabarica (Gmelin, 1789) [Passer.: Sturn.]
Sturnidoecus neointermedius Price, Hellenthal & Palma, 2003
    Ploceus intermedius intermedius Rüppell, 1845 [Passer.: Ploce.]
Sturnidoecus obsoletus Ansari, 1955
    Turdus obsoletus obsoletus Lawrence, 1862 [Passer.: Turd.]
Sturnidoecus opeca Ansari, 1969
    Speculipastor bicolor Reichenow, 1879 [Passer.: Sturn.]
Sturnidoecus orientalis Mey, 1989
    Gracupica nigricollis (Paykull, 1807) [Passer.: Sturn.]
Sturnidoecus ostralegi (Denny, 1842) = *Sturnidoecus sturni* (Schrank, 1776)
Sturnidoecus parvifrons Ansari, 1968
    Lamprotornis mevesii (Wahlberg, 1856) [Passer.: Sturn.]
Sturnidoecus pastoris (Denny, 1842)
    Pastor roseus (Linnaeus, 1758) [Passer.: Sturn.]
Sturnidoecus peguensis Mey, 1989
    Acridotheres burmannicus (Jerdon, 1862) [Passer.: Sturn.]
Sturnidoecus perunensis Ansari, 1955
    Turdus ignobilis debilis Hellmayr, 1902 [Passer.: Turd.]
Sturnidoecus pflegeri (Balát, 181b) = *Rostrinirmus pflegeri* Balát, 1981
Sturnidoecus philippensis Tandan & Kumar, 1969 = *Schizosairhynchus philippensis* (Tandan & Kumar) **new combination**
Sturnidoecus porphyrogenitus **new species**
    Cinnyricinclus leucogaster verreauxi (Bocage, 1870) [Passer.: Sturn.]
Sturnidoecus prominens Ansari, 1968 = *Buphagoecus prominens* (Ansari, 1968) **new combination**
Sturnidoecus quadrilineatus (Nitzsch, 1866) = *Penenirmus quadrilineatus* (Nitzsch, 1866) **new combination**
Sturnidoecus radui Bechet, 1965
    Oriolus oriolus oriolus (Linnaeus, 1758) [Passer.: Oriol.]
Sturnidoecis raji (Ansari, 1947) = *Rostrinirmus raji* (Ansari, 1947) **new combination**
Sturnidoecus refractoriolus (Złotorzycka, 1964) = *Rostrinirmus ruficeps* (Nitzsch [in Giebel], 1866)
Sturnidoecus regalis Ansari, 1955
    Turdus fulviventris Sclater, 1858 [Passer.: Turd.]
Sturnidoecus rehanae Ansari, 1955
    Turdus nigriceps Cabanis, 1874 [Passer.: Turd.]
Sturnidoecus rostratus (Mey, 1982) = *Rostrinirmus buresi* (Balát, 1958) **new combination**
Sturnidoecus ruficeps (Nitzsch [in Giebel], 1866) = *Rostrinirmus ruficeps* (Nitzsch [in Giebel], 1866)
Sturnidoecus saleimi Ansaru, 1955 = *Penenirmus saleimi* (Ansari, 1955)
Sturnidoecus sarwatae (Ansari, 1955
    Turdus rufiventris rufiventris Vieillot, 1818 [Passer.: Turd.]
Sturnidoecus senegalensis (Rudow, 1896)
    Lamprotornis nitens (Linnaeus, 1766) [Passer.: Sturn.]
Sturnidoecus sexualis Tendeiro, 1963
    Ploceus vitellinus uluensis (Neumann, 1900) [Passer.: Ploce.]
Sturnidoecus simplex (Kellogg, 1896)
    Turdus migratorius Linnaeus, 1766 [Passer.: Turd.]
    Turdus migratorius caurinus (Grinnell, 1909) [Passer.: Turd.]
    Turdus migratorius migratorius Linnaeus, 1766 [Passer.: Turd.]
Sturnidoecus somnodraco **new species**
    Quelea quelea lathami (Smith, 1836) [Passer.: Ploce.]
    Quelea quelea quelea (Linnaeus, 1758) [Passer.: Ploce.]
Sturnidoecus stresemanni Mey, 1989
    Leucopsar rothschildi Stresemann, 1912 [Passer.: Sturn.]
Sturnidoecus sturni (Schranck, 1776)
    Sturnus vulgaris humii Brooke, 1876 [Ref.: Ansari 1968] [Passer.: Sturn.]
    Sturnus vulgaris nobilior Hume, 1879, **new host record** [Passer.: Sturn.]
    Sturnus vulgaris poltaratskyi Finsch, 1878 [Passer.: Sturn.]
    Sturnus vulgaris vulgaris Linnaeus, 1758 [Passer.: Sturn.]

Sturnus vulgaris zetlandicus Hartert, 1918 [Passer.: Sturn.]
Sturnidoecus subacutus (Piaget, 1880)
Lamprotornis australis (Smith, 1836) host species uncertain [Passer.: Sturn.]
Sturnidoecus suzume (Uchida, 1949) = *Rostrinirmus ruficeps* (Nitzsch [in Giebel], 1866)
Sturnidoecus textoris Tendeiro, 1964
Ploceus melanocephalus (Linnaeus, 1758) [Passer.: Ploce.]
Ploceus melanocephalus duboisi Hartlaub, 1886 [Passer.: Ploce.]
Sturnidoecus theresae Ansari, 1968
Lamprotornis superbus (Rüppell, 1845) [Passer.: Sturn.]
Sturnidoecus tulackovae (Balát, 1981)
Locustella fluviatilis (Wolf, 1810) [Passer.: Megalur.]
Sturnidoecus wittei Tendeiro, 1963*Tchagra senegalus armenus* (Oberholser, 1906) [Passer.: Malaconot.]
Tchagra senegalus habessinica (Hemprich & Ehrenberg, 1833) **new host record** [Passer.: Malaconot.]
Tchagra senegalus kalahari (Roberts, 1932) **new host record** [Passer.: Malaconot.]
Tchagra senegalus orientalis (Cabanis, 1869) **new host record** [Passer.: Malaconot.]
Tchagra tchagra natalensis (Reichenow, 1903) **new host record** [Passer.: Malaconot.]
Sturnidoecus xanthops Tendeiro, 1963
Ploceus xanthops (Hartlaub, 1862) [Passer.: Ploce.]
Sturnidoecus zahrae Ansari, 1968
Onychognathus morio (Linnaeus, 1766) [Passer.: Sturn.]
Sturnidoecus zoophilic Ansari, 1968
Sturnia sinensis (Gmelin, 1788) [Passer.: Sturn.]

***Teinomordeus* new genus**
Teinomordeus entelosetus **new species**
Eurocephalus rueppelli Bonaparte, 1853 [Passer.: Lani.]

***Titanomessor* new genus**
Titanomessor sexloba **new species**
Laniarius erythrogaster (Cretzschmar, 1829) [Passer.: Malaconot.]

***Traihoriella* Ansari, 1947**
Traihoriella binhchauensis (Najer & Sychra [in Najer *et al*.], 2014) **new combination**
Psilopogon asiaticus asiaticus (Latham, 1790) **new host record** [Pic.: Megalaim.]
Psilopogon asiaticus davisoni (Hume, 1877) **new host record** [Pic.: Megalaim.]
Psilopogon faiostrictus praeternissus (Kloss, 1918) **new host record** [Pic.: Megalaim.]
Psilopogon franklinii franklinii (Blyth, 1842) [Pic.: Megalaim.]
Psilopogon incognitus elbeli (Deignan, 1956) **new host record** [Pic.: Megalaim.]
Psilopogon lineatus hodgsoni (Bonaparte, 1850) [Pic.: Megalaim.]
Psilopogon monticola (Sharpe, 1889) **new host record** [Pic.: Megalaim.]
Psilopogon mystacophanos mystacophanos (Temminck, 1824) **new host record** [Pic.: Megalaim.]
Psilopogon nuchalis (Gould, 1863) **new host record** [Pic.: Megalaim.]
Psilopogon oorti (Muller, 1836) **new host record** [Pic.: Megalaim.]
Traihoriella carrikeri (Ansari, 1955) **new combination**
Turdus serranus atrosericus (Lafresnaye, 1848) [Passer.: Turd.]
Traihoriella laticeps (Piaget, 1888) **new combination**
Andigena nigrirostris occidentalis Chapman, 1915 [Pic.: Ramphast.]
Andigena nigrirostris spilorhynchus Gould, 1858, **new host record** [Pic.: Ramphast.]
Aulacorhynchus coeruleicinctus d'Orbigny, 1840 [Pic.: Ramphast.]
Aulacorhynchus debianus Gould, 1835, **new host record** [Pic.: Ramphast.]
Aulacorhynchus haematopygus (Gould, 1835) [Pic.: Ramphast.]
Aulacorhynchus prasinus caeruleogularis (Gould, 1835) [Pic.: Ramphast.]
Aulacorhynchus prasinus prasinus (Gould, 1833) **new host record** [Pic.: Ramphast.]
Aulacorhynchus prasinus albovitta (Boissoneau, 1840) [Pic.: Ramphast.]
Aulacorhynchus prasinus atrogularis (Sturm & Sturm, 1841) [Pic.: Ramphast.]
Aulacorhynchus prasinus maxillaris Griscom, 1924, **new host record** [Pic.: Ramphast.]

Aulacorhynchus sulcatus erythrognathus (Gould, 1874) **new host record** [Pic.: Ramphast.]
Aulacorhynchus sulcatus sulcatus (Swainson, 1820) **new host record** [Pic.: Ramphast.]
Traihoriella punjabensis Ansari, 1947
Psilopogon virens marshallorum (Swinhoe, 1870) [Pic.: Megalaim.]
Psilopogon virens virens (Boddaert, 1783) [Pic.: Megalaim.]

***Turdinirmoides* new genus**
Turdinirmoides grandalae (Clay, 1936) **new combination**
Grandala coelicolor Hodgson, 1843 [Passer.: Muscicap.]
Turdinirmoides hrabali (Najer & Sychra [in Najer *et al.*], 2012) **new combination**
Mixornis gularis (Horsfield, 1822) [Passer.: Timali.]

***Turdinirmus* Eichler, 1951**
Turdinirmus australissimus **new species**
Zoothera lunulata lunulata (Latham, 1802) [Passer.: Turd.]
Turdinirmus daumae (Clay, 1936)
Zoothera dauma aurea (Holandre, 1825) **new host record** [Passer.: Turd.]
Zoothera dauma dauma (Latham, 1790) [Passer.: Turd.]
Zoothera dauma toratugumi (Momiyama, 1940) **new host record** [Passer.: Turd.]
Turdinirmus eichleri Mey, 1982
Turdus obscurus Gmelin, 1789 [Passer.: Turd.]
Turdinirmus merulensis (Denny, 1842)
Turdus merula aterrimus (Madarasz, 1903) [Ref.: Blagoveshtchensky 1940] [Passer.: Turd.]
Turdus merula merula Linnaeus, 1758 [Passer.: Turd.]
Turdus merula mandarinus Bonaparte, 1850 [Passer.: Turd.]
Turdus merula syriacus Hemprich & Ehrenberg, 1833, **new host record** [Passer.: Turd.]
Turdus pallidus Gmelin, 1789 [Passer.: Turd.]
Turdus philomelos philomelos Brehm, 1831, **new host record** [Passer.: Turd.]
Turdinirmus stresemanni (Clay, 1936)
Zoothera monticola monticola Vigors, 1832 [Passer.: Turd.]
Turdinirmus zootherae (Clay, 1936)
Zoothera marginata Blyth, 1847 [Passer.: Turd.]

***Brueelia*-complex**
Incertae sedis
Docophorus acuminatus Piaget, 1880
Tauraco persa (Linnaeus, 1758) [Cucul.: Musophag.]
Nirmus brasiliensis Giebel, 1874
Tangara mexicana brasiliensis (Linnaeus, 1766) [Passer.: Thraup.]
Nirmus eustigma Kellogg, 1896
Calypte anna (Lesson, 1829) [Apod.: Trochil.]
Nirmus hecticus Nitzsch [in Giebel], 1866
Sericulus chrysocephalus (Lewin, 1808) [Passer.: Ptilonorhynch.]
Nirmus nudus Giebel, 1874
Seleucidis melanoleuca (Daudin, 1800) [Passer.: Paradisae.]
Nirmus ovalis Neumann, 1890
Eclectus roratus polychlorus (Scopoli, 1786) [Psittac.: Psittac.]
Psittrichas fulgidus (Lesson, 1830) [Psittac.; Psittac.]

NOTES

[1] Williams (1986) listed several North American bird species as hosts of *Brueelia deficiens*, but its type host is European. The basis for this wide host range appears to be the superficial similarities in the male genitalia, though the key characters given by Williams (1986) for this similarity are sufficient to place them within *Brueelia* s. str. only. Non-genitalic characters of the louse populations from the hosts included by Williams (1986) show that they all belong to a different, yet undescribed species. Therfore, we have not listed the North American hosts of *Br. deficiens* in this checklist.

[2] Williams (1983) listed several host species of *Brueelia dorsale*. However, material examined from all host species, except the type host, represent a different species. Therefore, we have removed *Toxostoma curvirostre*, *T. redivivum* and *T. rufum* from the host list of *Br. dorsale*.

[3] All the specimens we have examined from North American woodpeckers differ in head shape and other characters from European material of *Br. straminea*. Therefore, were have not listed the North American hosts from under *Br. straminea* in this checklist. *Brueelia* s. str. from North American woodpeckers are quite variable and, as suggested by the molecular phylogeny in Bush *et al*. (2015a), this material may ultimately represent multiple species. The diversity and distribution of *Brueelia* s. str. on woodpeckers requires additional taxonomic study.

[4] Kellogg (1896: 496) claimed to have collected *Br. vulgata* from several host species, and in later studies, this species has been reported from several other hosts (*e.g.* Kellogg & Chapman 1899; Kellogg & Kuwana 1902; Woodman & Dicke 1954). The lectotype selected by Carriker (1957b) is a female *Brueelia* s. str. from *Junco hyemalis*. Although poorly preserved, the lectotype is similar to other material from the same host from other collection events, and we tentatively accept *J. hyemalis* as the correct host of *Br. vulgata*. Kellogg's host-louse associations are known to contain a large number of stragglers and contaminates (see Thompson 1938: Palma 1994; Palma & Peck 2013). Unless additional specimens are found and correctly identified, most of the hosts that were previously considered to be associated with *Br. vulgata* should be considered suspect. Therefore, we do not include these host associations in this checklist.

[5] We have not seen Balát's (1982) original material, but from his descriptions and illustrations of *Br. weberi*, it is clear that this is a very different species from all material we have examined from *Parus major*, or any other host of the family Paridae. His illustration is more similar to *Brueelia* s. str. species found on buntings (Emberizidae), hence his specimens may be stragglers or contaminants.

[6] Our material examined from *Mimus longicaudatus*, *Mimus gilvus*, *Mimus gundlachii*, *Ramphocinclus brachyurus* and *Melanotis hypoleucus* all appear to represent different species, none of which are particulary similar to the original illustration of *Guimaraesiella brunneinucha*, but we have not examined material from the type host of this species. We retain all those bird species as hosts of *Gu. brunneinucha* in this checklist, but further study is warranted.

[7] Williams (1983) recorded *Mimus gundlachii*, *Mimus longicaudatus*, *Mimus gilvus*, *Melanotis hypoleucus* and *Ramphocinclus brachyurus* as hosts for "*Brueelia*" *polyglotta*. Examination of the material she studied reveals several different but closely related species. We consider *Mimus polyglottos* to be the only true host of *Guimaraesiella polyglotta*. Therefore, we do not include the other host associations in this checklist. Additional taxonomic work is needed to formally describe material from the other host species listed by Williams (1983).

APPENDIX II

Checklist of species included in the *Brueelia* -complex arranged by host

This checklist is arranged alphabetically by host order, family, genus and species according to the taxonomy of Clements *et al.* (2015). Host-louse records without a reference have been taken from Price *et al*. (2003), unless stated otherwise. Chewing louse genera and species are indented below each host. Louse species are followed by the author and year of publication, with new nomenclatorial acts indicated in **boldface**, as established in the main text.

The word "? straggler" indicates that, while the host name is valid, we believe that: (1) the host was misidentified, or (2) the lice were found on the host as a result of a contamination by human agency, or (3) the lice were found on the host as the result of naturally occurring straggling events.

APODIFORMES
Trochilidae
Calypte anna (Lesson, 1829)
    Nirmus eustigma Kellogg, 1896 (? straggler)

CHARADRIIFORMES
Burhinidae
Burhinus oedicnemus (Linnaeus, 1758)
    Brueelia immaculata (Piaget, 1890) (? straggler)

CORACIIFORMES
Alcedinidae
Actenoides princeps (Reichenbach, 1851)
    Sturnidoecus femoratus (Piaget, 1880) (? straggler)

Brachypteraciidae
Brachyptreacias leptosomus (Lesson, 1833)
    Buerelius longiceps (Piaget, 1880)
    Buerelius subsimus Clay & Tandan, 1967)

Bucerotidae
Penelopides manillae (Boddaerts, 1783)
    Corvonirmus hamatofasciatus (Piaget, 1890) **new combination** (? straggler)

Meropidae
Merops albicollis Vieillot, 1817
    Meropsiella erythropteri (Piaget, 1885)
Merops americanus Muller, 1776
    Meropoecus balisong **new species**
    Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops apiaster Linnaeus, 1758
    Meropoecus meropis (Denny, 1842)
    Meropsiella apiastri (Denny, 1842)
Merops bullockoides Smith, 1834
    Meropoecus mossambicensis Tendeiro, 1989
    Meropsiella bullockoda (Williams, 1981)
Merops bulocki bulocki Vieillot, 1817
    Meropoecus emersoni Tendeiro, 1961
    Meropsiella erythropteri (Piaget, 1885)
Merops gularis gularis Shaw, 1798
    Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops hirundineus Lichtenstein, 1793
    Meropsiella erythropteri (Piaget, 1885)

Merops leschenaulti leschenaulti Vieillot, 1817
Meropoecus smithi Emerson & Elbel, 1956
Meropsiella erythropteri (Piaget, 1885)
Merops nubicoides Des Murs & Pucherans, 1846
Meropoecus eichleri Tendeiro, 1989
Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops nubicus Gmelin, 1788
Meropsiella erythropteri (Piaget, 1885)
Merops oreobates (Sharpe, 1892)
Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops orientalis ferrugeiceps Anderson, 1879
Meropoecus caprai Conci, 1941 **new host record**
Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops orientalis orientalis Latham, 1802
Meropoecus caprai Conci, 1941
Meropsiella erythropteri (Piaget, 1885)
Merops orientalis viridissimus Swainson, 1837
Meropoecus debeauxi Conci, 1941 **new host record**
Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops ornatus Latham, 1802
Meropoecus bartlowi **new species**
Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops persicus persicus Pallas, 1773
Meropoecus meropis (Denny, 1842)
Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops philippinus Linnaeus, 1767
Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops pusillus pusillus Müller, 1776
Meropoecus debeauxi Conci, 1941
Meropsiella erythropteri (Piaget, 1885)
Merops pusillus meridionalis (Sharpe, 1892)
Meropsiella erythropteri (Piaget, 1885) **new host record**
Merops revoilii Oustalet, 1882
Meropoecus debeauxi Conci, 1941 **new host record**
Meropsiella erythropteri (Piaget, 1885)
Merops superciliosus Linnaeus, 1766
Meropsiella erythropteri (Piaget, 1885)
Merops variegatus variegatus Vieillot, 1817
Meropsiella erythropteri (Piaget, 1885)
Merops viridis Linnaeus, 1758
Meropsiella erythropteri (Piaget, 1885)
Nyctyornis amicta (Temminck, 1824)
Aporisticeras athertona (Williams, 1981) **new combination**
Nyctyornis athertoni athertoni (Jardine & Selby, 1828)
Aporisticeras athertona (Williams, 1981) **new combination**

Momotidae
Baryphthengus ruficapillus (Vieillot, 1818)
Motmotnirmus humphreyi (Oniki & Emerson, 1982)
Momotus aequatorialis chlorolaemus Berlepsch & Stolzmann, 1902
Motmotnirmus marginella (Nitzsch [in Giebel], 1866)
Momotus coeruliceps coeruliceps (Gould, 1836)
Motmotnirmus xilitla (Carriker, 1954)
Momotus momota momota (Linnaeus, 1766)
Motmotnirmus marginella (Nitzsch [in Giebel], 1866)

Momotus momota natteri Sclater, 1858
    Motmotnirmus marginella (Nitzsch [in Giebel], 1866)
Momotus subrufescens Sclater, 1853
    Motmotnirmus marginella (Nitzsch [in Giebel], 1866)
Momotus subrufescens reconditus Ridgway, 1914
    Motmotnirmus marginella (Nitzsch [in Giebel], 1866)
Momotus subrufescens spatha Wetmore, 1956
    Motmotnirmus marginella (Nitzsch [in Giebel], 1866)

CUCULIFORMES
Cuculidae
Coua caerulea (Linnaeus, 1766)
    Couala angulata (Piaget, 1880) **new combination**
Coua cristata pyropyga Grandidier, 1867
    Couala dodekopter **new species**
Coua serriana Pucheran, 1845
    Couala goniodes (Piaget, 1880) **new combination**

Musophagidae
Tauraco persa (Linnaeus, 1758)
    Docophorus acuminatus Piaget, 1880 (? straggler)

GALLIFORMES
Odontophoridae
Colinus virginianus (Linnaeus, 1758)
    Brueelia abrupta (Osborn, 1896) (? straggler)

GRUIFORMES
Rallidae
Porphyrio indicus Horsfield, 1821
    Sturnidoecus continuus (Piaget, 1880) (? straggler)

PASSERIFORMES
Acrocephalidae
Acrocephalus palustris (Bechstein, 1798)
    Rostrinirmus pflegeri Balát, 1981
Acrocephalus schoenobaenus (Linnaeus, 1758)
    Brueelia vaneki Balát, 1982

Alaudidae
Alauda arvensis cantarella Bonaparte, 1850
    Brueelia parviguttata (Blagoveshtchensky, 1940)
Calandrella cinerea (Gmelin, 1789)
    Brueelia calandrellae Fedorenko, 1975
Eremophila alpestris adusta (Dwight, 1890)
    Osculonirmus limpidus Mey, 1982 **new host record**
Eremophila alpestris albigula (Bonaparte, 1850)
    Osculonirmus limpidus Mey, 1982 **new host record**
Eremophila alpestris brandti (Dresser, 1874)
    Osculonirmus limpidus Mey, 1982
Eremophila alpestris utahensis (Behle, 1938)
    Osculonirmus limpidus Mey, 1982 **new host record**
Galerida cristata iwanowi Zarudny & Loudon, 1903
    Brueelia parviguttata (Blagoveshtchensky, 1940) [Ref.: Blagoveshtchensky 1951]
Lullula arborea arborea (Linnaeus, 1758)
    Brueelia lullulae Bechet, 1961

Melanocorypha calandra calandra (Linnaeus, 1766)
    Brueelia melanocryphae Bechet, 1966
Melanocorypha calandra psammochroa Hartert, 1904
    Brueelia melanocoryphae Bechet, 1966 **new host record**

Artamidae
Artamus fuscus Vieillot, 1817
    Nemuus hoedhri **new species**
Artamus maximus Meyer, 1874
    Nemuus imperator **new species**

Bombycillidae
Bombycilla cedrorum Vieillot, 1808
    Brueelia cedrorum (Piaget, 1880)
Bombycilla garrulus garrulus (Linnaeus, 1758)
    Brueelia brachythorax (Giebel, 1874)
Bombycilla garrulus pallidiceps Reichenow, 1908
    Brueelia brachythorax (Giebel, 1874) **new host record**

Buphagidae
Buphagus africanus Linnaeus, 1766
    Buphagoecus husaini (Ansari, 1968) **new combination**
Buphagus erythrorhynchus (Stanley, 1814)
    Buphagoecus prominens (Ansari, 1968) **new combination**

Calcariidae
Calcarius lapponicus lapponicus (Linnaeus, 1758)
    Brueelia infrequens (Carriker, 1902)
Plectrophenax nivalis nivalis (Linnaeus, 1758)
    Brueelia nivalis (Giebel, 1874)
Plectrophenax nivalis vlasovae Portenko, 1937
    Brueelia nivalis (Giebel, 1874)

Callaeidae
Callaeas cinerea (Gmelin, 1788)
    Guimaraesiella calleincola (Valim & Palma, 2015) **new combination**
Callaeas wilsoni (Bonaparte, 1851)
    Guimaraesiella calleincola (Valim & Palma, 2015) **new combination**
Philesturnus carunculatus (Gmelin, 1789)
    Guimaraesiella calleincola (Valim & Palma, 2015) **new combination**
Philesturnus rufusater (Lesson, 1828)
    Guimaraesiella calleincola (Valim & Palma, 2015) **new combination**

Campephagidae
Coracina striata difficilis (Harter, 1895)
    Indoceoplanetes (*Indoceoplanetes*) *indonesiana* (Eichler, 1947) **new combination**, **new host record**
Coracina striata panayensis (Steere, 1890)
    Indoceoplanetes (*Indoceoplanetes*) *indonesiana* (Eichler, 1947) **new combination**, **new host record**
Coracina striata sumatrensis (Müller, 1843)
    Indoceoplanetes (*Indoceoplanetes*) *indonesiana* (Eichler, 1947) **new combination**
Edolisoma holopolium holopolium (Sharpe, 1888)
    Indoceoplanetes (*Capnodella*) *laurocorythes* **new species**
Lobotos oriolinus Bates, 1909
    Indoceoplanetes (*Capnodella*) *loboccupatrix* **new species**
Pericrocotus speciosus semiruber Whistler & Kinnear, 1933
    Guimaraesiella pandolura **new species**

Cardinalidae

Paroaria coronata (Miller, 1776)
    Brueelia trithorax (Burmeister, 1838)
Pheucticus ludovicianus (Linnaeus, 1766)
    Guimaraesiella pallidula (Harrison, 1916) **new combination**
Saltator coerulescens vigorsii Gray, 1844
    Guimaraesiella saltatora (Carriker, 1956) **new combination**

Cettidae

Scotocerca inquieta platyura (Severtzov, 1873)
    Brueelia scotocercae (Blagoveshtchensky, 1951)

Cisticolidae

Prinia subflava (Gmelin, 1789)
    Brueelia priniae Najer & Sychra [in Najer *et al.*], 2012

Corcoracidae

Corcorax melanorhamphos (Vieillot, 1817)
    Saepocephalum stephenfryi **new species**

Corvidae

Corvus albicollis Latham, 1790
    Corvonirmus leucocephalus (Nitzsch [in Giebel], 1866) **new combination**
Corvus albus Müller, 1776
    Corvonirmus quadrangularis (Rudow, 1869) **new combination**
    Hecatrishula bipunctata (Rudow, 1870) **new combination**
Corvus brachyrhynchos brachyrhynchos Brehm, 1822
    Corvonirmus rotundatus (Osborn, 1896) **new combination**
Corvus brachyrhynchos hesperis Ridgway, 1887
    Corvonirmus rotundatus (Osborn, 1896) **new combination**, **new host record**
Corvus brachyrhynchos pascuus Coues, 1899
    Corvonirmus rotundatus (Osborn, 1896) **new combination**, **new host record**
Corvus capensis capensis Lichtenstein, 1823
    Corvonirmus leucocephalus (Nitzsch [in Giebel], 1866) **new combination** (? straggler)
    Corvonirmus variegatus (Ansari, 1957) **new combination**
    Hecatrishula nawabi (Ansari, 1957) **new combination**
Corvus capensis kordofanensis Laubmann, 1919
    Corvonirmus variegatus (Ansari, 1957) **new combination**, **new host record**
Corvus caurinus Baird, 1858
    Corvonirmus rotundatus (Osborn, 1896) **new combination**
Corvus corax corax Linnaeus, 1758
    Corvonirmus argulus (Burmeister, 1838)
    Hecatrishula atherae (Ansari, 1957) **new combination**
Corvus corax kamtschaticus Dybowski, 1883
    Corvonirmus argulus (Burmeister, 1838)
Corvus corax laurencei Hume, 1873 [Passer.: Corv.]
    Corvonirmus argulus (Burmeister, 1838)
    Hecatrishula atherae (Ansari, 1957) **new combination**
Corvus corax sinuatus Wagler, 1824
    Hecatrishula cryptoleuca (Ansari, 1957) **new combination**, **new host record**
Corvus corax tibetanus Hodgson, 1849
    Corvonirmus argulus (Burmeister, 1838) **new host record**
    Hecatrishula atherae (Ansari, 1957) **new combination**
Corvus corax tingitanus Irby, 1874
    Corvonirmus argulus (Burmeister, 1838) **new host record**

Corvus cornix cornix Linnaeus, 1758
    Corvonirmus uncinosus (Burmeister, 1838)
Corvus cornix pallescens (Madarasz, 1904)
    Corvonirmus uncinosus (Burmeister, 1838) **new host record**
Corvus cornix sharpii Oates, 1889
    Corvonirmus uncinosus (Burmeister, 1838) [Ref.: Blagoveshtchensky 1951]
Corvus corone corone Linnaeus, 1758
    Corvonirmus uncinosus (Burmeister, 1838)
    Hecatrishula varia (Burmeister, 1838) **new combination [1]**
Corvus corone orientalis Eversmann, 1841
    Hecatrishula varia (Burmeister, 1838) **new combination**
Corvus cryptoleucus Couch, 1854
    Corvonirmus afzali (Ansari, 1957) **new combination**
    Hecatrishula cryptoleuca (Ansari, 1957) **new combination**
Corvus dauuricus (Pallas, 1776)
    Hecatrishula varia (Burmeister, 1838) **new combination**, **new host record**
Corvus enca mangoli Vaurie, 1958
    Corvonirmus latifasciatus (Piaget, 1880) **new combination**
Corvus enca pusillus Tweeddale, 1878
    Corvonirmus latifasciatus (Piaget, 1880) **new combination**, **new host record**
Corvus frugilegus frugilegus Linnaeus, 1758
    Corvonirmus tasniemae (Ansari, 1957) **new combination**
    Hecatrishula varia (Burmeister, 1838) **new combination**
Corvus frugilegus pastinator Gould, 1845
    Hecatrishula varia (Burmeister, 1838) **new combination**, **new host record**
Corvus macrorhyncos colonorum Swinhoe, 1864
    Corvonirmus mollii (Ansari, 1957) **new combination**
Corvus macrorhynchos culminatus Sykes, 1832
    Corvonirmus mollii (Ansari, 1957) **new combination**, **new host record**
Corvus macrorhynchos hainanus Stresemann, 1916
    Corvonirmus mollii (Ansari, 1957) **new combination, new host record**
Corvus macrorhynchos intermedius Adams, 1859
    Corvonirmus mollii (Ansari, 1957) **new combination**
Corvus macrorhynchos levaillantii Lesson, 1831
    Corvonirmus mollii (Ansari, 1957) **new combination**, **new host record**
Corvus macrorhynchos macrorhynchos Wagler, 1827
    Corvonirmus mollii (Ansari, 1957) **new combination**
Corvus macrorhynchos philippinus (Bonaparte, 1853)
    Corvonirmus mollii (Ansari, 1957) **new combination**, **new host record**
Corvus monedula monedula Linnaeus, 1758
    Hecatrishula varia (Burmeister, 1838) **new combination**
Corvus monedula soemmeringii (Fischer von Waldheim, 1811)
    Hecatrishula varia (Burmeister, 1838) **new combination**, **new host record**
Corvus monedula spermologus (Vieillot, 1817)
    Hecatrishula varia (Burmeister, 1838) **new combination**, **new host record**
Corvus nasicus Temminck, 1826
    Corvonirmus perwienae (Ansari, 1957) **new combination**
Corvus ossifragus Wilson, 1812
    Corvonirmus rotundatus (Osborn, 1896) **new combination**
Corvus rhipidurus Hartert, 1918
    Corvonirmus theresae (Ansari, 1957) **new combination**
Corvus splendens insolens Hume, 1874
    Corvonirmus saliemi (Ansari, 1957) **new combination**, **new host record**
Corvus splendens maldevicius Reichenow, 1904
    Corvonirmus saliemi (Ansari, 1957) **new combination**, **new host record**

Corvus splendens splendens Vieillot, 1817
    Corvonirmus saliemi (Ansari, 1957) **new combination**
Corvus splendens zugmeyeri Laubmann, 1913
    Corvonirmus saliemi (Ansari, 1957) **new combination**, **new host record**
Cyanocitta cristata (Linnaeus, 1758)
    Olivinirmus clayae (Ansari, 1956) **new combination**
Cyanocitta stelleri (Gmelin, 1788)
    Olivinirmus clayae (Ansari, 1956) **new combination**
Cyanocitta stelleri coronata (Swainson, 1827)
    Olivinirmus clayae (Ansari, 1956) **new combination**
Cyanocorax affinis affinis Pelzeln, 1856
    Olivinirmus paraffinis **nomen novum**
Cyanocorax cayanus (Linnaeus, 1766)
    Olivinirmus cyaneus (Carriker, 1963) **new combination**
Cyanocorax chrysops chrysops (Vieillot, 1818)
    Olivinirmus keleri (Carriker, 1963) **new combination**
Cyanocorax cyanomelas (Vieillot, 1818)
    Olivinirmus nitzschi (Kéler, 1938) **new combination**
Cyanocorax morio (Wagler, 1829)
    Olivinirmus morionus (Carriker, 1956) **new combination**
Cyanocorax violaceus violaceus Du Bus de Gisignies, 1847
    Olivinirmus violaceus (Carriker, 1963) **new combination**
Cyanocorax yncas (Boddaert, 1783)
    Olivinirmus hopkinsi (Ansari, 1956) **new combination**
Cyanocorax yncas galeatus (Ridgway, 1900)
    Olivinirmus hopkinsi (Ansari, 1956) **new combination**
Cyanocorax yncas guatimalensis (Bonaparte, 1850)
    Olivinirmus hopkinsi (Ansari, 1956) **new combination**
Cyanopica cooki Bonaparte, 1850
    Brueelia deficiens (Piaget, 1885)
Dendrocitta vagabunda (Latham, 1790)
    Olivinirmus meinertzhageni (Ansari, 1956) **new combination**
Dendrocitta vagabunda kinneari Baker, 1922
    Olivinirmus meinertzhageni (Ansari, 1956) **new combination**, **new host record**
Dendrocitta vagabunda sakeratensis Gyldenstolpe, 1920
    Olivinirmus meinertzhageni (Ansari, 1956) **new combination**, **new host record**
Garrulus glandarius albipectus Kleinschmidt, 1920
    Olivinirmus glandarii (Denny, 1842) **new host record**
Garrulus glandarius atricapillus Geoffroy Saint-Hilaire, 1832
    Olivinirmus glandarii (Denny, 1842) **new host record**
Garrulus glandarius fernandi Keve-Kleiner, 1944
    Olivinirmus glandarii (Denny, 1842)
Garrulus glandarius glandarius (Linnaeus, 1758)
    Olivinirmus glandarii (Denny, 1842)
Garrulus glandarii graecus Keve-Kleiner, 1939
    Olivinirmus glandarii (Denny, 1842)
Garrulus glandarius krynicki Kaleniczenko, 1839
    Olivinirmus glandarii (Denny, 1842)
Garrulus glandarius leucotis Hume, 1874
    Olivinirmus glandarii (Denny, 1842) **new host record**
Garrulus glandarius rufotergum Hartert, 1903
    Olivinirmus glandarii (Denny, 1842)
Garrulus glandarius whitakeri Hartert, 1903
    Olivinirmus glandarii (Denny, 1842) **new host record**
Nucifraga caryocatactes caryocatactes (Linnaeus, 1758)
    Olivinirmus olivaceus (Burmeister, 1838)

Nucifraga caryocatactes macrorhynchos Brehm, 1823
Olivinirmus olivaceus (Burmeister, 1838) **new host record**
Nucifraga multipunctata Gould, 1849
Hecatrishula multipunctata (Clay, 1936)
Perisoreus infaustus infaustus (Linnaeus, 1758)
Olivinirmus perisoreus (Ansari, 1956)
Pica hudsonia (Sabine, 1823)
Hecatrishula biocellata (Piaget, 1880) **new combination**
Pica nuttalli (Audubon, 1837)
Hecatrishula biocellata (Piaget, 1880) **new combination**
Pica pica bactriana Bonaparte, 1850
Hecatrishula biocellata (Piaget, 1880) **new combination** [Ref.: Blagoveshtchensky 1951]
Pica pica leucoptera Gould, 1862
Hecatrishula biocellata (Piaget, 1880) **new combination** *Platylophus galericulatus ardesiacus* (Bonaparte, 1850)
Priceiella (Thescelovora) alliocephala **new species**
Podoces biddulphi Hume, 1874
Hecatrishula koslovae (Clay, 1936) **new combination**
Podoces hendersoni Hume, 1871
Hecatrishula koslovae (Clay, 1936) **new combination**
Ptilostomus afer (Linnaeus, 1766)
Brueelia moreli Ansari, 1957
Brueelia zohrae Ansari, 1956
Pyrrhocorax graculus digitatus Ehrenberg, 1833
Hecatrishula biguttata (Kellogg & Paine, 1914) **new combination**
Hecatrishula docilis (Ansari, 1956) **new combination**, **new host record**
Pyrrhocorax graculus graculus (Linnaeus, 1766)
Hecatrishula biguttata (Kellogg & Paine, 1914) **new combination** [Ref.: Ansari 1956d]
Hecatrishula docilis (Ansari, 1956) **new combination**, **new host record**
Pyrrhocorax pyrrhocorax barbarus Vaurie, 1954
Hecatrishula docilis (Ansari, 1956) **new combination**
Pyrrhocorax pyrrhocorax docilis (Gmelin, 1774)
Hecatrishula biguttata (Kellogg & Paine, 1914) **new combination**
Hecatrishula docilis (Ansari, 1956) **new combination**
Pyrrhocorax pyrrhocorax erythroramphos (Vieillot, 1817)
Hecatrishula biguttata (Kellogg & Paine, 1914) **new combination** [Ref.: Ansari 1956d]
Pyrrhocorax pyrrhocorax himalayanus (Gould, 1862)
Hecatrishula biguttata (Kellogg & Paine, 1914) **new combination** [Ref.: Ansari 1956d]
Pyrrhocorax pyrrhocorax pyrrhocorax (Linnaeus, 1758)
Hecatrishula docilis (Ansari, 1956) **new combination**
Urocissa erythroryncha occipitalis (Blyth, 1846)
Olivinirmus husaini (Ansari, 1956) **new combination**
Urocissa flavirostris cucullata Gould, 1861
Olivinirmus husaini (Ansari, 1956) **new combination**
Zavattariornis stresemanni Moltoni, 1938
Brueelia zavattariornis (Ansari, 1956)

Cracticidae
Cracticus argenteus colletti Mathews, 1912
Olivinirmus semiannulatus (Piaget, 1883) **new combination**, **new host record**
Gymnorhina tibicen Latham, 1802
Olivinirmus semiannulatus (Piaget, 1883) **new combination**
Gymnorhina tibicen dorsalis Campbell, 1895
Olivinirmus semiannulatus (Piaget, 1883) **new combination**, **new host record**
Gymnorhina tibicen eylandtensis White, 1922
Olivinirmus semiannulatus (Piaget, 1883) **new combination**, **new host record**

Gymnorhina tibicen longirostris Milligan, 1903
    Olivinirmus semiannulatus (Piaget, 1883) **new combination**, **new host record**
Gymnorhina tibicen telonocua Schodde & Mason, 1999
    Olivinirmus semiannulatus (Piaget, 1883) **new combination**, **new host record**
Gymnorhina tibicen tyrannica Schodde & Mason, 1999
    Olivinirmus semiannulatus (Piaget, 1883) **new combination**
Strepera graculina (Shaw, 1790)
    Olivinirmus semiannulatus (Piaget, 1883) **new combination**, **new host record**
Strepera versicolor arguta Gould, 1846
    Olivinirmus semiannulatus (Piaget, 1883) **new combination**, **new host record**
Strepera versicolor plumbea Gould, 1846
    Olivinirmus semiannulatus (Piaget, 1883) **new combination**, **new host record**

Dicruridae
Dicrurus aeneus aeneus Vieillot, 1817
    Guimaraesiella sexmaculata (Piaget, 1880) **new combination**, **new host record**
Dicrurus caerulescens caerulescens (Linnaeus, 1758)
    Guimaraesiella dicruri (Ansari, 1955) **new combination**, **new host record**
Dicrurus macrocercus Vieillot, 1817
    Sturnidoecus bituberculatus (Giebel, 1874)
Dicrurus macrocercus albirictus (Hodgson, 1836)
    Guimaraesiella dicruri (Ansari, 1955) **new combination**
Dicrurus macrocercus macrocercus Vieillot, 1817
    Brueelia kalkalichi (Ansari, 1955) **new combination**
    Guimaraesiella dicruri (Ansari, 1955) **new combination**, **new host record**
Dicrurus macrocercus thai Kloss, 1921
    Guimaraesiella dicruri (Ansari, 1955) **new combination**, **new host record**
Dicrurus remifer (Temminck, 1823)
    Guimaraesiella sexmaculata (Piaget, 1880) **new combination**
Dicrurus remifer peracensis (Baker, 1918)
    Guimaraesiella sexmaculata (Piaget, 1880) **new combination**, **new host record**

Donacobiidae
Donacobius atricapillus albovittatus Lafresnaye & d'Orbigny, 1837
    Guimaraesiella atricapilla (Cicchino, 1983) **new combination**

Emberizidae
Amphispiza belli (Cassin, 1850)
    Brueelia latiuscula (Kellogg & Chapman, 1899), (? straggler)
Arremon brunneinucha (Lafresnaye, 1839)
    Guimaraesiella brunneinucha (Cicchino, 1983) **new combination**
Atlapetes schistaceus (Boissoneau, 1840)
    Guimaraesiella schistacea (Cicchino, 1983) **new combination**
Chondestes grammacus strigatus Swainson, 1827
    Brueelia angustifrons (Carriker, 1902)
Emberiza bruniceps Brandt, 1841
    Rostrinirmus buresi (Balát, 1958)
    Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866) [Ref.: Blagoveshtchensky 1951]
Emberiza citrinella caliginosa Clancey, 1940
    Brueelia delicata (Nitzsch [in Giebel], 1866) **new host record**
Emberiza citrinella citrinella Linnaeus, 1758
    Brueelia delicata (Nitzsch [in Giebel], 1866)
Emberiza hortulana Linnaeus, 1758
    Rostrinirmus buresi (Balát, 1958)
Emberiza leucocephalos leucocephalos Gmelin, 1771
    Brueelia delicata (Nitzsch [in Giebel], 1866)

Emberiza melanocephala Scopoli, 1769
    Brueelia pelikani Balát, 1958
    Rostrinirmus buresi (Balát, 1958)
Emberiza rustica Pallas, 1776
    Brueelia delicata (Nitzsch [in Giebel], 1866)
Emberiza schoeniclus (Linnaeus, 1758)
    Brueelia blagovescenskyi Balát, 1955
Emberiza spodocephala spodocephala Pallas, 1776
    Brueelia blagovescenskyi Balát, 1955
Emberiza stewarti (Blyth, 1845)
    Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866) [Ref.: Blagoveshtchensky 1951]
Junco hyemalis hyemalis (Linnaeus, 1758)
    Brueelia vulgata (Kellogg, 1896)
Pipilo erythrophthalmus griseipygus van Rossem, 1934
    Guimaraesiella erythrophthalma (Cicchino, 1983) **new combination**

Estrildidae
Amadina fasciata (Gmelin, 1789)
    Mirandofures fasciata (Sychra [in Sychra *et al.*], 2010) **new combination**
Amandava amandava amandava (Linnaeus, 1758)
    Mirandofures amandavae (Rékási & Saxena, 2005) **new combination**
Amandava amandava punicea (Horsfield, 1821)
    Mirandofures amandavae (Rékási & Saxena, 2005) **new combination**, **new host record**
Estrilda astrild sousae Reichenow, 1904
    Mirandofures astrildae (Tendeiro & Mendes, 1994) **new combination**
Erythrura trichroa sigillifer (De Vis, 1897)
    Mirandofures kamena **new species**
Euodice cantans (Gmelin, 1789)
    Brueelia cantans Sychra [in Sychra *et al.*], 2010
Euodice malabarica (Linnaeus, 1758)
    Mirandofures munia (Ansari, 1955) **new combination**
Lagonosticta senegala (Linnaeus, 1766)
    Brueelia senegala Sychra [in Sychra *et al.*], 2010
Lonchura cucullata cucullata (Swainson, 1837)
    Mirandofures lonchurae (Tendeiro & Mendes, 1994) **new combination**
Lonchura maja (Linnaeus, 1766)
    Mirandofures muniae (Eichler, 1957) **new combination**
Lonchura punctulata nisoria (Temminck, 1830)
    Mirandofures stenozona (Kellogg & Chapman, 1902) **new combination**
Lonchura punctulata topela (Swinhoe, 1863)
    Mirandofures stenozona (Kellogg & Chapman, 1902) **new combination**, **new host record**
Oreostruthes fuliginosa De Vis, 1898
    Mirandofures altoguineae **new species**

Eurylaimidae
Serilophus lunatus aphobus Deignan, 1948
    Psammonirmus lunatipectus **new species**
Serilophus lunatus lunatus (Gould, 1834)
    Psammonirmus lunatipectus **new species**

Fringillidae
Acanthis flammea flammea (Linnaeus, 1758)
    Brueelia sibirica Mey, 1982
Bucanetes mongolicus (Swinhoe, 1870)
    Brueelia gobiensis Mey, 1982
Carduelis cannabina cannabina (Linnaeus, 1758)
    Brueelia stadleri Eichler, 1954

Guimaraesiella granatensis (Soler-Cruz, Rodríguez, Florido-Navío & Muñoz-Parra, 1987) **new combination**
Carduelis carduelis carduelis (Linnaeus, 1758)
  Brueelia densilimba (Nitzsch [in Giebel], 1866)
  Sturnidoecus blandus Zlotorzycka, 1964
Carduelis carduelis niediecki Reichenow, 1907
  Brueelia densilimba (Nitzsch [in Giebel], 1866) **new host record**
Carduelis flavirostris altaica (Sushkin, 1925)
  Brueelia mongolica Mey, 1982
Carduelis flavirostris flavirostris (Linnaeus, 1758)
  Brueelia mongolica Mey, 1982 **new host record**
Carduelis flavirostris montanella (Hume, 1873)
  Brueelia mongolica Mey, 1982 **new host record**
Carduelis flavirostris pipilans (Latham, 1787)
  Brueelia mongolica Mey, 1982 **new host record**
Carpodacus erythrinus erythrinus (Pallas, 1770)
  Rostrinirmus carpodaci Balát, 1981
Chloris chloris aurantiiventris (Cabanis, 1851)
  Brueelia breueri Balát, 1955 **new host record**
Chloris chloris chloris (Linnaeus, 1758)
  Brueelia breueri Balát, 1955
Coccothraustes coccothraustes coccothraustes (Linnaeus, 1758)
  Brueelia juno (Giebel, 1874)
Coccothraustes coccothraustes humii Sharpe, 1886
  Brueelia juno (Giebel, 1874) [Ref.: Blagoveshtchensky 1951]
Drepanis coccinea (Forster, 1780)
  Guimaraesiella diaprepes (Kellogg & Chapman, 1902) **new combination**
Fringilla coelebs africana Levaillant, 1850
  Brueelia kluzi Balát, 1955 **new host record**
Fringilla coelebs coelebs Linnaeus, 1758
  Brueelia kluzi Balát, 1955
Fringilla coelebs gengleri Kleinschmidt, 1909
  Brueelia kluzi Balát, 1955 **new host record**
Fringilla montifringilla Linnaeus, 1758
  Brueelia glizi Balát, 1955
Loxia curvirostra curvirostra Linnaeus, 1758
  Brueelia limbata (Burmeister, 1838)
Loxia curvirostra japonica Ridgway, 1884
  Brueelia limbata (Burmeister, 1838)
Loxia curvirostra stricklandi Ridgway, 1885
  Brueelia limbata (Burmeister, 1838) **new host record**
Loxia pytyopsittacus Borkhausen, 1793
  Brueelia propinqua (Giebel, 1874)
Pyrrhula pyrrhula europoea Vieillot, 1816
  Brueelia pyrrhularum Eichler, 1954
Pyrrhula pyrrhula pileata MacGillivray, 1837
  Brueelia pyrrhularum Eichler, 1954
Pyrrhula pyrrhula pyrrhula (Linnaeus, 1758)
  Brueelia pyrrhularum Eichler, 1954
Serinus serinus (Linnaeus, 1766)
  Brueelia sexytanum (Soler-Cruz, Rodríguez, Florido-Navío & Muñoz-Parra, 1987)
Spinus spinus (Linnaeus, 1758)
  Brueelia chrysomystris (Blagoveshtchensky, 1940)

Furnariidae
Anumbius anumbi (Vieillot, 1817)
  Brueelia anumbii Cicchino, 1981

Brueelia rotundifrons Cicchino, 1981
Furnarius cristatus Burmeister, 1888
Brueelia mediterranea Cicchino, 1981
Furnarius rufus rufus (Gmelin, 1788)
Brueelia argentina Cicchino, 1981

Hirundinidae
Cecropsis abyssinica puella (Temminck & Schlegel, 1845)
Acronirmus gracilis (Burmeister, 1838) **new host record**
Cecropsis abyssinica unitatis (Sclater & Mackworth-Praed, 1942)
Acronirmus gracilis (Burmeister, 1838) **new host record**
Cecropsis badia Cassin, 1853
Acronirmus gracilis (Burmeister, 1838) **new host record**
Cecropsis daurica erythropygia (Sykes, 1832)
Acronirmus gracilis (Burmeister, 1838) **new host record**
Cecropis daurica japonica (Temminck & Schlegel, 1845)
Acronirmus gracilis (Burmeister, 1838) **new host record**
Cecropis daurica rufula (Temminck, 1835)
Acronirmus gracilis (Burmeister, 1838) **new host record**
Cecropsis senegalensis saturatior (Bannerman, 1923)
Acronirmus gracilis (Burmeister, 1838) **new host record**
Delichon dasypus cashmirense (Gould, 1858)
Acronirmus gracilis (Burmeister, 1838) **new host record**
Delichon dasypus dasypus (Bonaparte, 1850)
Acronirmus gracilis (Burmeister, 1838) **new host record**
Delichon urbicum urbicum (Linnaeus, 1758)
Acronirmus gracilis (Burmeister, 1838)
Hirundo aethiopica amadoni White, 1956
Acronirmus gracilis (Burmeister, 1838) **new host record**
Hirundo angolensis Bogace, 1868
Acronirmus gracilis (Burmeister, 1838) **new host record**
Hirundo rupestris (Scopoli, 1769)
Acronirmus gracilis (Burmeister, 1838) [Ref.: Blagoveshtchensky 1951]
Hirundo rustica erythrogaster (Boddaert, 1783)
Acronirmus gracilis (Burmeister, 1838) **new host record**
Hirundo rustica rustica Linnaeus, 1758
Acronirmus gracilis (Burmeister, 1838) **new host record**
Hirundo rustica savignyii Stephens, 1817
Acronirmus gracilis (Burmeister, 1838) **new host record**
Hirundo rustica tytleri Jerdon, 1864
Acronirmus gracilis (Burmeister, 1838) **new host record**
Hirundo tahitica javanica Sparrmann, 1789
Acronirmus gracilis (Burmeister, 1838) **new host record**
Petrochelidon pyrrhonota Vieillot, 1817
Acronirmus longus (Kellogg, 1896) **new combination**
Progne subis subis (Linnaeus, 1758)
Acronirmus subis (Carriker, 1963) **new combination**
Progne tapera tapera (Linnaeus, 1766)
Acronirmus neotropicalis (Carriker, 1963) **new combination**
Riparia riparia riparia (Linnaeus, 1758)
Acronirmus tenuis (Burmeister, 1838) **new combination**
Riparia diluta indica Ticehurst, 1916
Acronirmus gracilis (Burmeister, 1838) **new host record**
Tachycineta albiventer (Boddaert, 1783)
Acronirmus albiventris (Carriker, 1963) **new combination**

Tachycineta albilineata (Lawrence, 1783)
    Acronirmus crusculus (Carriker, 1963) **new combination**
Tachycineta bicolor (Vieillot, 1808)
    Acronirmus longus (Kellogg, 1896) **new combination**
Tachycineta leucopyga (Meyer, 1834)
    Acronirmus longus (Kellogg, 1896) **new combination**

Icteridae

Agelaioides badius Vieillot, 1819
    Brueelia badia Cicchino & Castro, 1996
Agelaius cyanopus cyanopus Vieillot, 1819
    Brueelia cyanopa Cicchino, 2004
Agelaius phoeniceus neutralis Ridgway, 1901
    Brueelia ornatissima (Giebel, 1874) **new host record**
Agelaius phoeniceus nevadensis Grinnell, 1914
    Brueelia ornatissima (Giebel, 1874) **new host record**
Agelaius phoeniceus phoeniceus (Linnaeus, 1766)
    Brueelia ornatissima (Giebel, 1874)
Agelaius ruficapillus ruficapillus Vieillot, 1819
    Brueelia ruficapilla Cicchino, 1990
Agelaius thilius petersi Laubmann, 1934
    Brueelia thilia Cicchino, 2004
Amblycercus holosericeus (Deppe, 1830)
    Brueelia virgata (Kellogg, 1899)
Amblyramphus holosericeus (Scopoli, 1814)
    Brueelia oxypyga (Giebel, 1874)
Cacicus cela (Linnaeus, 1758)
    Bizarrifrons picturatus Carriker & Díaz-Ungría, 1961
    Brueelia cela Stafford, 1943
Cacicus cela vitellinus Lawrence, 1865
    Bizarrifrons picturatus Carriker & Díaz-Ungría, 1961
Cacicus haemorrhous (Linnaeus, 1766)
    Bizarrifrons juruani Carriker & Díaz-Ungría, 1961
Cacicus solitarius (Vieillot, 1816
    Bizarrifrons quasisymmetricus Valim & Palma, 2012
    Brueelia solitaria Cicchino, 1990
Curaeus curaeus curaeus (Molina, 1782)
    Brueelia marcoi Cicchino & Castro, 1996
Euphagus carolinus (Muller, 1776)
    Brueelia emersoni Cicchino & Castro, 1996
Gnorimopsar chopi (Vieillot, 1819)
    Brueelia chopi Valim & Cicchino, 2015
Icterus nigrogularis nigrogularis (Hahn, 1819)
    Brueelia sallei Carriker, 1963
Molothrus aeneus (Wagler, 1829)
    Brueelia mauroi Cicchino & Castro, 1996
Molothrus ater artemisiae Grinnell, 1909
    Brueelia americana Cicchino & Castro, 1996 **new host record**
Molothrus ater ater (Boddaert, 1783)
    Brueelia americana Cicchino & Castro, 1996
    Brueelia ornatissima (Giebel, 1874)
Molothrus bonariensis bonariensis (Gmelin, 1789)
    Brueelia bonariensis Cicchino & Castro, 1996
Molothrus bonariensis minimus Dalmas, 1900
    Brueelia trinidadensis Cicchino & Castro, 1996

Molothrus oryzivora oryzivora (Gmelin, 1788)
    Brueelia decumana Cicchino & Castro, 1996
    Brueelia mirabile Carriker, 1963
Psarocolius angustifrons alfredi (Des Murs, 1856)
    Bizarrifrons latifrons Valim & Palma, 2012
Psarocolius bifasciatus bifasciatus (Spix, 1824)
    Bizarrifrons wecksteini Valim & Palma, 2012
Psarocolius bifasciatus yuracares (d'Orbigny & Lafresnaye, 1838)
    Bizarrifrons maculatus (Rudow, 1869)
Psarocolius decumanus decumanus (Pallas, 1769)
    Bizarrifrons magus (Nitzsch [in Giebel], 1866)
Psarocolius decumanus maculosus (Chapman, 1920)
    Brueelia decumana Cicchino & Castro, 1996
Psarocolius decumanus melanterus (Todd, 1917)
    Bizarrifrons magus (Nitzsch [in Giebel], 1866) **new host record**
Psarocolius montezuma (Lesson, 1830)
    Bizarrifrons clayae Eichler, 1938
Psarocolius wagleri ridgwayi (van Rossem, 1934)
    Bizarrifrons francisi (Carriker, 1903)
Pseudoleistes virescens (Vieillot, 1819)
    Brueelia mimas Cicchino & Castro, 1996
Quiscalus major (Vieillot, 1819)
    Brueelia flinti Cicchino & Castro, 1996
Quiscalus mexicanus mexicanus (Gmelin, 1788)
    Bizarrifrons meinertzhageni Eichler, 1938
    Brueelia flinti Cicchino & Castro, 1996
Quiscalus mexicanus prosopidicola (Lowery, 1938)
    Brueelia flinti Cicchino & Castro, 1996 **new host record**
Quiscalus quiscula (Linnaeus, 1758)
    Brueelia ornatissima (Giebel, 1874)
Quiscalus quiscula stonei Chapman, 1935
    Brueelia ornatissima (Giebel, 1874) **new host record**
Quiscalus quiscula versicolor Vieillot, 1819
    Brueelia ornatissima (Giebel, 1874) **new host record**
Sturnella loyca loyca (Molina, 1782)
    Brueelia boae Cicchino & Castro, 1996
Sturnella magna argutula Bangs, 1899
    Brueelia picturata (Osborn, 1896) [Ref.: Cicchino & Castro 1996]
Sturnella magna magna (Linnaeus, 1758)
    Brueelia picturata (Osborn, 1896)
Sturnella neglecta confluenta Rathbun, 1917
    Brueelia pseudopicturata Cicchino, 1986 **new host record**
Sturnella neglecta neglecta Audubon, 1844
    Brueelia pseudopicturata Cicchino, 1986
Sturnella superciliaris (Bonaparte, 1850)
    Brueelia paradoxa Valim & Cicchino, 2015
Xanthocephalus xanthocephalus (Bonaparte, 1827)
    Brueelia xanthocephali (Osborn, 1896)

Irenidae
Irena cyanogastra melanochlamys Sharpe, 1877
    Guimaraesiella wallacei (Mey & Barker, 2014) **new combination**
Irena puella crinigera Sharpe, 1877
    Guimaraesiella wallacei (Mey & Berker, 2014) **new combination**
Irena puella puella (Latham, 1790)
    Guimaraesiella wallacei (Mey & Berker, 2014) **new combination**, **new host record**

Laniidae

Corvinella melanoleuca (Jardine, 1831)
  Brueelia rigbyi Gustafsson & Bush, 2015
Corvinella melanoleuca expressa (Clancey, 1961)
  Sturnidoecus australafricanus **new species**
Eurocephalus rueppelli Bonaparte, 1853
  Teinomordeus entelosetus **new species**
Lanius collurio Linnaeus, 1758
  Brueelia cruciata (Burmeister, 1838)
Lanius excubitor excubitor Linnaeus, 1758
  Brueelia imponderabilica Eichler, 1954
Lanius minor Gmelin, 1788
  Brueelia minor Lunkaschu, 1970
Lanius phoenicuroides (Schalow, 1875)
  Brueelia cruciata (Burmeister, 1838) [Ref.: Blagoveshtchensky 1951]
Lanius vittatus Valenciennes, 1826
  Brueelia pakistanaise Ansari, 1955

Leiothrichidae

Cutia nipalensis nipalensis Hodgson, 1837
  Priceiella (*Priceiella*) *longisterna* (Ansari, 1956) **new combination**
Garrulax leucolophus belangeri Lesson, 1831
  Priceiella (*Camurnirmus*) *paulbrowni* **new species**
Garrulax leucolophus diardi (Lesson, 1831)
  Priceiella (*Camurnirmus*) *paulbrowni* **new species**
Garrulax ruficollis (Jardine & Selby, 1838)
  Priceiella (*Priceiella*) *ventrata* (Ansari, 1956) **new combination**
Garrulax taewanus Swinhoe, 1859
  Priceiella (*Camurnirmus*) *hwameicola* **new species**
Grammatoptila striata sikkimensis (Ticehurst, 1924)
  Ceratocista antennata (Ansari, 1956) **new combination**
  Priceiella (*Camurnirmus*) *nipalensis* (Ansari, 1956) **new combination**
Ianthocincla albogularis albogularis (Gould, 1836)
  Priceiella (*Priceiella*) *sternotransversa* (Ansari, 1956) **new combination**
Ianthocincla mitrata major (Robinson & Kloss, 1919)
  Priceiella (*Camurnirmus*) *rhinocichlae* (Eichler, 1957) **new combination**, **new host record**
Ianthocincla mitrata mitrata (Muller, 1836)
  Priceiella (*Camurnirmus*) *rhinocichlae* (Eichler, 1957) **new combination**
Ianthocincla pectoralis pectoralis (Gould, 1936)
  Priceiella (*Priceiella*) *sternotypica* (Ansari, 1956) **new combination**
Ianthocincla pectoralis subfusa Kinnear, 1924
  Priceiella (*Priceiella*) *sternotypica* (Ansari, 1956) **new combination**, **new host record**
Trochalopteron affine affine (Blyth, 1843)
  Resartor impressifrons (Ansari, 1956) **new combination**
Trochalopteron affine bethelae (Rand & Flemming, 1956)
  Resartor impressifrons (Ansari, 1956) **new combination**
Trochalopteron lineatum lineatum (Vigors, 1831)
  Guimaraesiella sehri (Ansari, 1955) **new combination**
Trochalopteron lineatum setafer (Hodgson, 1836)
  Guimaraesiella sehri (Ansari, 1955) **new combination**, **new host record**
Trochalopteron squamatum (Gould, 1835)
  Resartor effronte (Ansari, 1956) **new combination**
Trochalopteron subunicolor subunicolor (Blyth, 1843)
  Guimaraesiella avinus (Ansari, 1956) **new combination**
  Resartor novafacies (Ansari, 1956) **new combination**

Turdoides aylmeri aylmeri (Shelley, 1885)
    Priceiella (*Torosinirmus*) *brueliodes* (Ansari, 1956) **new combination**
Turdoides caudata eclipes (Hume, 1877)
    Brueelia chilchil Ansari, 1955
Turdoides fulva acaciae (Lichtenstein, 1823)
    Brueelia magnini Ansari, 1956
Turdoides hartlaubii (Bocage, 1868)
    Priceiella (*Torosinirmus*) *nivea* (Ansari, 1956) **new combination**
Turdoides squamiceps squamiceps (Cretzschmar, 1827)
    Brueelia brevipennis (Ansari, 1956)
Turdoides striata sindianus (Ticehurst, 1920) **[2]**
    Brueelia pengya (Ansari, 1947) **new host record**
    Priceiella (*Priceiella*) *mahrastan* (Ansari, 1956) **new combination**
Turdoides striata striata (Dumont, 1823)
    Brueelia pengya (Ansari, 1947) **new host record**
    Priceiella (*Priceiella*) *mahrastan* (Ansari, 1956) **new combination**
Turdoides tenebrosa (Hartlaub, 1883)
    Priceiella (*Torosinirmus*) *koka* **new species**

Malaconotidae
Laniarius erythrogaster (Cretzschmar, 1829)
    Titanomessor sexloba **new species**
Tchagra senegalus armenus (Oberholser, 1906)
    Sturnidoecus wittei Tendeiro, 1963
Tchagra senegalus habessinica (Hemprich & Ehrenberg, 1833)
    Sturnidoecus wittei Tendeiro, 1963 **new host record**
Tchagra senegalus kalahari (Roberts, 1932)
    Sturnidoecus wittei Tendeiro, 1963 **new host record**
Tchagra senegalus orientalis (Cabanis, 1869)
    Sturnidoecus wittei Tendeiro, 1963 **new host record**
Tchagra tchagra natalensis (Reichenow, 1903)
    Sturnidoecus wittei Tendeiro, 1963 **new host record**

Megaluridae
Locustella fluviatilis (Wolf, 1810)
    Sturnidoecus tulackovae (Balát, 1981) **new combination**
Locustella luscinoides (Savi, 1824)
    Brueelia locustellae Fedorenko, 1975

Meliphagidae
Anthornis melanura melanura (Sparrman, 1786)
    Melibrueelia novaeseelandiae Valim & Palma, 2015
Anthornis melanura oneho Bartle & Sagar, 1987
    Melibrueelia novaeseelandiae Valim & Palma, 2015
Anthornis melanura obscura Falla, 1948
    Melibrueelia novaeseelandiae Valim & Palma, 2015
Prosthemadera novaeseelandiae novaeseelandiae (Gmelin, 1788)
    Melibrueelia novaeseelandiae Valim & Palma, 2015
Ptiloprora guisei guisei (De Vis, 1894)
    Aratricerca cirithrus **new species**

Menuridae
Menura novaehollandiae edwardi Chisholm, 1921
    Guimaraesiella menuraelyrae (Coinde, 1859) **new combination**, **new host record**
Menura novaehollandiae novaehollandiae Latham, 1802
    Guimaraesiella menuraelyrae (Coinde, 1859) **new combination**

Mimidae

Melanotis hypoleucus Hartlaub, 1852
    Guimaraesiella brunneinucha (Cicchino, 1983) **new combination**
Mimus gilvus gilvus (Vieiellot, 1808)
    Guimaraesiella brunneinucha (Cicchino, 1983) **new combination**, **new host record**
Mimus gilvus melanopterus Lawrence, 1849
    Guimaraesiella brunneinucha (Cicchino, 1983) **new combination**
Mimus gundlachii gundlachii Cabanis, 1855
    Guimaraesiella brunneinucha (Cicchino, 1983) **new combination**
Mimus longicaudatus albogriseus lesson, 1844
    Guimaraesiella brunneinucha (Cicchino, 1983) **new combination**
Mimus polyglottos polyglottos (Linnaeus, 1758)
    Guimaraesiella polyglotta (Williams, 1983) **new combination**
Mimus saturninus modulator (Gould, 1836)
    Brueelia rotundifrons Cicchino, 1981
Mimus thenca (Molina, 1782)
    Brueelia rotundifrons Cicchino, 1981
Mimus melanotis (Gould, 1837)
    Guimaraesiella galapagensis (Kellogg & Kuwana, 1902) **new combination**
Mimus parvulus bauri Ridgway, 1894
    Guimaraesiella galapagensis (Kellogg & Kuwana, 1902) **new combination**
Mimus parvulus barringtoni Rothschild, 1898
    Guimaraesiella galapagensis (Kellogg & Kuwana, 1902) **new combination**
Mimus parvulus parvulus (Gould, 1837)
    Guimaraesiella galapagensis (Kellogg & Kuwana, 1902) **new combination**
Mimus parvulus personatus Ridgway, 1890
    Guimaraesiella galapagensis (Kellogg & Kuwana, 1902) **new combination**
Mimus trifasciatus (Gould, 1837)
    Guimaraesiella galapagensis (Kellogg & Kuwana, 1902) **new combination**
Oreoscoptes montanus (Townsend, 1837)
    Brueelia rotundifrons Cicchino, 1981
Ramphocinclus brachyurus sanctaeluciae Cory, 1887
    Guimaraesiella brunneinucha (Cicchino, 1983) **new combination**
Toxostoma crissale crissale Henry, 1858
    Brueelia dorsale Williams, 1983

Motacillidae

Anthus campestris campestris (Linnaeus, 1758)
    Brueelia kistiakowskyi Fedorenko, 1975
Anthus campestris griseus Nicoll, 1920
    Brueelia kistiakowskyi Fedorenko, 1975 **new host record**
Anthus pratensis pratensis (Linnaeus, 1758)
    Brueelia corydalla Timmermann, 1950 **new host record**
Anthus pratensis whistleri Clancey, 1942
    Brueelia corydalla Timmermann, 1950
Anthus rufulus Vieillot, 1818
    Brueelia parae Ansari, 1955
Anthus spinoletta (Linnaeus, 1758)
    Brueelia corydalla Timmermannn, 1950
Anthus spinoletta blakistoni Swinhoe, 1863
    Brueelia corydalla Timmermann, 1950 **new host record**
Anthus trivialis trivialis (Linnaeus, 1758)
    Brueelia ferianci Balát, 1955
Motacilla flava Linnaeus, 1758
    Brueelia kratochvili Balát, 1958

Motacilla flava feldegg Michahelles, 1830
    Brueelia kratochvili Balát, 1958
Motacilla tschutschensis macronyx (Stresemann, 1920)
    Brueelia kratochvili Balát, 1958 **new host record**

Muscicapidae
Copsychus fulicatus cambaiensis (Latham, 1790)
    Brueelia cambayensis Ansari, 1955
Erithacus rubecula melophilus Hartert, 1901
    Guimaraesiella tristis (Giebel, 1874) **new combination**, **new host record**
Erithacus rubecula rubecula (Linnaeus, 1758)
    Guimaraesiella tristis (Giebel, 1874) **new combination**
Grandala coelicolor Hodgson, 1843
    Turdinirmoides grandalae (Clay, 1936) **new combination**
Luscinia megarhynchos megarhynchos (Brehm, 1831)
    Guimaraesiella lais (Giebel, 1874) **new combination**
Luscinia svecicus svecicus (Linnaeus, 1758)
    Sturnidoecus atharea Ansari, 1955
Phoenicurus ochruros gibraltariensis (Gmelin, 1789)
    Brueelia exigua (Nitzsch [in Giebel], 1866)

Nectariniidae
Chalcomitra senegalensis (Linnaeus, 1766)
    Brueelia chalcomitrae Najer & Sychra [in Najer *et al.*], 2012

Oriolidae
Oriolus chinensis diffusus Sharpe, 1877
    Maculinirmus ljosalfar **new species**
Oriolus oriolus oriolus (Linnaeus, 1758)
    Maculinirmus mundus (Nitzsch [in Giebel], 1866)
    Sturnidoecus radui Bechet, 1965

Pachycephalidae
Colluricincla ferruginea clara (A.B. Meyer, 1894)
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**

Paradisaeidae
Cicinnurus magnificus hunsteini (A.B. Meyer, 1885)
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**
Manucodia ater (Lesson, 1830)
    Manucodicola acantharx **new species**
Paradisaea apoda novaeguineae D'Albertis & salvadori, 1879
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**
Paradisaea minor finschi Meyer, 1885
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**
Paradisaea minor minor Shaw, 1809
    Guimaraesiella papuana (Giebel, 1879) **new combination**
Paradisaea raggiana augustaevictoriae Cabanis, 1888
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**
Paradiseae raggiana raggiana P.L. Sclater, 1873
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**
Paradisaea raggiana salvadorii Mayr & Rand, 1935
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**
Paradisaea rubra Daudin, 1800
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**

Parotia lawesii E.P. Ramsay, 1885
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**
Phonygammus keraudrenii diamondi Cracraft, 1992
    Manucodicola semiramisae **new species**
Phonygammus keraudrenii purpureoviolaceus (A.B. Meyer, 1885)
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**
    Manucodicola semiramisae **new species**
Ptiloris magnificus magnificus (Vieillot, 1819)
    Guimaraesiella papuana (Giebel, 1879) **new combination**, **new host record**
Ptiloris paradisaeus Swainson, 1825
    Guimaraesiella satelles (Nitzsch [in Giebel], 1866) **new combination**
Seleucides melanoleuca (Daudin, 1800)
    Guimaraesiella setifer (Piaget, 1880) **new combination**
    Nirmus nudus Giebel, 1874

Paridae
Parus major major Linnaeus, 1758
    Brueelia weberi Balát, 1982
    Rostrinirmus hudeci Balát, 1981
Poecile atricapillus (Linnaeus, 1766)
    Brueelia longifrons Carriker, 1956

Parulidae
Dendroica pensylvanica (Linnaeus, 1766)
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Limnothlypis swainsonii (Audubon, 1834)
    Brueelia limnothlypiae Valim & Reiley, 2015
Setophaga petechia aureola (Gould, 1839)
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Setophaga petechia bryanti Ridgway, 1873
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Setophaga petechia erithachoides Baird, 1858
    Guimaraesiella interposita (Kellogg, 1899) **new combination**

Passeridae
Montifringilla nivalis nivalis (Linnaeus, 1766)
    Brueelia altaica Mey, 1982
Montifringilla nivalis alpicola (Pallas, 1811)
    Brueelia altaica Mey, 1982
Passer domesticus bactrianus Zarudny & Kudashev, 1916
    Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866) [Ref.: Blagoveshtchensky 1951]
Passer domesticus domesticus (Linnaeus, 1758)
    Brueelia cyclothorax (Burmeister, 1838)
    Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866)
Passer domesticus indicus Jardine & Selby, 1831
    Rostrinirmus boevi (Balát, 1958) **new host record**
Passer hispaniolensis hispaniolensis (Temminck, 1820)
    Brueelia cyclothorax (Burmeister, 1838) [Ref.: Blagoveshtchensky 1940]
    Rostrinirmus boevi (Balát, 1958)
Passer hispaniolensis trancaspicus Tschusi, 1902
    Rostrinirmus boevi (Balát, 1958) **new host record**
    Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866) [Ref.: Blagoveshtchensky 1951]
Passer montanus montanus (Linnaeus, 1758)
    Brueelia cyclothorax (Burmeister, 1838)
    Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866)
Passer montanus malaccensis Dubois, 1887
    Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866) **new host record**

Passer montanus obscuratus Jacobi, 1923
    Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866) **new host record**
Passer montanus saturatus Stejneger, 1885
    Brueelia cyclothorax (Burmeister, 1838) **new host record**
    Rostrinirmus ruficeps (Nitzsch [in Giebel], 1866) **new host record**
Petronia petronia barbara Erlanger, 1899
    Brueelia alexandrii Eichler, 1953
Petronia petronia brevirostris Taczanowski, 1874
    Brueelia alexandrii Eichler, 1953 **new host record**
Petronia petronia puteicola Festa, 1894
    Brueelia alexandrii Eichler, 1953 **new host record**
Petronia xanthocollis xanthocollis (Burton, 1838)
    Brueelia xanthocollis Ansari, 1955
    Rostrinirmus raji (Ansari, 1947)

Pellorneidae
Turdinus abbotti Blyth, 1845
    Priceiella (Thescelovora) malacocincla (Najer & Sychra [in Najer *et al.*], 2014) **new combination**

Ploceidae
Euplectes fransiscanus (Isert, 1789)
    Brueelia aguilarae **new species**
Euplectes hordeaceus (Linnaeus, 1758)
    Sturnidoecus mon **new species**
Ploceus cucullatus bohndorffi Reichenow, 1887
    Sturnidoecus basilewskyi Tendeiro, 1963
Ploceus cucullatus cucullatus (Müller, 1776)
    Sturnidoecus basilewskyi Tendeiro, 1963
Ploceus cucullatus nigriceps (Layard, 1867)
    Sturnidoecus basilewskyi Tendeiro, 1963
Ploceus galbula Rüppell, 1840
    Sturnidoecus galbula Tendeiro, 1963
Ploceus intermedius intermedius Rüppell, 1845
    Sturnidoecus neointermedius Price, Hellenthal & Palma, 2003
Ploceus melanocephalus (Linnaeus, 1758)
    Sturnidoecus textoris Tendeiro, 1964
Ploceus melanocephalus duboisi Hartlaub, 1886
    Sturnidoecus textoris Tendeiro, 1964
Ploceus philippinus burmanicus Ticehurst, 1832
    Brueelia plocea (Lakshminarayana, 1968)
Ploceus vitellinus uluensis (Neumann, 1900)
    Sturnidoecus sexualis Tendeiro, 1963
Ploceus xanthops (Hartlaub, 1862)
    Sturnidoecus xanthops Tendeiro, 1963
Quelea quelea lathami (Smith, 1836)
    Brueelia quelea Sychra & Barlev [in Sychra *et al.*], 2010 **new host record**
    Sturnidoecus somnodraco **new species**
Quelea quelea quelea (Linnaeus, 1758)
    Brueelia quelea Sychra & Barlev [in Sychra *et al.*], 2010
    Sturnidoecus somnodraco **new species**

Pomatostomidae
Pomatostomus isidorei calidus Rothschild, 1931
    Sychraella sinsutura **new species**
Pomatostomus isidorei isidorei Lesson, 1827
    Sychraella sinsutura **new species**

- *Pomatostomus temporalis strepitans* (Mayr & Rand, 1935)
  - *Anarchonirmus albovittatus* **new species**

Prunellidae

- *Prunella fulvescens dahurica* (Taczanowski, 1874)
  - *Brueelia piechockii* Mey, 1982
- *Prunella modularis* (Linnaeus, 1758)
  - *Brueelia modularis* (Piaget, 1880)

Ptilogonatidae

- *Phainopepla nitens lepida* Van Tyne, 1925
  - *Brueelia peninsularis* (Kellogg, 1899)
- *Phainopepla nitens nitens* (Swainson, 1838)
  - *Brueelia peninsularis* (Kellogg, 1899) **new host record**
- *Ptiliogonys caudatus* Cabanis, 1861
  - *Guimaraesiella ptiliogonis* (Carriker, 1903) **new combination**

Ptilonorhynchidae

- *Ailuroides buccoides buccoides* (Temminck, 1836)
  - *Guimaraesiella pallida* (Piaget, 1880) **new combination**, **new host record**
- *Ailuroedus buccoides oorti* Rothschild & Hartert, 1929
  - *Guimaraesiella pallida* (Piaget, 1880) **new combination**
- *Ptilonorhynchus violaceus* (Vieillot, 1816)
  - *Guimaraesiella nitzschii* (Ponton, 1871) **new combination**
- *Sericulus chrysocephalus* (Lewin, 1808)
  - *Nirmus hecticus* Nitzsch [in Giebel], 1866

Pycnonotidae

- *Alophoixus pallidus* (Swinhoe, 1870)
  - *Brueelia alophoixi* Sychra [in Sychra *et al.*], 2009
- *Hemixos flavala* Blyth, 1845
  - *Guimaraesiella flavala* (Najer & Sychra [in Najer *et al.*], 2012) **new combination**
- *Hypsipetes amaurotis ogawae* Hartert, 1907
  - *Sturnidoecus acutifrons* (Uchida, 1949)
- *Pycnonotus cafer intermedius* Blyth, 1846
  - *Brueelia guldum* Ansari, 1955
- *Pycnonotus finlaysoni* Strickland, 1844
  - *Guimaraesiella cucphuongensis* (Najer & Sychra [in Najer *et al.*], 2012) **new combination**
- *Pycnonotus nigricans superior* Clancey, 1959
  - *Brueelia pseudognatha* **new species**

Remizidae

- *Auriparus flaviceps* Sundevall, 1850
  - *Brueelia audax* (Kellogg, 1899)
- *Auriparus flaviceps ornatus* (Lawrence, 1851)
  - *Brueelia audax* (Kellogg, 1899)
- *Remiz pendulinus pendulinus* (Linnaeus, 1758)
  - *Brueelia balati* Kristofík, 1999

Rhipiduridae

- *Rhipidura cockerelli cockerelli* (Ramsay, 1879)
  - *Brueelia rhipidura* (Thompson, 1941)
- *Rhipidura leucophrys melaleuca* (Quoy & Gaimard, 1830)
  - *Brueelia rhipidura* (Thompson, 1941)

Sittidae

Sitta europaea caesia Wolf, 1810
  Brueelia conocephala (Blagoveshtchensky, 1940)
Sitta europaea caucasica Reichenow, 1901
  Brueelia conocephala (Blagoveshtchensky, 1940)
Sitta europaea rubiginosa Tschusi & Zarydny, 1905
  Brueelia conocephala (Blagoveshtchensky, 1940)

Sturnidae

Acridotheres burmannicus (Jerdon, 1862)
  Sturnidoecus peguensis Mey, 1989
Acridotheres cristatellus cristatellus (Linnaeus, 1758)
  Sturnidoecus bannoo Ansari, 1955
Acridotheres cristatellus formosanus (Hartert, 1912)
  Sturnidoecus bannoo Ansari, 1955
Acridotheres fuscus fuscus (Wagler, 1827)
  Sturnidoecus bannoo Ansari, 1955
Acridotheres fuscus torquatus Davison, 1892
  Sturnidoecus capensis (Giebel, 1874) **new host record**
Acridotheres javanicus Cabanis, 1851
  Sturnidoecus affinis (Piaget, 1880)
Acridotheres ginginianus (Latham, 1790)
  Brueelia ginginianus Ansari, 1955
  Sturnidoecus bannoo Ansari, 1955
Acridotheres grandis Moore, 1858
  Sturnidoecus capensis (Giebel, 1874) **new host record**
Acridotheres melanopterus (Daudon, 1800)
  Sturnidoecus borobodur Mey, 1989
Acridotheres tristis (Linnaeus, 1766)
  Brueelia chayanh Ansari, 1955
  Sturnidoecus bannoo Ansari, 1955
  Sturnidoecus capensis (Giebel, 1874) **new host record**
Acridotheres tristis melanosturnus Legge, 1879
  Sturnidoecus capensis (Giebel, 1874) **new host record**
Aplonis metallica metallica (Temminck, 1824)
  Schizosairhynchus erysichthoni **new species**
Aplonis metallica nitida (Grey, 1858)
  Schizosairhynchus erysichthoni **new species**
Aplonis panayensis panayensis (Scopoli, 1786)
  Brueelia fulmeki Eichler, 1957 **new host record**
Aplonis panayensis strigata (Horsfield, 1821)
  Brueelia fulmeki Eichler, 1957
Basilornis miranda (Hartert, 1903)
  Schizosairhynchus philippensis (Tandan & Kumar, 1969) **new combination**
Cinnyricinclus leucogaster verreauxi (Bocage, 1870)
  Sturnidoecus porphyrogenitus **new species**
Creatophora cinerea (Meuschen, 1787)
  Brueelia coryliventer Gustafsson & Bush, 2015
  Sturnidoecus afzali Ansari, 1968
Gracula religiosa Linnaeus, 1758
  Brueelia acutangulata (Piaget, 1880)
  Guimaraesiella nigrosignata (Piaget, 1880) **new combination**
  Sturnidoecus graculae (Piaget, 1880)
Gracula religiosa intermedia Hay, 1845
  Brueelia acutangulata (Piaget, 1880) **new host record**

Gracula religiosa palawanensis (Sharpe, 1890)
    Brueelia acutangulata (Piaget, 1880) **new host record**
Gracupica contra contra (Linnaeus, 1758)
    Sturnidoecus capensis (Giebel, 1874)
Gracupica contra floweri (Sharpe, 1897)
    Sturnidoecus capensis (Giebel, 1874) **new host record**
Gracupica contra jalla (Horsfield, 1821)
    Sturnidoecus capensis (Giebel, 1874) **new host record**
Gracupica contra superciliaris (Blyth, 1863)
    Sturnidoecus capensis (Giebel, 1874) **new host record**
Gracupica nigricollis (Paykull, 1807)
    Sturnidoecus orientalis Mey, 1989
Lamprotornis australis (A. Smith, 1836)
    Brueelia clara Gustafsson & Bush, 2015
    Sturnidoecus subacutus (Piaget, 1880)
Lamprotornis chalybaeus Hemprich & Ehrenberg, 1828
    Sturnidoecus eichleri Ansari, 1968
Lamprotornis chalybaeus nordmanni (Hartert & Neumann, 1914)
    Sturnidoecus eichleri Ansari, 1968 **new host record**
Lamprotornis iris (Oustalet, 1879)
    Sturnidoecus distinguendus Ansari, 1968
Lamprotornis mevesii (Wahlberg, 1856)
    Sturnidoecus parvifrons Ansari, 1968
Lamprotornis nitens (Linnaeus, 1766)
    Brueelia albida (Rudow, 1869)
    Sturnidoecus senegalensis (Rudow, 1869)
Lamprotornis splendidus bailundensis (Neumann, 1920)
    Sturnidoecus meinertzhageni Ansari, 1968
Lamprotornis splendidus splendidus (Vieillot, 1822)
    Sturnidoecus meinertzhageni Ansari, 1968
Lamprotornis superbus (Rüppell, 1845)
    Sturnidoecus theresae Ansari, 1968
Leucopsar rothschildi Stresemann, 1912
    Sturnidoecus stresemanni Mey, 1989
Mino dumontii Lesson, 1827
    Schizosairhynchus minovenator **new species**
Mino kreffti Sclater, 1869
    Brueelia museiberolinensis (Eichler, 1957)
Onychognathus blythii (Hartlaub, 1859)
    Sturnidoecus clayae Ansari, 1968
Onychognathus morio (Linnaeus, 1766)
    Sturnidoecus zahrae Ansari, 1968
Onychognathus tenuirostris theresae Meinertzhagen, 1937
    Sturnidoecus illustris Ansari, 1968
Onychognathus tristrami (Sclater, 1858)
    Sturnidoecus avivorax Ansari, 1968
Pastor roseus (Linnaeus, 1758)
    Brueelia fuscopleura (Blagoveshtchensky, 1951)
    Sturnidoecus pastoris (Denny, 1842)
Scissirostrum dubium (Latham, 1802)
    Brueelia longipes (Piaget, 1880)
    Guimaraesiella subacuta (Piaget, 1880) **new combination**
Speculipastor bicolor Reichenow, 1879
    Sturnidoecus opeca Ansari, 1968
Spreo albicapillus albicapillus Blyth, 1856
    Brueelia tkachi Gustafsson & Bush, 2015

Sturnia malabarica (Gmelin, 1789)
    Sturnidoecus neoacutifrons Price, Hellenthal & Palma, 2003
Sturnia pagodarum (Gmelin, 1789)
    Brueelia pagodarum Ansari, 1955
Sturnia sinensis (Gmelin, 1788)
    Sturnidoecus zoophilic Ansari, 1968
Sturnus vulgaris caucasicus Lorentz, 1887
    Brueelia nebulosa (Burmeister, 1838) [Ref.: Blagoveshtchensky 1940]
Sturnus vulgaris humii Brooke, 1876
    Sturnidoecus sturni (Schrank, 1776) [Ref.: Ansari 1968]
Sturnus vulgaris nobilior Hume, 1879
    Sturnidoecus sturni (Schrank, 1776) **new host record**
Sturnus vulgaris poltaratskyi Finsch, 1878
    Brueelia nebulosa (Burmeister, 1838)
    Sturnidoecus sturni (Schrank, 1776)
Sturnus vulgaris vulgaris Linnaeus, 1758
    Brueelia nebulosa (Burmeister, 1838)
    Sturnidoecus sturni (Schrank, 1776)
Sturnus vulgaris zetlandicus Hartert, 1918
    Brueelia nebulosa (Burmeister, 1838) **new host record**
    Sturnidoecus sturni (Schrank, 1776)

Sylviidae
Sylvia atricapilla (Linnaeus, 1758)
    Brueelia atricapillae (Soler-Cruz, Alcántara-Ibañez & Florido-Navío, 1984)
    Guimaraesiella tovornikae (Balát, 1981) **new combination**
Sylvia borin (Boddaerts, 1783)
    Brueelia borini Lunkaschu, 1970
Sylvia curruca blythi Ticehurst & Whistler, 1933
    Brueelia currucae Bechet, 1961 **new host record**
Sylvia curruca curruca (Linnaeus, 1758)
    Brueelia currucae Bechet, 1961
Sylvia minula Hume, 1873
    Brueelia currucae Bechet, 1961 **new host record**
Sylvia mystacea Menetries, 1832
    Rostrinirmus buresi Balát, 1958
Sylvia nisoria nisoria (Bechstein, 1792)
    Brueelia rosickyi Balát, 1955

Thraupidae
Camarhynchus pallidus productus Ridgway, 1894
    Brueelia chelydensis Hopkins, 1951
Camarhynchus parvulus (Gould, 1837)
    Brueelia chelydensis Hopkins, 1951
Camarhynchus psittacula affinis Ridgway, 1894
    Brueelia chelydensis Hopkins, 1951
Camarhynchus psittacula habeli Sclater & Salvin, 1870
    Brueelia chelydensis Hopkins, 1951
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Camarhynchus psittacula psittacula (Gould, 1837)
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Certhidea fusca becki Gould, 1837
    Brueelia chelydensis Hopkins, 1951
Certhidea olivacea olivacea Gould, 1837
    Brueelia chelydensis Hopkins, 1951

Coereba flaveola luteola (Cabanis, 1850)
    Brueelia phasmasoma **new species**
Coryphospingus cucullatus rubescens (Swainson, 1825)
    Brueelia cucullata Ciccino, 1982
Diuca diuca diuca (Molina, 1782)
    Brueelia diucae Cicchino & González-Acuna, 2009
Embernagra platensis platensis (Gmelin, 1789)
    Brueelia embernagrae Cicchino & Castro, 1980
Geospiza conirostris conirostris Ridgway, 1890
    Brueelia chelydensis Hopkins, 1951
Geospiza difficilis debilirostris Ridgway, 1894
    Brueelia chelydensis Hopkins, 1951
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Geospiza difficilis difficilis Sharpe, 1888
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Geospiza fortis Gould, 1837
    Brueelia chelydensis Hopkins, 1951
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Geospiza fuliginosa Gould, 1837
    Brueelia chelydensis Hopkins, 1951
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Geospiza magnirostris Gould, 1837
    Brueelia chelydensis Hopkins, 1951
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Geospiza scandens intermedia Ridgway, 1894
    Brueelia chelydensis Hopkins, 1951
Phrygilus fruticeti (Kittlitz, 1833)
    Brueelia yal Cicchino & González-Acuña, 2008
Phrygilus gayi (Gervais, 1834)
    Brueelia coquimbana Cicchino & González-Acuña, 2008
Piranga bidentata sanguinolenta Lafresnaye, 1839
    Guimaraesiella melanococa (Carriker, 1903) **new combination**
Platyspiza crassiostris (Gould, 1837)
    Guimaraesiella interposita (Kellogg, 1899) **new combination**
Ramphocelus passerinii Bonaparte, 1831
    Guimaraesiella rhamphocelii (Cicchino, 1983) **new combination**
Sicalis flaveola pelzelni Sclater, 1872
    Brueelia acuminata Cicchino, 1982
Tangara mexicana brasiliensis (Linnaeus, 1766)
    Nirmus brasiliensis Giebel, 1874
Tangara viridicollis (Taczanowski, 1884)
    Guimaraesiella taulis (Eichler [in Niethammer], 1956) **new combination**
Tersina viridis viridis (Illiger, 1811)
    Brueelia tersinae Cicchino, 1982
Thraupis abbas (Deppa, 1830)
    Guimaraesiella abbasi (Carriker, 1956) **new combination**
Thraupis sayaca sayaca (Linnaeus, 1766)
    Brueelia sayacae Cicchino, 1982
Tiaris canora (Gmelin, 1789)
    Guimaraesiella cubana (Cicchino, 1983) **new combination**
Volatinia jacarina (Linnaeus, 1766)
    Brueelia jacarinae Valim & Palma, 2006

Timaliidae
Mixornis gularis (Horsfield, 1822)
    Turdinirmoides hrabali (Najer & Sychra [in Najer *et al.*], 2012) **new combination**

Troglodytidae

- *Troglodytes aedon bonariae* Hellmayr, 1919
  - *Brueelia anamariae* Cicchino, 1980
- *Troglodytes aedon musculus* Naymann, 1823
  - *Brueelia anamariae* Cicchino, 1980 [Ref.: Sychra *et al.* 2014]

Turdidae

- *Catharus fuscater caniceps* Chapman, 1924
  - *Guimaraesiella concava* (Eichler [in Niethammer], 1956) **new combination**
- *Catharus fuscescens* (Stephens, 1817)
  - *Guimaraesiella antiqua* (Ansari, 1956) **new combination, new host record**
- *Catharus guttatus faxoni* (Bangs & Penard, 1921)
  - *Guimaraesiella antiqua* (Ansari, 1956) **new combination**
- *Catharus guttatus nanus* (Audubon, 1839)
  - *Guimaraesiella antiqua* (Ansari, 1956) **new combination, new host record**
- *Catharus minimus minimus* (Lafresnaye, 1848)
  - *Guimaraesiella antiqua* (Ansari, 1956) **new combination, new host record**
- *Catharus ustulatus* (Nuttall, 1840)
  - *Guimaraesiella antiqua* (Ansari, 1956) **new combination**
- *Entomodestes leucotis* (Tschudi, 1844)
  - *Guimaraesiella busharae* (Ansari, 1955) **new combination**
- *Myophonus caeruleus temminckii* Vigors, 1832
  - *Guimaraesiella myiophoneae* (Clay, 1936) **new combination**
- *Turdus amaurochalinus* Cabanis, 1850
  - *Guimaraesiella persimilis* (Cicchino, 1987) **new combination**
- *Turdus atrogularis* Jarocki, 1819
  - *Brueelia iliaci* (Denny, 1842)
  - *Guimaraeseilla marginata* (Burmeister, 1838) **new combination** [Ref.: Blagoveshtchensky 1951]
- *Turdus boulboul* (Latham, 1790)
  - *Brueelia iliaci* (Denny, 1842) **new host record**
- *Turdus chiguanco anthracinus* Burmeister, 1858
  - *Guimaraesiella chiguanca* (Cicchino, 1986) **new combination**
- *Turdus falcklandii falcklandii* Quoy & Gaimard, 1824
  - *Guimaraesiella magellanica* (Cicchino, 1986) **new combination, new host record**
- *Turdus falcklandii magellanicus* King, 1831
  - *Guimaraesiella magellanica* (Cicchino, 1986) **new combination**
- *Turdus fulviventris* Sclater, 1858
  - *Sturnidoecus regalis* Ansari, 1955
- *Turdus fuscater quindio* Chapman, 1925
  - *Guimaraesiella capitus* (Ansari, 1955) **new combination**
- *Turdus grayi casius* (Bonaparte, 1855)
  - *Sturnidoecus caligineus* (Carriker, 1903)
- *Turdus grayi incomptus* (Bangs, 1898)
  - *Sturnidoecus incomptus* Ansari, 1955
- *Turdus ignobilis debilis* Hellmayr, 1902
  - *Sturnidoecus perunensis* Ansari, 1955
- *Turdus iliacus coburni* Sharpe, 1901
  - *Brueelia iliaci* (Denny, 1842)
- *Turdus iliacus iliacus* Linnaeus, 1758
  - *Brueelia iliaci* (Denny, 1842)
  - *Guimaraesiella haftorni* (Balát, 1981) **new combination**
- *Turdus infuscatus* (Lafresnaye, 1844)
  - *Sturnidoecus mexicanus* Carriker, 1956
- *Turdus merula aterrimus* (Madarasz, 1903)
  - *Guimaraesiella amsel* (Eichler, 1951) **new combination, new host record**
  - *Turdinirmus merulensis* (Denny, 1842) [Ref.: Blagoveshtchensky 1940]

Turdus merula merula Linnaeus, 1758
    Brueelia jacobi Eichler, 1951
    Guimaraesiella amsel (Eichler, 1951) **new combination**
    Turdinirmus merulensis (Denny, 1842)
Turdus merula mandarinus Bonaparte, 1850
    Turdinirmus merulensis (Denny, 1842)
Turdus merula mauretanicus Hartert, 1902
    Guimaraesiella amsel (Eichler, 1951) **new combination**, **new host record**
Turdus merula syriacus Hemprich & Ehrenberg, 1833
    Guimaraesiella amsel (Eichler, 1951) **new combination**, **new host record**
    Turdinirmus merulensis (Denny, 1842) **new host record**
Turdus migratorius Linnaeus, 1766
    Sturnidoecus simplex (Kellogg, 1896)
Turdus migratorius caurinus (Grinnell, 1909)
    Sturnidoecus simplex (Kellogg, 1896) **new host record**
Turdus migratorius migratorius Linnaeus, 1766
    Sturnidoecus simplex (Kellogg, 1896)
Turdus migratorius propinquus Ridgway, 1877
    Brueelia brevicolor Ansari, 1956
Turdus nigriceps Cabanis, 1874
    Sturnidoecus rehanae Ansari, 1955
Turdus nudigenis nudigenis Lafresnaye, 1848
    Guimaraesiella pointu (Ansari, 1955) **new combination**
Turdus obscurus Gmelin, 1789
    Turdinirmus eichleri Mey, 1982
Turdus obsoletus obsoletus Lawrence, 1862
    Sturnidoecus obsoletus Ansari, 1955
Turdus olivaceus pondoensis Reichenow, 1917
    Guimaraesiella ilmasae (Ansari, 1956) **new combination**
Turdus olivater sanctaemartae (Todd, 1913)
    Sturnidoecus carrikeri Ansari, 1955
Turdus pallidus Gmelin, 1789
    Turdinirmus merulensis (Denny, 1842)
Turdus philomelos clarkei Hartert, 1909
    Brueelia iliaci (Denny, 1842) **new host record**
    Guimaraesiella turdinulae (Ansari, 1956) **new combination**
Turdus philomelos philomelos Brehm, 1831
    Guimaraesiella turdinulae (Ansari, 1956) **new combination**
    Sturnidoecus melodicus (Eichler, 1951)
    Turdinirmus merulensis (Denny, 1842) **new host record**
Turdus pilaris Linnaeus, 1758
    Brueelia antimarginalis Eichler, 1951
    Guimaraesiella marginata (Burmeister, 1838) **new combination**
Turdus rufiventris rufiventris Vieillot, 1818
    Guimaraesiella addoloratoi (Cicchino, 1986) **new combination**
    Sturnidoecus sarwatae (Ansari, 1955)
Turdus serranus atrosericus (Lafresnaye, 1848)
    Sturnidoecus intermedius Ansari, 1955
    Traihoriella carrikeri (Ansari, 1955)
Turdus serranus fuscobrunneus (Chapman, 1912)
    Guimaraesiella saghirae (Ansari, 1955) **new combination**
Turdus serranus serranus Tschudi, 1844
    Sturnidoecus intermedius (Carriker, 1903)
Turdus simillimus nigropileus Lafresnaye, 1840
    Guimaraesiella oudhensis (Ansari, 1956) **new combination**

Turdus subalaris (Seebohm, 1887)
    Guimaraesiella similis (Cicchino, 1986) **new combination**
Turdus torquatus alpestris (Brehm, 1831)
    Brueelia intermedia (Nitzsch [in Giebel], 1866)
Turdus torquatus torquatus Linnaeus, 1758
    Brueelia intermedia (Nitzsch [in Giebel], 1866)
    Guimaraesiella marginata (Burmeister, 1838) **new combination**
Turdus viscivorus viscivorus Linnaeus, 1758
    Brueelia matvejevi Balát, 1981
    Guimaraesiella viscivori (Denny, 1842) **new combination**
Zoothera aurea (Holandre, 1825)
    Turdinirmus daumae (Clay, 1936) **new host record**
Zoothera dauma dauma (Latham, 1790)
    Guimaraesiella neodaumae (Najer & Sychra [in Najer *et al.*], 2012) **new combination**
    Turdinirmus daumae (Clay, 1936)
Zoothera lunulata lunulata (Latham, 1802)
    Turdinirmus australissimus **new species**
Zoothera marginata Blyth, 1847
    Turdinirmus zootherae (Clay, 1936)
Zoothera monticola monticola Vigors, 1832
    Turdinirmus stresemanni (Clay, 1936)

Tyrannidae
Empidonax difficilis Baird, 1858
    Brueelia ductilis (Kellogg & Chapman, 1899)
Mecocerculus stictopterus albocaudatus Phelps & Gilliard, 1941
    Guimaraesiella niquitaoi (Carriker, 1963) **new combination**
Myiozetetes similis (Spix, 1825)
    Guimaraesiella incerta (Cicchino, 1983) **new combination**
Pitangus sulphuratus argentinus Todd, 1952
    Brueelia parabolocybe (Carriker, 1903) **new host record**
Pitangus sulphuratus bolivianus (Lafresnaye, 1852)
    Brueelia parabolocybe (Carriker, 1903)
Tyrannus melancholica melancholica Vieiellot, 1819
    Brueelia parabolocybe (Carriker, 1903)
Tyrannus melancholicus satrapa (Cabanis & Heine, 1859)
    Brueelia parabolocybe (Carriker, 1903)
Tyrannus tyrannus (Linnaeus, 1758)
    Brueelia parabolocybe (Carriker, 1903)
Tyrannus verticalis Say, 1822
    Brueelia parabolocybe (Carriker, 1903) **new host record**

Vangidae
Euryceros prevostii Lesson, 1831
    Guimaraesiella bisetacea (Piaget, 1885) **new combination**

Viduidae
Vidua paradisaea (Linnaeus, 1758)
    Brueelia bicurvata (Piaget, 1880)

PICIFORMES
Megalaimidae
Psilopogon asiaticus asiaticus (Latham, 1790)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**, **new host record**
Psilopogon asiaticus davisoni (Hume, 1877)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**, **new host record**

Psilopogon faiostrictus praeternissus (Kloss, 1918)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**, **new host record**
Psilopogon franklinii franklinii (Blyth, 1842)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**, **new host record**
Psilopogon haemocephalus indicus (Latham, 1790)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**, **new host record**
Psilopogon incognitus elbeli (Deignan, 1956)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**, **new host record**
Psilopogon lineatus hodgsoni (Bonaparte, 1850)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**
Psilopogon monticola (Sharpe, 1889)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**
Psilopogon mystacophanos mystacophanos (Temminck, 1824)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**
Psilopogon nuchalis (Gould, 1863)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**, **new host record**
Psilopogon oorti (Muller, 1836)
    Traihoriella binhchauensis (Najer & Sychra [in Najer *et al.*], 2014) **new combination**, **new host record**
Psilopogon virens marshallorum (Swinhoe, 1870)
    Traihoriella punjabensis Ansari, 1947
Psilopogon virens virens (Boddaert, 1783)
    Traihoriella punjabensis Ansari, 1947

Picidae
Campephilus guatemalensis (Hartlaub, 1844)
    Motmotnirmus guatemalensis (Dalgliesh, 1971) (? straggler)
Dendrocopos leucotos (Bechstein, 1802)
    Brueelia straminea (Denny, 1842)
Dendrocopos leucotos lilfordi (Sharpe & Dresser, 1871)
    Brueelia straminea (Denny, 1842) **new host record**
Dendrocopos major major (Linnaeus, 1758)
    Brueelia straminea (Denny, 1842)
Dendrocopos major pinetorum (Brehm, 1831)
    Brueelia straminea (Denny, 1842)
Dendrocopos major poelzami (Bogdanov, 1879)
    Brueelia straminea (Denny, 1842)
Dendrocopos medius medius (Linnaeus, 1758)
    Brueelia straminea (Denny, 1842) **new host record**
Dendrocopos syriacus (Hemprich & Ehrenberg, 1833)
    Brueelia straminea (Denny, 1842) **new host record**
Dendropicos goertae (Müller, 1776)
    Brueelia goertae Dalgliesh, 1971
Jynx torquilla (Linnaeus, 1758)
    Brueelia straminea (Denny, 1842)
Melanerpes candidus (Otto, 1796)
    Brueelia infuscata Cicchino, 1979

Ramphastidae
Andigena nigrirostris occidentalis Chapman, 1915
    Traihoriella laticeps (Piaget, 1888) **new combination**
Andigena nigrirostris spilorhynchus Gould, 1858
    Traihoriella laticeps (Piaget, 1888) **new combination**, **new host record**
Aulacorhynchus coeruleicinctus d'Orbigny, 1840
    Traihoriella laticeps (Piaget, 1888) **new combination**
Aulacorhynchus debianus Gould, 1835
    Traihoriella laticeps (Piaget, 1888) **new combination**, **new host record**

Aulacorhynchus haematopygus (Gould, 1835)
    Traihoriella laticeps (Piaget, 1888) **new combination**
Aulacorhynchus prasinus albovitta (Boissoneau, 1840)
    Traihoriella laticeps (Piaget, 1888) **new combination**, **new host record**
Aulacorhynchus prasinus atrogularis (Sturm & Sturm, 1841)
    Traihoriella laticeps (Piaget, 1888) **new combination**
Aulacorhynchus prasinus caeruleogularis (Gould, 1835)
    Traihoriella laticeps (Piaget, 1888) **new combination**
Aulacorhynchus prasinus maxillaris Griscom, 1924
    Traihoriella laticeps (Piaget, 1888) **new combination**, **new host record**
Aulacorhynchus prasinus prasinus (Gould, 1833)
    Traihoriella laticeps (Piaget, 1888) **new combination**
Aulacorhynchus sulcatus erythrognathus (Gould, 1874)
    Traihoriella laticeps (Piaget, 1888) **new combination**, **new host record**
Aulacorhynchus sulcatus sulcatus (Swainson, 1820)
    Traihoriella laticeps (Piaget, 1888) **new combination**, **new host record**

PSITTACIFORMES
Psittacidae
Amazona ochrocephala (Gmelin, 1788)
    Brueelia amazonae Stafford, 1943 (? straggler)
Eclectus roratus polychlorus (Scopoli, 1786)
    Nirmus ovalis Neumann, 1890 (? straggler)
Psittrichas fulgidus (Lesson, 1830)
    Nirmus ovalis Neumann, 1890 (? straggler)

STRIGIFORMES
Strigidae
Asio flammeus (Pontoppidan, 1763)
    Couala angulata (Piaget, 1880) **new combination** (? straggler)

TROGONIFORMES
Trogonidae
Harpactes ardens ardens (Temminck, 1826)
    Harpactrox pontifrons **new species**
Harpactes erythrocephalus annamensis (Robinson & Kloss, 1919)
    Harpactrox loeiensis **new species**
Harpactes erythrocephalus erythrocephalus (Gould, 1834)
    Harpactrox geminodus **new species**
Pharomachrus pavoninus (Spix, 1824)
    Guimaraesiella cicchinoi (Valim & Weckstein, 2011) **new combination**
    Guimaraesiella sueta (Valim & Weckstein, 2011) **new combination**
Trogon collaris Vieillot, 1817
    Guimaraesiella cicchinoi (Valim & Weckstein, 2011) **new combination**
Trogon massena Gould, 1838
    Guimaraesiella cicchinoi (Valim & Weckstein, 2011) **new combination**
Trogon melanocephalus Gould, 1836
    Guimaraesiella cicchinoi (Valim & Weckstein, 2011) **new combination**
Trogon melanurus Swainson, 1838
    Guimaraesiella cicchinoi (Valim & Weckstein, 2011) **new combination**
Trogon mexicanus Swainson, 1827
    Guimaraesiella insolita (Cicchino, 1983) **new combination**
Trogon viridis Linnaeus, 1766
    Guimaraesiella cicchinoi (Valim & Weckstein, 2011) **new combination**

Notes

[1] Earlier authors (Burmeister 1838; Giebel 1861, 1874) listed *Corvus corone* as a host to this species. We have seen material from two different subspecies of this host (*C. corone corone* and *C. corone orientalis*) collected from several different individuals; therefore, we reject Hopkins & Clay's (1952) assertion that this host record was in error.

[2] *Brueelia pengya* was described from material collected at Lyallpur (now Faisalabad) in present-day Pakistan (Ansari 1947). The host was given by Ansari as *Turdoides terricolor terricolor* (Hodgson, 1844), with a note that the host may actually be *T. terricolor sindianus* (Ticehurst, 1920). Hopkins & Clay (1952: 60) amended this host record to *T. sindianus somervillei* (Sykes, 1832), without comment. Price *et al.* (2003: 157) listed the host as *Turdoides striata somervillei* (Sykes, 1832). This subspecies occurs only along the Indian west coast, from Gujarat to Goa (Clements *et al*. 2015), and is thus unlikely to be the correct host subspecies. The host subspecies occurring in the area around Faisalabad is *Turdoides striata sindianus*. As Ansari (1947) suggested it, this may be the correct name of the host from which he collected his material. Therefore, we hereby change the type host of *Br. pengya* to *Turdoides striata sindianus*.

APPENDIX III

Material Examined

The material examined of the 37 new species described in this paper are not repeated in this list. Country names have been updated without comment, and may differ from those stated on slides. Host taxonomy follows Clements *et al*. (2015).

Institutional abbreviations are as follows:

BPBM – Bernice Pauahi Bishop Museum, Honolulu, Hawaii, U.S.A.
EMEC – Essig Museum of Entomology, University of California, Berkeley, California U.S.A.
FMNH – Field Museum of Natural History, Chicago, U.S.A.
MFNG – Museum für Naturkunde, Berlin, Germany.
MONZ – Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand.
MRAC – Musée Royale de l'Afrique Centrale, Tervuren, Belgium.
NHML – Natural History Museum, London, United Kingdom.
OSUS – Oklahoma State University, Stillwater, Oklahoma, U.S.A.
PIPeR – Price Institute for Parasite Researsh, University of Utah, Salt Lake City, Utah, U.S.A.
PMSL – Slovenian Museum of Natural History, Ljubljana, Slovenia.
SMNH – Swedish Museum of Natural History, Stockholm, Sweden.
UMSP – University of Minnesota, St. Paul, Minnesota, U.S.A.
USNM – National Museum of Natural History, Washington D.C., U.S.A.

List of species in alphabetical order by genus

***Acronirmus albiventris* (Carriker, 1963)**
Non-types ex ***Tachycineta albiventer*:** 1♀, Itabali, Guyana, 7 Jan. 1984, coll. J. Hill, 22177 [on reverse] (OSUS); 1♂, 1♀, same data (USNM).

***Acronirmus longus* (Kellogg, 1896)**
Type material ex ***Petrochelidon pyrrhonota*: Holotype** ♀, Lawrence, Kansas, U.S.A., EMEC-75435 (EMEC).
Non-types ex ***Petrochelidon pyrrhonota:*** 3♂, 3♀, Easy Sewage Reservoir, Dugway, Tooele County, Utah, U.S.A., 20 May 1965, (PIPeR) [one slide is PIPeR#124]; 1♂, 1♀, Easy Sewage Reservoir, Dugway, Tooele County, Utah, U.S.A., 20 May 1965, 22051 [on reverse] (OSUS).
Non-types ex ***Tachycineta leucopyga*:** 1♂, Coastal range, La Goyana, Santiago, Chile, 28 Nov. 1981, M.A. Marin, 24316 [on reverse] (NHML).

***Acronirmus subis* (Carriker, 1963)**
Type material ex ***Progne subis subis*: Paratypes:** 1♂, 3♀, Stillwater, Oklahoma, U.S.A., 6 Apr. 1947, K.C. Emerson, BM 1968-291 [one slide marked "same series as type'] (NHML).
Non-types ex ***Progne subis subis*:** 1♂, 3♀, State College, Mississippi, U.S.A., 8 Jul. 1939, E.W. Stafford, 8279, 8280–1, 8285–7 [on reverse] (OSUS); 2♂, 1♀, Motley, Minnesota, U.S.A., 5 Jun. 1961, R.D. Price (UMSP); 1♀, University of Oklahoma Biological Station, Willis, Oklahoma, U.S.A., 4 Jul. 1957, G.M. Sutton, PS570704 (PIPeR); 3♂, 1♀, no locality, originally from MacDonald College collection, possibly in Quebec, Canada, 3 Jun. 1933, BM 1933-615 (NHML); 2♂, St. Annes, Quebec, Canada 25 Jul. 1944, BM 1980-40 (NHML); 1♀, Sanibel, Florida, U.S.A., 22 Apr. 1981, K.C. Emerson (OSUS); 1♂, Stillwater, Oklahoma, U.S.A., 6 Apr. 1947, K.C. Emerson, BM 1980-40 (OSUS); 1♂, 1♀, Motley, Minnesota, U.S.A., 5 Jun. 1961, R.D. Price, PIPeR# 44–45 (PIPeR); 1♂, 1♀, Sanibel, Florida, U.S.A., 22 Apr. 1981, K.C. Emerson, PIPeR# 46 (PIPeR); 1♂, Ramsey County, Minnesota, U.S.A., Summer 1961, PIPeR# 47 (PIPeR).

***Bizarrifrons clayae* Eichler, 1938**
Type material ex ***Psarocolius montezuma* [as *Gymnostinops montezumae*]: Holotype** ♂, México, R. Meinertzhagen, 10846 (NHML); **paratypes** 3♀, same data as holotype (NHML).

Bizarrifrons francisi **(Carriker, 1903)**
Type material ex ***Psarocolius wagleri ridgwayi*** [as ***Eucorystes wagleri*** or ***Zarhynchus wagleri***]: **Paratypes:** 2♀, Juan Vinas, Costa Rica, Mar. 1902, M.A. Carriker Jr., Brit. Mus. 1953-305 (NHML).
Non-types ex ***Psarocolius wagleri ridgwayi*** [as ***Eucorystes wagleri*** or ***Zarhynchus wagleri***]: 1♂, Honduras, R. Meinertzhagen, 10847 (NHML).

Bizarrifrons latifrons **Valim & Palma, 2012**
Non-types ex ***Psarocolius angustifrons alfredi***: 2♂, 3♀, Hacienda Amazonia, near Atalaya, Department of Madre de Dios, Perú, 13 Nov. 1985, S.M. Lanyon, 1098 (UMSP).

Bizarrifrons maculatus **(Rudow, 1869)**
Non-types ex ***Psarocolius bifasciatus yuracares*** [as ***Psarocolius yuracoues***]: 2♂, Hacienda Amazonia, near Antalaya, Department of Madre de Dios, Perú, 9 Nov. 1985, 1059 (UMSP).

Bizarrifrons magus **(Nitzsch [in Giebel], 1866)**
Non-types ex ***Psarocolius decumanus decumanus*** [some as ***Ostinops decumanus***]: 2♂, 5♀, Hacienda Amazonia, near Atalaya, Department of Madre de Dios, Perú, 12 Nov. 1985, S.M. Lanyon, 1085 (UMSP); 11♂, 13♀, Hacienda Amazonia, near Atalaya, Department of Madre de Dios, Perú, 17 Nov. 1985, S.M. Lanyon, 1116–1117 (UMSP); 4♂, 6♀, same data as previous, 1116 (PIPeR); 3♂, Brazil, R. Meinertzhagen, 10845 (NHML).
Non-types ex ***Psarocolius decumanus melanterus*** [as ***Ostinops decumanus melanterus***]: 1♂, 1♀, Chenducúa, Sierra Nevada de Santa Marta, Cesar Department, Colombia, 6 Apr. 1946, M.A. Carriker Jr., Brit. Mus. 1953-305 (NHML).

Bizarrifrons meinertzhageni **Eichler, 1938**
Type material ex ***Quiscalus mexicanus mexicanus***: **Holotype** ♂, México, R. Meinertzhagen, 10848 (NHML).

Bizarrifrons picturatus **Carriker & Díaz-Ungría, 1961**
Type material ex ***Cacicus cela cela***: **Paratypes:** 2♀, San Felix, Venezuela, 8 Feb. 1910, M.A. Carriker Jr., Brit. Mus. 1968-455 (NHML).

Bizarrifrons quasisymmetricus **Valim & Palma, 2012**
Non-types ex ***Cacicus solitarius***: 5♂, 10♀, 20 miles NW Pilcopata, Department of Cuzco, Perú, 21 Dec. 1985, D.H. Clayton, 1211–1212 (UMSP); 2♂, 4♀, same data, 1211 (PIPeR).

Brueelia acutangulata **(Piaget, 1880)**
Type material ex ***Gracula religiosa intermedia***: **Syntypes:** 3♂, 5♀, in Piaget collection, 1086, 1087 [BM 1953-21] (NHML); **paratypes** of *Brueelia elbeli*: 1♂, 1♀, Chiang Saen Kao, Chiang Rai Province, Thailand, 24 Feb. 1953, [R.E.] Elbel & [H.G.] Deignan, RE-2324, Brit. Mus. 1959-540 (NHML); 1♂, 1♀, Ban Kaeng Ban Non Taolek, Phu Khio, Chaiyaphum Province, Thailand, 14 Dec. 1952, R.E. Elbel, RE-901, RT-B-17537 (OSUS).
Non-types ex ***Gracula religiosa intermedia***: 2♂, 2♀, Ban Tha Phae, Nakhon Sri Thammarat Province, Thailand, 9 Sep. 1962, SEATO Medical Research Lab, SMRL 1497 (NHML); 2♂, 2♀, same data as previous (OSUS); 1♀, Khok Phu Ban Sang Kho, Sakon Nakhon Province, Thailand, 2 Feb. 1954, R.E. Elbel & B. Lekagul, RE-3379, RT-B-22680 (OSUS); 15♂, 19♀, Pabon, Pak Phayun District, Phattalung Province, Thailand, 23 Jun. 1963, W. Songprakob, WS-308 (PIPeR); 6♂, 4♀, Thung Nui, Satun Province, Thailand, 19 Sep. 1963, W[anit] Songprakob & W. Suwan Laong, WS519 (PIPeR); 13♂, 7♀, Muang Kluang, Kapoe, Ranong Province, Thailand, 28 Dec. 1962, W. Songprakob, RE-6944–5 (PIPeR); 2♂, 2♀, Thadindang, Pak Phayun, Phattalung Province, Thailand, 20 Jul. 1962, W. Songprakob, RE-6324 (PIPeR); 1♂, 5♀, same locality and collector, 16 May 1962, RE-6202 (PIPeR); 3♂, 2♀, Ko Fai, Pak Phayun, Phattalung Province, Thailand, 2 Jun. 1962, W. Songprakob, RE-6236–7 (PIPeR); 1♂, 3♀, Thang Nui, Satun Province, Thailand, 24 Jun. 1962, W. Songprakob, RE-6282 (PIPeR); 1♂, same locality and collector, 21 Jun. 1962, RE-6269–70 (PIPeR); 2♀, Si Than, Wang Saphung, Loei Province, Thailand, 7 Jan. 1954, R.E. Elbel & B. Lekagul, RE-3269, RT-B-22647 (PIPeR); 1♀, Bau Kaeng Ban Non Taolek, Chaiyaphum Province, Thailand, 14 Dec. 1952, R.E. Elbel, RE-901, RT-B-12537 (PIPeR); 4♂, 1♀, Ban Kaeng Ban Non Taolek, Phu Khieo, Chaiyaphum, Thailand, 14 Dec. 1952, R.E. Elbel, RE-901, RT-B-17537 (PIPeR).
Non-types ex ***Gracula religiosa palawanensis***: 1♂, 1♀, Brooke's Point, Palawan, Philippines, 2 Apr. 1962, Max Thompson, BPBM-PI-999 (OSUS); 1♂, 1♀, same locality and collector, 31 Mar. 1962, BBM-PI-798 (OSUS); 1♂, 1♀, same locality and collector, 7 Apr. 1962, BBM-PI-2022 (OSUS).

Non-types ex ***Gracula religiosa* ssp.:** 4♂, 4♀, locality unknown, captive bird, Sep. 1965–1966, R.S. Balter, 31, 46, 163 Brit. Mus. 1969-101 (NHML); 1♂, 1♀, locality unknown, captive birds, marked "*Eulabes* sp?", 20 Dec. 1965, Brit. Mus. 1969-101 (NHML).

***Brueelia alexandrii* Eichler, 1953**
Type material ex ***Petronia petronia barbara*: Holotype** ♂, Tunis, Tunisia, Apr. 1886, Alexander König, 336n (MFNG); **allotype** ♀, same data as holotype, 336o (MFNG); **paratypes:** 2♂, 1♀, same data as holotype, 336B, 336k, 336p, 336q (MFNG); 1♀, same data as holotype, 336f (NHML).
Non-types ex ***Petronia petronia barbara*:** 1♀, same data as holotype, 336c (MFNG).
Non-types ex ***Petronia petronia puteicola*:** 1♂, 1♀, Jerusalem, Israel, 21 Jun. 1958, 399, Brit. Mus. 1959-56 (NHML).

***Brueelia altaica* Mey, 1982**
Non-types ex ***Montifringilla nivalis*:** 1♂, 1♀, London Zoological Gardens?, [England, United Kingdom] (NHML).
Non-types ex ***Montifringilla nivalis alpicola*:** 1♀, Afghanistan, May 1937, R. Meinertzhagen, 10291 (NHML).

***Brueelia amazonae* Stafford, 1943**
Type material ex ***Amazona ochrocephala*: Paratypes:** 1♂, 1♀, Urama, E[ast] Carabobo, Venezuela, 25 Mar. 1938, Pablo Anduze, 3-221, 1721–2 (OSUS).

***Brueelia americana* Cicchino & Castro, 1996**
Non-types ex ***Molothrus ater ater*:** 1♂, 2♀, Prince George's County, Maryland, U.S.A., 22 Mar. 1995, C. Hahn, 04 (UMSP); 1♂, 2♀, same locality and collector, 31 Mar. 1995, 08 (UMSP); 3♂, 4♀, 2 nymphs, same locality and collector, 21 Apr. 1995, 31 (UMSP); 2♂, 2♀, Anslow County, North Carolina, U.S.A., 20 Dec. 1938, R. Collie (NHML); 1♂, 1♀, State College, Mississippi, U.S.A., 12 Jul. 1935, E.W. Stafford, 14470 [on reverse] (NHML); 1♀, same locality and collector, 13 Dec. 1935 (NHML).
Non-types ex ***Molothrus ater artemisiae:*** 1♀, 4 miles NE Camelback Mountain, vicinity Dugway Valley, Tooele County, Utah, U.S.A., 22 Jul. 1954, Andersson, 375-B-1851 (NHML); 1♂, 2♀, same locality, 15 Jul. 1953, R.D. Porter, 208-B-299 (NHML); 2♂, 3♀, same locality, 21 May 1953, 176-B-263 (NHML); 1♀, S end of Cedar Mountains, vicinity of Dugway Valley, Tooele County, Utah, U.S.A., 29 Apr. 1953, R.D. Porter, 96-B-298 (NHML); 3♂, 1♀, Dog Area, Dugway Proving Ground, Tooele County, Utah, U.S.A., 15 Aug. 1953, R.D. Porter, 26-B-300–1 (NHML).

***Brueelia anamariae* Cicchino, 1980**
Non-types ex ***Troglodytes aedon*:** 1♀, McCormick Place, Chicago, Cook County, Illinois, U.S.A., 5 May 2005, Jason D. Weckstein, FMNH-INS-0000 028 103 (FMNH).

***Brueelia angustifrons* (Carriker, 1902)**
Non-types ex ***Chondestes grammacus strigatus*:** 2♂, 2♀, N Skull Valley, Tooele County, Utah, U.S.A., 11 Jun. 1964, 5360 (PIPeR); 1♀, Dugway Area, Tooele County, Utah, U.S.A., May–Jun. 1966 (PIPeR); 4♂, 4♀, near Idabel, Red River, McCurtain, Oklahoma, U.S.A., 13 Apr. 1958, G.M. Sutton, GMS-13566 (PIPeR); 2♂, 2♀, same data (OSUS).

***Brueelia antimarginalis* Eichler, 1951**
Type material ex ***Turdus pilaris*: Holotype** ♀, Bialowies, Poland, 1917/18, H. Bischoff, 2673b (MFNG).
Non-types ex ***Turdus pilaris*:** 1♂, 3♀, Bácsalmás, Bács-Kiskun, Hungary, 9 Jan. 1971, J. Rékási, 11516–11519 (PMSL); 1♀, Podcerkey, Slovenia, 21 Jan. 1976, A. Smuc, 13579 (PMSL); 1♀, Logatec, Slovenia, 18 Jan. 1976, A. Smuc, 13419 (PMSL).

***Brueelia argentina* Cicchino, 1981**
Type material ex ***Furnarius rufus rufus*: Paratypes:** 1♂, B[ueno]s A[ire]s, Partido La Plata, Argentina, 8 Mar. 1981, A. Cicchino, 1647 (OSUS); 1♀, Ollden?, Argentina, 23 Apr. 1977, A. Cicchino, 1648 (OSUS).

***Brueelia atricapillae* Soler Cruz, Alcántara-Ibañez & Florido-Navío, 1984**
Non-types ex ***Sylvia atricapilla*:** 1♂, 1♀, Nólsoy, Faroe Islands, 18 Oct. 1997, J-K. Jensen (MONZ).

***Brueelia bicurvata* (Piaget, 1880)**
Non-types ex ***Vidua paradisaea*:** 1♂, 2♀, Piaget Collection, 1198–1199 (NHML) [one slide contains one unidentified *Brueelia* s. str.].

Brueelia blagovescenskyi **Balát, 1955**
Non-types ex ***Emberiza schoeniclus*****:** 1♀, Kapriska, Hodonin, Moravia, Czech Republic, 2 Apr. 1949, F. Balát, 10660 (PMSL).
Non-types ex ***Emberiz spodocephala*****:** 1♂, 1♀, Teteldsh, Mongolia, 10 Jun. 1979, 407g and 423 (OSU).

Brueelia bonariensis **Cicchino & Castro, 1996**
Non-types ex ***Molothrus bonariensis*** **ssp.:** 1♂, 1♀, "Santa Cruz", R. Meinertzhagen, 10850 (NHML).

Brueelia breueri **Balát, 1955**
Type material ex ***Chloris chloris chloris*****: Paratypes:** 1♂, Gabcíkoro, Slovakia, 25 Mar. 1954, F. Balát, Brit. Mus. 1955-662 (NHML); 1♀, Pod[gorne] Biskupice, Poland, 20 Jul. 1953, F. Balát, Brit. Mus. 1955-662 (NHML).
Non-types ex ***Chloris chloris aurantiiventris*****:** 4♀, Eichler Collection, 3737 (MFNG); 1♀, Dubrovnik, Croatia, 29 Dec. 1963, A. Lesinger, 9161 (PMSL); 1♂, 8♀, Stozice, Ljubljana, Slovenia, 6 Mar. 1979, D. Sere, 13848–13858 (PMSL); 1♀, Stozice, Ljubljana, Slovenia, 2 Nov. 1978, D. Sere, 13760 (PMSL).
Non-types ex ***Carduelis chloris chloris*****:** 2♀, Podunjske Biskupice, Bratislava, Slovakia, 20 Jul. 1953, F. Balát (PMSL); 5♀, Sangeorz-Bai, Romania, 27 May 1960, I. Bechet, 9156–9160 (PMSL); 1♀, Langton, Lancashire, England, United Kingdom, 1 Apr. 1923, W.H. Heathcote (NHML); 5♂, 24♀, Cornwall, England, United Kingdom, Jan. 1937, R. Meinertzhagen, 8278–80 (NHML); 4♂, 16♀, Cornwall, England, United Kingdom, Mar. 1946, R. Meinertzhagen, 15648 (NHML); 5♀, Ireland, Aug. 1937, R. Meinertzhagen, 10593 (NHML); 2♀, South Uist, [Hebrides, Scotland, United Kingdom,] Jan. 1934, R. Meinertzhagen, 96 (NHML).

Brueelia brevicolor **Ansari, 1956**
Type material ex ***Turdus migratorius propinquus*****: Holotype** ♂, Arizona, U.S.A., Mar. 1939, R. Meinertzhagen, 13127 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 2♂, 29♀, same data as holotype (NHML); 1♀, same data as holotype (OSUS).
Non-types ex ***Turdus migratorius propinquus*****:** 4♀, Carter Canyon, Arizona, U.S.A., 2 Aug. 1934 (NHML).
Non-types ex ***Turdus migratorius*** **ssp.:** 5♂, 5♀, St. Cloud, Minnesota, U.S.A., 5 Jun. 1961, R.D. Price (UMSP); 1♀, Ward County, North Dakota, U.S.A., 29 Apr. 1960, R.T. Gammell (PIPeR); 1♀, Bardstown, Kentucky, U.S.A., 23 Sep. 1964, N. Wilson (PIPeR); 10♂, 20♀, Cedar Falls, Black Hawk County, Iowa, U.S.A., 16 Jun. 1979, N. Wilson (PIPeR); 1♀, State College, Mississippi, U.S.A., 29 Jan. 1937, E.W. Stafford (NHML); 1♂, 3♀, Sandusky, Ohio, U.S.A., 15 Jul. 1925, H.S. Peters (NHML).

Brueelia brevipennis **Ansari, 1956**
Type material ex ***Turdoides squamiceps*****: Holotype** ♂, Jericho, Palestine, 24 Nov. 1922, P.A. Buxton (NHML); **paratypes:** 2♂, same data as holotype (NHML).
Non-types ex ***Turdoides squamiceps*****:** 1♂, 1♀, Masada [as Metzada], Israel, 2 May 1958, 326, Brit. Mus. 1958-520 (NHML).

Brueelia cedrorum **(Piaget, 1880)**
Type material ex ***Bombycilla cedrorum*****: Syntypes:** 2♂, 3♀, Piaget Collection, 1214, 1215 (NHML).
Non-types ex ***Bombycilla cedrorum*****:** 1♂, 1♀, California, U.S.A., Mar. 1939, R. Meinertzhagen, 12826 (NHML); 1♂, 1♀, Vance, Texas, U.S.A., 30 Jan. 1929, H.S. Peters (OSUS); 1♀, locality unknown, 1040 (UMSP).

Brueela cela **Stafford, 1943**
Type material ex ***Cacicus cela cela*****: Holotype** ♂, San Felipe, Venezuela, 18 May 1938, Pablo Anduze, 1720 (NHML).
Non-types ex ***Cacicus cela cela*****:** 1♀, El Callao, Venezuela, 2 May 1910, M.A. Carriker Jr., 7144-Ven (NHML).

Brueelia chayanh **Ansari, 1955**
Non-types ex *Acridotheres tristis tristis* [some as ***Sturnus tristis*****]:** 2♂, 2♀, Ban Bo Luang, Hot, Chiang Mai Province, Thailand, 7 Apr. 1962, K. Thonglongya, 729 (NHML); 1♂, 1♀, same data as previous (OSUS); 3♂, 3♀, same data (UMSP); 2♂, 2♀, same data (PIPeR); 3♂, Khon Kaen City, [Khon Kaen Province,] Thailand, 11 Oct. 1953, R.E. Elbel & B. Lekagul, RE-3023, RT-B-22554 (PIPeR); 1♀, Khlong Khlung, Kamphaeng Phet Province, Thailand, 19 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2460, RT-B-21030 (PIPeR); 8♂, 13♀, Thadindang, Pak Phayun District, Phatthalung Province, Thailand, 28 Jul. 1962, W. Songprakob, RE-6348 (PIPeR); 1♂, 4♀, Ban Rai Dong, Lampoon, Chiang Mai Province, Thailand, 8 Jun. 1963, K. Thonglongya, SEATO 1067 (PIPeR); 1♂, 1♀, St. Helena, 25 Oct. 1952, E.L. Haydock, ML/64, Brit. Mus. 1952-595 (NHML); 5♂, 8♀, Nepal, May 1935, R. Meinertzhagen, 3862 (NHML); 9♀, Nepal, Jul. 1936, R. Meinertzhagen, 4953–4 (NHML); 1♂, 21♀, Rajputana, India, Mar. 1937, R. Meinertzhagen, 8975 (NHML); 1♂, 1♀, Daulatabad, Maharastra, India, 2 Aug. 1970, XIE-1448 (NHML); 1♂, same locality, 9 Aug. 1969, XIE-394, C-6675 (NHML).

***Brueelia chelydensis* Hopkins, 1951**

Type material ex ***Camarhynchus pallidus productus***: **Lectotype** ♀, Fernandina [as Narborough Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1006a, EMEC 75464 (EMEC); **paralectotypes:** 1♂, 3♀, Fernandina [as Narborough Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1076, 1156, EMEC 225261, 225304 (EMEC).

Non-types ex ***Camarhynchus parvulus parvulus*** **[**as ***Camarhynchus prosthemelas*]:** 1♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1061a, EMEC 225263 (EMEC).

Non-types ex ***Camarhynchus psittacula affinis*:** 1♂, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1008b, EMEC 225262 (EMEC).

Non-types ex ***Certhidea fusca becki*** **[**as ***Certhidea becki*]:** 1♂, Wolf Island [as Wenman Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 982a, EMEC 225265 (EMEC).

Non-types ex ***Certhidea olivacea*** **[**as ***Certhidea albemarlensis*]:** 1♂, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1085b, EMEC 225264 (EMEC).

Non-types ex ***Geospiza conirostris conirostris*:** 1♂, Española [as Hood Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1141, EMEC 225303 (EMEC); 1♀, Gardner Island, Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1143, EMEC 225302 (EMEC); 2♂, 2♀, Bahía Manzanillo, Isla Española, Galápagos Islands, Ecuador, 24 Apr. 1992, R.L. Palma (MONZ).

Non-types ex ***Geospiza difficilis*:** 1♂, 1♀, Aguacate Camp, Isla Santiago (500m a.s.l.), Galápagos Islands, Ecuador, 8 Apr. 1992, R.L. Palma (MONZ).

Non-types ex ***Geospiza fortis*** **[**some as ***Geospiza dubia*]:** 3♂, 2♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1026, 1096e, 1106, EMEC 225299–225301 (EMEC); 1♂, 1♀, San Cristóbal [as Chatham Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 983b, 987, EMEC 225305–6 (EMEC).

Non-types ex ***Geospiza fuliginosa*:** 2♂, 2♀, same data as lectotype, 1028, 1059a, EMEC 225266–7 (EMEC); 5♂, 14♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 988, 994–5, 1016b, 1019b, 1039, 1044, 1049, 1070a, 1077a, 1081, 1100, 1104, 1107, 1112, 1144, 1157b, EMEC 225268–81, 225287–8, 225307 (EMEC); 5♀, San Cristóbal [as Chatham island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 989, 1018, 1140a, EMEC 225282, 225284–5 (EMEC); 1♂, Española [as Hood Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1001, EMEC 225283 (EMEC); 2♂, 2♀, Bahía Manzanillo, Isla Española, Galápagos Islands, Ecuador, 24 Apr. 1992, R.L. Palma (MONZ).

Non-types ex ***Geospiza magnirostris*:** 1♂, 1♀, Playa Negra, Isla Marchena, Galápagos Islands, Ecuador, 24 Mar. 1992, R.L. Palma (MONZ).

Non-types ex ***Mimus macdonaldi*** **[**as ***Nesomimus macdonaldi*]:** 1♀, Gardner Island, Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1130a, EMEC 225298 (EMEC); 1♂, Española [as Hood Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1138a, EMEC 225297 (EMEC) [contaminants].

Non-types ex ***Mimus melanotis*** **[**as ***Nesomimus adamsi*]:** 1♀, San Cristóbal [as Chatham island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 984, EMEC 225290 (EMEC) [contaminants].

Non-types ex ***Mimus parvulus parvulus*** **[**as ***Nesomimus parvulus*]:** 1♀, Fernandina [as Narborough Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1080, EMEC 225289 (EMEC) [contaminants].

Non-types ex ***Mimus* sp. [**as ***Nesomimus* sp.]:** 2♀, Santa Fé [as Barrington Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1022b, 1030a, EMEC 225291–2 (EMEC) [contaminants].

Non-types ex ***Myiarchus magnirostris*:** 1♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1125, EMEC 225293 (EMEC) [contaminants].

Non-types ex ***Onychoprion fuscatus crissalis*** **[**as ***Sterna fuliginosa*]:** 1♀, Clipperton Island, France, [R.E. Snodgrass], 1029a, EMEC 225294 (EMEC) [contaminants].

Non-types ex ***Pyrocephalus rubinus nanus*** **[**as ***Pyrocephalus intercedens*]:** 1♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1116, EMEC 225296 (EMEC) [contaminants].

Non-types ex ***Dendroica petechia aureola*** **[**as ***Dendroica aureola*]:** 1♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, 1899, [R.E. Snodgrass], 1011, EMEC 115295 (EMEC) [contaminants].

***Brueelia chilchil* Ansari, 1955**

Type material ex ***Turdoides caudata caudata*:** **Paratypes:** 1♂, 2♀, Faisalabad [as Lyallpur], Pakistan, 11 May 1932, M.A.R. Ansari (NHML).

Non-types ex ***Turdoides caudatus caudatus*** **[**some as ***Argya caudata caudata*]:** 1♂, 2♀, Rajputana [India], Mar. 1937, R. Meinertzhagen, 8922 (NMHL). 6♂, 9♀, Peshawar [Pakistan], Mar. 1937, R. Meinertzhagen, 9193–94, 9501 (NHML). 4♂, 16♀, Peshawar [Pakistan], Mar, 1937, R. Meinertzhagen, 9445–47 (NHML). 1♂, 2♀, Bharatpur [Rajasthan, India], 3 Jan. 1952, R. Meinertzhagen, 19670, Brit. Mus. 1952-143 (NHML). 1♀, same locality, 8E-0028 (OSUS).

***Brueelia chrysomystris* (Blagoveshtchensky, 1940)**

Non-types ex ***Carduelis spinus***: 1♂, 1♀, Achersleben, Germany, 12 Mar. 1949, W. Eichler, 3523 [An additional slide with this reference number contains a nymph and the bisected abdomen of a female. It is marked "Paratypoid", but "ist nicht paratypoid, sehe Eichler, 1954c" (= "is not paratype, see Eichler, 1954c") is written on the reverse. This appears to be true for all of the slides in this series, as Eichler (1954: 61) claims to have collected these specimens himself, which would mean that they are not paratype material] (MFNG); 3♂, 5♀, Vikrce, Ljubljana, Slovenia, 4 Nov. 1958, S. Brelih, 491–492, 2040–2041, 2043–2046 (PMSL); 1♂, 1♀, Vikrce, [Ljubljana,] Slovenia, 4 Nov. 1958, [S. Brelih?,] Brit. Mus. 1959-33 (NHML); 2♂, 20♀, Estonia, Feb. 1938, R. Meinertzhagen, 10934–5 (NHML); 1♂, 13♀, Ross-Shire, Scotland, United Kingdom, Mar. 1934, R. Meinertzhagen, 576, 580, 582 (NHML) [one slide contains one *Acronirmus gracilis*]; 11♂, 14♀, Somerset, [England,] United Kingdom, Jan. 1938, R. Meinertzhagen, 10739, 10749–51 (NHML); 2♀, "Chinchup Myum", [South] Korea, 21 Apr. 1968, 8E0385 (OSUS); 1♀, Vikrce, [Ljubljana,] Slovenia, 4 Nov. 1958, S. Brelih?, 2042 (USNM).

***Brueelia clara* Gustafsson & Bush, 2015**

Type material ex ***Lamprotornis australis*: Holotype** ♂, Namibia (as "S.W. Africa"), May 1949, R. Meinertzhagen, 19253-4, marked with black dot on slide (NHML); **paratypes**: 8♂, 9♀, same data as holotype (NHML).

***Brueelia conocephalus* (Blagoveshtchensky, 1940)**

Non-types ex ***Sitta europaea caesia***: 1♂, 1♀, Kosice, Czech Republic, 5 Nov. 1953, F. Balát, 1080 (MFNG); 1♀, Kosice, Czech Republic, 5 Nov. 1953, F Balát (PMSL); 1♀, "Gera-Erusee", 22 Jan. 1980, 293g (OSUS).

***Brueelia corydalla* Timmermann, 1950**

Type material ex ***Anthus pratensis whistleri*: Paratypes:** 1♀, Hornafjell, Höfn, Iceland, Brit. Mus. 1951-24 (NHML).

Non-types ex ***Anthus pratensis pratensis***: 2♂, 9♀, Verje, Medvode, Slovenia, 1955, S. Brelih, 226, 362, 828–830, 832–833, 835, 837–839 (PMSL); 1♀, same locality, date, and collector, 836 (NHML); 4♀, Cumberland, [England,] United Kingdom, Apr. 1941, R. Meinertzhagen, 14189 (NHML).

Non-types ex ***Anthus spinoletta blakistoni* [as *Anthus spinoletta japonica*]:** 8♀, Kabul, Afghanistan, Apr. 1937, R. Meinertzhagen, 9629 (NHML).

***Brueelia coryliventer* Gustafsson & Bush, 2015**

Type material ex ***Creatophora cinerea*: Holotype** ♂, Isiolo, Kenya, Jan. 1956, R. Meinertzhagen, 20469 (NHML); **paratypes**: 1♀, same data as holotype (NHML); 1♂, 8♀, Awassa, Ethiopia, 17 Nov. 1960, S. Brelih, IM-3137–3145 (PMSL).

***Brueelia cruciata* (Burmeister, 1838)**

Non-types ex ***Lanius collurio collurio***: 1♂, 1♀, Johannesburg, Transvaal [Goteng, South Africa], 30 Jul. 1957, H. Paterson, Brit.Mus. 1958–76 (NHML).

***Brueelia currucae* Bechet, 1961**

Non-types ex ***Sylvia curruca blythi* [as *Sylvia curruca affinis*]:** 4♂, 7♀, Sindh, India, Jan. 1937, R. Meinertzhagen, 10375–6 (NHML).

Non-types ex ***Sylvia curruca curruca***: 6♀, Stozice, Ljubljana, Slovenia, 21 Apr. 1980, D. Sere, 13947, 13950–13954 (PMSL); 1♂, 8♀, Stozice, Ljubljana, Slovenia, 26 Apr. 1979, D. Sere, 13841, 13843–13846 (PMSL); 1♂, 1♀, Fair Isle Bird Observatory, Shetlands, Scotland, United Kingdom, JC408, Brit. Mus. 1954-566 (NHML).

Non-types ex ***Sylvia minula***: 2♂, 2♀, Bahawalpur, Sindh, India, Jan. 1939, R. Meinertzhagen, 13964 (NHML).

***Brueelia cyclothorax* (Burmeister, 1838)**

Type material ex ***Passer domesticus domesticus*: Holotype** ♂ of *Brueelia subtilis obligata*: Achersleben, Germany, 7 Aug. 1948, W. Eichler, 2968e (MFNG); **allotype** of *Brueelia subtilis obligata*: 1♀, same data as holotype, 2968b (MFNG); **paratypes**: 2♂, 5♀, same data as holotype, 2968c–d, f, h, k, i (MFNG); 1♀, Eichler collection, 2964a (MFNG).

Non-types ex ***Passer domesticus domesticus***: 3♀, Eichler collection, 2300 (MFNG) [two slides marked "autohyle"]; 1♀, Eichler Collection, 3652 (MFNG) [autohyle]. 1♂, 1♀, Wroclaw, Poland, 25 Jun. 1951, J. Zlotorzycka, 4/t/1-2 and 4/t/1-8 (MFNG); 1♂, Grosspösna, Leipzig, Germany, 7 Feb. 1958, L. Britz, 20 (MFNG); 1♂, 1♀, Ruddington, Nottinghamshire, England, United Kingdom, 10 May 1964, R.S. Balter, Brit. Mus. 1964-614 (NHML); 2♂, 6♀, Hastings, Pakipaki, New Zealand, 31 Dec. 1965, D.G. Dawson, Brit. Mus. 1966-243 (NHML); 1♂, 5♀, Stillwater, Payne County, Oklahoma, U.S.A., 16 Mar. 1949, D.E. Howell (OSUS); 1♀, same locality and collector, 13 Jan. 1947 (OSUS); 1♀, same locality and collector, 8 Jan. 1948 (OSUS); 1♀, same locality, 15 Feb. 1948, M.S. Sloan (OSUS); 1♂, 1♀, Island of Réunion, France, 30 Sep. 1980, N. Barre (OSUS); 1♂, Jay, Oklahoma, U.S.A., 2 Nov. 1982, A.M. Baumgartner (OSUS); 1♂, Ames, Iowa, U.S.A., 6 Apr. 1936, C.E.T. (OSUS); 3♀, Milpitas, California, U.S.A., 12 Dec. 1977, Lapin 7 (OSUS); 5♂, 2♀, Shelter Island, New York, U.S.A., 14 Jun. 1948, Roy Latham (OSUS); 1♂, 1♀, Leavenworth, Kansas, U.S.A., 12 Feb. 1955, K.C. Emerson (OSUS); 1♀, Ruddington, Nottinghamshire, England, United Kingdom, 6 May 1964, Brir.Mus. 1964-614 (NHML); 2♂, 2♀, Anoka, Minnesota, U.S.A., 31 May 961, R.D. price (UMSP); 3♂, 3♀, Park Rapids, Minnesota, U.S.A., 25 May 1961, R.D. Price (UMSP); 1♂, 1♀, Minneapolis, Minnesota, U.S.A., 14 Aug. 1961, R.C. Nelson (UMSP); 1♂, 2♀, Verje, Medvode, Slovenia, 14 Feb. 1954, S. Brelih, 206, 645–646 (PMSL); 3♂, 3♀, Tomacevo, Ljubljana, Slovenia, 8 Nov. 1965, S. Brelih, 11545–11550 (PMSL); 1♂, 1♀, Burgas, Bulgaria, 4 Jun. 1957, F. Balát (PMSL).

Non-types ex ***Passer montanus montanus*****:** 1♂, Zellendorf, Berlin, Germany, 26 Feb. 1948, S. von Kéler, ZM-1230/2 (MFNG); 1♂, 3♀, Eichler Collection, 50485 (MFNG); 1♀, Eichler Collection, 3660 (MFNG); 2♂, 1♀, Bácsszőlős, Bács-Kiskun, Hungary, 15 Mar. 1969, J. Rékási, 11552–11554 (PMSL); 1♂, Stozice, Ljubljana, Slovenia, 10 Mar. 1958, S. Brelih, 4305 (PMSL); 1♂, 2♀, Ljublansko Barje, Slovenia, 10 Mar. 1958, S. Brelih, 205, 635–636 (PMSL); 2♂, 2♀, Hodonín, South Moravia, Czech Republic, 11 Jun. 1953, F. Balát (PMSL); 1♀, Hodonín, South Moravia, Czech Republic, 6 Jul. 1953 (PMSL); 1♂, Bácsalmás, Bács-Kiskun, Hungary, 1 Feb. 1969, J. Rékási, 11539 (PMSL); 1♀, Bácsalmás, Bács-Kiskun, Hungary, 12 Mar. 1969, J. Rékási, 11549 (PMSL).

Non-types ex ***Passer montanus saturatus*** **[**as ***Passer montanus taivanensis*****]:** 1♀, Tam Shui, Taipei Hsien, Taiwan, 5 Mar. 1958, R.E. Kuntz, PF4700 (OSUS).

***Brueelia deficiens* (Piaget, 1885)**

Type material ex ***Cyanopica cyanus cooki*****: Holotype** ♂, Piaget Collection, 1237 (NHML). **Holotype** ♀ of *Nirmus ampullatus*: Piaget Collection, 1180 (NHML); **paratypes** of *Nirmus ampullatus:* 1♂, 1♀, Piaget Collection, 1180 (NHML).

Non-types ex ***Cyanopica cyanus cooki*****:** 3♂, 2♀, Piaget Collection (NHML); 3♀, "S. Spain", Spain, R. Meinertzhagen, 8020 (NHML).

***Brueelia delicata* (Nitsch [in Giebel], 1866)**

Type material ex ***Emberiza citrinella citrinella*****: Neoparatypes:** 1♂, Soboňky, Rohatec, Czech Republic, 4 Nov. 1951, F. Balát, Brit. Mus. 1955-662 (NHML); 1♀, Hungary, 21 Jan. 1953, G. Breuer, Brit. Mus. 1955-662 (NHML).

Non-types ex ***Emberiza citrinella citrinella*****:** 2♂, 2♀, Cluj, Romania, 6 May 1958, I. Bechet, 9172–9175 (PMSL); 1♂, 2♀, Nagykanisza, Zala, Hungary, 21 Jan. 1953, F. Balát (PMSL); 1♀, Rohatec, Hodonín, Czech Republic, 4 Nov. 1951, F. Balát (PMSL).

Non-types ex ***Emberiza citrinella caliginosa*****:** 7♀, Mull, United Kingdom, Feb. 1944, R. Meinertzhagen, 15048–9 (NHML); 4♂, 13♀, Ross-shire, Scotland, United Kingdom, Mar. 1934, R. Meinertzhagen, 506 (NHML); 3♂, 2♀, Cornwall, United Kingdom, Jan. 1937, R. Meinertzhagen, 8255 (NHML); 1♂, Ilam, New Zealand, 5–10 Sep. 1966, D.G. Dawson, Brit. Mus. 1966-593 (NHML).

Non-types ex ***Emberiza citrinella* ssp.:** 2♂, 3♀, Raoul Island, New Zealand, 1 Oct. 1962, G.A. Samuelson, 100, Brit. Mus. 1966-201 (NHML); 3♂, 3♀, Ilam, New Zealand, 5–10 Sep. 1966, D.G. Dawson, Brit. Mus. 1966-593 (NHML).

***Brueelia densilimba* (Nitzsch [in Giebel], 1866)**

Non-types ex ***Carduelis carduelis carduelis*****:** 3♂, 8♀, Ljubljana, Slovenia, 14 May 1964, S. Brelih, 8362–8370 (PMSL); 1♀, Lednice, South Moravia, Czech Republic, 25 May 1954, F. Balát (PMSL).

Non-types ex ***Carduelis carduelis niediecki*****:** 5♂, 4♀, Palestine, Apr. 1953, R. Meinertzhagen, BM-1953-225 (NHML).

***Brueelia dorsale* Williams, 1983**

Type material ex ***Toxostoma crissale*** [some slides as ***Toxostoma dorsale*****]: Holotype** ♂, California, U.S.A., Mar. 1939, R. Meinertzhagen, 13081 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 25♂, 45♀, California, U.S.A., Mar. 1938, R. Meinertzhagen, 13081 (NHML); 2♀, Las Vacas, Coahuila, Mexico, 3 Jul. 1958, C.A. Ely, CAE-0592 (PIPeR); 2♀, same locality, 16 Jul. 1958, C.A. Ely, CAE-671 (OSUS); 2♂, 2♀, same locality, 11 Nov. 1958, C.A. Ely, CAE-1087, slide #117 (PIPeR).

Non-types ex ***Toxostoma crissale*** **[**as ***Toxostoma dorsale*****]:** 1♂, California, USA, Mar. 1939, R. Meinertzhagen, 13081 (NHML); 1♂, 1♀, Las Vacas, Coahuila, Mexico, 11 Nov. 1958, C.A. Ely, CAE-1087 (PIPeR).

***Brueelia ductilis* (Kellogg & Chapman, 1899)**

Type material ex ***Empidonax difficilis*****: Holotype** ♀, Ontario, California, U.S.A., 1897, 577b, EMEC 75395 (EMEC).

***Brueelia ferianci* Balát, 1955**

Type material ex ***Anthus trivialis trivialis*****: Paratypes:** 1♀, Nesyt, Lednice, Czech Republic, 8 Apr. 1953, F. Balát, Brit. Mus. 1955-662 (NHML).

Non-types ex ***Anthus trivialis trivialis***: 4♂, 6♀, Goljaki, Trnovski Gozd, Slovenia, 18 Jun. 1965, S. Brelih, 11521–11530 (PMSL); 1♂, 2♀, "S. Spain", Spain, 27 Apr. 1961, Varma Coll. No. A310, Brit. Mus. 1962-325 (NHML); 6♂, 79♀, Morocco, Oct. 1938, R. Meinertzhagen, 11773, 11976 (NHML).

Brueelia flinti **Cicchino & Castro, 1996**
Non-types ex ***Quiscalus mexicanus mexicanus***: 3♀, Ruatan Island, Bay of Honduras, Honduras, 1886, G.F. Gaumer (R.S. Balter), Brit. Mus. 1967-63 (NHML).
Non-types ex ***Quiscalus mexicanus prosopidicola***: 2♂, 3♀, Moore, Cleveland County, Oklahoma, U.S.A., 8 Nov. 1957, G.M. Sutton, RE-571108 (NHML); 2♂, 2♀, same data as previous (OSUS); 7♂, 8♀, same data as previous (PIPeR).
Non-types ex ***Quiscalus mexicanus*** **ssp.:** 5♂, 19♀, México, R. Meinertzhagen, 10848–9 (NHML).

Brueelia fulmeki **Eichler, 1957**
Type material ex *Aplonis panayensis strigata*: **Holotype** ♂, Medan, Sumatra, Indonesia, 785 (MFNG).
Non-types ex ***Aplonis panayensis panayensis***: 1♂, 1♀, Calatagan, Batangas, Luzon, Philippines, 11 Mar. 1965, H.E. McClure, SE-1774 (OSUS); 1♂, same locality, 11 Jul. 1964, H.E. McClure, H-0220 (OSUS); 1♂, 1♀, Pasi Qr, Mindoro, Philippines, 14 Aug. 1964, H.E. McClure, H-0081 (OSUS); 1♂, 1♀, Balabac Island, Philippines, 19 Apr. 1962, Max Thompson, BBM-PI-2507 (OSUS); 1♀, Malita, Mindanao, Philippines, SU-BBM-1121 (PIPeR); 2♂, 2♀, Balabac Island, Philippines, 19 Apr. 1962, Max Thompson, BBM-SI-2510 (USNM); 1♂, 1♀, Dalton pass, North Vizenya, Philippines, 28 Jan. 1966, 6E-0080 (USNM); 1♂, same data, 6E-0074 (USNM).
Non-types ex ***Aplonis panayensis strigata***: 10♂, 6♀, Muang Kluang, Kapoe, Ranong Province, Thailand, 26 Dec. 1962, W. Songprakob, RE-6432–4 (PIPeR); 28♂, 25♀, same locality and collector, 1 Feb. 1963, RE-7059–60 (PIPeR); 10♂, 10♀, same locality and collector, 27 Jan. 1963, RE-702930 (PIPeR); 11♂, 10♀, Bang Hin, Kapoe, Ranong Province, Thailand, 28 Jan. 1963, W. Songprakob, RE-7037 (PIPeR); 1♀, Thung Kha, Muang Kluang, Ranong Province, Thailand, 1 Feb. 1963, R.E. Elbel, RE-105900 (PIPeR); 4♂, 4♀, Khao Kaeo, Lansaka, Nakhon Si Thammarat Province, Thailand, 4 Apr. 1963, W. Songprakob, WS-012 (PIPeR); 3♂, 4♀, same data, WS-008 (PIPeR); 5♂, 3♀, same data, WS-009 (PIPeR); 1♂, 2♀, Pak Ro, Muang, Songkhla Province, Thailand, 7 May 1962, W. Songprakob, RE-6169–70 (PIPeR); 2♀, same locality and collector, 7 May 1962, RE-6971 (PIPeR).

Brueelia fuscopleura **(Blagoveshtchensky, 1951)**
Non-types ex ***Pastor roseus***: 1♂, 7♀, Deccan, India, Feb. 1937, R. Meinertzhagen, 8828–32 (NHML).

Brueelia ginginianus **Ansari, 1955**
Non-types ex ***Acridotheres ginginianus***: 1♂, Bharatpur, Rajasthan, India, 25 Oct. 1969, XIE-987 (OSUS); 4♂, 24♀, Rajputana, India, Mar. 1937, R. Meinertzhagen, 9024 (NHML); 1♂, 7♀, same localty and collector, Jan. 1936, 4790 (NHML).

Brueelia glizi **Balát, 1955**
Type material ex ***Fringilla montifringilla***: **Paratypes:** 1♀, Nesyt, Hodonin, Czech Republic, 10 Feb. 1952, F. Balát, Brit. Mus. 1955-662 (NHML).
Non-types ex ***Fringilla montifringilla***: 8♂, 14♀, Stozice, Ljubljana, Slovenia, 24 Aug. 1960, S. Brelih, 8430–8440, 8442, 3921–3930 (PMSL); 4♀, Stozice, Ljubljana, Slovenia, 1 Mar. 1979, D. Sere, 13916–13919 (PMSL); 1♀, Hodonín, Czech Republic, 10 Nov. 1952, F. Balát (PMSL); 1♂, 1♀, same data as previous, Brit. Mus. 1962-124 (NHML).

Brueelia gobiensis **Mey, 1982**
Type material ex ***Bucanetes mongolicus***: **Paratypes:** 1♂, 1♀, c. 35 km W of Dolandzadgad, Gobi, Mongolia, 2 Jun. 1979, [E. Mey,] 426c, 433b, 1784–5 (OSUS).

Brueelia goertae **Dalgliesh, 1971**
Type material ex ***Dendropicos goertae***: **Holotype** ♂, Maroua, Cameroon, J. Mouchet, Brit. Mus. 1960-295 (NHML).

Brueelia guldum **Ansari, 1955**
Non-types ex ***Pycnonotus cafer*** **ssp.:** locality unknown, captive birds, 19 Mar. 1966, R.S. Balter, Brit. Mus. 1969-101 (NHML).

Brueelia iliaci **(Denny, 1842)**
Note: See Ansari (1956b: 109) for a discussion on the validity of the Neotype material.

Type material ex ***Turdus iliacus iliacus*****: Neotype** ♂, Cornwall, England, United Kingdom, Mar. 1946, R. Meinertzhagen, 15643 (NHML); **neoallotype** ♀, same data as neotype (NHML); **neoparatypes:** 1♂, 5♀, same data as neotype (NHML).
Ex ***Turdus iliacus coburni*****: Holotype** ♀ of *Brueelia inornata*: Reykjavik, Iceland, 11 Apr. 1935, B.M. 1951-24 (NHML).
Ex ***Turdus atrogularis*****: Holotype** ♂ of *Brueelia iliaci indiensis*: Uttar Pradesh, India, 1939, R. Meinertzhagen, 12358 (NHML); **allotype** ♀ of *Brueelia iliaci indiensis*: same data as holotype (NHML); 2♂, 11♀, **paratypes** of *Brueelia iliaci indiensis*, same data as holotype (NHML).
Non-types ex ***Turdus atrogularis*****:** 7♂, 19♀, Uttar Pradesh, India, 1939, R. Meinertzhagen, 13358 (NHML).
Non-types ex ***Turdus boulboul*****:** 1♂, 6♀, “Himalayas”, Feb. 1925, R. Meinertzhagen, 2716 (NHML).
Non-types ex ***Turdus iliacus coburni*****:** 1♀, Eichler Collection, 1367e (MFNG).
Non-types ex ***Turdus iliacus iliacus*****:** 2♂, 11♀, same data as neotype (NHML); 1♂, 2♀, United Kingdom, Denny Collection, BM1852-98 (NHML); 1♂, 1♀, Eyerland, Texel Island, Netherlands, 26 Oct. 1958 (NHML).

Brueelia immaculata **(Piaget, 1890)**
Type material ex ***Burhinus oedicnemus*** **[as *Oedicnemus crepitans*]: Holotype** ♂, Piaget Collection, 766 (NHML).

Brueelia imponderabilica **Eichler, 1954**
Type material ex ***Lanius excubitor excubitor*****: Holotype** ♂, Heidelberg, Germany, 5 Dec. 1937, H. Sick, 378 (MFNG); **allotype** ♀, same data as holotype (MFNG); **paratypes** 2♀, same data as holotype (MFNG); 2♀, same data as holotype (NHML).
Non-types ex ***Lanius excubitor excubitor*****:** 2♀, same data as holotype (MFNG); 2♀, Eichler collection, 3750b (MFNG); 2♂, 2♀, Prešov, Slovakia, 1964, F. Balát, 10701–10704 (PMSL).

Brueelia infrequens **(Carriker, 1902)**
Non-types ex ***Calcarius lapponicus*****:** 1♀, Stozice, Ljubljana, Slovenia, 16 Apr. 1975, D. Sere, 12740 (PMSL).

Brueelia infuscata **Cicchino, 1979**
Non-types ex ***Melanerpes candidus*****:** 1♀, Department Santa Cruz, Bolivia, Chris[topher C.] Witt, CCW970 [voucher specimen for sequence Pisp.Mecan.1.15.2000.12] (PIPeR).

Brueelia intermedia **(Nitzsch [in Giebel], 1866)**
Non-types ex ***Turdus torquatus torquatus*****:** 1♂, Ullaberry, Shetlands, United Kingdom, 29 Jul. 1912, J. Waterston, B.M. 1930-232 [male genitalia only] (NHML); 5♂, 7♀, Eichler Collection, 1729 (MFNG); 1♀, Wolffhügel, IN1278/53 (MFNG).
Non-types ex ***Turdus torquatus alpestris*****:** 1♀, Dedno Polje, Julijske Alpe, Slovenia, 28 May 1955, S. Brelih, 211, 1979–1981, 2522–2523, 2525–2527 (PMSL); 2♂, 1♀, Bandenica, Bulgaria, 26 Jun. 1957, F. Balát (PMSL).

Brueelia jacarinae **Valim & Palma, 2006**
Type material ex ***Volatinia jacarinae*****: Paratypes** 1♂, 1♀, Bairro Campos Elíseos, Mun. Duque de Caxias, Estado Rio de Janeiro, Brazil, Sep. 2002, M.P. Valim (MONZ).

Brueelia jacobi **Eichler, 1951**
Type material ex ***Turdus merula merula*****: Holotype** ♂, Huchting, Bremen, Germany, 23 Apr. 1949, E. Jacob, 3545 (MFNG); **allotype** ♀, same data as holotype (MFNG); **paratypes:** 23♀, same data as holotype (MFNG); 1♀, same data as holotype, NHRS-GULI 000010337 (SMNH); 1♀, same data as holotype (NHML).

Brueelia juno **(Giebel, 1874)**
Non-types ex ***Coccothraustes coccothraustes coccothraustes*****:** 1♂, 1♀, Górki Wschodnie, Poland, 17 Apr. 1962, Zajac?, 4/g/2 and 4/g/32 (MFNG); 4♂, 7♀, Kranj, Slovenia, 25 Dec. 1972, I. Geister, 13501–13509 (PMSL); 1♂, 5♀, Gameljne, Ljubljana, Slovenia, 27 Feb. 1951, S. Brelih, 203, 640–641, 648–649, 840 (PMSL); 1♂, 4♀, Zelena Jama, Ljubljana, Slovenia, 21 Jan. 1976, A. Smuc, 13171–13175 (PMSL); 2♀, Hampshire, England, United Kingdom, Jun. 1932, R. Meinertzhagen, 2668 (NHML); 1♂, 3♀, United Kingdom, 10 Dec. 1836, Fred. Moore Esq., 1865-8 (NHML); 1♀, Chin Chup Myun, Kyunggi, South Korea, 26 Feb. 1966, MAPS 6E-0895 (OSUS); 1♀, 2 km N of Weißig, Gera, Thuringia, Germany, 16 Jul. 1982, 1056a, 23439 [on reverse] (OSUS); 1♀, Gameljne, Ljubljana, Slovenia, 27 Feb. 1951, S. Brelih, 650 (USNM).

Brueelia kistiakowskyi **Fedorenko, 1975**
Non-types ex ***Anthus campestris campestris*****:** 4♀, Afghanistan, Apr. 1937, R. Meinertzhagen, 9804 (NHML).
Non-types ex ***Anthus campestris griseus*****:** 1♂, 11♀, Aden, Yemen, Dec. 1948, R. Meinertzhagen, 17813 (NHML).

Brueelia kluzi **Balát, 1955**

Non-types ex ***Fringilla coelebs africana***: 5♀, Morocco, Oct. 1938, R. Meinertzhagen, 11740 (NHML).
Non-types ex ***Fringilla coelebs coelebs***: 1♀, Tomacevo, Ljubljana, Slovenia, 29 Apr. 1965, S. Brelih, 9775 (PMSL).
Non-types ex ***Fringilla coelebs gengleri***: 3♂, 2♀, Scotland, United Kingdom, 19 Sep. 1962, Vet[erinary] Lab Eskgrove, Brit. Mus. 1962-722 (NHML); 18♂, 31♀, Suffolk, England, United Kingdom, Jul. 1941, R. Meinertzhagen, 14406 (NHML); 1♂, 8♀, Ross-Shire, Scotland, United Kingdom, Dec. 1934, R. Meinertzhagen, 2318, 2324 (NHML); 2♂, 2♀, Pembrokeshire, Scotland, United Kingdom, Jul. 1934, R. Meinertzhagen, 1166 (NHML); 1♂, 1♀, Devon, England, United Kingdom, Oct. 1942, R. Meinertzhagen, 14804 (NHML); 13♀, Wales, United Kingdom, Jan. 1942, R. Meinertzhagen, 1474 (NHML); 2♂, 16♀, [Isle of] Mull, Scotland, United Kingdom, Feb. 1944, R. Meinertzhagen, 15072 (NHML).
Non-types ex ***Fringilla coelebs*** **ssp.:** 2♀, Piaget Collection (NHML).

Brueelia kratochvili **Balát, 1958**

Type material ex ***Motacilla flava feldeggi***: **Paratypes:** 1♂, 1♀, Burgas, Bulgaria, 29 May 1957, Brit. Mus. 1958-425 (NHML).
Non-types ex ***Motacilla flava*** **ssp.:** 3♂, 14♀, Metkovic, Croatia, 23 Apr. 1963, A. Lesinger, 6285–6290, 8415–8428 (PMSL); 1♂, Dubrovnik, Croatia, 1 Apr. 1968, A. Lesinger, 11420 (PMSL); 1♀, Burgas, Bulgaria, 29 May 1957, F. Balát (PMSL); 1♀, Bharatpur, Rajasthan, India, 4 Oct. 1969, X1E-1006, 24295 [on reverse] (OSUS); 1♀, Muang Bung Boraphet, Nakhon Sawan Province, Thailand, 15 Mar. 1968, X1E-702 (OSUS); 2♂, 2♀, Bahig, Egypt, 25 Aug. 1968, OMS-4468 (OSUS); 1♀, Mishmar HaNegev [?], Israel, 29 Aug. 1960, 1167-1174, Brit. Mus. 1961-403 (NHML).
Non-types ex ***Motacilla tschutschensis macronyx***: 1♀, Bangkok, Thailand, 18 Sep. 1964, H.E. McClure, H-0953 (OSUS).

Brueelia limbata **(Burmeister, 1838)**

Non-types ex ***Loxia curvirostra curvirostra***: 2♂, United Kingdom, Denny Collection, 1852-98 (NHML); 1♂, 1♀, Bedford, England, United Kingdom, 26 Sep. 1962, Brit. Mus. 1962-722 (NHML); 15♂, 26♀, "N.E. Poland", Poland, Aug. 1935, R. Meinertzhagen, 4110, 4216 (NHML); 2♀, Fair Isle, Scotland, United Kingdom, 6 Jul. 1953, R. 7395, Brit. Mus. 1953-509 (NHML); 3♂, 9♀, Estonia, Oct. 1934, R. Meinertzhagen, 1834, 1870, 1970, 1984, 1986, 1994 (NHML); 1♂, 1♀, Ljubljana, Slovenia, 12 Feb. 1959, S. Brelih (OSUS); 2♀, Eichler collection, 5035 (MFNG); 2♀, Wolffhügel, IN1278/61 (MFNG); 2♂, 5♀, Serrahn, Germany, 24 Aug. 1964, F. Balát, 1432 (MFNG); 2♂, 2♀, Skanör, Sweden, 12 Sep. 1963, F. Balát, 1267 (MFNG); 2♂, 2♀, Zooloski vrt, Ljubljana, Slovenia, 22 Jun. 1955, S. Brelih (PMSL); 10♂, 7♀, Stozice, Ljubljana, Slovenia, 12 Feb. 1959, S. Brelih, 2686–2688, 2690–2693, 2695–2697, 2699, 6291–6293, 6298–6300 (PMSL); 3♀, Pekel, Borovnica, Slovenia, 2 Mar. 1959, S. Brelih, 2047–2049 (PMSL).
Non-types ex ***Loxia curvirostra stricklandi***: 1♂, 2♀, Santa Rita Mountains, Arizona, U.S.A., 9 Dec. 1939 (OSUS).

Brueelia locustellae **Fedorenko, 1975**

Non-types ex ***Locustella luscinoides fusca***: 1♂, 1♀, BAHRAIN, 20 Sep. 1970, M.D. Gallagher, Brit. Mus. 1971-349 (NHML).

Brueelia longipes **(Piaget, 1880)**

Type material ex ***Scissirostrum dubium***: **Holotype** ♂, Piaget collection, 148, BM 1928-325 (NHML).

Brueelia lullulae **Bechet, 1961**

Non-types ex ***Lullula arborea arborea***: 8♂, 9♀, Predmeja, Trnovski Gozd, Slovenia, 24 Jun. 1964, S. Brelih, 8376, 8378–8384, 8386–8390, 8392–8395 (PMSL).

Brueelia magnini **Ansari, 1956**

Type material ex ***Turdoides fulva acacia*** **[as *Turdoides fulvus acacia*]: Holotype** ♂, Sudan, Dec. 1947, R. Meinertzhagen, 17066–17068 (NHML); **allotype** ♀, same data as holotype (NHML); **paratype:** 6♂, 5♀, same data as holotype (NHML).
Non-types ex ***Turdoides fulva acacia*** **[as *Turdoides fulvus acacia*]:** 4♂, 8♀, same data as holotype (NHML).

Brueelia matvejevi **Balát, 1981**

Non-types ex ***Turdus viscivorus viscivorus***: 2♂, 2♀, Crno Jez, Durmitor, Montenegro, 8 Jul. 1958, S. Brelih, 333, 1990, 1992–1993 (PMSL); 6♂, 10♀, Crno Jez, Durmitor, Montenegro, 3 Jul. 1958, S. Brelih, 428–429, 628–629, 1997–1998, 6338–6339, 6341, 6343, 6345–6347, 6350–6352 (PMSL); 1♀, Crna Gora, Zabljak, Montenegro, 1 Mar. 1958, S. Brelih (OSUS).

Brueelia melanocoryphae **Bechet 1966**

Non-types ex ***Melanocorypha calandra psammochroa***: 4♂, 13♀, Afghanistan, May 1937, R. Meinertzhagen, 10263 (NHML).

Brueelia minor **Lunkaschu, 1970**
Non-types ex ***Lanius minor***: 2♂, 2♀, Stara Ves, Krizevci, Croatia, 11 May, 1964, A. Lesinger, 11511–11514 (PMSL); 2♀, Dubrovnik, Croatia, 11 Sep. 1964, A. Lesinger, 9176–9177 (PMSL); 1♂, 1♀, Kirim, Israel, 19 Sep. 1960, 1202, Brit. Mus. 1961-403 (NHML).

Brueelia mirabile **Carriker, 1963**
Type material ex ***Molothrus oryzivorus oryzivorus***: **Paratypes:** 1♀, El Cuyuni, Venezuela, 18 Mar. 1910, M.A. Carriker Jr., 670-Ven, Brit. Mus. 1968-455 (NHML).
Non-types ex ***Molothrus oryzivorus oryzivorus***: 1♂, Hacienda Amazonia, near Atalaya, Department of Madre de Dios, Perú, 5 Nov. 1985, S.M. Lanyon (UMSP); 2♀, same locality and collector, 4 Nov. 1985 (UMSP).

Brueelia modularis **(Piaget, 1880)**
Type material ex ***Prunella modularis***: **Syntypes**: 2♂, 2♀, Piaget Collection, 1216–1217 (NHML).

Brueelia mongolica **Mey, 1982**
Non-types ex ***Carduelis flavirostris flavirostris***: 1♂, 2♀, Halle, Sachsen-Anhalt, Germany, 25 Mar. 1968, F. Balát, 10649–51 (PMSL); 1♂, Stozice, Ljubljana, Slovenia, 16 Apr. 1975, D. Sere, 12737 (PMSL).
Non-types ex ***Carduelis flavirostris montanella***: 7♂, 15♀, Afghanistan, May 1937, R. Meinertzhagen, 10268–71, 10282–5 (NHML).
Non-types ex ***Carduelis flavirostris pipilans***: 1♀, Fair Island Bird Observatory, Scotland, United Kingdom, 2 Jun. 1954, JC-513, Brit. Mus. 1954-566 (NHML).

Brueelia moreli **Ansari, 1957**
Type material ex ***Ptilostomus afer***: **Holotype** ♂, Rufisque, Senegal, 26 Jun. 1955, P. Morel, Brit. Mus. 1959-539 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 4♂, 2♀, same data as holotype (NHML).
Non-types ex ***Ptilostomus afer***: 4♂, 4♀, same data as holotype, Brit.Mus 1964-658 (NHML); 2♂, 2♀, Gulu, Uganda, 11 May 1936, G.H.E. Hopkins (NHML).

Brueelia museiberolinensis **(Eichler, 1957)**
Type material ex ***Mino kreffti***: **Holotype** ♂, Bismarck Archipelago, Papua New Guinea, Eichler Collection, 2072 (MFNG); **allotype** ♀, same data as holotype (MFNG); **paratypes**: 1♂, 2♀, same data as holotype (MFNG).
Non-types ex ***Mino kreffti***: 1♂, 2♀, Haleta, elev. 10 m, Florida Island, Solomon Islands, 15 Oct. 1964, P.J. Shanahan, BBM-NG-24465 (BPBM); 3♀, Ulo Crater, elev. 10 m, Vella Lavella Island, Solomon Islands, 6 Dec. 1963, P. Temple, BBM-SI-23255 (BPBM); 2♂, 2♀, Gaulim, New Britain, Bismarck Archipelago, Papua New Guinea, 28 Oct. 1962, H. Clissold, BBM-NG-20697 (OSUS).

Brueelia nebulosa **(Burmeister, 1838)**
Non-types ex ***Sturnus vulgaris vulgaris***: 1♀, Preston, Longton, Lancashire, England, United Kingdom, 8 Mar. 1921, W.H. Heathcote, BM1980-40 (NHML); 1♀, Penylan, Glamorganshire, Wales, United Kingdom, 21 Jul. 1935, J.G. Williams, BM 1980-40 (NHML); 1♂, 2♀, Blakeden, Cheshire, England, United Kingdom, 9 Apr. 1930, A.W. Boyd, BM1980-40 (NHML); 1♂, 1♀, Midlothian, Scotland, United Kingdom, 9 Jan. 1965, Eskgrove Lab, Brit. Mus. 1965-641 (NHML); 2♂, Romford, Essex, England, United Kingdom, 7 Nov. 1954, 20029 (NHML); 1♂, 1♀, Churchdown, Gloucestershire, England, United Kingdom, 19 Jun. 1956, Brit. Mus. 1957-297 (NHML); 1♂, 1♀, Llanbrynmair, Monmouthshire, Wales, United Kingdom, 20 Jul. 1960 (NHML); 2♀, United Kingdom, Denny collection, 1852-98 (NHML); 1♀, no collection data, 122 (NHML); 1♂, 1♀, Urana, New South Wales, Australia, 21 Oct. 1924, Brit. Mus. 1932-133 (NHML); 1♂, 1♀, Christchurch, New Zealand, May 1964, M. Davis, Brit. Mus. 1965-541 (NHML); 1♂, 1♀, Blue Lake, Raoul Island, New Zealand, 6 Jan. 1967, D.S.I.R., N.Z., Brit. Mus. 1968-401 (NHML); 1♂, 3♀, Camargue, France, 21 Feb. 1959, Brit. Mus. 1959-418 (NHML); 1♀, Nejdek, Moravia, Czech Republic, 25 May 1953, F. Balát, Brit. Mus. 1954-252 (NHML); 1♂, 1♀, Podbrezje, [Radovljica,] Slovenia, 20 Nov. 1959, S. Brelih, 2877, 2888 (NHML); 1♂, Orr's Ranch, Tooele County, Utah, U.S.A., 18 May 1954, E. Ekker, 370: 13-1488 (OSUS); 1♂, 1♀, State College, Mississippi, U.S.A., 4 Oct. 1934, E.W. Stafford (OSUS); 1♂, 2♀, State College, Mississippi, U.S.A., 16 Apr. 1937, Mildred Watts (OSUS); 3♂, 3♀, same data as previous (OSUS); 2♀, no collection data, from South Africa Museum, BM 1930-232 (NHML); 4♂, 2♀, presented by MacDonald College, 18 Apr. 1933, "W.W.", 511, BM 1933-654 (NHML); 1♀, same data, 2 May 1934 (NHML); 1♀, same data, 23 May 1931, W.E. Whitehead, BM 1933-126 (NHML); 1♂, 2♀, no collection data, marked "Lng 1914" (NHML); 1♂, 4♀, eggs, no collection data, BM 1980-40 (NHML);1♂, 3♀,

Bielowies, Poland, 1917/18, H. Bischoff, 2671 (MFNG); 1♀, Huchting, Bremen, Germany, 19 Apr. 1949, E. Jacob, 3546 (MFNG); 4♂, 7♀, Göttingen, Germany, 23 Jun. 1934, Wolfdietrich Eichler, 122 (MFNG); 1♀, Helgoland, Germany, 379 (MFNG); 1♀, Göttingen, Germany, 23 Jun. 1934, Wolfdietrich Eichler, 120 (MFNG); 2♀, Heidenheim, Germany, Wilffhügel, IN1278/62 (MFNG); 1♂, 4♀, Berlin, Germany, 27 Apr. 1953, Stefan von Kéler, IN1383 (MFNG); 2♂, 4♀, Neschwitz i. Sa., Germany, 5 May 1954, Creutz, IN1935/1-1–11 (MFNG); 1♀, Kaunas, Lithuania, 5 Mar. 1920, S.G. Iwanowsky, IN1401/6/1 (MFNG); 1♂, Thaden, Schleswig-Holstein, Germany, 7 May 1939, A. Jönkh, ZM1236/41-1–2 (MFNG); 1♂, 1♀, 11 Apr. 1876, R. Krieger, IN1283/35 (MFNG); 1♂, 1♀, Józefów, Warszaw, Poland, 29 Jul. 1954, Klopleka, 48/1954 (MFNG); 10♂, 28♀, W. Eichler collection, 1863, 2097, 3630–1, 3679, 3748, 4013, 4035, 50447, 50557–8 (MFNG) [several slides contain poorly preserved and unidentifiable *Sturnidoecus, Myrsidea, Penenirmus,* or *Brueelia* s. str.]; 4♂, 4♀, locality unknown [handwritten in Russia, illegible], 882 (MFNG); 1♂, 2♀, Bácsalmás, Bacs-Kiskun, Hungary, 6 Mar. 1971, J. Rékási, 11498–11500 (PMSL); 1♂, 1♀, Bácsalmás, Bacs-Kiskun, Hungary, 16 Mar. 1969, J. Rékási, 11501–11502 (PMSL); 8♂, 7♀, Podbrezje, Radovljica, Slovenia, 20 Nov. 1959, S. Brelih, 2875–6, 2878–87, 2889–91 (PMSL); 4♂, 8♀, Cerklje, Slovenia, 15 Apr. 1969, S. Brelih, 12171–3 (PMSL); 4♂, 3♀, Stozice, Ljubljana, Slovenia, 8 Jun. 1962, S. Brelih, 11491–7 (PMSL); 3♀, Ljubljansko Barje, Slovenia, 15 Mar. 1956, S. Brelih, 202, 1563–4 (PMSL); 1♂, 1♀, Kent Island, New Brunswick, Canada, 14 Jun. 1971, E. Burttt (UMSP); 1♂, St. Cloud, Minnesota, U.S.A., 5 Jun. 1961, R.D. Price (UMSP); 4♂, 5♀, Anoka County, Minnesota, U.S.A., 5 Jun. 1961, R.D. Price (UMSP); 2♀, Callao, Juab County, Utah, U.S.A., 21 Mar. 1962, SV95 (PIPeR); 15♂, 15♀, same locality, 21 Mar. 1962, SV96 (PIPeR); 2♂, 7♀, same locality, 28 Jan. 1965 (PIPeR); 8♂, 4♀, Government Creek, Dugway, Tooele County, Utah, U.S.A., 15 Mar. 1962, SV77 (PIPeR); 1♂, 1♀, same locality, 16 Mar. 1962, SV93 (PIPer); 2♂, 3♀, same locality, 1 May 1963, SV168 (PIPeR); 5♀, same locality, 14 Mar. 1962, SV71 (PIPeR); 7♂, 12♀, Muskrat Spring, Stansbury Mountains, Tooele County, Utah, U.S.A., 15 Mar. 1965 (PIPeR); 6♂, 9♀, North Skull Valley, Tooele County, Utah, U.S.A., 29 Apr. 1964, 4821–2 (PIPeR); 2♂, 2♀, same locality, 27 Apr. 1964, 4748 (PIPeR); 7♂, 2♀, Skull Valley, Tooele County, Utah, U.S.A., 4 Apr. 1968 EE090018 (PIPeR).

Non-types ex ***Sturnus vulgaris zetlandicus***: 1♀, Fair Isle Bird Observatory, Shetlands, Scotland, United Kingdom, 12 Sep. 1948, K. Williamson, 1349 (NHML).

Brueelia nivalis **(Giebel, 1874)**

Non-types ex ***Plectrophenax nivalis***: 2♀, Eichler collection, 3092 (MFNG); 1♂, Hornsea, Yorkshire, England, United Kingdom, 1 Mar. 1956, A. Hazelwood, Brit. Mus. 1956-169 (NHML).

Brueelia ornatissima **(Giebel, 1874)**

Non-types ex ***Agelaius phoeniceus neutralis***: 3♂, 3♀, Sargent, California, U.S.A., 17 Sep. 1938, A.S. Hyde, BM1980-40 (NHML); 3♂, 3♀, California, U.S.A., R. Meinertzhagen, 12520 (NHML).

Non-types ex ***Agelaius phoeniceus nevadensis***: 1♀, Sewerline, vicinity Dugway, Tooele County, Utah, U.S.A., 9 Oct. 1953, R. Holliman (NHML); 15♂, 121♀, Callao, Tooele County, Utah, U.S.A., 19 Dec. 1963, EE0348, EE0352, EE0355, EE0363, EE0359, EE0372, EE0376 (PIPeR); 1♂, 2♀, same locality, 28 Jan. 1965 (PIPeR); 1♀, Deep Creek Mountains, Juab County, Utah, U.S.A., 4 May 1967, EE074548 (PIPeR); 7♂, 9♀, Iosepa Ranch #2, North Skull Valley, Tooele County, Utah, U.S.A., 4 Jun. 1964, EE5304 (PIPeR).

Non-types ex ***Agelaius phoeniceus phoeniceus***: 1♀, Dallas, Texas, U.S.A., 12 Apr. 1926, F.C. Bishopp, BM1980-40 (NHML); 2♀, Baie d'Urfé, Quebec, Canada, 12 Jul. 1933, "W.W.", BM1933-615 (NHML); 1♂, Stillwater, Oklahoma, U.S.A., 5 Jun. 1948, K.C. Emerson (OSUS); 2♂, 3♀, East Marron, New York, U.S.A., 28 May 1948, Roy Latham, RL-28956 (OSUS); 1♂, 5♀, Motley, Minnesota, U.S.A., 28 May 1961, R.D. Price (UMSP); 2♂, 2♀, Price George's County, Maryland, U.S.A., 21 Jun. 1994, C. Hahn, RWBL09EA (UMSP) 2♂, 1♀, same locality and collector, 12 Jul. 1994, RWBL13DR (UMSP).

Non-types ex ***Quiscalus quiscula stonei***: 1♂, 3♀, Fort Dix, New Jersey, U.S.A., 25 Apr. 1974, H. Harlan & J. Sherman, 4135-029–30, 32 (UMSP); 3♂, same locality and collectors, 2 May 1974, 4142-037–9 (UMSP); 1♀, same locality and collectors, 30 Apr. 1974, 44140-034 (UMSP); 13♂, 27♀, 3 indeterminate, State College, Mississippi, U.S.A., 13 Feb. 1937, E.W. Stafford (OSUS); 1♂, 1♀, Houlka, Mississippi, U.S.A., 26 Mar. 1935, H.E. Stafford (NHML); 2♂, 2♀, Tibbee, Mississippi, U.S.A., 25 Jan. 1937, E.W. Stafford (NHML); 1♂, 1♀, same location and collector, 13 Feb. 1937 (NHML).

Non-types ex ***Quiscalus quiscula versicolor***: 1♂, Linn County, Kansas, U.S.A., 9 Nov. 1949, BM 1950-32 (NHML); 1♀, Ames, Iowa, U.S.A., 7 Jun. 1936, T.G. Scott (NHML).

Brueelia pagodarum **Ansari, 1955**

Non-types ex ***Temenuchus pagodarum***: 2♂, 10♀, Deccan, India, Feb. 1937, R. Meinertzhagen, 8678, 8707 (NHML); 2♀, Bharatpur, Rajasthan, India, 7 Feb. 1971, X1E-1850 (OSUS); 1♂, same locality, 2 Feb. 1971, X1E-2247 (OSUS); 2♂, 1♀, same locality, 13 Feb. 1968, 8E-0484 (USNM).

Brueelia pakistanaise **Ansari, 1955**

Non-types ex ***Lanius vittatus*:** 1♂, 5♀, locality unknown, captive birds, Oct. 1966, R.S. Balter, Brit. Mus. 1969-101 (NHML).

***Brueelia parabolocybe* (Carriker, 1903)**
Type material ex ***Tyrannus melancholicus satrapa*:** **Paratypes:** 1♂, Juan Vinas, Costa Rica, [Mar. 1902], M.A. Carriker Jr., 287 (NHML).
Non-types ex ***Tyrannus melancholicus satrapa*** [as ***Tyrannus melancholicus occidentalis*]:** 1♀, Tucson, Arizona, U.S.A., 19 Aug. 1938 (OSUS).
Non-types ex ***Tyrannus tyrannus*:** 2♂, 2♀, Ames, Iowa, U.S.A., 20 May 1936, C.E.T. (OSUS); 2♂, Augusta, Maine, U.S.A., 26 Jul. 1939 (NHML); 1♀, Iosepa Ranch, Tooele County, Utah, U.S.A., 31 Aug. 1953, D. Parker, 16: B-423 (OSUS); 1♀, Skull Valleym vicinity Dugway Valley, 31 Aug. 1953, R. Porter, 267: B-433 (OSUS).
Non-types ex ***Tyrannus verticalis*:** 3♀, Callao, Juab County, Utah, U.S.A., 2 Jun. 1964, EE-5231 (PIPeR).
Non-types ex ***Pitangus sulphuratus argentinus*:** 2♀, Rio Cuarto, Department of Cordoba, Argentina, 2 Jul. 1981, S. Tiranti (UMSP).

***Brueelia parae* Ansari, 1955**
Non-types ex ***Anthus rufulus rufulus*** [as ***Anthus richardi rufulus*]:** 8♀, Nepal, Mar. 1937, R. Meinertzhagen, 9129 (NHML).

***Brueelia parviguttata* (Blagoveshtchensky, 1940)**
Non-types ex ***Alauda arvensis cantarella*:** 4♂, 11♀, Morocco, Nov. 1938, R. Meinertzhagen, 12385 (NHML).

***Brueelia pelikani* Balát, 1958**
Type material ex ***Emberiza melanocephala*:** **Paratypes:** 1♀, Sliven, Bulgaria, 27 May, 1957, F. Balát (PMSL).
Non-types ex ***Emberiza melanocephala*:** 1♀, Dubrovnik, Dalmatia, Croatia, 1961, A. Lesinger, 6269 (PMSL).

***Brueelia pengya* (Ansari, 1947)**
Type material ex ***Turdoides striata sindiana*** [as ***Turdoides terricolor terricolor*]:** **Holotype** ♀, Faisalabad, Pakistan [as Lyallpur, Punjab, India] 16 Mar. 1932, Brit. Mus. 1953-2 (NHML); **allotype** ♂, same data as holotype (NHML).
Non-types ex ***Turdoides striata striata*** [as ***Turdoides somervillei*]:** 1♂, 1♀, same data as holotype (NHML); 2♀, Lucknow, [Uttar Pradesh,] India, Brit. Mus. 1951-444 (NHML).
Non-types ex ***Turdoides striata* ssp.** [as ***Turdoides terricolor terricolor*]:** 1♂, 1♀, no locality, no date (NHML).

***Brueelia peninsularis* (Kellogg, 1899)**
Type material ex ***Phainopepla nitens lepida*:** **Syntypes:** 1♂, 5♀, Santa Anita, Baja California, México, 19 May 1896, [J.F.] Abbott, 441a, EMEC 75450–2 (EMEC); 1♀, same data (NHML).
Non-types ex ***Phainopepla nitens lepida*:** 3♂, 3♀, Pleasant Valley, Mariposa County, California, U.S.A., 1913, G.F. Ferris, 1466, EMEC 225162 (EMEC); 2♂, 5♀, Arizona, U.S.A., Mar. 1939, R. Meinertzhagen, 13151 (NHML).
Non-types ex ***Phainopepla nitens nitens*:** 3♂, 52 road miles S of Monclova, [Coahuila,] México, 24 ec. 1957, C.A. Ely, CAE387, 15884 [on reverse] (OSUS); 3♂, 3♀, Brewster County, Texas, U.S.A., 1 Feb. 1958, R.B. Eads (OSUS); 1♂, Las Vacas, Coahuila, México, 5 Nov. 1958, C.A. Ely, CAE-1063 (PIPeR); 1♀, 32 miles south by road from Monclova, México, 24 Dec. 1957, C.A. Ely, CAE-387, PIPeR #129 (PIPeR).

***Brueelia picturata* (Osborn, 1896)**
Non-types ex ***Sturnella magna argutula*:** 1♂, 2♀, Ames, Mississippi, U.S.A., 1 May 1936, E.W. Stafford (OSUS); 2♂, 3♀, State College, Mississippi, U.S.A., 22 Jan. 1939, E.W. Stafford (OSUS).
Non-types ex ***Sturnella magna magna*:** 4♀, Stillwater, Oklahoma, U.S.A., 20 Mar, 1948, K.C. Emerson (NHML); 2♂, 5♀, same data as previous (OSUS); 8♀, same locality, Mar. 1948, K.C. Emerson (NHML); 2♀, Oklahoma, U.S.A., Mar. 1948, R. Meinertzhagen, 19322 (NHML); 3♀, Stillwater, Oklahoma, U.S.A., Mar. 1948, M.A. Carriker Jr., 7115–7 (PMSL).
Non-types ex ***Sturnella magna* ssp.:** 1♂, 8♀, locality unknown, Mewaldt, 321 (UMSP).

***Brueelia piechockii* Mey, 1982**
Type material ex ***Prunella fulvescens dahurica*:** **Paratypes:** 2♀, Somon Chovd, Aimak Chovd, Mongolia, 15 Feb. 1980, M. Stubbe, 607 (MFNG).

***Brueelia propinqua* (Giebel, 1874)**

Non-types ex ***Loxia pytyopsittacus***: 1♂, 2♀, Serrahn, Mecklemburg, Germany, 24 Aug. 1969, F. Balát, 10652–4 (PMSL); 5♂, 24♀, "Lapland", [Finland,] Mar. 1938, R. Meinertzhagen, 11046 (NHML).

Brueelia pseudopicturata **Cicchino, 1986**
Non-types ex ***Sturnella neglecta confluenta***: 10♂, 7♀, California, U.S.A., Mar. 1939, R. Meinertzhagen, 13049 (NHML).
Non-types ex ***Sturnella neglecta neglecta***: 2♂, 3♀, Summit County, Texas, U.S.A., 31 Jan. 1929, H.S. Peters, 13030, BM-1980-40 (NHML); 4♂, 19♀, North Skull Valley, Tooele County, Utah, U.S.A., 9 Jun. 1964, 5315 (PIPeR); 2♂, same locality, 2 Nov. 1964 (PIPeR); 14♂, 43♀, same locality, 31 Mar. 1970, EE-700-0810 (PIPeR); 1♂, 3♀, Grassy Mountains, Juab County, Utah, U.S.A., 24 Mar. 1965, EE00360 (PIPeR); 3♂, 9♀, Cane Springs, Tooele County, Utah, U.S.A., 9 Oct. 1968 (PIPeR); 11♂, 17♀, Dugway, Tooele County, Utah, U.S.A., 17 Jun. 1971, 71-0-0071 (PIPeR).

Brueelia pyrrhularum **Eichler, 1954**
Type material ex ***Pyrrhula pyrrhula pyrrhula***: **Holotype** ♂, Münden, Hannover, Germany, 28 Feb. 1939, H. Eidman, 2896 (MFNG); **paratypes:** 1♂, same data as holotype (MFNG); 2♀, Zoologische Museum, Berlin, Germany, 2365 (MFNG).
Non-types ex ***Pyrrhula pyrrhula pyrrhula***: 1♀, same data as holotype (MFNG); 8♀, Eichler Collection, 3613, 3832, 4045 (MFNG); 2♂, 2♀, Skofja Loka, Slovenia, 10 Jan. 1964, S. Brelih, 11541–4 (PMSL); 8♂, 15♀, Okolica, Ljubljana, Slovenia, 30 May 1958, S. Brelih, 502–13, 533, 647, 11531–8 (PMSL); 1♂, Stozice, Ljubljana, Slovenia, 6 Dec. 1958, S. Brelih, 2503 (PMSL); 1♂, 1♀, Dubrovnik, Croatia, 15 Nov. 1976, A. Lesinger, 13361–2 (PMSL); 1♂, 1♀, Gabcíkoro, Slovakia, 24 Mar. 1954, F. Balát, Brit. Mus. 1955-662 (NHML).
Non-types ex ***Pyrrhula pyrrhula europoea***: 1♀, Königsberg, Thüringen, Germany, 14 Aug. 1909 (NHML).
Non-types ex ***Pyrrhula pyrrhula pileata*** **[**some as ***Pyrrhula pyrrhula nesa*****]**: 3♂, 16♀, Styal, Cheshire, England, United Kingdom, 17 Mar. 1933, C. Jones, Brit. Mus. 1955-616 (NHML); 1♂, 4♀, Grange, Lancashire, England, United Kingdom, 5 Apr. 1956 (NHML); 5♀, Ross-Shire, Scotland, United Kingdom, Oct. 1935, R. Meinertzhagen, 4350 (NHML); 5♀, Seaton, Devon, England, United Kingdom, 22 Apr. 1959, A. Hazelwood, Brit. Mus. 1960-272 (NHML); 2♀, Wiltshire, England, United Kingdom, May 1945, R. Meinertzhagen, 15432 (NHML).

Brueelia quelea **Sychra & Barlev [in Sychra *et al.*], 2010**
Non-types ex ***Quelea quelea lathami***: 1♀, Khuta Maji, Vwaza Marsh, Vwaza Wildlife Resere, Malawi, 15 Oct. 2009, V. Tkach, MLW-3747, FMNH-468583 [voucher for sequences Brsp.Ququ.11.15.2010.15] (FMNH).

Brueelia rhipidura **(Thompson, 1941)**
Type material ex ***Rhipidura leucophrys melaleuca***: **Syntypes:** 4♂, 7♀, Lunga, Guadalcanal Island, Solomon Islands, 3 Jun. 1935, R.W.A. Lever, BM1980-40 (NHML).
Non-types ex ***Rhipidura leucophrys melaleuca***: 7♂, Mutahi, elev. 700 m, Bougainville, Papua New Guinea, 24 Mar. 1968, A.B. Mirza, BBM-NG-61316 (BPBM); 2♂, Sinaeada, elev. 10 m, Milne Bay, Papua New Guinea, 5 Apr. 1965, P.J. Shanahan, BBM-NG-24545 (BPBM); 1♂, 4♀, Pusisama, elev. 5 m, Vella Lavella Island, Solomon Islands, 23 Nov. 1963, P. Temple, BBM-SI-23213 (BPBM).

Brueelia rigbyi **Gustafsson & Bush, 2015**
Type material ex ***Corvinella melanoleuca***: **Holotype** ♂, Nierop, near Rustenburg, Transvaal, South Africa, Brit. Mus. 1958-424 (NHML); **paratypes**: 1♀, same data as holotype (NHML); 1♂, Tsessebe, Botswana (as "Bechuanaland"), 28 Dec. 1955, Brit. Mus. 1956-561 (NHML).

Brueelia rosickyi **Balát, 1955**
Non-types ex ***Sylvia nisoria nisoria***: 1♀, Cjul, Romania, 27 Apr. 1963, I. Bechet, 8396 (PMSL); 1♂, 7♀, Fair Isle Bird Observatory, Shetlands, Scotland, United Kingdom, 18 Aug. 1954, B88207, Brit. Mus. 1954-795 (NHML).

Brueelia rotundifrons **Cicchino, 1981**
Type material ex ***Oreoscoptes montanus***: **Paratypes** of *Brueelia montana*: 1♂, 1♀, "DGP", Ditto Dunes, Tooele County, Utah, U.S.A., 8 May 1969, R.E. Elbel, EE-09054 (UMSP); 1♂, 4♀, same data as previous (OSUS); 2♀, same locality, 15 May 1969, 09055 (PIPeR); 1♂, 1♀, Vernon, Tooele County, Utah, U.S.A., 24 May 1967, R.E. Elbel, EE-070467 (PIPeR); 2♂, 1♀, North Skull Valley, Tooele County, Utah, U.S.A., 4 Jun. 1964, EE5314 (PIPeR).
Non-types ex ***Oreoscoptes montanus***: 9♂, 16♀, same locality, 15 May 1969, 09055 (PIPeR); 9♂, 3♀, Dugway, Tooele County, Utah, U.S.A., 15 May 1969, 09055 (PIPeR); 1♂, 1♀, same locality, 17–18 Jun. 1969, 09111 (PIPeR).
Non-types ex ***Mimus thenca***: 1♂, 3♀, Huilmo, Pumitaqui, Coquimbo, Chile, 27 Jun. 1981, M.A. Marin, 22091–4 [on reverse] (OSUS).

Brueelia ruficapilla **Cicchino, 1990**

Type material ex ***Agelaius ruficapillus*****: Paratypes:** 1♂, 1♀, Córoba, Argentina, May 1981, A. Cicchino, 1771–2 (OSUS).

Brueelia sibirica **Mey, 1982**

Non-types ex ***Acanthis flammea flammea*****:** 1♀, Stozice, Ljubljana, Slovenia, 15 Mar. 1960, S. Brelih, 2990 (PMSL); 1♂, 1♀, Nólsoy, Faroe Islands, 9 Nov. 1996, J-K. Jensen (MONZ); 1♀, 3 nymphs, no locality, Oct. 1946, R. Meinertzhagen, 16078 (NHML).

Brueelia solitaria **Cicchino, 1990**

Type material ex ***Cacicus solitarius*****: Paratypes:** 1♂, 1♀, Bella Vista, Corrientes, Argentina, 3 May 1980, A. Cicchino, 1773–4 (OSUS).

Brueelia stadleri **Eichler, 1954**

Type material ex ***Carduelis cannabina*****: Holotype** ♂, Norfolk, England, United Kingdom, Feb. 1934, R. Meinertzhagen, 295 [Meinertzhagen No.], 929 [Eichler No.] (MFNG).

Non-types ex ***Carduelis cannabina cannabina*****:** 2♀, Same data as holotype (MFNG); 3♂, 6♀, Cornwall, England, United Kingdom, Feb. 1946, R. Meinertzhagen, 15637 (NHML); 6♂, 17♀, same locality and collector, Jan. 1937, 8224–7 (NHML); 2♂, 13♀, Devon, England, United Kingdom, Oct. 1942, R. Meinertzhagen, 14803 (NHML); 1♂, 1♀, Stozice, Ljubljana, Slovenia, 28 Apr. 1960, S. Brelih, 2988–9 (PMSL).

Non-types ex ***Carduelis cannabina autochthona*****:** 1♂, 8♀, Orkney, Scotland, United Kingdom, Aug. 1938, R. Meinertzhagen, 11477–8, 11517, 11582 (NHML).

Non-types ex ***Carduelis cannabina*** **ssp.** 1♂, 4♀, locality unknown, Eichler Collection, 3610, 3614 (MFNG).

Brueelia straminea **(Denny, 1842)**

Type material ex ***Dendrocopos major pinetorum*****: Holotype** ♂, locality unknown, likely United Kingdom, Denny Collection, [BM18]52-98 (NHML).

Type material ex ***Dendrocopos leucotos lilfordi*****: Holotype** ♂ of *Brueelia fixa*: 10 km NE Demidoff, Smolensk, Russia, Kelm, 2692v (MFNG); **allotype** ♀of *Brueelia fixa*, same data as holotype (MFNG).

Non-types ex ***Dendrocopos major pinetorum*** **(some as *Dryobates major anglicus*):** 2♀, Same data as holotype (NHML); 2♀, Brookworth, Gloucestershire, England, United Kingdom, 17 Apr. 1961, R. Carey, Brit. Mus. 1961-670 (NHML); 6♂, 6♀, Somerset, England, United Kingdom, May 1934, R. Meinertzhagen, 1128 (NHML); 3♀, Hertfordshire, England, United Kingdom, Nov. 1943, R. Meinertzhagen, 14948 (NHML); 2♂, 2♀, St Paul's Cray, Kent, England, United Kingdom, 27 Mar. 1966, P.N. Lawrence, Brit. Mus. 1966-172 (NHML); 1♂, 2♀, Brookworth, Gloucestershire, England, United Kingdom, 17 Apr. 1961, R. Carey, Brit. Mus. 1961-670 (NHML); 1♀, Wroclaw, Poland, J. Zlotorzycka, 26/d/47 (OSUS); 1♂, 1♀, Hodonin, Czech Republic, 28 Nov. 1948, F. Balát (NHML); 3♂, 2♀, Jezersko, Kamniske Alpe, Slovenia, 25 Jan. 1959, S. Brelih, 2868–9, 2871–2, 2874 (PMSL); 1♂, 1♀, Dramlje, Celje, Slovenia, 6 Jan. 1951, S. Brelih, 219, 1999 (PMSL); 2♀, Mestni Log, Ljubljana, Slovenia, 28 Apr. 1953, S. Brelih, 2510–1 (PMSL); 1♂, 4♀, Suha Kajina, Slovenia, 12 Jan. 1964, S. Brelih, 8371–8375 (PMSL); 1♀, Ribnica, Slovenia, 14 Apr. 1960, S. Brelih, 6325 (PMSL).

Non-types ex ***Dendrocopos major major*****:** 2♂, 2♀, Torup, [Skåne,] Sweden, 30 Jan. 1957, S. Linder, 132 (UMSP).

Non-types ex ***Dendrocopos leucotos lilfordi*****:** 1♂, 2♀, Kozuf, Macedonia, 16 May, 1954, S. Brelih, 2470–2 (PMSL).

Non-types ex ***Dendrocopos medius medius*****:** 1♂, Gruzia, Kraljevo, Serbia, 28 Jul. 1937, S. Brelih, 2475 (PMSL).

Non-types ex ***Dendrocopos syriacus*** **[as *Dendrocopos syriacus balcanicus*]:** 2♀, Kopaonik, Serbia, 28 May 1952, S. Brelih, 2473–4 (PMSL).

Brueelia tkachi **Gustafsson & Bush, 2015**

Type material ex ***Spreo albicapillus albicapillus*****: Holotype** ♂, Somalia (as "Somaliland"), Jan. 1949, R. Meinertzhagen, 18230 (NHML); **paratypes**: 4♀, same data as holotype (NHML).

Brueelia trinidadensis **Cicchino & Castro, 1996**

Non-types ex ***Molothrus bonariensis minimus*****:** 1♂, Biche, Trinidad, Trinidad and Togabo, 17 Jun. 1960, TRVL-4526, Brit. Mus.1974-636 (NHML).

Brueelia vaneki **Balát, 1982**

Non-types ex ***Acrocephalus schoenbaenus*****:** 1♂, 4♀, Ljubljansko Barje, Slovenia, 22 Jun. 1978, 13444–8 (PMSL).

***Brueelia virgata* (Kellogg, 1899)**

Type material ex ***Amblycercus holosericeus*****: Syntypes:** 2♂, 2♀, Panama, 417a, EMEC 75459 (EMEC).

***Brueelia vulgata* (Kellogg, 1896)**

Type material ex ***Junco hyemalis*****: Holotype** ♀, Lawrence, Kansas, U.S.A., V.L. Kellogg, 238b, EMEC 75460 (EMEC).

[The Kellogg collection at EMEC contains material purportedly of this species from over a dozen hosts. Almost without exception, these are poorly preserved and cannot be identified. Therefore, material from hosts other than the type host is not listed here.]

***Brueelia xanthocephali* (Osborn, 1896)**

Non-types ex ***Xanthocephalus xanthocephalus*****:** 1♀, St. Anthony Park, [St. Paul,] Minnesota, U.S.A., 13 Jun. 1896 (UMSP); 1♂, 2♀, Fort Lowell, Arizona, U.S.A., 23 Jan. 1940 (OSUS).

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***Brueelia zavattariornis* Ansari, 1956**

Type material ex ***Zavattariornis stresemanni*****: Holotype** ♂, Yavallo, Ethiopia, R. Meinertzhagen, 16129 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 6♂, 19♀, same data as holotype (NHML); 1♂, 1♀, same data as holotype (OSUS).

***Brueelia zohrae* Ansari, 1956**

Type material ex ***Ptilostomus afer*****: Holotype** ♂, Guinea-Bissau [as Portuguese Guinea], R. Meinertzhagen, 4064 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 1♂, 5♀, same data as holotype (NHML).

Non-types ex ***Ptilostomus afer*****:** 2♀, Sudan, Apr. 1936, R. Meinertzhagen, 7751 (NHML).

***Buerelius longiceps* (Piaget, 1880)**

Type material ex ***Brachypteracias leptosomus*****: Syntypes:** 2♂, 4♀, Madagascar, Piaget Collection, 599–600 (NHML).

Non-types ex ***Brachypteracias leptosomus*****:** 3♂, 5♀, Madagascar, R. Meinertzhagen, 16649 (NHML); 2♂, 8♀, Madagascar, no other data (NHML).

***Buerelius subsimus* Clay & Tandan, 1967**

Type material ex ***Brachypteracias leptosomus*****: Holotype** ♂, Madagascar, R. Meinertzhagen, 16649 (NHML); **paratypes:** 3♂, 6♀, same data as holotype (NHML). 1♂, 5♀, no further data (NHML).

***Buphagoecus husaini* (Ansari, 1968)**

Type material ex ***Buphagus africanus*****: Syntypes:** 1♂, 4♀, Feb. 1936, R. Meinertzhagen, 6646, 6930 (NHML).

***Buphagoecus prominens* (Ansari, 1968)**

Non-types ex ***Buphagus erythrorhynchus erythrorhynchus*****:** 7♂, 5♀, Lake Langano, Oromia Region, Ethiopia, 20 Nov. 1960, S. Brelih, 3446 (PMSL).

***Corvonirmus afzali* (Ansari, 1957)**

Type material ex ***Corvus cryptoleucus*****: Holotype** ♂, Illinois, U.S.A., R. Meinertzhagen, 12668 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 1♂, 2♀, same data as holtyoe (NHML); 1♂, 2♀, Texas, U.S.A., Dec. 1880, R. Meinertzhagen, 46 (NHML).

Non-types ex ***Corvus brachyrhynchos brachyrhynchos*** (possibly stragglers)**:** 1♂, 2♀, Stillwater, Oklahoma, U.S.A., 5 Jun. 1948, K.C. Emerson, 3201 (NHML).

Non-types ex ***Corvus cryptoleucus*****:** 7♀, Texas, U.S.A., May 1935, R. Meinertzhagen, 3783 (NHML); 2♂, 1♀, Roosevelt County, New México, U.S.A., 19 Oct. 1979, W. Bulter & D. Hudson, one slide with 18636 [on reverse] (NHML); 2♂, 2♀, , Roosevelt County, New México, U.S.A., 22 Oct. 1979, W. Butler & D. Hudson (OSUS); 2♂, “western part”, Tamaulipas, México, 28 Apr. 1985, A.R. Philips, 23392 [on reverse] (OSUS).

***Corvonirmus argulus* (Burmeister, 1838)**

Type material ex ***Corvus corax corax*****: Neotype** ♂, North Uist, Outer Hebrides, Scotland, United Kingdom, Sep. 1941, R. Meinertzhagen, 14562 (NHML); **neoallotype** ♀, same data as holotype (NHML); **neoparatypes:** 5♂, 5♀, "Zoological Garden", Russia, Aug. 1937, R. Meinertzhagen, 10617 (NHML); 1♀, South Uist, Outer Hebrides, Scotland, United Kingdom, Apr. 1934, R. Meinertzhagen, 951 (NHML).

Non-types ex ***Corvus corax corax*****:** 2♂, 4♀, South Uist, Outer Hebrides, Scotland, United Kingdom, Sep. 1953, R. Meinertzhagen, 20323, BM1953-658 (NHML); 2♀, Pirlochry, Perth and Kinross, Scotland, United Kingdom, 2 Dec. 1951, Brit. Mus. 1953-150 (NHML); 1♂, 1♀, [Arosa and Sempach stated on slide, but these are in different canton (Lucerne and Graubünden, respectively)], 12 Jun. 1944, W. Büttiker, Brit. Mus. 1966-575 (NHML); 1♀, locality unknown, Piaget Collection, 1021 (NHML); 1♀, Lublin, Poland, 9 Sep. 1949, UMCS, Freunde Collection, 26/1955 (MFNG); 4♀, Slovenia, 21 Oct. 1910, S. Brelih, 7415–8 (PMSL); 1♂, Dubrovnik, Croatia, 14 Sep. 1962, A. Lesinger, 5760 (PMSL); 4♂, 2♀, Dubrovnik, Croatia, 20 Sep. 1963, A. Lesinger, 9507, 9509–13 (PMSL); 2♀, Kragujevac, Serbia, 21 Mar. 1948, S. Brelih, 2321, 2323 (PMSL); 1♂, Kragujevac, Serbia, 11 May 1938, S. Brelih, 2565 (PMSL).

Non-types ex ***Corvus corax tingitanus*****:** 50♂, 64♀, Morocco, Oct. 1938, R. Meinertzhagen, 11710, 11733, 11831 (NHML); 1♂, 4♀, "Northern Africa", R. Meinertzhagen, 4070 (NHML); 1♂, 2♀, Egypt, Feb. 1920, R. Meinertzhagen, 31 (NHML); 1♂, 4♀, Teneriffe, Canary Islands, Spain, R. Meinertzhagen, 4072 (NHML).

Non-types ex ***Corvus corax laurencei*** [some as ***Corvus corax***]**:** 6♂, 7♀, Ghorband, Parvan province, Afghanistan, Apr. 1937, R. Meinertzhagen, 9712, Brit. Mus. 1951-171 (NHML); 4♀, Kabul, Afghanistan, Apr. 1937, R. Meinertzhagen, 9579 (NHML); 3♀, Jerusalem, Palestine, 15 Oct. 1921, P.A. Buxton (NHML); 1♀, Palestine, R. Meinertzhagen, 29–30 (NHML); 1♂, 1♀, Palestine, R. Meinertzhagen, 23 (NHML); 1♀, Iran, R. Meinertzhagen, 29–30 (NHML); 1♀, "South Russia", Russia, R. Meinertzhagen, 4073 (NHML); 1♀, "Palestine, Persia", R. Meinertzhagen, 29–30. 1♂, 1♀, Mizpeh-Ramon, Israel, 12 Feb. 1959, Brit. Mus. 1959-405 (NHML).

Corvonirmus hamatofasciatus **(Piaget, 1890)**

Type material ex ***Penelopides manillae*****: Lectotype** ♀, Piaget Collection (NHML).

Corvonirmus latifasciatus **(Piaget, 1880)**

Type material ex ***Corvus enca pusillus*** [as ***Corvus enca***]**: Lectotype** ♀, Piaget Collection, BM 1928-325 (NHML).

Non-types ex ***Corvus enca pusillus*** **[**as ***Corvus enca*****]:** 1♂, 1♀, Brooke's Point, Palawan, Philippines, 8 Apr. 1962, M.C. Thompson, BBM-PI-1508 (NHML); 2♂, 2♀, Brooke's Point, Palawan, Philippines, 29 Mar. 1962, M.C. Thompson, BBM-PI-699 (NHML); 1♂, Puerto Princesa, Palawan Province & Island, Philippines, 9 Apr. 1947, Hoogstraal, 2614 (USNM).

Corvonirmus leucocephalus **(Nitzsch [in Giebel], 1866)**

Type material ex ***Corvus albicollis*** **[**some as ***Covultur albicollis*****]: Neotype** ♂, Quthing District, Lesotho, 15 Mar. 1951, Swedish South Africa Expedition, 1950-1 (NHML); **neoallotype** ♀, same data as holotype (NHML); **neoparatypes:** 4♂, 3♀, same data as holotype (NHML); 2♂, 5♀, "Tanganyika Territory", Tanzania, R. Meinertzhagen, 4021 (NHML); 3♂, 3♀, Bugwere, Mbale District, Eastern Region, Uganda, 4 Jun. 1936, G.H.E. Hopkins (NHML); 2♂, 5♀, Kenya, Feb. 1936, R. Meinertzhagen, 6470 (NHML); 1♀, Oshogbo, Osun State, Nigeria, 27 Feb. 1910, V.L. Kellogg, 1912-122 (NHML); 1♀, Kenya, Feb. 1904, R. Meinertzhagen, 58 (NHML).

Non-types ex ***Corvus albicollis*** **[**some as ***Covultur albicollis*****]:** 2♂, 2♀, Mbeya Region, Tanzania, Jul. 1957, R. Meinertzhagen, Brit. Mus. 1957-466, 20598 (NHML); 2♂, 5♀, South Ankole, Western Region, Uganda, 11 Dec. 1934, G.H.E. Hopkins, BM1980-40 (NHML); 1♂, 7♀, Cherangani Hills, Kenya, 2 Aug. 1969, Oxford Expedition, 162, Brit. Mus. 1970-618 (NHML).

Non-types ex ***Corvus capensis capensis*** **(**possibly stragglers**):** 3♂, 2♀, Marsabit, Eastern Province, Kenya, Jan. 1956, R. Meinertzhagen, 20517 (NHML).

Corvonirmus mollii **(Ansari, 1957)**

Type material ex ***Corvus macrorhynchos macrorhynchos*** [some as ***Corvus coronoides macrorhynchos***]**: Holotype** ♂, Malay Peninsula, Malaysia, R. Meinertzhagen, 4022 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 3♂, 2♀, same data as holotype (NHML).

Non-types ex ***Corvus macrorhynchos macrorhynchos*** **[**some as ***Corvus coronoides macrorhynchos*****]:** 1♂, same data as holotype (NHML); 1♂, Malay Peninsula, Malaysia, R. Meinertzhagen, 4023 (NHML); 1♂, 1♀, Khao Kaeo Subdistrict, Lan Saka District, Hankon Si Thammarat Province, Thailand, 19 Apr. 1963, W. Songprakob, WS080, 20262 [on reverse] (OSUS); 1♂, 1♀, Khlong Khlung District, Kamphaeng Phet Province, Thailand, 14 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2429, RTB-21021, 12477 [on reverse] (OSUS); 1♂, 1♀, Khao Kaeo, Lan Saka District, Nakhon Si Thammarat, Thailand, 11 Apr. 1963, W. Songprakob, WS045, 20263 [on reverse] (OSUS); 1♂, 2♀, "At sea level", Samut Sakhon Province, Thailand, 1 Oct. 1965, MAPS-1167, 13885 [on reverse] (OSUS); 1♂, 3 km S of Trat, Trat Province, Thailand, 27 Apr. 1966 (OSUS); 1♀, Huai Mae Sanam, Hot District, Chieng Mai Province, Thailand, 2 Nov. 1962, SEATO Med Res Lab., SMRL1674 (NHML); 6♂, 6♀, Khao Kaeo Subdistrict, Lan Saka District, Nakhon Si Thammarat Province, Thailand, 19 Apr. 1963, W. Songprakob, WS080 (PIPeR); 3♂, 3♀, Khlong Khlung District, Kamphaeng Phet Province, Thailand, 14 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2429, RTB-21021 (PIPeR); 1♂, Flores, Indonesia, R. Meinertzhagen, 4028 (PIPeR).

Non-types ex ***Corvus macrorhynchos culminatus***: 1♀, Ootacamund, Tamil nadu, India, 19 Apr. 1876, 86.3.1.344 (NHML); 1♂, Thiruvananthapuram [as Trivandrum], Kerala, India, 5 Jul. 1931, 1949.Whi.1-900 (NHML).

Non-types ex ***Corvus macrorhynchos intermedius***: 4♂, 11♀, Bihar, India, Mar. 1937, R. Meinertzhagen, 9314–6, 9258–9, 9171 (NHML).

Non-types ex ***Corvus macrorhynchos levaillantii***: 3♀, Yetho Yomas, Tharrawaddy District, Bago Region, Myanmar, 29 Aug. 1933, Brit. Mus. 1966-294 (NHML); 1♂, Toungoo District, Bago Region, Myanmar, 15 Jan. 1939, 1948-80-32, Brit. Mus. 1966-294 (NHML); 1♂, 1♀, Tharrawaddy District, Bago Region, Myanmar, 17 Aug. 1933, 1948-80-2, Brit. Mus. 1966-294 (NHML).

Non-types ex ***Corvus macrorhynchos hainanus***: 2♀, Hoihow, Hainan, China, 13 Feb. 1923, 1924-8-22-7, Brit. Mus. 1966-294 (NHML).

Non-types ex ***Corvus macrorhynchos philippinus***: 1♀, North Bohol Island, Bohol Province, Philippines, Nov. 1877, 87-11-97, Brit. Mus. 1966-294 (NHML); 1♂, 1♀, Bugasan, Parang, Cotabato Province, Mindanao, Philippines, 3 Dec. 1946, G.L. Alcasig, 12472 and 12475 [on reverse] (OSUS); 3♂, 3♀, Malita, Consenza Province, Mindanao, Philippines, SU-BBM-1105 (BPBM) [some slides contain *Myrsidea*]. 1♂, 1♀, Mount Mayo, Limot Mati, Davao Province, Mindanao, Philippines, 6 Jun. 1965, D.S. Rabor, B8153 (PIPeR) [slides also contain *Philopterus*]. 1♀, Malalag, Davao province, Mindanao, Philippines, SU-BBM-131 (PIPeR) [slides also contain *Philopterus*]. 1♀, Mount Mayo, Limot Mati, Davao Province, Mindanao, Philippines, 4 Jun. 1965, D.S. Rabor, B8307 (NHML); 1♂, 1♀, Malita, Consenza Province, Mindanao, Philippines, SU-BBM-1010 (BPBM); 1♂, Philippines, 28 Jun. 1964, N. Wilson, BBM-6226 (BPBM).

Non-types ex ***Corvus macrorhynchos* ssp.**: 1♂, 1♀, Rangoon, Myanmar, Apr. 1902, R. Meinertzhagen, 54 (NHML).

***Corvonirmus perwienae* (Ansari, 1957)**

Type material ex ***Corvus nasicus***: **Holotype** ♂, Cuba, Feb. 1905, R. Meinertzhagen, 50 (NHML); **allotype** ♀, Cuba, R. Meinertzhagen, 12669 (NHML); **paratypes:** 4♀, same data as allotype (NHML).

***Corvonirmus quadrangularis* (Rudow, 1869)**

Type material ex ***Corvus albus***: **Neotype** ♂, NAMIBIA [as "S.W. Africa"], May 1949, R. Meinertzhagen, 19180–91, Brit. Mus. 1951-171 (NHML); **neoallotype** ♀, same data as holotype (NHML); **neoparatypes:** 2♂, 3♀, same data as holotype (NHML); 4♂, 2♀, Sudan, May 1936, R. Meinertzhagen, 7832 (NHML); 1♂, 7♀, Tanzania [as "Tanganyika Territory"], R. Meinertzhagen, 4045 (NHML) [slide also contains one female *Hecatrishula*]. 5♀, Kenya, Apr. 1936, R. Meinertzhagen, 7547 (NHML); 2♂, 1♀, Kampala, Uganda, 12 Dec. 1933, G.H.E. Hopkins (NHML).

Non-types ex ***Corvus albus***: 3♂, 3♀, Warmbaths, [North] Transvaal, South Africa, 7 Jun. 1967, J. Oosthuizen & M. Markus, Brit. Mus. 1967-628 and 1972-19 (NHML); 1♂, 1♀, Mosetsi, Botswana, 22 Dec. 1954, F. Zumpt, Brit. Mus. 1955-457 (NHML); 1♂, 1♀, Port Marshall, Liberia, 7 Jan. 1946, Atlantide Expedition 1945–6, Brit. Mus. 1958-717 (NHML); 1♂, 1♀, Port Marshall, Liberia, 393 (NHML); 2♂, 4♀, Nairobi, Kenya, Jan. 1956, R. Meinertzhagen, 20424 (NHML); 1♂, 1♀, Mugaga, Kenya, 14 Jan. 1957, Brit. Mus. 1957-384 (NHML); 1♀, Quthing, Lesotho [as "Basutoland"], 17 Mar. 1951, Swedish South Africa Expedition, 1950-1 (NHML); 3♂, 1♀, Coquno, Mozambique, 26 Apr. 1964, A.L. Moore (USNM); 1♀, Phillipshof, Usamb[a]ra Mountains, Tanzania [as Tanganyika Territory], 21 Dec. 1926, Arthur Loveridge (USNM).

***Corvonirmus rotundatus* (Osborn, 1896)**

Type material ex ***Corvus brachyrhynchos brachyrhynchos***: **Neotype:** 1♂, Stillwater, Oklahoma, U.S.A., 5 Jun. 1948, K.C. Emerson, 3204 and 3202 [on reverse] (OSUS); **neoallotype** 1♀, same data as holotype (OSUS).

Non-types ex ***Corvus brachyrhynchos brachyrhynchos***: 1♂, 2♀, Stillwater, Oklahoma, U.S.A., 5 Jun. 1948, K.C. Emerson, 3201 [on reverse] (OSUS); 1♀, Barton County, Kansas, U.S.A., 1 Sep. 1949, Brit. Mus. 1950-32 (NHML) [slide also contains and unidentified *Philopterus* nymph]. 1♂, 1♀, Wadena, Minnesota, U.S.A., 30 Apr. 1961, R.D. Price (UMSP); 4♂, Wadena, Minnesota, U.S.A., 29 Apr. 1961, R.D. Price (UMSP); 4♀, Ibapah, Tooele County, Utah, U.S.A., 23 Sug. 1967, EE074545 (PIPeR); 1♂, Dugway, Ibapah, Tooele County, Utah, U.S.A., 12 Jul. 1967, EE074536 (PIPeR).

Non-types ex ***Corvus brachyrhynchos pascuus***: 1♀, [Florida], U.S.A. (PIPeR).

Non-types ex ***Corvus brachyrhynchos hepseris***: 1♂, 1♀, Fleming Ranch, California, U.S.A., 20 Jun. 1943, 3206 [on reverse] on one slide (OSUS); 3♀, California, U.S.A., 1871, R. Meinertzhagen, 47 (NHML); 2♂, 2♀, Aberdeen, Saskatchewan, Canada, 2–9 Aug. 1988, R. Connell, 46 (NHML); 1♀, locality unknown (PIPeR).

Non-types ex ***Corvus brachyrhynchos* ssp.**: 1♂, 1♀, locality unknown (OSUS).

Non-types ex ***Corvus caurinus***: 1♀, Vancouver, [British Columbia], Canada, R. Meinertzhagen, 4040 (NHML).

Corvonirmus saliemi **(Ansari, 1957)**
Type material ex ***Corvus splendens splendens*****: Holotype** ♂, Nepal, Mar. 1937, R. Meinertzhagen, 9313 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 4♂, 10♀, same data as holotype (NHML); 1♂, 1♀, same data as holotype (OSUS); 1♀, Deccan, India, Feb. 1937, R. Meinertzhagen, 8542 (NHML); 13♀, Bihar, India, Mar. 1937, R. Meinertzhagen, 9260 & 9261 (NHML).
Non-types ex ***Corvus splendens maldevicius*****:** 1♂, 1♀, Male, Maldives, 15 Jan. 1956, W.W.A. Philips, Brit. Mus. 1957-283 (NHML).
Non-types ex ***Corvus splendens zugmeyeri*****:** 1♂, 3♀, Sind, India, Feb. 1914, R. Meinertzhagen, 39 (NHML).
Non-types ex ***Corvus splendens insolens*****:** 2♂, 2♀, Mandalay, Myanmar, 3 Aug. 1951, H.M. Smith, 197, 12470–1 [on reverse] (OSUS).

Corvonirmus tasniemae **(Ansari, 1957)**
Type material ex ***Corvus frugilegus frugilegus*****: Holotype** ♂, Kabul, Afghanistan, Apr. 1937, R. Meinertzhagen, 9686 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 2♂, 7♀, same data as holotype (NHML) [one slide contains female *Hecatrishula perforatus*]; 1♂, 1♀, same data as holotype (OSUS).

Corvonirmus theresae **(Ansari, 1957)**
Type material ex ***Corvus rhipidurus*** **[**some as ***Corvus affinis*****]: Holotype** ♂, Aden, Yemen, Dec. 1948, R. Meinertzhagen, 17849 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 4♂, 1♀, same data as holotype (NHML); 1♂, 1♀, same data as holotype (OSUS); 12♂, 18♀, "Arabia", Jan. 1948, R. Meinertzhagen, 17138 & 17338 (NHML).
Non-types ex ***Corvus rhipidurus*** **[**some as ***Corvus affinis*****]:** 1♂, 1♀, Moyo District, Uganda, 10 Mar. 1937, G.H.E. Hopkins (NHML); 2♂, 5♀, Mbale District, Bugisi Sub-region, Uganda, 4 Jun. 1936, G.H.E. Hopkins (NHML); 1♂, 3♀, Ethiopia, R. Meinertzhagen, 4051 (NHML); 2♀, Kenya, Feb. 1936, R. Meinertzhagen, 6802 (NHML); 1♂, "Aden and Palestine", R. Meinertzhagen, 32 (NHML).

Corvonirmus variegatus **(Ansari, 1957)**
Type material ex ***Corvus capensis kordofanensis*****: Holotype** ♂, Somalia, Jan. 1949, R. Meinertzhagen, 18329 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 10♀, same data as holotype (NHML); 1♂, 1♀, same data as holotype (OSUS).
Non-types ex ***Corvus capensis kordofanensis*****:** 7♂, 7♀, Ambo, Oromia, Ethiopia, 27 Nov. 1960, S. Brelih, 3104–3117 (PMSL).
Non-types ex ***Corvus capensis capensis***: 1♂, Transvaal, South Africa, May 1917, R. Meinertzhagen, 4018 (NHML); 2♂ [male genitalia only], South Africa, BM 1930-232 (NHML).
Non-types ex ***Corvus capensis*** **ssp.:** 1♂, 1♀, South Africa? [no locality on slides, but originally from South Africa Museum], BM 1930-232 (NHML).

Couala goniodes **(Piaget, 1880)**
Type material ex ***Coua serriana*****: Syntypes:** 3♂, 6♀, Piaget Collection, 1350–2 (NHML).
Type material ex **"*Dacelo gigas*": Syntypes** of *Nirmus goniocotes*: 4♂, 5♀, Piaget Collection, 1313–5 (NHML).
Non-types ex ***Coua serriana*****:** 2♀, "Guy 1914" (NHML).

Guimaraesiella abbasi **(Carriker, 1956)**
Type material ex ***Thraupis abbas*****: Paratypes:** 1♀, Xilitla, San Luis Potosi, México, 27 Jan. 1947, R. Newman, 405, Brit. Mus. 1968-455 (NHML).

Guimaraesiella addoloratoi **(Cicchino, 1986)**
Type material ex ***Turdus rufiventris rufiventris*****: Paratypes:** 1♂, 1♀, Chascomús, Buenos Aires, Argentina, 1982, A. Cicchino, 1769–70 (OSUS).

Guimaraesiella amsel **(Eichler, 1951)**
Type material ex ***Turdus merula merula*****: Holotype** ♂, Quedlingburg, Germany, 27 Aug. 1949, H. Dathe, 50007g (MFNG); **allotype** ♀, same data as holotype, 50007h (MFNG); **paratypes:** 1♂, 2♀, same data as holotype, 50007 (MFNG); 4♂, 1♀, Berlin, Germany, 4 Dec. 1937, Walter, 377 (MFNG); 1♂, Lucerne, Switzerland, 14 Aug. 1936, E. Lang, 1312 (MFNG); 2♀,

Lucerne, Switzerland, 7 Apr. 1936, E. Lang, 431 (MFNG); 1♀, Kent, England, United Kingdom, May 1937, R. Meinertzhagen, 10689 (Meinertzhagen No.], 930d [Eichler No.] (MFNG); 1♀, locality unknown, NHRS-GULI000010335, 3664d (SMNH).

Non-types ex ***Turdus merula merula*:** 4♂, 5♀, Eichler Collection, 3626, 3639, 3699, 3710, 50363, all slides marked "Autohyle" (MFNG); 6♂, 27♀, Eichler Collection, 2068, 3637, 3639, 3641–2, 3656, 3664, 3692, 3694, 3715, 3747, 50567 (MFNG) [some slides contain unidentified menoponis nymphs]. 1♂, 3♀, Berlin, Germany, 8 Feb. 1951, Heus?, IN1329/2-1–3 (MFNG); 85♂, 217♀, Berlin, Germany, 3 May 1950, Heus? IN1305 (MFNG) [Series includes 11 unidentified *Philopterus* nymphs, several unidentified eggs, egg husks, or dissected stomachs]. 4♂, 6♀, Berlin, Germany, 14 May 1950, F.M. Heuchenow, IN1306/2 (MFNG); 2♀, Dahlem, Berlin, Germany, 27 Jan. 1951, Heus?, IN1342/3 (MFNG); 5♂, 3♀, Berlin, Germany, 14 Oct. 1954, Wolf Herold, IN1400-1–9 (MFNG) [stomaches dissected onto other slides]. 1♀, Wroclaw, Poland, 2 Jun. 1969, Okulewicz, 14/e/359 (MFNG); 1♂, 1♀, Whetstow, England, United Kingdom, May 1953, Brit. Mus. 1953-346 (NHML); 1♂, 2♀, Kerry, United Kingdom, Oct. 1945, R. Meinertzhagen, 15472 (NHML); 2♀, Bolton, United Kingdom, 15 Feb. 1954, Brit. Mus. 1954-267 (NHML); 1♀, New Milton, Hampfordshire, United Kingdom, 10 May 1966, A.E. Cooper, Brit. Mus. 1967-29 (NHML); 1♂, Addington, Surrey, United Kingdom, 18 Mar. 1964, J. Houston (NHML); 1♂, 1♀, Colinton, Midlothian, Scotland, United Kingdom, 12 Aug. 1909, J. W[aterston?], BM1930-232 (NHML) [series also contains one slide with only male genitalia]; 3♂, 10♀, Wiltshire, United Kingdom, Mar. 1945, R. Meinertzhagen, 15398 (NHML); 6♂, 2♀, Scotland, United Kingdom, Aug. 1934, R. Meinertzhagen, 1259 (NHML); 2♂, 2♀, Hull, Yorkshire, United Kingdom, 26 Jan. 1958, A. Hazelwood, Brit. Mus. 1958-96 (NHML); 1♀, Llanishen, Glamorgan, United Kingdom, 8 Aug. 1927, A. Thomas (NHML); 2♂, 2♀, Putney, London, United Kingdom, 11 May 1965, D.L.F. Sealy (NHML); 2♀, Bowen, Cambridgeshire, United Kingdom, 3 Jun. 1952, G.B. Thompson, BM1980-40 (NHML); 6♀, W of Bryn-Siencym, SW Anglesey, Wales, United Kingdom, 26 May 1936, M. Mitchell, BM1980-40 (NHML); 2♂, 2♀, Dunbarton, Scotland, United Kingdom, BM1980-40 (NHML) [collected from abdomen on *Ornithomyia fringillina*]; 4♂, 3♀, Podsmead, Gloucestershire, England, United Kingdom, 11 Jun. 1956, R.S. George, Brit. Mus. 1956-399 (NHML); 1♂, 2♀, Surrey, England, United Kingdom, 16 Jun. 1966, Lasswade Veterinary Lab, Brit. Mus. 1967-154 (NHML); 2♀, Addington, Surrey, England, United Kingdom, 18 Mar. 1964, J. Houston (NHML); 1♂, 1♀, Hull, Yorkshire, England, United Kingdom, 26 Jan. 1958, A. Hazelwood, Brit. Mus. 1958-96 (NHML); 2♂, 3♀, Romford, Essex, England, United Kingdom, 4 Jun. 1955, Brit. Mus. 1955-416 (NHML); 1♂, 1♀, Whetstow, England, United Kingdom, May 1953, Brit. Mus. 1953-346 (NHML); 1♂, 1♀, Boron [?], Cambridgeshire, England, United Kingdom, 3 Jun. 1952, G.B. Thompson, BM 1980-40 (NHML); 2♂, 2♀, Belfast, Northern Ireland, United Kingdom, May 1961 (NHML); 2♀, near Bryn-Siencyn, SW Anglesey, N Wales, United Kingdom, 26 May 1936, M. Mitchell, BM 1980-40 (NHML); 1♀, locality unknown, Wolfdietrich Eichler, 3698b (NHML); 1♀, locality unknown, "Eichler's no 50363" (NHML).

Non-types ex ***Turdus merula aterrimus*:** 2♂, 2♀, Senj [as "Zengg], Croatia, 20 Feb. 1913, F. Dobiasch, 1913-450 (NHML); 1♀, Ljubljana, Slovenia, 5 Aug. 1958, S. Brelih, 425 (NHML); 1♂, 4♀, Ljubljana, Slovenia, 5 Aug. 1958, S. Brelih, 1565–7, 6320–1 (PMSL); 4♂, 5♀, Ljubljana, 20 Jul. 1959, S. Brelih, 2031–9 (PMSL); 1♂, 2♀, Ljubljana, Slovenia, 10 Jun. 1964, S. Brelih, 8398–400 (PMSL); 1♂, 2♀, Mirje, Ljubljana, Slovenia, 6 Jun. 1959, 2972–4 (PMSL); 5♂, 5♀, Dubrovnik, Croatia, 13 Mar. 1964, A. Lesinger, 9162–71 (PMSL).

Non-types ex ***Turdus merula mauretanicus*:** 8♂, 16♀, Morocco, Nov. 1938, R. Meinertzhagen, 11907 (NHML).

Non-types ex ***Turdus merula syriacus*:** 10♂, 12♀, Palestine, Apr. 1953, R. Meinertzhagen, 20143, BM1953-225 (NHML); 1♂, 1♀, Aishmar-Haesmek, Israel, 13 Feb. 1959, 688, Brit. Mus. 1959-405 (NHML).

***Guimaraesiella antiqua* (Ansari, 1956)**

Type material ex ***Catharus guttatus*:** **Holotype** ♂, Vilas Cunty, Wisconsin, U.S.A., 5 Jul. 1952, W.J. Woodman, Brit. Mus. 1958-215 (NHML); **allotype** ♀, same data as holotype (NHML).

Type material ex ***Catharus ustulatus*:** **Holotype** ♂ of *Brueelia zeropunctata*: Arena, Wisconsin, U.S.A., 20 May 1953, W.J. Woodman, Brit. Mus. 1958-215 (NHML); **allotype** ♀ of *Brueelia zeropunctata*: same data as holotype (NHML).

Non-types ex ***Catharus fuscescens salicicolus*:** 4♂, 3♀, Basswood Lake, Lake County, Minnesote, U.S.A., 9 Jul. 1963, J.R. Beer (UMSP).

Non-types ex ***Catharus fuscescens* ssp.**: 1♀, 300 W. Monroe, Loop, Chicago Illinois, U.S.A., 10 May 2006, Jason D. Weckstein, FMNH-INS-0000028122 [voucher for sequence Brsp.Cafu.6.13.2006.6] (FMNH); 1♀, Shaw Woods, Lake Forest, Lake County, Illinois, U.S.A., 5 May 2006, Chelsea L. Bueter, FMNH-INS-0000028128 [voucher for sequence Brsp.Cafu.6.13.2006.9] (FMNH); 1♀, same locality and collector, FMNH-INS-0000028064 [voucher for sequence Brsp.Cafu.6.27.2006.31] (FMNH); 1♀, Chaco, Bolivia, 3 Nov. 2000, Jason D. Weckstein, FMNH-INS-0000028126 [voucher for sequence Brsp.Cafu.6.13.2006.2] (FMNH).

Non-types ex ***Catharus guttatus faxoni*** **[**some as ***Hylocichla guttata*]:** 1♀, 3420 N. Clark, Loop, Chicago, Illinois, U.S.A., 21 Apr. 2006, Jason D. Weckstein, FMNH-INS-0000028065 [voucher for sequence Bran.6.27.2006.30] (FMNH); 1♀, 111 E. Wacker, Loop, Chicago, Illinois, U.S.A., 14 Apr. 2006, Jason D. Weckstein, FMNH-INS-0000028127 [voucher for sequence Bran.6.13.2006.1] (FMNH); 2♂, 4♀, Elmhurst, [Long Island,] New York, U.S.A., 20 Apr. 1931, M.V. Beals, 14181 [on reverse] (OSUS); 1♀, Elmhurst, Long Island, New York, U.S.A., 29 Jan. 1938, C.M. Herman (NHML).

Non-types ex **Catharus guttatus nanus** [as ***Hylocichla guttatus nanus***]: 1♂, 1♀, Langara Island, British Columbia, Canada, 9 Jun. 1946, Brit. Mus. 1963-110 (NHML).

Non-types ex ***Catharus minimus minimus***: 1♂, 233 N. Michigan Avenue, Loop, Chicago, Illinois, U.S.A., 10 May 2006, Jason D. Weckstein, FMNH-INS-0000028123 [voucher for sequence Brsp.Cami.6.13.2006.5] (FMNH); 1♂, Shaw Woods, Lake Forest, Lake County, Illinois, U.S.A., 25 May 2006, Chelsea L. Bueter, FMNH-INS-0000028118 [voucher for sequence Brsp.Cami.6.13.2006.12] (FMNH).

Non-types ex ***Catharus minimus*** **ssp.** [as ***Hylocichla minima***]: 1♂, 2♀, Orient, Long Island, New York, U.S.A., 4 Nov. 1948, Roy Latham, RL-27734 (NHML).

Non-types ex ***Catharus ustulatus*** **ssp.** [some as ***Hylocichla ustulata***]: 1♀, Shaw Woods, Lake Forest, Lake County, Illinois, U.S.A., 8 May 2006, Chelsea L. Bueter, FMNH-INS-0000028129 [voucher for sequence Brze.6.13.2006.10] (FMNH); 1♀, The Loop, Chicago, Illinois, U.S.A., 11 May 2005, Jason D. Weckstein, FMNH-INS-000028314 [voucher for sequence Brsp.Caus.4.10.2006.14] (FMNH); 1♀, 111 S. Wacker, Loop, Chicago, Illinois, U.S.A., 10 May 2006, Jason D. Weckstein, FMNH-INS-000028120 [voucher for sequence Brze.6.13.2006.7] (FMNH); 1♀, Cook County, Illinois, U.S.A., 1 Jun. 2005, Jason D. Weckstein, FMNH-INS-0000028318 [voucher for sequence Brsp.Caus.4.10.2006.15] (FMNH); 1♀, 400 E. Randolph, Loop, Chicago, Illinois, U.S.A., 30 May 2006, Jason D. Weckstein, FMNH-INS-0000028066 [voucher for sequence Brze.6.27.2006.29] (FMNH); 1♀, Seriana del Maje, Panama, 14 Feb. 2006, Kevin P. Johnson, FMNH-INS-0000028125 [voucher for sequence Brze.6.13.2006.3] (FMNH); 1♂, State College, Mississippi, U.S.A., 19 Nov. 1939, E.W. Stafford, 14189 [on reverse] (OSUS); 1♂, 1♀, Raleigh, New York, U.S.A., 14 Apr. 1942, R. Collie, 14190 or 14192 [on reverse] (OSUS); 2♀, New York, U.S.A., 1941, 14187–8 [on reverse] (OSUS); 2♀, Duxbury, Massachusetts, U.S.A., 7 Oct. 1965, A, Main, 103-105169, EFS-194m–n (USNM).

Guimaraesiella atricapilla **(Cicchino, 1983)**

Non-types ex ***Donacobius atricapillus atricapillus***: 2♀, Fundacion, Magdalena, Colombia, 11 Aug. 1913, M.A. Carriker Jr., 12726 (OSUS).

Guimaraesiella avinus **(Ansari, 1956)**

Type material ex ***Trochalopteron subunicolor subunicolor***: **Holotype** ♂, Chungtang, Sikkim, India, 16 Feb. 1952, R. Meinertzhagen, 19938, BM1952-143 (NHML); **allotype** ♀, same data as holotype. (NHML); **paratypes**: 1♂, 1♀, same data as holotype (NHML).

Non-types ex ***Trochalopteron subunicolor subunicolor***: 1♂, 1♀, same data as holotype (NHML).

Guimaraesiella bisetacea **(Piaget, 1885)**

Type material ex ***Euryceros prevostii***: **Holotype** ♀, Piaget collection, 1208 (NHML).

Guimaraesiella brunneinucha **(Cicchino, 1983)**

Non-types ex ***Mimus gilvus gilvus***: 1♂, near Lethem, Rupununi, Guyana [as Brit. Guyana], 12 Feb. 1961, T. Clay, No. 116 (NHML). 2♂, 2♀, same locality, 14 Feb. 1961, T. Clay, No. 129 (NHML).

Guimaraesiella busharae **(Ansari, 1955)**

Type material ex ***Entemodestes leucotis***: **Paratypes:** 4♂, 3♀, Huacapistana, Perú, 12 Aug. 1929, M.A. Carriker, Jr., 343-4 (USNM).

Guimaraesiella cicchinoi **(Valim & Weckstein, 2011)**

Type material ex ***Trogon viridis***: **Paratypes:** 1♀, 01°33’34.5” S, 65 52’48.2” W, Lago Cumapi, Município **Maranhão**, Amazonas, Brazil, 31 Jul. 2007, J.D. Weckstein [voucher for sequence Brsp.Trvir.1.4.2011.20, FMNH-INS-028901] (FMNH).

Non-types ex ***Pharomachrus pavoninus***: 1♀, 02° 02’ 31.6” S, 67° 17’ 16.6” W, Rio Mapari, Município Japurá, Amazonas, Brazil, 17 Jul. 2007, J.D. Weckstein [voucher for sequence Brsp.Phpa.4.4.2011.16, FMNH-INS-028903] (FMNH).

Non-types ex ***Trogon collaris castaneus***: 1♂, 3♀, ridge 330 m above Hacienda Amazonia, near Atalaya, Department of Madre de Dios, Perú, 5 Aug. 1985, D.H. Clayton, 85076–7 (UMSP).

Non-types ex ***Trogon viridis viridis***: 1♂, 2♀, Winiperu, Guyana, 15 Aug. 1967, G. Lincoln, Brit. Mus. 1968-664 (NHML).

Guimaraesiella chiguanca **(Cicchino, 1986)**

Type material ex ***Turdus chiguanco anthracinus***: **Paratypes:** 1♂, 1♀, Cordóba, Argentina, May 1975, A. Cicchino, 1775–6 (OSUS).

Guimaraesiella concava **(Eichler [in Niethammer], 1956)**
Type material ex ***Catharus fuscater caniceps*****: Holotype**, Perú, Koepcke, 3072h (MFNG); **allotype** ♀, same data as holotype, 3072g (MFNG); **paratypes:** 2♂, 4♀, 3072a–e, I (MFNG).

Guimaraesiella diaprepes **(Kellogg & Mann, 1912)**
Type material ex ***Vestiaria coccinea*****: Lectotype** ♂, Hilo, Hawaii, U.S.A., 1229a, EMEC 75393 (EMEC); **paralectotypes:** 1♂, 1♀, same data as lectotype, 1231, EMEC 225286 (EMEC).

Guimaraesiella dicruri **(Ansari, 1955)**
Non-types ex ***Dicrurus caerulescens caerulescens*****:** 11♂, 6♀, Nepal, Mar. 1937, R. Meinertzhagen, 9288 (NHML).
Non-types ex ***Dicrurus macrourus albirictus*****:** 5♂, 9♀, Nepal, Mar. 1937, R. Meinertzhagen, 9266 (NHML).
Non-types ex ***Dicrurus macrourus macrourus*****:** 9♀, Mumbai [as "Bombay"], [Maharasthra,] India, Feb. 1937, R. Meinertzhagen, 8446 (NHML).
Non-types ex ***Dicrurus macrourus thai*****:** 2♀, Pak Nom Pho, Nakhon Sawan Province, Thailand, 4 Mar. 1953, R.E. Elbel, RE-1671, RT-B-17601 (PIPeR); 1♀, Hin Laem, Tha Khanun, Kanchanaburi Province, Thailand, 8 Nov. 1952, R.E. Elbel & H.G. Deignan, RE-1447, RT-B-15847 (PIPeR); 2♀, Thai Khao Oerawan Mountains, Lop Buri Province, Thailand, 14 Jul. 1953, R.E. Elbel, RE-2792, RT-B-21659 (PIPeR).

Guimaraesiella galapagensis **(Kellogg & Kuwana, 1902)**
[material from all hosts, except from *Mimus* spp., are contaminants]
Type material
Ex ***Camarhynchus pallidus productus*** **[as *Camarhynchus productus*]: Lectotype** ♂, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1089, EMEC 75176 (EMEC).
Paralectotypes:
Ex ***Camarhynchus pallidus productus*** **[as *Camarhynchus productus*]:** 1♂, 2♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1040a, 1061c, 1122a, EMEC 225323, 225345–6 (EMEC).
Ex ***Camarhynchus parvulus parvulus*** **[as *Camarhynchus prosthemelas*]:** 1♂, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1061f, EMEC 225340 (EMEC).
Ex ***Certhidea olivacea*** **[as *Certhidea albemarlei*]:** 1♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1086b, EMEC 225342 (EMEC).
Ex ***Geospiza conirostris*****:** 1♂, Gardner Island, Galápagos Islands, Ecuador, [R.E. Snodgrass], 943a, EMEC 225341 (EMEC); 2♀, Española [as Hood Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 993b, 1020, EMEC 225309, 225326 (EMEC).
Ex ***Geospiza fortis*** **[some as *Geospiza dubia*]:** 1♂, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1034b, EMEC 225339 (EMEC); 2♀, Ferdinandina [as Narborough Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1062a–b, EMEC 225324–5 (EMEC); 1♀, San Cristóbal [as Chatham Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 983b, EMEC 225344 (EMEC).
Ex ***Geospiza fuliginosa*****:** 1♂, 3♀, same data as lectotype, 1004, 1017a–c, EMEC 75417, 225311, 225334 (EMEC); 1♂, Ferdinandina [as Narborough Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1021b, EMEC 225335 (EMEC); 1♂, 1♀, San Cristóbal [as Chatham Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 979, 1140f, EMEC 225310, 225332 (EMEC).
Ex ***Platyspiza crassirostris*** **[as *Camarhynchus variegatus*]:** 1♀, Ferdinandina [as Narborough Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1121, EMEC 225343 (EMEC).
Ex ***Mimus macdonaldi*** **[as *Nesomimus macdonaldi*]:** 1♂, 2♀, Española [as Hood Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1138b, 1130b, EMEC 225317, 225319, 225322 (EMEC).
Ex ***Mimus parvulus parvulus*** **[as *Nesomimus parvulus*]:** 1♂, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 998b, EMEC 225321 (EMEC); 3♀, Ferdinandina [as Narborough Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1069, EMEC 225318 (EMEC).
Ex ***Mimus*** **sp. [as *Nesomimus* sp.]:** 1♂, 1♀, Wolf Island [as Wenman Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1053a, EMEC 225320 (EMEC).
Non-types ex ***Actitis macularia*****:** 1♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1108e, EMEC 225329 (EMEC).
Non-types ex ***Anous stolidus galapagensis*****:** 1♀, Marchena [as Bindlow Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1392a, EMEC 225328 (EMEC).
Non-types ex ***Camarhynchus pallidus productus*** **[as *Camarhynchus productus*]:** 1♂, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1090b, EMEC 225308 (EMEC).

Non-types ex ***Coccyzus melanocoryphus***: 1♀, San Cristóbal [as Hood Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1162a, EMEC 225338 (EMEC).
Non-types ex ***Geospiza fortis***: 3♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1034c, EMEC 225312 (EMEC).
Non-types ex ***Mimus melanotis*** [as ***Nesomimus melanotis***]: 3♀, [San Cristóbal], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1373a, EMEC 225314, 225316 (EMEC).
Non-types ex ***Mimus parvulus parvulus*** **[as *Nesomimus parvulus*]**: 1♂, 1♀, Santa Cruz [as Indefatigable Islands], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1362, EMEC 225315 (EMEC).
Non-types ex ***Myiarchus magnirostris***: 1♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1012, EMEC 225337 (EMEC).
Non-types ex ***Oceanodroma tethys*** **[as *Procellaria tethys*]**: 1♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1047c, EMEC 225331 (EMEC).
Non-types ex ***Pyrocephalus rubinus dubius*** [as ***Pyrocephalus dubine***]: 1♀, San Cristóbal [as Chatham Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 981, EMEC 225336 (EMEC).
Non-types ex ***Pyrocephalus rubinus nanus*** **[as *Pyrocephalus intercedens*]**: 1♀, Isabela [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1147, EMEC 225333 (EMEC).
Non-types ex ***Zenaida galapagoensis*** [as ***Nesopelia galapagoensis***]: 1♀, Española [as Hood Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 992b, EMEC 225330 (EMEC).
Non-types ex unknown host: 1♀, Galápagos Islands, Ecuador, [R.E. Snodgrass], 1033a, EMEC 225313 (EMEC).

Guimaraesiella ilmasae **(Ansari, 1956)**
Type material ex ***Turdus olivaceus pondoensis***: **Holotype** ♂, Potchefstroom, West Transvaal, South Africa, 1 Oct. 1953 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 1♂, same data as holotype (NHML).
Non-types ex ***Turdus olivaceus pondoensis***: 10♂, 8♀, same data as holotype (NHML).

Guimaraesiella interposita **(Kellogg, 1899)**
Type material ex ***Dendroica petechia*** [as ***Dendroica vieilloti***]: **Syntypes:** 3♀, Panama, 420a, EMEC 75430 (EMEC).
Non-types ex ***Dendroica petechia***: 2♂, 2♀, Bellavista, Isla Santa Cruz, Galápagos Islands, Ecuador, 1 Apr. 1992, R.L. Palma (MONZ).
Non-types ex ***Camarhynchus psittacula***: 1♂, 1♀, Aguacate Camp, Isla Santiago (500m a.s.l.), Galápagos Islands, Ecuador, 9 Apr. 1992, R.L. Palma (MONZ).
Non-types ex ***Geospiza difficilis***: 1♂, 1♀, Aguacate Camp, Isla Santiago (500m a.s.l.), Galápagos Islands, Ecuador, 9 Apr. 1992, R.L. Palma (MONZ).
Non-types ex ***Geospiza fortis***: 2♀, Isabel [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1024b, 1031a, EMEC 225357–8 (EMEC); 1♂, 1♀, Isla Pinta (200m a.s.l.), Galápagos Islands, Ecuador, 15 Mar. 1992, R.L. Palma & E.M. Inca (MONZ).
Non-types ex ***Geospiza fuliginosa***: 1♂, Isabel [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1017b, EMEC 225355 (EMEC); 1♀, Fernandina [as Narborough Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1021c, EMEC 225356 (EMEC); 1♂, 1♀, Isla Pinta (200m a.s.l.), Galápagos Islands, Ecuador, 15 Mar. 1992, R.L. Palma & E.M. Inca (MONZ).
Non-types ex ***Platyspiza crassirostris*** **[as *Camarhynchus variegatus*]**: 1♀, Isabel [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1161, EMEC 225359 (EMEC).
Non-types ex ***Mimus melanotis*** **[as *Nesomimus carringtoni*]**: 1♀, Santa Fé [as Barrington Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1102, EMEC 225362 (EMEC) [contaminants].
Non-types ex ***Mimus parvulus parvulus*** [as ***Nesomimus parvulus***]: 2♀, Isabel [as Albemarle Island], Galápagos Islands, Ecuador, [R.E. Snodgrass], 1117, 1124, EMEC 225360–1 (EMEC) [contaminants].

Guimaraesiella magellanica **(Cicchino, 1986)**
Type material ex ***Turdus falcklandii magellanicus***: **Holotype** ♂, Pumitaqui, Coquimbo, Chile, 26 Jun. 1981, M.A. Marin, 1777 (OSUS); **allotype** ♀, El Portozuela, Colina, Santiago, Chile, 3 Sep. 1981, M.A. Marin, 1778 (OSUS); **paratypes:** 1♂, 2♀, same data as holotype (OSUS).
Non-types ex ***Turdus falcklandii falcklandii***: 5♂, 10♀, Kidney Island, Falklands, United Kingdom, 21 Nov. 1961, R.W. Woods, Brit. Mus. 1969-158 (NHML); 1♂, Stanley, East Falklands, United Kingdom, 7 May 1958, Brit. Mus. 1960-199 (NHML).

Guimaraesiella marginata **(Burmeister, 1838**

Type material ex ***Turdus pilaris*****: Neotype** ♂, Uppsala, Uppland, Sweden, Oct. 1946, R. Meinertzhagen, 16097 (NHML); **neoallotype** ♀, same data as holotype (NHML); **neoparatypes:** 3♂, 3♀, same data as holotype (NHML); 1♂, Estonia, Oct. 1943, R. Meinertzhagen, 1932 (NHML); 6♂, 12♀, Heacham, Norfolk, England, United Kingdom, Jan. 1941, R. Meinertzhagen, 14084 (NHML).

Non-types ex ***Turdus pilaris*****:** 1♂, 1♀, locality unknown, Rev. L. Jenyn's Collection (NHML); 2♂, 1♀, Westhoughton, Lancashire, England, United Kingdom, 5 Nov. 1955, Brit. Mus. 1955-810 (NHML); 6♂, 6♀, same locality and collector, 8 Dec. 1957, Brit. Mus. 1958-22 (NHML); 1♂, 4♀, Redcliffe, United Kingdom, 23 Jan. 1933, T. Warwick (NHML); 2♂, 2♀, Yorkshire, United Kingdom, 14 Mar. 1967, Lasswade Veterinary Lab, Brit. Mus. 1967-154 (NHML); 1♂, 4♀, Seaton, Devon, England, United Kingdom, 11 Mar. 1956 (NHML); 4♂, 1♀, Wales, United Kingdom, Jan. 1942, R. Meinertzhagen, 14724 (NHML); 1♂, 1♀, Suffolk, England, United Kingdom, Jan. 1941, R. Meinertzhagen, 14144 (NHML); 2♂, 5♀, Estonia, Sep. 1934, R. Meinertzhagen, 1840 (NHML); 3♀, Estonia, Oct. 1934, R. Meinertzhagen, 1932 (NHML); 1♂, 1♀, Ljubljanske Banje, Slovenia, 10 Mar. 1958, S. Brelih, 1982 (NHML); 1♂, 1♀, Ljubljana, Slovenia, 3 Mar. 1958, S. Brelih (OSUS); 1♀, Eichler Collection, 5286 (MFNG); 1♂, 1♀, Górki Wschodnie, Poland, 27 Mar. 1962, Zajac?, 14/d/33 & 14/d/6 (MFNG); 3♂, 3♀, Wroclaw, Poland, 24 Mar. 1958, J. Zlotorzycka, 8445–50 (PMSL); 2♀, Zakopane, Poland, 11 Jul. 1955, J. Zlotorzycka, 2684–5 (PMSL); 1♂, Bácsalmás, Bacs-Kiskun, Hungary, 4 Feb. 1972, J. Rékási, 11487 (PMSL); 1♂, 2♀, Katymar, Bacs-Kiskun, Hungary, 5 Feb. 1969, J. Rékási, 11488–90 (PMSL); 8♂, 5♀, Ljubljansko Barje, Slovenia, 10 Mar. 1958, S. Brelih, 224, 334, 1552–6, 1983–5, 6301–3, 6306–12, 6315–7 (PMSL).

Guimaraesiella menuraelyrae **(Coinde, 1859)**

Non-types ex ***Menura novaehollandiae edwardi*****:** 1♀, Queensland, Australia, 13 May 1922, W.G. Oke, collected from type host male skin at National Museum in Melbourne (NHML).

Non-types ex ***Menura novaehollandiae novaehollandiae*****:** 1♀, Mount Ku-Ring-Gai, Sydney, New South Wales, Australia, Jan. 1983, B-37316 (OSUS).

Non-types ex ***Menura novaehollandiae*** **ssp. [**some as ***Menura lyrae*** or ***Menura superba*****]: 1**♂, locality unknown, Piaget Collection, 611 (NHML); 12♂, 46♀, New South Wales, Australia, R. Meinertzhagen, 12584 (NHML); 5♂, 8♀, Australia, from skin, R. Meinertzhagen, 16203 (NHML); 3♂, 4♀, Australia (OSUS); 1♀, locality unknown, L. Harrison collection, BM1934-570 (NHML).

Guimaraesiella myiophoneae **(Clay, 1936)**

Type material ex ***Myophonus caeruleus temminckii*****: Holotype** ♀, Kashmir, India, Mar, 1925, R. Meinertzhagen, 3541 (NHML); **paratypes:** 2♂, 3♀, same data as holotype. 1♂, Baltistan, [Gilgit-Baltistan,] Pakistan, R. Meinertzhagen, 2724 (NHML).

Non-types ex ***Myophonus caeruleus temminckii*****:** 2♂, 8♀, Afghanistan, Apr. 1937, R. Meinertzhagen, 9749 (NHML); 1♂, Langtang Valley, W of Gorah Tabela, North Central Nepal, Nepal, 3 Nov. 1975, Weisser, BM 1977-205 (NHML).

Guimaraesiella neodaumae **(Najer & Sychra [in Najer *et al.*], 2012)**

Non-types ex ***Zoothera dauma dauma*****:** 1♂, Doi Pha Hom Pok, Chiang Mai Province, Thailand, 29 Oct. 1965, MAPS-1462 (OSUS).

Guimaraesiella nigrosignata **(Piaget, 1880)**

Type material ex ***Gracula religiosa*****: Holotype** ♀, Piaget collection, 1419 (NHML).

Guimaraesiella niquitaoi **(Carriker, 1963)**

Type material ex ***Mecocerculus stictopterus albocaudatus*****: Paratypes:** 4♂, 9♀, La Teta de Niquitao, 31 May 1922, M.A. Carriker, Jr., 27988 (USNM).

Guimaraesiella nitzschii **(Ponton, 1871)**

Non-types ex ***Ptilonorhynchus violaceus violaceus*****:** 4♀, New Guinea, from skin, R. Meinertzhagen, 16171 (NHML).

Guimaraesiella oudhensis **(Ansari, 1956)**

Type material ex ***Turdus simillimus nigropileus*** [as ***Turdus merula nigropelios*****]: Holotype** ♂, Bombay, India, Feb. 1937, R. Meinertzhagen, 8472 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 1♂, 8♀, same data as holotype (NHML); 1♀, same data as holotype (OSUS).

***Guimaraesiella pallida* (Piaget, 1880)**
Type material ex ***Ailuroedus buccoides*** [as ***Ptylorhynchus buccoides***]: **Syntypes:** 2♂, 4♀, Piaget Collection, 1354–5 (NHML).
Non-types ex ***Ailuroedus buccoides buccoides***: 1♂, 2♀, Papua New Guinea, from skin, R. Meinertzhagen, 16172 (NHML).

***Guimaraesiella pallidula* (Harrison, 1916)**
Non-types ex ***Pheucticus ludovicianus***: Firestation, Loop, Chicago, Illinois, U.S.A., 10 May 2007, J. D. Weckstein [voucher specimen for sequence Brpa.8.29.2011.14] (PIPeR).

***Guimaraesiella persimilis* (Cicchino, 1987)**
Non-types ex ***Turdus amaurochalinus***: 2♀, Department of Santa Cruz, Province of Chiquita, Bolivia, Brit. Mus. 1961-489 (NHML).

***Guimaraesiella pointu* (Ansari, 1955)**
Type material ex ***Turdus nudigenis nudigenis***: **Paratypes:** 1♀, Heights of Aripo, Trinidad, Trinidad and Tobago, 25 Aug. 1909, M.A. Carriker, Jr., 5142 (USNM).
Non-types ex ***Turdus nudigenis nudigenis***: 3♂, 7♀, Caroni River, Trinidad, Trinidad and Togabo, 4 Jan. 1961, TRUL-5259, Brit. Mus. 1974-636 (NHML); 1♂, Sangre Grande, Trinidad, Trinidad and Tobago [as British Virgin Islands], 5 Dec. 1958, T.H.G. Aitken, 2127, Lot 59-8841 (USNM).

***Guimaraesiella polyglotta* (Williams, 1983)**
Type material ex ***Mimus polyglottos polyglottos***: **Paratypes:** 2♂, 1♀, Fairhope, Alabama, U.S.A., Aug. 1930, W.M. Edwards, 18357 (UMSP); 3♂, 4♀, same data, 18357–8, 18366 (OSUS); 2♂, 1♀, State College, Mississippi, U.S.A., 5 Aug. 1936, E.W. Stafford, 1667 (OSUS); 1♂, 1♀, same locality and collector, 8 Jun. 1936, 1668 (OSUS); 1♂, 1♀, Bloomington, Indiana, U.S.A., 28 Nov. 1962, R. Schneider, 63-1601, 1650 (OSUS).
Non-types ex ***Mimus polyglottos polyglottos***: 3♂, 4♀, Alchua County, Florida, U.S.A., 13 Feb. 1954, Frank W. Mead (UMSP); 1♂, 1♀, same data (OSUS); 1♀, Jamaica, 19 Jul. 1962, A. Ventura, Brit. Mus. 1963-51 (NHML).
Non-types ex ***Mimus polyglottus leucopterus***: 1♂, 1♀, Dimmit County, Texas, U.S.A., 31 Jan. 1929, H.S. Peters, 13032 (USNM).

***Guimaraesiella ptiliogonis* (Carriker, 1903)**
Type material ex ***Ptiliogonys caudatus***: **Paratypes:** 3♂, 1♀, Irazu, Costa Rica, Apr. 1902, M.A. Carriker Jr., 101 (NHML).
Non-types ex ***Ptiliogonys caudatus***: 2♂, 2♀, Cerro Abarca, Caitago, Costa Rica, 16 Mar. 1986, M.A. Marin, 23516–9 [on reverse] (OSUS).

***Guimaraesiella ptiliogonis* (Carriker, 1903)**
Type material ex ***Ptiliogonys caudatus***: **Paratypes:** 3♂, 1♀, Irazu, Costa Rica, Apr. 1902, M.A. Carriker Jr., 101 (NHML).
Non-types ex ***Ptiliogonys caudatus***: 2♂, 2♀, Cerro Abarca, Caitago, Costa Rica, 16 Mar. 1986, M.A. Marin, 23516–9 [on reverse] (NHML).

***Guimaraesiella saghirae* (Ansari, 1955)**
Type material ex ***Turdus serranus fuscobrunneus***: **Paratypes:** 2♂, 6♀, Ventanas, [Valdivia], Colombia, 7 Jul. 1948, M.A. Carriker, Jr., 13806 (USNM).

***Guimaraesiella saltatora* (Carriker, 1956)**
Type material ex ***Saltator coerulescens grandis***: **Allotype** ♀, Xilitla, San Luis Potosí, México, 22 Jan. 1941, R. Newman, 377, USNM#65411 (USNM); **paratypes:** 1♀, same data, Brit. Mus. 1968-455 (NHML); 1♂, same data, 504 (USNM).

***Guimaraesiella satelles* (Nitzsch [in Giebel], 1866)**
Non-types ex ***Ptiloris paradisaea*** [as ***Ptilorhis paradisaea***]: 2♂, 1♀, locality unknown, L. Harrison collection, BM 1934-570 (NHML).

***Guimaraesiella sehri* (Ansari, 1955)**
Type material ex ***Trochalopteron lineatum setafer***: **Holotype** ♂, Kulu, [Kullu District, PAKISTAN], 14 Oct. 1934, [R.A.M.] Ansari (NHML); **allotype** ♀, Same data as holotype (NHML).

Non-types ex ***Trochalopteron lineatum setafer*****:** 1♂, 1♀, Melichme, Sindhu District, Nepal, 5 Aug. 1968, NP-6863, 12478 [on reverse] (OSUS); 1♂, same locality, 25 Aug. 1968, NP-1054 (USNM); 1♀, same locality, 16 Aug. 1968, NP-978 (USNM).

Guimaraesiella setifer **(Piaget, 1885)**

Type material ex ***Seleucidis melanoleucus melanoleucus*****: Syntypes**: 4♀, Piaget Collection, 629–30 (NHML).

Non-types ex ***Seleucidis melanoleucus melanoleucus*****:** 10♂, 14♀, Papua New Guinea, from skin, R. Meinertzhagen, 16167, 16206 (NHML).

Guimaraesiella sexmaculata **(Piaget, 1880)**

Type material ex ***Dicrurus remifer*****: Syntypes**: 2♂, 3♀, Piaget Collection, 1395–6 (NHML) [one slide contains a different species of *Guimaraesiella*].

Non-types ex ***Dicrurus aeneus aeneus*****:** 1♂, 2♀, Myanmar, R. Meinertzhagen, 13523 (NHML).

Non-types ex ***Dicrurus remifer peracensis*****:** 1♂, Khao Soi Dao Tai, elev. 4800 ft, Chanthaburi Province, Thailand, 7 Mar. 1966, MAPS-4208 (OSUS); 1♀, Khao Soi Dao Tai, elev. 2500 ft, Chanthaburi Province, Thailand, 21 Mar. 1968, MAPS-4609 (OSUS).

Guimaraesiella sueta **(Valim & Weckstein, 2011)**

Type material ex ***Pharomachrus pavoninus*****: Paratypes:** 1♀, 01° 33' 34.5" S, 65° 52' 48.2" W, Lago Cumapi, Município **Maranhão**, Amazonas, Brazil, 31 Jul. 2007, J.D. Weckstein [voucher for sequence Brsp.PhPa.1.4.2011.19, FMNH-INS-02902] (FMNH).

Guimaraesiella taulis **(Eichler [in Niethammer], 1956)**

Type material ex ***Tangara viridicollis*****: Holotype** ♀, Taulis, Perú, G. Niethammer, 3065a (MFNG).

Guimaraesiella tovornikae **(Balát, 1981)**

Non-types ex ***Sylvia atricapilla atricapilla*****:** 3♂, 1♀, Stozice, Ljubljana, Slovenia, 15 May, 1978, D. Sere, 13264–7 (PMSL); 2♂, Stozice, Ljubljana, Slovenia, 19 SEP. 1978, D. Sere, 13483–4 (PMSL); 2♂, 8♀, Ljubljana, Slovenia, 15 Aug. 1960, S. Brelih, 2975–6, 2978–85 (PMSL); 1♀, Tomacevo, Ljubljana, Slovenia, 22 Apr. 1974, S. Brelih, 11460 (PMSL); 1♀, Tomacevo, Ljubljana, Slovenia, 10 Apr. 1975, D. Sere, 12835 (PMSL); 6♂, 6♀, Metkovic, Croatia, 23 Apr. 1963, A. Lesinger, 8401, 8403–8, 8410–4 (PMSL).

Guimaraesiella tristis **(Giebel, 1874)**

Non-types ex ***Erithacus rubecula melophilus*****:** 1♂, 1♀, Cornwall, England, United Kingdom, Mar. 1946, R. Meinertzhagen, 15684 (NHML).

Non-types ex ***Erithacus rubecula rubecula*****:** 1♀, Eichler Collection, 435 (MFNG); 1♂, Stahkova, Kamnik, Slovenia, 4 Apr. 1960, S. Brelih, 2958, 2960, 2962–6, 2968–9, 6277–82 (PMSL); 2♀, Dramlje, Celje, Slovenia, 22 Mar. 1951, S. Brelih, 208, 644 (PMSL); 8♀, Stozice, Ljubljana, Slovenia, 26 Apr. 1980, D. Sere, 14060–2 (PMSL); 1♀, Stahovica, [Kamnik,] Slovenia, 4 May 1960, S. Brelih (OSUS); 1♂, 1♀, same locality, 4 Apr. 1960, S. Brelih, 2959, 2961 (NHML); 1♂, Kamniska Bistrica, [Kamnik,] Slovenia, 2 Apr. 1960, S. Brelih, 2967 (USNM).

Guimaraesiella turdinulae **(Ansari, 1956)**

Type material ex ***Turdus philomelos philomelos*****: Holotype** ♂, North Mymms, Hertfordshire, United Kingdom, 2 Jul. 1933, D. Buxton & J.F. Shillits, BM1936-624 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 3♂, same data as holotype (NHML); 3♂, Cornwall, England, United Kingdom, Jan. 1937, R. Meinertzhagen, 8229 (NHML).

Type material ex ***Turdus philomelos clarkei*****: Holotype** ♂ of *Brueelia turdinulae eternitatus*: Kent, United Kingdom, Feb. 1937, R. Meinertzhagen, 8335 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes**: 6♂, 4♀, same data as holotype (NHML); 1♂, 1♀, same data as holotype (OSUS).

Type material ex ***Turdus philomelos*** **ssp.: Paratypes** of *Allobrueelia abluda*: 1♀, "Hel", 3 May 1963, Busse, 14/a/23 (MFNG); 1♀, same data, 14/a/24 (OSUS).

Non-types ex ***Turdus philomelos philomelos*****:** 2 individuals of indeterminate sex, neither of which are entire, Eichler Collection, 4037 (MFNG); 1♂, 1♀, Sitzendorf, Rudolstadt, Thüringen, Germany, 15 Aug. 1978, 23455–6 [on reverse] (OSUS).

Non-types ex ***Turdus philomelos clarkei*** **[**some as ***Turdus musicus*** or ***Turdus ericetorum*****]:** 2♀, Penylan, Cardiff, Glamorganshire, Wales, United Kingdom, 12 Dec. 1935, J.G. Williams, BM1980-40 (NHML); 1♂, W3, London, England, United Kingdom, 9 Jul. 1966, J.M. Ingles (NHML); 1♀, SW Stirlingshire, Scotland, United Kingdom, 16 Apr. 1937, P.A. Clancey, BM 1980-40 (NHML); 1♀, Gibraltar Point Bird Observatory, Lincolnshire, England, United Kingdom, 18 Jun. 1953, BM 1980-40 (NHML); 4♂, 12♀, Hampshire, England, United Kingdom, Jun. 1941, R. Meinertzhagen, 14319 (NHML); 7♂, 17♀, Kent, England, United Kingdom, Feb. 1937, R. Meinertzhagen, 8334–5 (NHML).

Non-types ex ***Turdus philomelos* ssp.:** 1♂, 2♀, Bahig, Egypt, 1 Mar. 1967, 2964 (USNM).

Non-types ex ***Turdus merula merula* (stragglers):** 1♂, 16♀, Wiltshire, England, United Kingdom, Mar. 1945, R. Meinertzhagen, 15398 (NHML).

***Guimaraesiella viscivori* (Denny, 1842)**

Type material ex ***Turdus viscivorus*: Holotype** ♂, United Kingdom, Denny Collection, [BM] 1852-98 (NHML).

Non-types ex ***Turdus viscivorus*:** 8♂, 15♀, Tring, Hertfordshire, England, United Kingdom, 19 Apr. 1936, M. Rothschild, BM1980-40 (NHML); 2♂, Sliddery, Arram, Scotland, United Kingdom, 18 Aug. 1927, J. Waterston, BM 1930-232 (NHML); 11♂, 6♀, Norfolk, England, United Kingdom, Jan. 1940, R. Meinertzhagen, 13761 (NHML); 2♂, 16♀, Suffolk, England, United Kingdom, Jun. 1937, R. Meinertzhagen, 8359 (NHML); 2♀, Reading, Berkshire, England, United Kingdom, May 1940, R. Meinertzhagen, 13292 (NHML); 2♂, 5♀, Hampshire, England, United Kingdom, Jun. 1941, R. Meinertzhagen, 14383–4 (NHML); 1♀, Honyton Platon [?], Lancashire, England, United Kingdom, 4 Mar. 1923, BM 1980-40 (NHML); 1♂, 2♀, County Cork, Ireland, Jan. 1953, R. Meinertzhagen, 20128, Brit. Mus. 1953-132 (NHML); 1♂, Heilsberg, [Baden-Württemberg?,] Germany, 1 Sep. 1913, von Tischler, Dampf Collection (NHML).

***Guimaraesiella wallacei* (Mey & Barker, 2014)**

Non-types ex ***Irena puella crinigera*:** 1♂, 4º 23.87' N, 117º 53.28' E, Headquarters, elev. 280 m, Tawau Hills Park, Sabah, Malaysia, 25 Jan. 2005, Robert G. Moyle, FMNH-INS-0000028053 [voucher for sequence Brsp.Irpu.6.27.2006.23] (FMNH).

Non-types ex ***Irena puella puella*:** 1♀, Khao Luang, Nakhon Si Thammarat Province, Thailand, 24 May 1965, MAPS-390 (OSUS); 1♀, same locality, 1 Jun. 1965, MAPS-567 (OSUS); 1♂, 2♀, Hin Laem, Tha Khanun, Kanchanaburi Province, Thailand, 12 Nov. 1952, R.E. Elbel & H.G. Deignan, RE-1477, RT-B-17036 (OSUS); 2♂, 2♀, same data, RE-1480, RT-B-17037 (OSUS); 3♂, 3♀, same data (PIPeR); 1♂, 1♀, same locality and collector, 31 Oct. 1952, RE-1349, RT-B-15817 (PIPeR); 8♂, 15♀, Khao Keao, Lansaka, Nakhon Si Thammarat Province, Thailand, 6 May 1963, W. Songprakob, WS-135 (PIPeR); 1♂, 3♀, same locality and collector, 8 May 1963, WS-143 (PIPeR); 2♂, 3♀, same locality and collector, 19 Apr. 1963, WS-079 (PIPeR); 1♂, 1♀, Muang Kluang, Kapoe, Ranong Province, Thailand, 27 Dec. 1962, W. Songprakob, RE-6941 (PIPeR); 2♂, same locality and collector, 25 Dec. 1963, RE-6917–8 (PIPeR); 1♂, 1♀, Bang Hin, Kapoe, Ranong Province, Thailand, 28 Jan. 1963, W. Songprakob, RE-7039 (PIPeR); 2♂, 2♀, Ban Muang Khai, Tha Li, Loei Province, Thailand, 11 Jan. 1955, R.E. Elbel, RE-4433, RT-B-31083 (PIPeR); 2♀, same locality and collector, 9 Jan. 1955, RE-4417, RT-B-31076 (PIPeR).

***Hecatrishula biocellata* (Piaget, 1880)**

Type material ex ***Pica pica* [as *Pica pica leucoptera*]: Lectotype** ♂, Piaget Colletion, 1117 (NHML).

Type material ex ***Pica hudsonica*: Paratypes** of *Nirmus nigripictus*: 2♂, Fort Robinson, Nebraska, U.S.A., 2 Dec. 1895, L. Broner, 242 (NHML); 3♂, same data (USNM), 1♀, same locality, 14 Dec. 1895, W.D. Hunter (USNM).

Non-types ex ***Pica pica pica* [some as *Pica leucoptera*]:** 1♀, Senj [as "Zengg], Croatia, F. Dobiasch, [BM] 1913-450 (NHML).

Non-types ex ***Pica pica bactriana*:** 29♂, 34♀, Kabul, Afghanistan, Apr. 1937, R. Meinertzhagen, 9535–9 (NHML); 2♂, Bamyan, [Bamyan Province,] Afghanistan, 3 Oct. 1963, H. Klockenhoff, 200, 18253–4 [on reverse] (OSUS); 1♂, Ladakh, elev. 10200 ft, [Jammu and Kashmir,] India, May 1925, R. Meinertzhagen, 962 (NHML); 2♂, 2♀, Eichler Collection, 3053 (MFNG); 2♂, 2♀, Tadzjikistan, 7 Jan. 1941, IN1379/14-1–2 (MFNG).

Non-types ex ***Pica hudsonica*:** 2♂, 2♀, Logan, Utah, U.S.A., 17 Nov. 1946, one slide marked 9530 [on reverse] (OSUS); 2♂, 2♀, 13 miles N Boise City, Cimarron County, Oklahoma, U.S.A., 6 Jun. 1957, G.M. Sutton (OSUS); 1♂, 1♀, Walla Walla, Washington, U.S.A., "Spring" 1957, John Irvine, 1 (OSUS); 4♂, 4♀, "R.S.", "L'bge", Alta, [Utah?, U.S.A.?,] 30 Jan. 1956, R. Connoll, 1956-761 (NHML); 1♀, "North America", R. Meinertzhagen, 4059 (NHML); 8♂, 2♀, Weld County, Colorado, U.S.A., 18 Nov. 1949, BM1950-32 (NHML); 2♂, 2♀, 13 miles N of Boise City, Cimarron County, Oklahoma, U.S.A., 6 Jun. 1957, G.M. Sutton (PIPeR); 2♂, 5♀, Clover, Tooele County, Utah, U.S.A., 26 Apr. 1965, (PIPeR); 5♂, 5♀, Simpson Springs, Tooele County, Utah, U.S.A., 19 Oct. 1964, (PIPeR); 1♂, Clover, Tooele County, Utah, U.S.A., May 1965, (PIPeR).

Non-types ex ***Pica nuttalli* [some as *Pica pica*]:** 4♂, 3♀, California, U.S.A., Mar. 1923, R. Meinertzhagen, 954 (NHML); 1♂, 3♀, Napa County, California, U.S.A., Jul. 1943, 9525–7, 9529 (OSUS).

***Hecatrishula bipunctata* (Rudow, 1870)**

Non-types ex ***Corvus albus*:** 1♀, Sudan, May 1936, R. Meinertzhagen, 7942 (NHML).

***Hecatrishula cryptoleuca* (Ansari, 1957)**

Type material ex ***Corvus cryptoleuca*: Holotype** ♂, Texas, U.S.A., Dec. 1880, R. Meinertzhagen, 46 (NHML); **allotype** 1♀, same data as holotype (NHML); **paratypes [**localitiy is outside the range of this species, either the host or the locality are likely to be wrong**]:** 4♂, 6♀, Illinois, U.S.A., R. Meinertzhagen, 12668 (NHML); 1♂, 1♀, same data as previous (OSUS).

Non-types ex ***Corvus corax sinuatus*** [as ***Corvus corax*]:** 2♂, 1♀, Las Vacas, Coahuila, México, 5 Jul. 1958, C.A. Ely, CAE-607 (NHML); 2♂, 1♀, same data as previous (OSUS); 1♂, Tulare Lake, California, U.S.A., 2 Oct. 1948, C.M. Herman (OSUS); 1♂, Fort Apache, Arizona, U.S.A., 2 Aug. 1940, A.R. Philips, 14380 (OSUS); 2♂, 3♀, Skull Valley, Tooele County, Utah, U.S.A., 19 Feb. 1964, 3990 (PIPeR); 2♀, Vernon, Tooele County, Utah, U.S.A., 9 Feb. 1967, 070451 (PIPeR); 2♀, Northern Skull Valley, Tooele County, Utah, U.S.A., 15 Feb. 1962 (PIPeR); 6♂, 5♀, Tooele Army Depot, Tooele County, Utah, U.S.A., 14 Jun. 1974, 74-0022 (Ce) (PIPeR); 21♂, 36♀, Skull Valley, Tooele County, Utah, U.S.A., 6 Jul. 1964, 5462–4 (PIPeR).

***Hecatrishula docilis* (Ansari, 1956)**

Type material ex ***Pyrrhocorax pyrrhocorax barbarus*** **[**as ***Pyrrhocorax pyrrhocorax pyrrhocorax*** or ***Pyrrhocorax pyrrhocorax docilis*]: Holotype** ♂, Morocco, Nov. 1938, R. Meinertzhagen, 12439 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 7♂, 1♀, same data as holotype (NHML); 21♂, 20♀, Morocco, Nov. 1938, R. Meinertzhagen, 12250 (NHML).

Non-types ex ***Pyrrhocorax pyrrhocorax barbarus*** [as ***Pyrrhocorax pyrrhocorax pyrrhocorax*** or ***Pyrrhocorax pyrrhocorax docilis*]:** 1♂, 6♀, Tangier, [Tangier-Tetouan Region,] Morocco, R. Meinertzhagen, 3108 (NHML); 3♂, 5♀, Morocco, Nov. 1938, R. Meinertzhagen, 12250 [Meinertzhagen No.], 835 [Eichler No.] (MFNG).

Non-types ex ***Pyrrhocorax pyrrhocorax erythrorhamphos*** **[**as ***Pyrrhocorax pyrrhocorax pyrrhocorax*]:** 1♂, 1♀, "Pyrenées", Apr. 1932, R. Meinertzhagen, 828 (NHML).

Non-types ex ***Pyrrhocorax pyrrhocorax docilis*** **[**some as ***Pyrrhocorax pyrrhocorax himalayensis*, *Pyrrhocorax pyrrhocorax pontifex*,** or ***Pyrrhocorax pyrrhocorax pyrrhocorax*]:** 1♂, 1♀, Bamyan, [Bamyan Province,] Afghanistan, 3 Oct. 1963, H. Klockenhoff, 193/196, 18251–2 [on reverse] (OSUS); 14♂, 11♀, Afghanistan, Apr. 1937, R. Meinertzhagen, 9737 and 9766 (NHML); 15♂, 14♀, Apr. 1937, R. Meinertzhagen, 9966–8 (NHML); 33♂, 28♀, Kabul, Afghanistan, Apr. 1937, R. Meinertzhagen, 9597 (NHML); 3♂, 3♀, "East Persia", Iran, Dec. 1926, R. Meinertzhagen, 834 (NHML); 3♀, Crete, Greece, Jun. 1920, R. Meinertzhagen, 836 (NHML); 4♂, 4♀, Sar Planina, Kosovo, 8 Jun. 1953, S.D. Matvejev, 2458–60, 2462–3, 2466–8. 1♂, Sar Planina, Kosovo, 9 Jun. 1953, S.D. Matvejev, 2457 (PMSL); 2♀, Sar Planina, KOSOVO, 10 Jun. 1953, S.D. Matvejev, 2455–6 (PMSL); 1♂, 1♀, Sibije, Sar Planina, KOSOVO, 10 Jun. 1953, S. Brelih, 2454, 2464 (USNM).

Non-types ex ***Pyrrhocorax pyrrhocorax himalayanus*** **[**some as ***Pyrrhocorax pyrrhocorax himalayensis*]:** 6♂, 6♀, Lachung, Sikkim, India, 19 Feb. 1952, R. Meinertzhagen, 19991, BM1952-143 (NHML); 11♂, 2♀, Kashmir, India, Apr. 1925, R. Meinertzhagen, 830, 832 (NHML); 4♂, 8♀, Kashmir, India, Mar. 1925, R. Meinertzhagen, 3109–10 (NHML); 1♂, 1♀, Gosaikund Lake, Nuwakot, Bagmati Zone, Central Region, Nepal, 10 Sep. 1968, NP-121, 12339 (OSUS); 10♂, 3♀, Makalu Base Camp, elev. 4850 m, "Himalaya", Nepal, 16 Oct. 1972, J. Gregori, 11461–72 (PMSL).

Non-types ex ***Pyrrhocorax pyrrhocorax graculus*:** 1♀, "Pyrenées", Apr. 1932, R. Meinertzhagen, 3013 (NHML) [slide countains *Hecatrishula biguttata*].

Non-types ex ***Pyrrhocorax graculus digitatus*** [as ***Pyrrhocorax graculus forsythi*]:** 1♂, Ladakh, [Jammu and Kashmir,] India, Apr. 1925, R. Meinertzhagen, 3015 (NHML) [slide contains *Hecatrishula biguttata*].

***Hecatrishula koslovae* (Clay, 1936)**

Type material ex ***Podoces biddulphi*: Holotype** ♂, "Kashgaria", China, Sep. 1889, R. Meinertzhagen, 2994 (NHML); **paratypes:** 2♂, 8♀, same data as holotype (NHML); 7♂, 3♀, "Kashgaria", China, Sep. 1889, R. Meinertzhagen, 3558, 816 (NHML); 1♂, 2♀, "E. Turkestan", [China?], R. Meinertzhagen, 1774 (USNM).

Type material ex ***Podoces hendersoni* Paratypes:** 3♂, 1♀, Mongolia, Apr. 1887, R. Meinertzhagen, 818 (NHML); 2♀, Mongolia, Feb. 1887, R. Meinertzhagen, 820 (NHML); 1♂, 3♀, Mongolia, Dec. [1886?], R. Meinertzhagen, 2990 (NHML).

Non-types ex ***Podoces hendersoni*:** 6♂, 4♀, "Kashgaria", China, R. Meinertzhagen, 1772 (NHML) [slide contains unidentified *Degeeriella*].

***Hecatrishula multipunctata* (Clay, 1936)**

Type material ex ***Nucifraga multipunctata*** [as ***Nucifraga caryocatactes multipunctata*]: Holotype** ♂, Kashmir, India, Mar. 1925, R. Meinertzhagen, 978 (NHML); **paratypes:** 3♀, same data as holotype (NHML); 3♂, 3♀, Kashmir, India, Mar. 1925, R. Meinertzhagen, 974, 976 (NHML).

Non-types ex ***Nucifraga multipunctata*** [as ***Nucifraga ccaryocatactes multipunctata*]:** 7♂, 26♀, Kashmir, India, Mar. 1935, R. Meinertzhagen, 974 (NHML).

Hecatrishula nawabi **(Ansari, 1957)**

Type material ex ***Corvus capensis capensis*****: Holotype** ♂, NAMIBIA [as "S.W. Africa"], R. Meinertzhagen, 13469 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 1♀, same data as holotype (NHML); 2♀, "Damaraland", NAMIBIA, R. Meinertzhagen, 4050 (NHML).

Hecatrishula varia **(Burmeister, 1838)**

Type material ex ***Corvus frugilegus frugilegus*****: Paratypes** of *Corvonirmus perforatus*: 1♂, Opatowice, Poland, 15 Jan. 1952, [J.] Zlotorzycka, 1/G/26-2 (MFNG). 1♀, Wroclaw, Poland, 4 Feb. 1960, [J.] Zlotorzycka, 1/c/76-2 (MFNG).

Non-types ex ***Corvus monedula spermologus*****:** 3♂, 1♀, Heligoland, Schleswig-Holstein, Germany, 15 Jul. 1925 [Note that these slides are extremely poorly prepared, and the specimens are almost entirely transparent and hard to see.] (OSUS); 4♂, 3♀, Zbilje, Medvode, Slovenia, 25 Mar. 1955, S. Brelih, 197, 1571–2, 2576–9 (PMSL); 1♂, Kopaonik, elev. 1760 m, Serbia, 25 Nov. 1951, S. Brelih, 2759 (PMSL); 1♀, Péc, Kosovska Mitrovica, KOSOVO, 14 May 1969, Exped. CSAV, 10700 (PMSL); 1♀, Metkovic, Croatia, 1 Dec. 1964, A. Lesinger, 11842 (PMSL); 1♂, 1♀, Okol, Prizren, KOSOVO, 11 May 1969, Exped. CSAV, 11418–9 (PMSL).

Non-types ex ***Corvus monedula soemmerginii*****:** 1♂, 1♀, St. Kriz, Senj [as "Zengg"], [Lika-Senj County,] Croatia, 1913, F. Dobiasch, 1913-450 (NHML); 1♂, 1♀, Beth-Gubrin [= Bet Guvrin?,] Israel, 9 May 1959, 788/9, Brit. Mus. 1959-541 (NHML); 1♂, 2♀, Mikra Bay, [Central Macedonia Region,] Greece, 26 Oct. 1917, J. Waterston, BM1930-232 (NHML); 8♂, 13♀, Afghanistan, May 1937, R. Meinertzhagen, 10253–4 (NHML) [slide contains unidentified menoponid].

Non-types ex ***Corvus monedula monedula*****:** 2♂, 1♀, Sweden, Oct. 1946, R. Meinertzhagen, 16109 (NHML); 1♂, 3♀, Estonia, Aug. 1934, R. Meinertzhagen, 1526, 1528, 1530 (NHML).

Non-types ex ***Corvus monedula*** **ssp.:** 1♀, Eichler Collection, 411 (MFNG); 3♀, Tartu [as Dorpat], Estonia, Grube, IN1287/31-1–3 (MFNG).

Non-types ex ***Corvus dauuricus*** **[**as ***Corvus dauuricus khamensis*****]:** 4♀, "South East Tibet", China, R. Meinertzhagen, 4055 (NHML).

Non-types ex ***Corvus frugilegus frugilegus*****:** 1♂, 2♀, Eichler Collection, 3524, 3766, 7764, 50010 (MFNG); 1♀, Wolffhügel, IN1278/38/1 (MFNG); 13♂, 9♀, Ireland, Aug. 1937, R. Meinertzhagen, 10426–8 (NHML); 1♂, 1♀, Norfolk, England, United Kingdom, Jan. 1941, R. Meinertzhagen, 14083 (NHML); 1♂, 1♀, Windermere, Cumbria, England, United Kingdom, 23 May 1929, A.H.B. & W.H.P. (NHML); 1♀, Cumbria [as "Cumberland"], England, United Kingdom, Apr. 1941, R. Meinertzhagen, 14167 (NHML); 1♀, Orkney Islands, Scotland, United Kingdom, Aug. 1938, R. Meinertzhagen, 11571 (NHML); 6♀, South Uist, Hebrides, Scotland, United Kingdom, Jan. 1934, R. Meinertzhagen, 88 (NHML); 1♂, 1♀, Aberdeen, Scotland, United Kingdom, 30 Apr. 1964, Eskgrove Lab, Brit. Mus. 1965-641 (NHML); 2♂, 1♀, Aberdeen, Scotland, United Kingdom, 31 Mar. 1964, Eskgrove Lab, Brit. Mus. 1964-312 (NHML); 1♂, 1♀, Aberdeen, Scotland, United Kingdom, 25 Apr. 1966, Lasswade Veterinary Lab, Brit. Mus. 1967-654 (NHML); 3♀, Wiltshire, England, United Kingdom, May 1945, R. Meinertzhagen, 15426 (NHML); 1♂, Lancashire, England, United Kingdom, 1 Feb. 1963, Eskgrove Veterinary Lab, Brit. Mus. 1963-240 (NHML); 2♂, 1♀, Lancashire, England, United Kingdom, 6 Apr. 1964, Brit. Mus. 1964-182 (NHML); 1♂, Shropshire, England, United Kingdom, 20 Apr. 1958, R.S. George, Brit. Mus. 1959-167 (NHML); 1♂, Gloucestershire, England, United Kingdom, 19 May 1954, R.S. George, Brit. Mus. 1954-565 (NHML); 11♂, 8♀, Cornwall, England, United Kingdom, Jan. 1937, R. Meinertzhagen, 8290 (NHML); 1♀, Hampshire, England, United Kingdom, Jun. 1941, R. Meinertzhagen, 14362 (NHML); 1♀, Westmorland, England, United Kingdom, 4 Jun. 1933, G.H.E. Hopkins, Brit. Mus. 1955-616 (NHML); 1♂, 1♀, Kfar Blum, [Northern District,] Israel, 31 Oct. 1960, 1236, Brit. Mus. 1961-403 (NHML); 1♂, "Rhein", Germany, C. Hilgest, BM1930-232 (NHML); 2♂, 1♀, Kincardine, Fife, Scotland, United Kingdom, 29 Apr. 1963, Brit. Mus. 1963-501 (NHML); 1♂, 1♀, locality unknown, "Ely 1914" [?], BM1936-311 (NHML); 2♂, 2♀, Csikéria, Bács-Kiskun, Hungary, 8 Nov. 1964, J. Rékási, 11454–7 (PMSL); 1♂, 1♀, Tataháza, Bács-Kiskun, Hungary, 21 Apr. 1971, J. Rékási, 11458–9 (PMSL); 1♀, Tomacevo, Ljubljana, Slovenia, 28 Nov. 1950, S. Brelih, 196 (PMSL); 7♂, 10♀, Medjimurje, Croatia, 15 Feb. 1963, A. Lesinger, 7626–9, 7631–41, 7643–4 (PMSL).

Non-types ex ***Corvus frugilegus pastinator*****:** 2♂, 3♀, "N. China", China, R. Meinertzhagen, 4019 (NHML); 1♀, Kinkiang, Yunnan, China, 31 Jan. 1912, 1934.1.1.3785, Brit. Mus. 1975-356 (NHML).

Non-types ex ***Corvus corone corone*****:** 1♂, 2♀, Fulton Park, "Resthorne", [Bedfordshire?, England,] United Kingdom, 25 Apr. 1924, D.K. Lawson (NHML).

Non-types ex ***Corvus corone orientalis*****:** 12♂, 19♀, Afghanistan, May 1937, R. Meinertzhagen, 10227–9 (NHML).

Melibrueelia novaeseelandiae **Valim & Palma, 2015**

Non-types ex ***Anthornis melanura melanura*** **[**as ***Anthornis melanura dumerilli*****]:** 1♂, 1♀, North Island, New Zealand, L. Harrison collection, BM 1934-570 (NHML).

Non-types ex ***Prosthemadera novaeseelandiae novaeseelandiae*****:** 5♀, North Island, New Zealand, L. Harrison Collection, BM 1934-570 (NHML).

***Meropoecus caprai* Conci, 1941**

Non-types ex ***Merops orientalis orientalis*****:** 2♂, 3♀, Bombay, India, Feb. 1937, R. Meinertzhagen, 8483 (NHML).

Non-types ex ***Merops orientalis ferrugeiceps*** **[**some as ***Merops orientalis birmanus*****]:** 1♂, 3♀, Ban Bo Kaeo, Chiang Mai Province, Thailand, 2 Feb. 1962, K. Thonglongya, V 387 or V389 (PIPeR); 1♂, Dansai, Na Haeo, Leoi Province, Thailand, 1 Nov. 1954, [R.E.] Elbel, RE-4242, B-31019 (PIPeR); 1♂, Mount Derwan, Lopburi Province, Thailand, [R.E.] Elbel & [H.G.] Deignan, RE-2779, RT-B-21652 (PIPeR); 1♂, 1♀, Khao Khong Sala, Khaothong Subdistrict, Phayuha Khiri District, Nakhon Sawan Province, Thailand, 15 May 1953, [R.E.] Elbel, RE-2562, RT-B-21084 (PIPeR); 1♂, 18 miles N of Myitkyina, Myanmar, 29 Dec. 1944, H.S. Fuller, BM1947-321 (NHML).

***Meropoecus debeauxi* Conci, 1941**

Non-types ex ***Merops pusillus pusillus*****:** 2♂, 1♀, Freetown, Sierra Leone, 18 Mar. 1912, H. Kelsall (NHML); 7♂, 4♀, River Niger, Bida, Nigeria, 20 May 1965, C.H. Fry, Brit. Mus. 1967-88 (NHML).

Non-types ex ***Merops orientalis viridissimus*** **[**as ***Merops orientalis*****]:** 6♂, 3♀, Potiskum, Nigeria, 4 Jul. 1965, C.H. Fry, Brit. Mus. 1967-88 (NHML).

Non-types ex ***Merops revoilii*****:** 2♂, 3♀, Somaliland, Somalia, Jan. 1949, R. Meinertzhagen, 18183 (NHML).

***Meropoecus emersoni* Tendeiro, 1961**

Non-types ex ***Merops bulocki*****:** 6♂, 6♀, "N. Ghana", Ghana, 1969, I. Taylor, Brit. Mus. 1970-617 (NHML).

***Meropoecus meropis* (Denny, 1842)**

Type material ex ***Merops apiaster*****: Holotype** ♀, Belfast, Northern Ireland, United Kingdom, Denny Collection, [BM] 1852-98 (NHML); **paratypes:** 1♀, same data as holotype (NHML).

Non-types ex ***Merops apiaster*****:** 2♂, 2♀, Johannesburg, Transvaal, South Africa, 15 Nov. 1968, J. Ledger, BM1972-382 (NHML); 1♂, 1♀, Kafr Ibgig [?], El Wasta, Beni Suef, EGYPT, 30 Apr.? 1958, BM-1959-475 (NHML); 1♂, 1♀, Mityana, Uganda, 8 Jan. 1939, G.H.E. Hopkins (NHML); 2♂, 1♀, Defilia, near Figuig, Morocco, 12 Spr. 1966, A. Hutson, BM1966-241 (NHML); 5♂, 4♀, near Limasol, CYPRUS, 25 Sep. 1945, G.A. Maoromoustaki [?] (NHML); 1♂, 1♀, Wadi Milec [?], Israel, 23 Jul. 1957, 159–162, BM 1958-520 (NHML); 1♀, Quetta, Afghanistan, May 1913, R. Meinertzhagen, 2746 (NHML); 2♀, Slivem, Bulgaria, 27 May, 1957, F. Balát, BM 1972-342 (NHML); 1♂, 1♀, "S. Spain", Spain, 21 Apr. 1961, Varma No. A252, BM 1962-325 (NHML); 1♂, locality unknown, originally from South Africa Museum (NHML); 1♂, 1♀, "Stavros", locality unknown, 23 May 1918, J. W[aterston] (NHML); 2♂, 3♀, Eichler Collection, 1373, 3052 (MFNG); 1♂, 2♀, [Poltava Oblast,] Ukraine, 18 Jun. 1942, Eichler Collection, 2745 (MFNG); 2♂, 1♀, Tadzjikistan, 8 May 1934, IN1379/5-1–2 (MFNG).

Non-types ex ***Merops persicus persicus*** **[**as ***Merops superciliosus persicus*****]:** 1♂, 3♀, EGYPT, May 1936, R. Meinertzhagen, 4605–7 (NHML).

***Meropoecus smithi* Emerson & Elbel, 1956**

Type material ex ***Merops leschenaulti leschenaulti*****: Paratypes:** 1♂, 1♀, Ban Khlua Klang, Prachuap Khiri Khan Province, Thailand, 9 Dec. 1952, [R.E.] Elbel & [H.G.] Deignan, RE-1597 or RE-1599, RT-B-17098 or RT-B-17100 (PIPeR); 1♂, Chiang Saen Kao, Chiang Rai Province, Thailand, 19 Feb. 1953, [R.E.] Elbel & [H.G.] Deignan, RE-2290, RT-B-17794 (PIPeR); 1♂, Hinlaem Thakhanum, Kanachanaburi Province, Thailand, 3 Nov. 1952, [R.E.] Elbel & [H.G.] Deignan, RE-1398, RT-B-15835 (PIPeR).

Non-types ex ***Merops leschenaultii leschenaultii*****:** 1♂, 1♀, Thus Madi Mountains, Pampang, Ulu Kaingaruh [?], North Borneo, Indonesia, Aug. 1953, "U.S. Army Bait. Col. Off. Res. Unit", RT-B-20901 (PIPeR) [locality outside range of host species, and may be in error]; 3♂, 1♀, Thung Nui, Saton province, Thailand, 3 Sep. 1963, W. Songprakob & W. Sowanlaong, WS466 or WS526 (PIPeR).

***Meropsiella bullockoda* (Williams, 1981)**

Type material ex ***Merops bullockoides*** **[**as ***Melittophagus bullockoides*****]: Holotype** ♂, Kenya, A.G. Canaris, Brit. Mus. 1965-42 (NHML); **paratypes**: 2♀, Zambia, Apr. 1939, R. Meinertzhagen, 13511 (NHML).

Non-types ex ***Merops bullockoides*** **[**as ***Melittophagus bullockoides*****]:** 1♂, 1♀, same data as holotype (NHML) [slide contains *Meropoecus*]. 4♂, 10♀, locality unknown, Mar. 1936, R. Meinertzhagen, 7400, 7331, 7364, 7216, 7399 (NHML); 1♂, Bene Poste, Mozambique, 18 Sep. 1964, A.L. Moore, A-87, 20148 (OSUS).

Meropsiella erythropteri **(Piaget, 1885)**

Type material ex ***Merops pusillus cyanostictus*****: Lectotype** ♂, Locality unknown, Piaget Collection, 1267 (NHML).

Non-types ex ***Merops pusillus cyanostictus*****:** 1♀, Somaliland, Somalia, Jan. 1949, R. Meinertzhagen, 18110 (NHML).

Non-types ex ***Merops pusillus meridionalis*****:** 1♂, 13°22'47'' S, 34°00'09'' E, Ntchisi Forest Reserve, Malawi, 1 Oct. 2005, John M. Bates, FMNH-INS 0000 029 974 [DNA voucher for Brsp.Mepu.4.5.2011.8] (FMNH); 3♀, Onderstepoort, Transvaal, South Africa, 7 Nov. 1919, G.A.H. Bedford (NHML); 2♀, Transvaal, South Africa, R. Meinertzhagen, 3974 (NHML).

Non-types ex ***Merops albicollis*****:** 2♀, Ghana [DNA voucher for Brsp.Mealb.3.26.2012.25A–B] (PIPeR); 1♂, 1♀, Yaounde, Cameroon, 1955, J. Mouchet (NHML); 1♀, Freetown, Sierra Leone, 7 Nov. 1912, H. Kelsall (NHML).

Non-types ex ***Merops bullocki*** **[**as ***Melittophagus bullocki*****]:** 1♂, 5♀, Motel Mole Game Reserve, near Damongo, Northern Region, Ghana, 16 Aug. 1968, Oxford University Ornithological Expedition, Brit. Mus. 1975-83 (NHML); 2♂, 4♀, Northern Region, Ghana, 1969, I. Taylor, Brit. Mus. 1970-617 (NHML).

Non-types ex ***Merops gularis gularis*****:** 1♀, Ghana, 18 Feb. 2000, J. Weckstein, JDW-391 [DNA voucher for sequence Brsp.megul.4.17.2000.2] (PIPeR).

Non-types ex ***Merops hirundineus*** **[**some as ***Dicrocercus hirundineus*****]:** 2♂, 4♀, Dodoma, Tanzania, Jul. 1957, R. Meinertzhagen, Brit. Mus. 1957-466, 20593 (NHML); 1♀, Salisbury, Zimbabwe, 2 Sep. 1964, C.H. Fry, Brit. Mus. 1967-88 (NHML); 1♂, Fisenje, Zimbabwe, 5 Jul. 1953, ML/91, Brit. Mus. 1953-638 (NHML); 1♂, 2♀, Luanshya, Zimbabwe, 18 Jun. 1952, ML/50, Brit. Mus. 1953-245 (NHML).

Non-types ex ***Merops leschenaultii leschenaultii*****:** 4♂, 4♀, Muang Kluang, Kapor, Ranong Province, Thailand, 3 Feb. 1963, W. Songprakob, RE-7068 (OSUS); 1♂, 1♀, Ban Khlua Klang, Prachuap Khiri Khan Province, Thailand, 9 Dec. 1952, R.E. Elbel, RE-1597, RT-B-17098 (OSUS).

Non-types ex ***Merops nubicoides*****:** 1♂, 2♀, Salisbury, Zimbabwe, Nov. 1964, C.H. Fry, Brit. Mus. 1967-88 (NHML).

Non-types ex ***Merops nubicus*****:** 1♂, 2♀, Sudan, May 1936, R. Meinertzhagen, 7931–2 (NHML).

Non-types ex ***Merops oreobates*** **[**as ***Merops lafresnayii oreobates*****]:** 2♂, 6♀, Nanyuki, Kenya, Mar. 1949, R. Meinertzhagen, 18849 (NHML).

Non-types ex ***Merops orientalis cleopatra*** **[**as ***Merops pusillus cleopatra*****]:** 1♀, Egypt, May 1936, R. Meinertzhagen, 4656 (NHML).

Non-types ex ***Merops orientalis ferrugeiceps*****:** 1♂, 1♀, Ban Huathang, Khlong Khlung District, Kamphaeng-Phet Province, Thailand, 9 Apr. 1953, [R.E.] Elbel & [H.G.] Deignan, RE-2364, RT-B-17859 (NHML).

Non-types ex ***Merops orientalis orientalis*****:** 1♂, 3♀, Nepal, Mar. 1937, R. Meinertzhagen, 9390–1 (NHML); 1♂, 2♀, Lucknow, India, Brit. Mus. 1951-444 (NHML); 12♂, 4♀, Bombay, India, Feb. 1937, R. Meinertzhagen, 8458–60 (NHML).

Non-types ex ***Merops orientalis viridissimus*****:** 9♂, 11♀, Sudan, Dec. 1947, R. Meinertzhagen, 16893–5 (NHML).

Non-types ex ***Merops persicus persicus*****:** 2♂, Isiolo, Kenya, Jan. 1956, R. Meinertzhagen, 20448 (NHML); 2♂, 2♀, Afghanistan, May 1937, R. Meinertzhagen, 10161–3 (NHML); 3♂, 2♀, Mesiloth, Israel, 19 Apr. 1960, BM1975-77 (NHML).

Non-types ex ***Merops philippinus*** [some as *M. ph. javanicus*]: 1♂, 1♀, Point Calimere [Tamil Nadu], India, 13 Sep. 1969, XE-262, AB-27091 (OSUS); 1♂, 1♀, Rur Chang, Khao, Songkhla Province, Thailand, 19 Nov. 1961, W. Songprakob, REE-6016 (OSUS).

Non-types ex ***Merops revoilii*****:** 2♂, 4♀, Somaliland, Somalia, Jan. 1949, R. Meinertzhagen, 18190, 18225 (NHML).

Non-types ex ***Merops variegatus loringi*** **[**as ***Merops variegatus variegatus*****]:** 2♀, Uganda, Apr. 1936, R. Meinertzhagen, 7680 (NHML).

Non-types ex ***Merops viridis*** **[**some as ***Merops sumatranus*****]:** 3♂, 8♀, Thailand, Nov. 1938, R. Meinertzhagen, 13578 (NHML); 1♂, Nam Noi, Kradyai, Songkhla Province, Thailand, 15 Apr. 1962, W. Songprakob, RE-6133 (OSUS); Songei Buloh, Selangor, Malaysia, 18 Jan. 1956, R-44435 (OSUS).

Mirandofures astrildae **(Tendeiro & Mendes, 1994)**

Non-types ex ***Estrilda astrild*****:** 1♂, 1♀, East of Magenta, New Caledonia, 23 Aug. 1983, P. Millener, (MONZ).

Mirandofures amandavae **(Rékási & Saxena, 2005)**

Non-types ex ***Amandava amandava amandava*****:** 3♀, Sind, India, Jan. 1937, R. Meinertzhagen, 19361 (NHML); 1♀, "in captivity", locality unknown, 17 Apr. 1987, R.S. Balter, Brit. Mus. 1969-101 (NHML); 1♂, 1♀, Uttar Pradesh, Rampur, India, 1 Sep. 2002, A.K. Saxena, GLA 932 (MONZ).

Non-types ex ***Amandava amandava punicea*** **[**as ***Amandava amandava*****]:** Paknampho, Nakhon Sawan Province, Thailand, 30 Apr. 1953, R.E. Elbel, RE-1756, RT-B-21012 (PIPeR).

Mirandofures muniae **(Eichler, 1957)**
Type material ex ***Lonchura maja*****: Holotype** ♀, Medan, Sumatra, Indonesia, 744 (MFNG).
Non-types ex ***Lonchura maja*****:** 1♂, 1♀, Dragon Aviaries, England, Nov. 1975 (MONZ).

Mirandofures stenozona **(Kellogg & Chapman, 1902)**
Type material ex ***Lonchura punctulata nisoria*****: Syntypes:** 2♀, Hilo, Hawai'I, U.S.A., R.C. McGregor, 1222a, EMEC 225173 (EMEC).
Non-types ex ***Lonchura punctulata nisoria*****:** 1♀, Tjiburial, Bogor Regency, Western Java Province, Indonesia, 6 Mar. 1968, 8E-0824, 23142 [on reverse] (OSUS).
Non-types ex ***Lonchura punctulata topela*** **[**as ***Lonchura punctulata*****]:** 2♂, Bansanluang, San Sai District, Chiang Mai province, Thailand, 14 Jun. 1962, K. Thonglongya, SEATO 1090, 23141 [on reverse] (OSUS); 1♂, 1♀, Ban Pong, San Sai District, Chiang Mai Province, Thailand, 26 Feb. 1962, K. Thonglongya, 549 (PIPeR); 1♂, 1♀, Ban Chiang Kian, Chiang Mai Province, Thailand, 3 Mar. 1963, K. Thonglongya, SEATO 930 (PIPeR); 1♂, Khlong Khlung District, Kamphaeng-Phet Province, Thailand, 13 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2419, RT-B-17898 (PIPeR); 1♂, 1♀, Taipei, Taiwan, 22 Oct. 1964, K.S. Lin, TMT-2168–72 (UMSP).

Motmotnirmus guatemalensis **(Dalgliesh, 1971)**
Type material ex ***Campephilus guatemalensis*****: Holotype** ♂, Santa Clara, Chiriqui Province, Panama, 15 Feb. 1956, G. Hartman, Brit. Mus. 1956-449 (NHML); **allotype** ♀, same data as holotype (NHML).

Motmotnirmus humphreyi **(Oniki & Emerson, 1982a)**
Non-types ex ***Baryphthengus ruficapillus*****:** 1♂, 4♀, Barro Colorado Island, Panama, 12 Jan. 1971, 1153 (OSUS); 2♂, 4♀, Pachicutza, 35 km ESE of Zamora, Provice Zamore-Chinchipe, Ecuador, 25 Jul. 1989, JC-292 (OSUS); 7♂, 14♀, Cerro di Pantiacolla, evel. 680 m, Department of Madre de Dios, Perú, 8 Nov. 1985, D.H. Clayton, 1018 (UMSP); 3♂, 6♀, Cerro di Pantiacolla, evel. 680 m, Department of Madre de Dios, Perú, 11 Nov. 1985 (UMSP).

Motmotnirmus xilitla **(Carriker, 1954)**
Type material ex ***Momotus coeruliceps coeruliceps*** [as ***Momotus momota coeruliceps***]**: Paratypes:** 2♀, Xilitla, San Luis Potosi, México, 12 Feb. 1947, R. Newman, 478, 497, Brit. Mus. 1968-455 (NHML).
Non-types ex ***Momotus coeruliceps coeruliceps*** **[as *Momotus momota coeruliceps*]:** 1♂, 1♀, México, 7 Mar. 1965, Herbert Trevino, 12387–8 [on reverse] (NHML); 2♂, 2♀, Eichler Collection, 178, 184 (MFNG).

Olivinirmus clayae **(Ansari, 1956)**
Type material ex ***Cyanocitta cristata*****: Holotype** ♂, Virginia, U.S.A., Feb. 1939, R. Meinertzhagen, 12657–58 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 10♂, 11♀, same data as holotype (NHML); 1♂, 1♀, same data as holotype (OSUS); 2♂, 6♀, Virginia, U.S.A., Feb. 1939, R. Meinertzhagen, 12615 (NHML).
Non-types ex ***Cyanocitta cristata*****:** 1♂, 2♀, Richmond, Virginia, U.S.A., 8 Jul. 1931, E.B. Marshall, 15850 (UMSP); 5♂, 5♀, Carlos Avery, Minnesota, U.S.A., 21 Oct. 1964, J.R. Beer (UMSP); 1♂, 1♀, Carlos Avery, Minnesota, U.S.A., 21 Oct. 1964, J.R. Beer, UT-10–11 (PIPeR).
Non-types ex ***Cyanocitta stelleri*****:** 1♀, San Antonia de las Alazanas, Texas, U.S.A., 7 Nov. 1958, C.A. Ely, CAE1074 [locality out of known range, may be misidentified] (PIPeR).
Non-types ex ***Cyanocitta stelleri stelleri*****:** 1♂, 1♀, Trinity Valley, British Columbia, Canada, 29 Jan. 1947, 1948-229 (NHML).
Non-types ex ***Cyanocitta stelleri coronata*****:** 1♂, 1♀, México, R. Meinertzhagen, 4075 (NHML).

Olivinirmus cyaneus **(Carriker, 1963)**
Non-types ex ***Cyanocorax cayanus*****:** 2♂, 4♀, Kanaku Mountains, Rupununi, BRITISH GUIANA, 22 Feb. 1961, T. Clay, 155 (NHML).

Olivinirmus hopkinsi **(Ansari, 1956)**
Type material ex ***Cyanocorax yncas galeatus*****: Holotype** ♂, Colombia, R. Meinertzhagen, 4077 (NHML); **allotype** ♀, same data as holotype (NHML). **Allotype** ♀ of *Brueelia yncas*, San Esteban, Venezuela, 29 Oct. 1910, M.A. Carriker, Jr., 8482 (USNM).

***Olivinirmus husaini* (Ansari, 1956)**

Type material ex ***Urocissa flavirostris cucullata*: Holotype** ♂, Kashmir, India, Mar. 1925, R. Meinertzhagen, 944 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 7♂, 10♀, same data as holotype, some with number 948 (NHML); 1♂, 1♀, Kashmir, India, Sep. 1925, R. Meinertzhagen, 946 (NHML); 6♂, 4♀, Kashmir, India, Mar.

Non-types ex ***Urocissa flavirostris cucullata*:** 3♂, 6♀, Mandi [as Maundi], Himachal Pradesh, India, EMEC 225363–6 (EMEC).

Non-types ex ***Urocissa erythrorhynchus occipitalis* [**as ***Urocissa melanocephala occipitalis*]:** 2♂, 5♀, Nepal, Mar. 1937, R. Meinertzhagen, 10616 (NHML); 2♀, Dehradun [as Dahra Dun], Uttarakand, India, Harrison Collection (NHML).

***Olivinirmus keleri* (Carriker, 1963)**

Type material ex ***Cyanocorax chrysops chrysops*: Allotype** ♀, Rio Lipeo, Bolivia, 20 Aug. 1936, M.A. Carriker, Jr., 770 (USNM).

***Olivinirmus meinertzhageni* (Ansari, 1956)**

Type material ex ***Dendrocitta vagabunda* ssp. [**as ***Dendrocitta rufa vagabunda*]: Holotype** ♂, Nepal, Mar. 1937, R. Meinertzhagen, 9283 & 9385 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 15♂, 26♀, same data as holotype, some with number 9280–1, 9283–5 (NHML); 2♂, 7♀, Myanmar, R. Meinertzhagen, 4061 (NHML); 1♀, Deccan, India, Feb. 1937, R. Meinertzhagen, 8684 (NHML).

Non-types ex ***Dendrocitta vagabunda kinneari* [**as ***Crypsirina vagabunda*]:** 1♂, 1♀, Ban Bo Kaeo, Hot District, Chiang Mai Province, Thailand, 4 Feb. 1962, K. Thonglongya, V411 (PIPeR); 1♂, 3♀, Ban Thung Chuak, Salok Bat, Khann, Kamphaeng Phet Province, Thailand, 20 Jun. 1953, R.E. Elbel, RE-2692, B-21630 (PIPeR); 1♂, 1♀, Ban Thuang Chuak, Salok Bat, Khann, Kamphaeng Phet Province, Thailand, 20 Jun. 1953, R.E. Elbel, RE-2692, B-21630 (OSUS); 3♂, 3♀, Ban Bo Kaeo, Hot District, Chiang Mai Province, Thailand, 4 Feb. 1962, K. Thonglongya, V-411 (OSUS).

Non-types ex ***Dendrocitta vagabunda sakeratensis* [**as ***Crypsirina vagabunda sakeratensis*]:** 1♂, 2♀, Ban Na Nong Thum, Non Han Subdistrict, Chum Phae District, Khon Kaen Province, Thailand, 31 Oct. 1953, R.E. Elbel & B. Lekagul, B-22580 (PIPeR); 1♂, 1♀, Ban Na Nong Thum, Non Han Subdistrict, Chum Phae District, Khon Kaen Province, Thailand, 31 Oct. 1953, R.E. Elbel & B. Lekagul, B-22580 (OSUS).

Non-types ex ***Dendrocitta vagabunda vagabunda* [**as ***Dendrocitta rufa*]:** 1♂, Kolkata [as Calcutta], India, EMEC 225353 (EMEC).

***Olivinirmus morionus* (Carriker, 1956)**

Type material ex ***Cyanocorax morio*: Allotype** ♀, Cerro Conejo Reg., San Luis Potosí, México, 16 May 1947, R.J. Newman, 677, USNM#65412 (USNM); **paratypes:** 1♀, Xilitla, San Luis Potosí, México, 17 Jan. 1947, R. Newman, Brit. Mus. 1968-455 (NHML); 1♀, same locality, 14 Feb. 1947, M. Newman, 237 (USNM).

Non-types ex ***Cyanocorax morio*:** Campeche, México, 5. Mar. 1998, D. Clayton, UT-152 (PIPeR).

***Olivinirmus nitzschi* (Kéler, 1938)**

Non-types ex ***Cyanocorax cyanomelas*:** 4♂, 4♀, San Joaquin, Beni Department, Bolivia, 23 Jul. 1963, MARU 2050, 2061, 12466–9 [on reverse] (OSUS); 5♂, 5♀, Brazil, R. Meinertzhagen, 12610 (NHML); 4♂, National Park Defensores del Chaco, Alto Paraguay Department, Paraguay, 10 Aug. 1983, N. Lopez, 185 (UMSP); 1♂, National Park Defensores del Chaco, Alto Paraguay Department, Paraguay, 10 Aug. 1983, N. Lopez, 185 (PIPeR).

***Olivinirmus olivaceus* (Burmeister, 1838)**

Non-types ex ***Nucifraga caryocatactes caryocatactes* [**some as ***Nucifraga caryocatactes relicta*]:** 4♂, 6♀, "Yugoslavia", 15 Sep. 1959, Brit. Mus. 1962-589 (NHML); 1♂, 1♀, Podljubelj, [Tržič Municipality,] Slovenia, 15 Sep. 1959, S. Brelih, 1388 & 1399, Brit. Mus. 1962-19 (NHML); 1♀, Germany, Oct. 1986, R. Meinertzhagen, 3098 (NHML); 1♀, locality unknown, 8 Oct. 1885 (NHML); 3♂, 3♀, Katymar, Bács-Kiskun, Hungary, 20 Oct. 1968, J. Rékási, 11481–6 (PMSL); 13♂, 13♀, Podljubelj [Tržič Municipality,] Slovenia, 15 Sep. 1959, S. Brelih, 1380–7, 1389–98, 6259–66 (PMSL); 1♂, 8♀, Trbovlje, Slovenia, 30 Sep. 1964, S. Brelih, 13614–8 (PMSL); 1♂, Cerknica, Slovenia, 18 Jan. 1976, A. Smuc, 13577 (PMSL); 1♂, 1♀, Podljubelj [Tržič Municipality,] Slovenia, 15 Sep. 1959, S. Brelih, 6258, 6267 (USNM).

Non-types ex ***Nucifraga caryocatactes macrorhynchos*:** 1♂, France, J. Mouchet, Brit. Mus. 1969-187 (NHML); 1♂, 3♀, Yenisei, Siberia, Russia, Oct. 1910, R. Meinertzhagen, 3097 (NHML); 1♂, 1♀, "East Prussia", 3 Oct. 1911 (NHML); 2♂, 7♀, W. Eichler Collection, 1003 or 1014 (MFNG).

Non-types ex ***Nucifraga* sp.:** 2♂, 2♀, W. Eichler Collection, 2208 (MFNG).

Olivinirmus perisoreus **(Ansari, 1956)**

Type material ex ***Perisoreus infaustus infaustus*****: Holotype** ♂, "Lapland", [Finland,] Mar. 1938, R. Meinertzhagen, 11103 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 25♂, 62♀, same data as holotype, 11103, 11106–7, or 11047 and Brit. Mus. 1951-171 (NHML); 1♂, 1♀, same data as holotype, 11047 (OSUS).

Olivinirmus semiannulatus **(Piaget, 1883)**

Type material ex ***Gymnorhina tibicen*****: Syntypes**: 3♀, Piaget Collection, 1397 (NHML). **Holotype** ♂ of *Brueelia elegans*: Canberra, [Australian Capital Territoty,] Australia, 19 Jun. 1956, R. Mykytowycz (NHML); **allotype** ♀ of *Brueelia elegans*: same data as holotype (NHML); **paratypes** of *Brueelia elegans*: 2♂, 2♀, same data as holotype (NHML).
Non-types ex ***Gymnorhina tibicen*** **ssp.:** 2♂, 1♀, London Zoo, London, United Kingdom (NHML).
Non-types ex ***Gymnorhina tibicen dorsalis*** **[**as ***Gymnorhina dorsalis*****]:** 5♂, 7♀, Perth, Western Australia, Australia, 1968, R.H. Stranger, Brit. Mus. 1968-293 (NHML); 3♂, 3♀, Perth, Western Australia, Australia, Jun. 1970, R.H. Stranger, Brit. Mus. 1971-450 (NHML); 3♂, 4♀, Helena Valley and Pinjarra, Perth, Western Australia, Australia, 17 Oct. 1968 and 8 Dec. 1968, R.[H.] Stranger, Brit. Mus. 1969-595 (NHML); 1♂, 1♀,Mandurah, Western Australia, Australia, Apr. 1975, R.[H.] Stranger, Brit. Mus. 1975-39 (NHML); 12♂, 9♀, Muchea, Western Australia, Australia, 4 Nov. 1967, R.H. Stranger, Brit. Mus. 1968-293 (NHML); 4♂, 2♀, Muchea, Western Australia, Australia, 26 Sep. 1968, R.[H.] Starnger, Brit. Mus. 1969-595 (NHML); 1♂, 1♀, "South-West Australia", Australia, R. Meinertzhagen, 4047 (NHML); 1♂, 1♀, Guildford, Western Australia, Australia, 1967, R.H. Stranger, Brit. Mus. 1968-23 (NHML); 1♂, 1♀, 15 miles S of Perth & Cardup, Western Australia, Australia, 27 Jul. 1969 and 9 Aug. 1969, R.H. Stranger, Brit. Mus. 1975-39 (NHML); 3♂, 3♀, near Woyerling, Western Australia, Australia, 1967, R.H. Stranger, Brit. Mus. 1968-23 (NHML).
Non-types ex ***Gymnorhina tibicen hypoleuca*****:** 1♂, 1♀, Christchurch, New Zealand, 23 Nov. 1947, J.R. Jackson, 1958-660 (NHML).
Non-types ex ***Gymnorhina tibicen telenocua*****:** 5♂, 5♀, Cowandilla, Southern Australia, Australia, 3 Oct. 1987, C.O. Fuller, B-45385 (OSUS).
Non-types ex ***Strepera fuliginosa*****:** 2♀, Tasmania, Australia, L. Harrison Collection, BM1934-570 (NHML).
Non-types ex ***Strepera graculina*** **ssp.:** 6♂, 6♀, Australia, 2 Feb. 1985, J. Abrahams (R. Balter), Brit. Mus. 1969-113 (NHML).
Non-types ex ***Strepera versicolor arguta*** **[**as ***Strepera arguta*****]:** 2♂, 2♀, [Tasmania, Australia,] in L. Harrison Collection, BM1934-570 (NHML) [No locality data on slides, but host subspecies endemic to Tasmania].
Non-types ex ***Strepera versicolor plumbea*** **[**as ***Strepera versicolor*****]:** 3♂, 3♀, North Bannister, West Australia, Australia, 25 Apr. 1968, R.H. Stranger, Brit. Mus. 1975-39 (NHML); 3♂, 3♀, Bannister and Gleneagle, West Australia, Australia, 4 May 1968 and 18 may 1968, R.[H.] Stranger, Brit. Mus. 1975-39 (NHML).

Olivinirmus violaceus **(Carriker, 1963)**

Non-types ex ***Cyanocorax violaceus violaceus*****:** 2♂, 2♀, Hacienda Amazonia, near Atalaya, Department Madre de Dios, Perú, 23 Nov. 1985, D.H. Clayton, 85, UT-50 (PIPeR); 1♂, 1♀, same data as previous (UMSP); 2♂, 1♀, same data as previous (OSUS).

Priceiella **(*****Camurnirmus*****)** ***nipalensis*** **(Ansari, 1956)**

Type material ex ***Grammatoptila striata sikkimensis*****: Holotype** ♂, Chungtang, Sikkim, India, 16 Feb. 1952, R. Meinertzhagen, 19942, Brit. Mus. 1952-143 (NHML); **allotype** ♀, same data as holotype (NHML).

Priceiella **(*****Camurnirmus*****)** ***rhinocihlae*** **(Eichler, 1957)**

Type material ex ***Ianthocincla mitrata mitrata*****: Holotype** ♀, [Sumatra, Indonesia], NHRS-GULI000010336 (SMNH).
Non-types ex ***Ianthocincla mitrata major***: 1♂, Gunong Benom, elev. 5000 ft., Malaysia, 21 Mar. 1967, BN-381, Brit. Mus. 1967-400 (NHML) 1♀, Trengganu, elev. 4200 ft., 102º 36' E, 5º 25' N, Malaysia, 17 Mar. 1974, Gn. Lawit Expedition, Brit. Mus. 1974-2 (NHML).

Priceiella **(*****Priceiella*****)** ***longisterna*** **(Ansari, 1956)**

Type material ex ***Cutia nipalensis nipalensis*****: Holotype** ♂, Dikchu, Sikkim, India, 15 Feb. 1952, R. Meinertzhagen, 19934, BM1952-143 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes**: 1♂, same data as holotype (NHML).
Non-types ex ***Cutia nipalensis nipalensis*****:** 3♂, same data as holotype (NHML).

Priceiella (***Priceiella***) ***mahrastan*** **(Ansari, 1956)**

Type material ex ***Turdoides striata somervillei*** [some as ***Turdoides somervillei terricolor***]: **Holotype** ♂, Mumbai [as Bombay], [Maharashtra,] India, Feb. 1937, R. Meinertzhagen, 8442–3 (NHML); **allotype** ♀, same data as holotype (NHML); **paratypes:** 4♂, 8♀, same data as holotype (NHML).

Non-types ex ***Turdoides striata somervillei*** [some as ***Turdoides somervillei terricolor***]: 2♂, 2♀, Madhu-Ban, Bara [District,] [Narayani Zone, Central Region,] Nepal, 6 Jan. 1968, NP-302, 12383–4 (OSUS); 1♂, 1♀, Nepal, Dec. 1935, R. Meinertzhagen, 4854 (NHML).

Priceiella (***Priceiella***) ***sternotranversa*** **(Ansari, 1956)**

Type material ex ***Garrulax albogularis albogularis***: **Holotype** ♂, Nepal, Feb. 1938, R. Meinertzhagen, 11196 (NHML); **allotype** ♀, same data as holotype (NHML).

Non-types ex ***Garrulax albogularis albogularis***: 1♀, same data as holotype (NHML). 1♀, Nepal, Oct. 1935, R. Meinertzhagen, 4533 (NHML).

Priceiella (***Priceiella***) ***ventrata*** **(Ansari, 1956)**

Type material ex ***Garrulax ruficollis***: **Holotype** ♂, Kangpokpi, Manipur, India, 26 Jan. 1952, R. Meinertzhagen, 19868, BM 1952-143 (NHML); **allotype** ♀, same data as holotype (NHML).

Non-types ex ***Garrulax ruficollis***: 2♂, 3♀, same data as holotype (NHML).

Priceiella (***Torosinirmus***) ***brueliodes*** **(Ansari, 1956)**

Type material ex ***Turdoides aylmeri aylmeri***: **Holotype** ♂, Somaliland, Somalia, Feb. 1949, R. Meinertzhagen, 18686 (NHML); **allotype** ♀, same data as holotype (NHML).

Priceiella (***Torosinirmus***) ***nivea*** **(Ansari, 1956)**

Type material ex ***Turdoides leucopygius hartlaubii***: **Holotype** ♂, Luanshya River, Zimbabwe, 3 Oct. 1953, ML/104, Brit. Mus.1954-137 (NHML); **allotype** ♀, same data as holotype (NHML).

Resartor effronte **(Ansari, 1956)**

Type material ex ***Trochalopterus squamatum***: **Holotype** ♂, India: Manipur: Kangpokpi. 29 Jan. 1952, in Meinertzhagen collection. 19879 and B.M. 1952-143 (NHML); **allotype** ♀, same data as holotype (NHML).

Non-types ex ***Trochalopterus squamatum***: 1♂, 4♀, same data as holotype (NHML).

Resartor novofacies **(Ansari, 1956)**

Type material ex ***Trochalopteron subunicolor subunicolor*** [as ***Garrulax subunicolor subunicolor***]: **Holotype** ♂, Lachen, Sikkim, India, 25 Feb. 1952, R. Meinertzhagen, 20023, Brit. Mus. 1952-143 (NHML); **allotype** ♀, same data as holotype (NHML).

Non-types ex ***Trochalopteron subunicolor subunicolor*** [as ***Garrulax subunicolor subunicolor***]: 1♂, 1♀, same data as holotype (NHML).

Rostrinirmus boevi **(Balát, 1958)**

Non-types ex ***Passer hispaniolensis transcaspicus***: 1♂, Bharatpur, Rajputana State, India, Jan. 1925, R. Meinertzhagen, 19635, BM 1952-143 (NHML).

Non-types ex ***Passer domesticus indicus***: 3♂, 6♀, Bharatpur, Rajputana State, India, 3 jan. 1952, R. Meinertzhagen, 19663, BM 1952-143 (NHML).

Rostrinirmus buresi **(Balát, 1958)**

Type material ex ***Emberiza melanocephala***: **Paratypes:** 1♂, 1♀, Slivem, Bulgaria, 27 May 1957, F. Balát, Brit. Mus. 1958-425 (NHML).

Non-types ex ***Emberiza melanocephala***: 2♀, “Asia Minor”, Turkey, May 1935, R. Meinertzhagen, 3890 (NHML); 1♀, Burgas, Bulgaria, 31 May 1957, F. Balát, Brit. Mus. 1972-342 (NHML); 1♂, 1♀, Slivem, Bulgaria, 27 May 1957, F. Balát, Brit. Mus. 1972-342 (NHML); 1♂, 1♀, Dubrovnik, Croatia, 1962, A. Lesinger, 6449–50 (PMSL); 2♂, 1♀, Dubrovnik, Croatia, 11 May 1965, A. Lesinger, 9765–7 (PMSL); 3♀, Dubrovnik, Croatia, 7 May 1968, A. Lesinger, 10860 (PMSL); 3♂, 3♀, Lokrum, Dubrovnik, Croatia, 1 Jun. 1963, A. Lesinger, 7645–50 (PMSL); 1♂, Zaton, Zadar, Croatia, 1 Aug. 1975, D. Sere, 12663 (PMSL); 1♂, 3♀, Gnjilane, Macedonia, 15 Jun. 1949, S. Brelih, 2821–4 (PMSL); 1♂, 1♀, Slivem, Bulgaria, 27 May 1957, F. Balát, 968 (PMSL); 1♂, 1♀, Burgas, Bulgaria, 31 May 1957, F. Balát, 958 (PMSL).

Non-types ex ***Emberiza bruniceps*** **[**some as ***Emberiza icterica*****]:** 3♂, 1♀, captive birds, locality unknown, 19 Apr. 1966, R.S. Balter, Brit. Mus. 1969-101 (NHML); 2♂, 2♀, Afghanistan, May 1937, R. Meinertzhagen, 10070 (NHML); 1♂, 1♀, Deccan, India, Feb. 1937, R. Meinertzhagen, 8673 (NHML).

Non-types ex ***Sylvia mystacea*** [as ***Sylvia melanocephala mystacea***; possibly stragglers]**:** 2♂, "Arabia", Jan. 1948, R. Meinertzhagen, 17150 (NHML).

***Rostrinirmus raji* (Ansari, 1947)**

Type material ex ***Petronia xanthocollis xanthocollis*****: Holotype** ♀, Faisalabad, Pakistan [as Lyallpur, Punjab, India] 13 May 1933, Brit. Mus. 1953-2 (NHML).

Non-types ex ***Petronia xanthocollis xanthocollis*****:** 2♀, same data as holotype (NHML).

***Schizosairhynchus philippensis* (Tandan & Kumar, 1969)**

Type material ex ***Basilornis miranda*****: Paratypes** 1♂, 1♀, Davao Province, Mindanao, Philippines, 8 Aug. 1946, 1085 (OSUS).

Non-types ex ***Basilornis miranda*****:** Eastern Slope, Mount McKinley, Davao Province, Mindanao, Philippines, 23 Aug. 1946, Hoogstraal, 689–92 (PIPeR).

***Sturnidoecus afzali* Ansari, 1968**

Type material ex ***Creatophora cinerea*** [as ***Creatophora caruncula*ta**]**: Syntypes:** 1♂, 1♀, Isiolo, Kenya, Jan. 1956, R. Meinertzhagen, 20469 (NHML).

Non-types ex ***Creatophora cinerea*** [as ***Creatophora caruncula*ta**]**:** 1♂, 1♀, same data as syntypes (NHML); 9♂, 17♀, Kenya, Mar, 1936, R. Meinertzhagen, 6953–7 (NHML).

***Sturnidoecus avivorax* Ansari, 1968**

Type material ex ***Onychognathus tristrami*****: Syntypes:** 4♂, 5♀, Aden, Yemen, Nov. 1949, R. Meinertzhagen, 17785 (NHML).

***Sturnidoecus bannoo* Ansari, 1955**

Type material ex ***Acridotheres cristatellus*****: Holotype** ♂ of *Sturnidoecus bannoo laticephalum*: Moraign, Manipur, India, 2 Jan. 1952, R. Meinertzhagen, 19827, BM 1952-143 (NHML); **paratypes** of *Sturnidoecus bannoo laticephalum*: 1♀, same data as holotype (NHML).

Type material ex ***Acridotheres tristis tristis*****: Holotype** ♂ of *Sturnidoecus bannoo avinus*: Nepal, Jul. 1936, R. Meinertzhagen, 4953 (NHML); **paratypes** of *Sturnidoecus bannoo avinus*: same data as holotype (NHML).

Non-types ex ***Acridotheres cristatellus*** [as ***Aethiopsar albocinctus*** or ***Sturnus cristatellus***]**:** 1♂, 5♀, locality unknown, Piaget Collection, 605–6 (NHML).

Non-types ex ***Acridotheres ginginianus*****:** 2♂, Rajputana, India, Mar. 1937, R. Meinertzhagen, 9024 (NHML).

Non-types ex ***Acridotheres tristis tristis*****:** 6♂, 13♀, Rajputana, India, Mar. 1937, R. Meinertzhagen, 8975 (NHML); 1♂, 1♀, Jasdan, Hingolgadh, Gujarat State, India, 18 Sep. 1970, XIE-1465 (OSUS); 1♀, Bharatpur District, Rajasthan State, India, 20 Oct. 1969, XIE-317 (OSUS).

Non-types ex ***Acridotheres fuscus fuscus*** [as ***Aethiopsar fuscus fuscus***]**:** 2♂, 2♀, Nepal, Jun. 1935, R. Meinertzhagen, 3857–8 (NHML).

***Sturnidoecus basilewskyi* Tendeiro, 1963**

Type material ex ***Ploceus cucullatus bohndorffi*** **[**as ***Textor cucullatus*****]: Holotype** ♂, Lualaba River, Kasongo, Maniema Province, Democratic Republic of the Congo, Nov. 1959, P.L.G. Benoit, 231 (MRAC); **allotype** 1♀, same data as holotype (MRAC); **paratypes:** 4♂, 8♀, same data as holotype (MRAC).

Type material ex ***Ploceus cucullatus cucullatus*****: Holotype** ♀ of *Sturnidoecus basilewskyi minor*: Yaoundé, Cameroon, 1955, J. Mouchet, Brit. Mus. 1955-737 (NHML).

Type material ex ***Ploceus nigriceps*****: Paratypes** of *Sturnidoecus lopesi*: 1♂, Limpop River, Mapai, Mozambique, 6 Jul. 1953, Brit. Mus. 1954-474 (NHML).

Non-types ex ***Ploceus cucullatus cucullatus*** [some as ***Plesiostagra cucullata***]**:** 6♂, 5♀, Sotube, SENEGAL, 21 Aug. 1955, P. Morel, Brit. Mus. 1964-685 (NHML).

***Sturnidoecus caligineus* (Carriker, 1903)**

Non-types ex ***Turdus grayi casius*: **1♂, 1♀, Ciudad Universitaria, San Jose, Costa Rica, 24 Aug. 1984, M.A. Marin, 22386–7 [on reverse] (NHML).

***Sturnidoecus capensis* (Giebel, 1874)**

Type material ex ***Acridotheres tristis melanosternus*: Holotype** ♂ of *Sturnidoecus capensis fragilis*: Sri Lanka [as "Ceylon"], Mar. 1935, R. Meinertzhagen, 3460 (NHML).

Non-types ex ***Gracupica contra contra* [as *Sturnus contra contra*]: **3♂, 3♀, Rakhine State [as Arakan], Myanmar, 18 Apr. 1952, H.M. Smith, 710, one slide 22737 [on reverse] (OSUS).

Non-types ex ***Gracupica contra superciliosa* [**as ***Sturnus contra superciliosa*]: **1♂, 1♀, Daring, Assam, India, 2 Jan. 1952, R. Meinertzhagen, 19894 (NHML).

Non-types ex ***Gracupica contra jalla* [**as ***Sturnus contra*]: **1♀, "Dua J", West Java, Indonesia, 6 May 1970, XIE-153, 050-26145 (OSUS).

Non-types ex ***Gracupica contra floweri* [**most as ***Sturnus contra*]: **2♂, 3♀, Ban Ning Ham, San Sai District, Chiang Mai Province, Thailand, 3 Jul. 1962, K. Thonglongya, SEATO-1214, Brit. Mus. 1965-630 (NHML); 2♂, 2♀, Ban Khlua Klang, Prauchap Khiri Khan Province, Thailand, 17 Dec. 1952, R.E. Elbel & H.G. Deignan, RE-2043, RT-B-17666 (OSUS); 1♀, Wat Phai Lom, Thailand, 23 Apr. 1969, 9E-0839, 050-26066 (OSUS); 1♂, 1♀, Ban Noen Phap, Khlong Khlung District, Kamphaeng Phet Province, Thailand, 2 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2351, RT-B-17581 (NHML); 4♂, 4♀, Ban Buak Pow, San Sai District, Chiang Mai Province, Thailand, 29 Mar. 1962, K. Thonglongya, 672–4 (NHML); 2♂, 2♀, Ban Khlua Klang, Prauchap Khiri Khan Province, Thailand, 17 Dec. 1952, R.E. Elbel & H.G. Deignan, RE-2043, RT-B-17666 (PIPeR); 2♂, 2♀, same locality, 2 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2351, RT-B-17581 (PIPeR); 1♂, 1♀, Latya, Kanchanaburi Province, Thailand, 27 Mar. 1952, R.E. Elbel, RE-574, RT-B-15126 (PIPeR); 2♀, Khao Oerowan Mountains, Lopburi Province, Thailand, 25 Jul. 1953, R.E. Elbel, RE-2831, RT-B-21671 (PIPeR); 1♂, 1♀, Ban San Luang, San Sai District, Chiang Mai Province, Thailand, 2 Jun. 1962, K. Thonglongya, SEATO-1101 (PIPeR).

Non-types ex ***Acridotheres grandis* [**as ***Sturnus javanicus grandis* **or ***Sturnus grandis*]: **2♀, "3 Kilow", Nakhon Phanom Province, Thailand, 28 Dec. 1951, R.E. Elbel, RE-320 (PIPeR); 3♂, 1♀, Ban Khae, Phu Khiao District, Chaiyaphum Province, Thailand, 30 Dec. 1952, R.E. Elbel, RE-984, RT-B-17565 (PIPeR); 1♀, Chiang Saen District, Chiang Rai Province, Thailand, 14 Feb. 1953, R.E. Elbel & H.G. Deignan, RE-2261, RT-B-17770 (PIPeR); 1♀, Hua Thanon Subdistrict, Khlong Khlung District, Kamphaeng-Phet Province, Thailand, 5 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2379, RT-B-17867 (PIPeR); 1♀, Khao Khat Mountains, Pak Namn Pho, Nakhon Sawan Province, Thailand, 11 Apr. 1953, R.E. Elbel, RE-1755, RT-B-21011 (PIPeR); 1♂, 1♀, Khao Oerawan Mountain, Lopburi Province, Thailand, 13 Jul. 1953, RE-2789, RT-B-21658 (NHML); 1♂, 1♀, Ban Khae, Phu Khiao District, Chaiyaphum Province, Thailand, 30 Dec. 1952, R.E. Elbel, RE-984, RT-B-17565 (NHML); 1♀, Hua Thanin Subdistrict, Khlong Khlung District, Kamphaeng-Phet Province, Thailand, 5 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2379, RT-B-17867 (NHML).

Non-types ex ***Acridotheres fuscus torquatus* [**as ***Acridotheres fuscus* **or ***Acridotheres mahrattensis torquatus*]: **4♂, 4♀, Ban Khilek, Mae Rim District, Chiang Mai Province, Thailand, 18 Jul. 1962, K. Thonglongya, SEATO-1296 (PIPeR); 2♂, 3♀, Songkhla Muang, Thailand, 21 Mar. 1962, Vanich Songprakob, RE-6106 (PIPeR); 1♂, same location and collection, 12 Mar. 1962, RE-6091 (PIPeR); 1♂, 1♀, Huaiyang, Prauchap Khiri Khan Province, Thailand, 25 Dec. 1952, R.E. Elbel & H.G. Deignan, RE-2071, RT-B-17688 (PIPeR); 5♂, 5♀, Ban Khilek, Mae Rim District, Chiang Mai Province, Thailand, 18 Jul. 1962, K. Thonglongya, SEATO-1293–4, 1296, 1298, some slides with 19639 or 22729 [on reverse] (OSUS); 1♂, 1♀, Ban Buak Pao, San Sai District, Chiang Mai Province, Thailand, 4 Jul. 1962, K. Lonthongya, SEATO-1239, 22727 [on reverse] (NHML); 1♂, 1♀, Ban Hua Rin, San Sai District, Chiang Mai Province, Thailand, 19 Jun. 1961, K. Thonglongya, SEATO-1117, 22728 [on reverse] (OSUS); 1♀, Khlua Khlang, Prauchap Khiri Khan Province, Thailand, 23 Dec. 1952, R.E. Elbel & H.G. Deignan, RE-2065, RT-B-17682 (NHML); 1♂, 1♀, Bohin, Doi Saket District, Chiang Mai Province, Thailand, 31 May 1962, K. Thonglongya, SEATO-1031, one slide with 22726 [on reverse] (OSUS).

Non-types ex ***Acridotheres tristis tristis* [**as ***Acridotheres tristis* **or ***Sturnus tristis*]: **13♂, 11♀, Ban Rai Dong, Lamphun Province, Thailand, 8 Jun. 1963, K. Thonglongya, SEATO-1067 (PIPeR); 1♂, 1♀, Latya, Kanchanaburi Province, Thailand, 28 Mar. 1952, R.E. Elbel, RE-591, RT-B-15131 (PIPeR); 1♂, 1♀, Khao Oerewan Mountains, Lopburi Province, Thailand, 19 Aug. 1953, R.E. Elbel, RE-29025, RT-B-21699 (PIPeR); 1♂, 1♀, Khlong Khlung District, Kamphaeng Phet Province, Thailand, 19 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2460, RT-B-21030 (PIPeR); 1♂, 1♀, Ban Hua Thand, Khlong Khlung District, Kamphaeng-Phet Province, Thailand, 5 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2381, RT-B-17868 (PIPeR); 3♂, 1♀, Ban San Luang, San Sai District, Chiang Mai Province, Thailand, 14 Jun. 1962, K. Thonglongya, SEATO-1089 (NHML); 1♂, 3♀, Ban Chang Khian, Chiang Mai Province, Thailand, 20 Mar. 1962, K. Thonglongya, 632 (NHML); 2♂, 2♀, same data (OSUS); 1♂, 3 km S of Trat, Trat Province, Thailand, 27 Apr. 1966 (OSUS).

Non-types ex ***Acridotheres tristis melanosternus*: **1♂, 3♀, Sri Lanka [as "Ceylon"], Mar. 1935, R. Meinertzhagen, 3460, Brit. Mus. 1951-171 (NHML); 2♂, 1♀, Sri Lanka [as "Ceylon"], Apr. 1935, R. Meinertzhagen, 3511 (NHML).

Sturnidoecus carrikeri **Ansari, 1955**
Type material ex ***Turdus olivater sanctaemartae*****: Paratypes:** 1♀, Chinchicua, Sierra Nevada de Santa Marta, Colombia, 15 Jan. 1946, M.A. Carriker Jr., 7398 (NHML); 2♀, same data (USNM); 1♀, same data (OSUS).

Sturnidoecus clayae **Ansari, 1968**
Type material ex ***Onychognathus blythii*** [as ***Onychognathus morio blythi***]**: Holotype** ♂, Somaliland, Somalia, Jan. 1949, R. Meinertzhagen, 18239 (NHML); **allotype** ♀, same data as holotype (NHML).
Non-types ex ***Onychognathus blythii*** **[as *Onychognathus morio blythi*]:** 3♂, 2♀, same data as holotype (NHML).

Sturnidoecus continuus **(Piaget, 1880)**
Type material ex ***Porphyrio indicus*** [as ***Porphyrio smaragdinus***]**: Syntypes:** 2♂, 2♀, locality unknown, Piaget Collection, 591–2 (NHML).

Sturnidoecus distinguendus **Ansari, 1968**
Type material ex ***Lamprotornis iris*** [as ***Lamprotornis purpuropterus purpuropterus***]**: Syntype:** 1♂, Uganda, Apr. 1936, R. Meinertzhagen, 7754 (NHML).

Sturnidoecus eichleri **Ansari, 1968**
Type material ex ***Lamprotornis chalybaeus chalybaeus*****: Holotype** ♂, Kenya, Mar. 1936, R. Meinertzhagen, 6668 (NHML).
Non-types ex ***Lamprotornis chalybaeus chalybaeus*****:** 4♂, 9♀, Awassa, Ethiopia, 5 Nov. 1960, S. Brelih, 4097–4109 (PMSL); 1♂, 5♀, Awassa, Ethiopia, 7. Nov. 1960, S. Brelih, 3440–5 (PMSL); 1♂, 2♀, Awassa, Ethiopia, 10 Nov. 1960, S. Brelih, 4094–6 (PMSL).
Non-types ex ***Lamprotornis chalybaeus nordmanni*****:** 2♂, 3♀, Nwashitsumbe, Limpopo, South Africa, 24 Apr. 1983, Braack & Espie, PHTH21, 23676, 23678, 23680, 23683–4 [on reverse] (NHML).

Sturnidoecus femoratus **(Piaget, 1880)**
Type material ex ***Dacelo princeps*****: Holotype** ♀, locality unknown, Piaget Collection, 579 (NHML).

Sturnidoecus galbula **Tendeiro, 1963**
Non-types ex ***Ploceus galbula*** [as ***Xanthophilus galbula***]**:** 3♂, 3♀, locality unknown, 1966, R.S. Balter, Brit. Mus. 1969-101 (NHML).

Sturnidoecus graculae **(Piaget, 1880)**
Type material ex ***Gracula religiosa*****: Syntypes:** 1♂, 5♀, locality unknown, Piaget Collection, 603–4 or BM 1953-21 (NHML).

Sturnidoecus illustris **Ansari, 1968**
Type material ex ***Onychognathus tenuirostris theresae*** [as ***Onychognathus tenuirostris raymondi***]**: Syntypes:** 3♂, 4♀, Kenya, Feb. 1936, R. Meinertzhagen, 6577 (NHML).

Sturnidoecus incomptus **Ansari, 1956**
Type material ex ***Turdus grayi incomptus*****: Paratypes:** 2♂, 2♀, Fonseca, Department Magdalena, Colombia, Jan. 1920, M.A. Carriker Jr., 26839 (OSUS); 2♂, 4♀, same data (USNM).

Sturnidoecus intermedius **Ansari, 1968**
Type material ex ***Turdus serranus atrosericeus*****: Paratypes:** 1♂, 1♀, Guamito, Barinas State, Venezuela, 16 May 1922, M.A. Carriker Jr., 27634, 1487–8 (OSUS).
Non-types ex ***Turdus serranus serranus*****:** 1♂, Santo Domingo, Piura Region, Perú, 29 Jun. 1931, M.A. Carriker Jr., 18199 (OSUS).

Sturnidoecus meinertzhageni **Ansari, 1968**
Type material ex ***Lamprotornis splendidus splendidus*****: Holotype** ♂, Ndikiniméki, Cameroon, 12 Apr. 1947, V. Aellen, Brit. Mus. 1954-487 (NHML); **paratypes:** 1♀, same data as holotype (NHML).
Non-types ex ***Lamprotornis splendidus splendidus*****:** 1♂, Uganda, Apr. 1936, R. Meinertzhagen, 7644 (NHML).
Non-types ex ***Lamprotornis splendidus bailundensis*****:** Zambia [as "N.W. Rhodesia"], 1939, R. Meinertzhagen, 13331, BM 1951-171 (NHML).

Sturnidoecus mexicanus **Carriker, 1956**

Type material ex ***Turdus infuscatus*****: Paratypes:** 1♂, 1♀, Cerro Conejo, San Luis Potosí, México, 27 May 1947, [R.] Newman, 494 (USNM).

Sturnidoecus neoacutifrons **Price, Hellenthal & Palma, 2003**

Type material ex ***Sturnia malabarica*** [as ***Sturnus malabaricus*****]: Syntypes:** 2♂, 1♀, Nepal, Mar. 1937, R. Meinertzhagen, 9327 or 10614 (NHML).

Non-types ex ***Sturnia malabarica*** [as ***Sturnus malabaricus*****]: 1**♂, Pang Nam Un, Ban Yun, Nan Province, Thailand, 26 Jan. 1953, R.E. Elbel D.G. Deignan, RE-2208, RT-B-17732 (NHML); 2♂, 2♀, Sa Ban Pha Hang, Nan Province, Thailand, 17 Dec. 1961, K. Thonglongya, V-233, 22724–5 [on reverse] (OSUS).

Sturnidoecus obsoletus **Ansari, 1955**

Type material ex ***Turdus obsoletus obsoletus*** [as ***Turdus fumigatus obsoletus*****]: Paratypes:** 1♂, 1♀, Guapiles, Limón Province, Costa Rica, Mar. 1903, M.A. Carriker Jr., 1491 (OSUS).

Non-types ex ***Turdus fumigatus aquilonalis*****:** 1♂, 8♀, Vega de Oropouche, Trinidad, Trinidad and Togabo, 15 Dec. 1959, TRUL-3737, Brit. Mus. 1974-636 (NHML); 1♂, 1♀, Corneillac Estate, Vea de Oropouche, Trinidad, Trinidad and Togabo, 28 Jan. 1966, T.H.G. Aitken, TRUL-11246, Brit. Mus. 1974-636 (NHML); 1♀, Arima Valley, Trinidad, Trinidad and Togabo, 1 Oct. 1958, David Snow, Brit. Mus. 1974-636 (NHML); 2♂, 2♀, same locality, 10 Mar. 1962, T. Clay, 192, Brit. Mus. 1974-636 (NHML).

Sturnidoecus opeca **Ansari, 1968**

Type material ex ***Speculipastor bicolor*****: Holotype** ♂, Kenya, Mar. 1936, R. Meinertzhagen, 6925 (NHML).

Non-types ex ***Speculipastor bicolor*****:** 2♂, Venterstad, Orange Free State, South Africa, 6 Dec. 1971 (NHML).

Sturnidoecus orientalis **Mey, 1989**

Non-types ex ***Gracupica nigricollis*****:** 1♀, Wat Phai Lom, Thailand, 26 Aug. 1969, 9E-0972, B-14007 (NHML); 1♂, Wat Phai Lom, Thailand, 2 Jun. 1970, XE-356, 23712 [on reverse] (NHML); 2♀, Phu Phan Mountains, Sakon Nakhon Province, Thailand, 28 Jun. 1954, R.E. Elbel & B. Lekagul, RE-3815, B-30909 (NHML); 7♂, 13♀, Ban Lat, Ban Kaeng, Phu Khiao District, Chaiyaphum Province, Thailand, 5 Jan. 1952, R.E. Elbel, RE-331–3 RT-B-9888 (NHML); 3♂, 2♀, Ban Na Nong Thum, Ban kaeng Subdistrict, Phu Khiao District, Chaiyaphum Province, Thailand, 15 Dec. 1952, R.E. Elbel, RE-905, RT-B-17539 (NHML); 1♂, Phu Lom La Mountain, Kok Sathon Subdistrict, Dan Sai District, Loei Province, Thailand, 5 Mar. 1954, R.E. Elbel, RE-3467, RT-B-22706 (NHML); 2♂, 5♀, Phu Phak Khi Nak Mountain, Kok Sathon Subdistrict, Dan Sai District, Loei Province, Thailand, 14 Mar. 1955, R.E. Elbel, RE-4922–3 (NHML); 2♂, 8♀, same location and collector, 28 Mar. 1955, RE-5171–2 (NHML); 2♀, Hua Thanon Subdistrict, Khlong Khlung District, Kamphaeng-Phet Province, Thailand, 9 Apr. 1953, R.E. Elbel & H.G. Deignan, RE-2401, RT-B-17885 (NHML); 1♂, 2♀, Phu Lom Lo Mountain, Kok sathon Subdistrict, Dan Sai District, Loei Province, Thailand, 6 Mar. 1955, R.E. Elbel, RE-4896 (NHML); 1♂, 1♀, Ban Na Nong Thum, Ban Kaeng Subdistrict, Phu Khiao District, Chaiyaphum Province, Thailand, 15 Dec. 1952, R.E. Elbel, RE-905, RT-B-17539 (PIPeR); 1♂, 1♀, same locality and collector, 5 Jan. 1952, RE-331–3, RT-B-9888 (PIPeR); 1♂, 1♀, Phak Khi Nak Mountain, Kok Sathon Subdistrict, Dan Sai District, Loei Province, Thailand, 28 Mar. 1955, R.E. Elbel, RE-5171 (PIPeR); 1♂, 1♀, same locality and collector, 14 Mar. 1955, R.E. Elbel, RE-4923 (PIPeR).

Sturnidoecus parvifrons **Ansari, 1968**

Type material ex ***Lamprotornis mevesii mevesii*****: Holotype** ♂, Gotomwe, Zimbabwe [as "S. R." for South Rhodesia], 18 Jul. 1954, H.E. Paterson, Brit. Mus. 1955-660 (NHML); **paratypes:** 1♀, same data as holotype (NHML).

Non-types ex ***Lamprotornis mevesii mevesii*****:** 1♂, 1♀, Debeete, Botswana, 26 Jul. 1956, 77 (NHML); 1♂, Maun, [North-West District,] Botswana, 30 Dec. 1954, F. Zumpt, Brit. Mus. 1955-457 (NHML); 2♀, Chirundu, [Southern Province,] Zambia [as "South Rhodesia"], 23 Feb. 1964, K.C. Emerson, 22741–2 [on reverse] (OSUS); 1♂, 5♀, Kariba, [Mashonaland West Province,] Zimbabwe [as "South Rhodesia"], 13 Feb. 1964, K.C. Emerson [?], 22745 [on reverse] (NHML); 2♂, 2♀, same data (OSUS); 1♂, 1♀, Zumbo, Tete District, Mozambique, 28 Aug. 1964, A.L. Moore, A-24, 22743 [on reverse] (OSUS); 1♂, Lochinvaar, Zambia [as "North Rhodesia"], 6 May 1962 (NHML); 1♂, Lochinvaar, Zambia [as "North Rhodesia"], 7 May 1962 (NHML).

Sturnidoecus pastoris **(Denny, 1842)**

Non-types ex ***Pastor roseus*****:** 1♂, Bharatpur, Rajasthan State, India, 13 Feb. 1968, 8E-0501, 23216 [on reverse] (OSUS); 1♂, Hingolgadh, Jasdan, Gujarat State, India, 17 Sep. 1970, XIE-1162, 23215 [on reverse] (OSUS); 6♂, 3♀, Deccan, India, Feb.

1937, R. Meinertzhagen, 8828–32 (NHML); 2♀, United Kingdom, Denny Collection, BM[18]52-98 (NHML); 4♂, 13♀, Dubrovnik, Croatia, 1962, A. Lesinger, 8961–75, 5799–5800 (PMSL); 1♀, Dubrovnik, Croatia, 11 Jun. 1973, A. Lesinger, 12558 (PMSL); 1♂, Kupinovo, Pecinci, Srem, Vojvodina, Serbia, 3 Jun. 1945, S. Brelih, 2825 (PMSL).

***Sturnidoecus perunensis* Ansari, 1955**

Type material ex ***Turdus ignobilis debilis*: Paratypes:** 1♂, 1♀, Moyobamba, San Martin Region, Perú, 2 Oct. 1933, M.A. Carriker Jr., 7803, 1492–3 (OSUS); 2♂, 1♀, same data (USNM).

***Sturnidoecus sarwatae* (Ansari, 1955)**

Type material ex ***Turdus rufiventris*: Paratypes:** 1♂, 1♀, Samaipata, Bolivia, 4 Nov. 1937, M.A. Carriker, Jr., 16456 (USNM).

Non-types ex ***Turdus rufiventris***: 2♂, Serra dos Órgãos, Teresópolis, Rio de Janeiro State, Brazil, 4 Dec. 1981, A.M. Hulson, BM 1982-265 (NHML); 4♀, Mury, Nova Friburgo, Rio de Janeiro State, Brazil, 27 Dec. 1981, A.M. Hulson, BM 1982-265 (NHML).

***Sturnidoecus senegalensis* (Rudow, 1896)**

Non-types ex ***Lamprotornis nitens nitens***: 2♂, Cape Province, South Africa, Jul. 1964, Emerson Collection, 22744 [on reverse] (OSUS).

Non-types ex ***Lamprotornis nitens phoenicopterus***: 2♂, Potchefstroom, North West Province, South Africa, 27 Dec. 1952, Brit. Mus. 1954-474 (NHML).

***Sturnidoecus sexualis* Tendeiro, 1963**

Type material ex ***Ploceus vitellinus uluensis*: Holotype** ♂, Somaliland, Somalia, Jan. 1949, R. Meinertzhagen, BM 1951-171 (NHML); **paratypes:** 1♀, same data as holotype (NHML).

***Sturnidoecus simplex* (Kellogg, 1896)**

Type material ex ***Turdus migratorius migratorius*: Holotype** ♀, Lawrence, Kansas, U.S.A., 1896, V.L. Kellogg, 229a, EMEC 75456 (EMEC); **paratypes** of *Philopterus migratorii*: 2♂, 2♀, Rosslyn, Virginia, U.S.A., 20 Mar. 1935, H.S. Peters, 374–5, 22825 (OSUS); 1♂, 1♀, Rosslyn, Virginia, U.S.A., 26 Jun. 1934, W.P. Wharton, 373, 22676 (OSUS); 1♂, 1♀, Pass-a-Grille, Florida, U.S.A., 15 Mar. 1935, W.G. Fargo, 22804 (NHML).

Non-types ex ***Turdus migratorius caurinus***: 1♂, 1♀, Tofino, Vancouver Island, British Columbia, Canada, 4 May 1931, K. Racey, Brit. Mus. 1963-110 (NHML).

Non-types ex ***Turdus migratorius migratorius***: 1♀, Stillwater, Oklahoma, U.S.A., 10 Feb. 1948, K.C. Emerson, 14544 [on reverse] (OSUS); 2♂, 5♀, Orient, Long Island, New York, U.S.A., 28 May 1948, Roy Latham, RJ-27803 (OSUS); 1♂, 1♀, Tibbee, Mississippi, U.S.A., 8 Jan. 1939, E.W. Stafford (OSUS); 1♂, 1♀, Clarke County, Georgia, U.S.A. 24 May 1964, W.W. Baker (OSUS); 2♀, Elmhurst, New York, U.S.A., M.V. Beals, BM 1980-40 (NHML); 1♂, 1♀, Pearl River, Lousiana, U.S.A., 1934, T.F. Hall Jr., BM 1980-70 (NHML).

Non-types ex ***Turdus migratorius* ssp.:** 2♀, locality unknown (OSUS).

***Sturnidoecus subacutus* (Piaget, 1880)**

Type material ex ***Lamprotornis* sp.: Syntypes:** 2 nymphs, locality unknown, Piaget Collection, 602 (NHML).

***Sturnidoecus textoris* Tendeiro, 1964**

Type material ex ***Ploceus melanocephalus*: Holotype** ♂, Lualaba River, Kasongo, Maniema Province, Democratic Republic of the Congo, Nov. 1959, P.L.G. Benoit, 53 (MRAC); **allotype** ♀, same data as holotype (MRAC); **paratypes:** 2♂, same data as holotype (MRAC); 2♂, 1♀, Mabwe, elev. 585 m, Parc National de l'Upemba, Katanga Province, Democratic Republic of the Congo, 17 Feb. 1949, G.F. de Witte, 2344a (MRAC); 1♀, same locality and collector, 20 Dec. 1949, 2121a (MRAC); 1♀, same locality and collector, 27 Jan. 1949, 2276a (MRAC).

***Sturnidoecus theresae* Ansari, 1968**

Type material ex ***Lamprotornis superbus* [as *Spreo superbus*]: Syntypes:** 5♂, 7♀, Somaliland, Somalia, Feb. 1949, R. Meinertzhagen, 18671 (NHML).

Sturnidoecus wittei **Tendeiro, 1963**
Type material ex ***Tchagra senegalus armenus*** [as ***Tchagra senegala*]: Holotype** ♂, Mabwe, elev. 585 m, Lake Upemba, Parc National de l'Upemba, Democratic Republic of the Congo, 28 Jul. 1949, G.F. de Witte, 684a (MRAC); **allotype** ♀, same data as holotype; **paratypes:** 5♀, same data as holotype (MRAC); 1♀, same data as holotype (NHML).
Non-types ex ***Tchagra senegalus armenus*** [as ***Tchagra senegala*]:** 1♀, same data as holotype (MRAC); 3♂, 3♀, Chiuta, Tete Province, Mozambique, 21 Sep. 1964, A.L. Moore, A-93, 22746–7 [on reverse] (OSUS); 3♂, 3♀, Luanshya, [Copperbelt Province,] Zambia, 19 May 1952, ML-45, Brit. Mus. 1952-393 (NHML); 1♂, 1♀, Small Trees, Fisenge [as "Fisenje"], [Copperbelt Province,] Zambia [as "North Rhodesia"], 12 Jul. 1953, ML/92 (NHML).
Non-types ex ***Tchagra senegalus habessinica*:** 3♂, 6♀, Awassa, Ethiopia, 27 Oct. 1960, S. Brelih, 3419–27 (PMSL); 2♂, 2♀, Awassa, Ethiopia, 28 Oct. 1960, S. Brelih, 3849–52 (PMSL).
Non-types ex ***Tchagra senegalus kalahari*** [as ***Tchagra senegala*]:** 2♂, 1♀, "Sabi-Lund Junction", Zimbabwe [as "South Rhodesia"], 1950, Smithers, S65, Brit. Mus. 1956-353 (NHML).
Non-types ex ***Tchagra senegalus orientalis*** [as ***Tchagra senegala*]:** 1♂, 1♀, Maringue, Sofala Province, Mozambique, Jun. 1950, W. Büttiker, 206 (NHML).
Non-types ex ***Tchagra tchagra australis*** [as ***Tchagra australis*]:** 2♂, 1♀, Shabani, Zimbabwe [as "Rhodesia"], 24 Apr. 1971, R.P. Bonnett, 1039 (NHML).
Non-types ex ***Tchagra tchagra natalensis*** [as ***Tchagra tchagra*]:** 2♂, 1♀, Limpopo River, Mapai, Gaza province, Mozambique, 6 Aug. [year unknown], Brit. Mus. 1954-474 (NHML).

Sturnidoecus xanthops **Tendeiro, 1963**
Type material ex ***Ploceus xanthops*: Holotype** ♂, Gorges de la Pelange, elev. 1150 m, Parc National de l"upemba, Katanga Province, Democratic Republic of the Congo, 17 Jun. 1947, G.F. de Witte, 92b (MRAC).

Sturnidoecus zahrae **Ansari, 1968**
Type material ex ***Onychognathus morio*: Syntypes:** 2♂, 3♀, Kenya, Mar. 1936, R. Meinertzhagen, 7443 (NHML) [slide contains unidentified *Philopterus*].

Sturnidoecus zoophilic **Ansari, 1968**
Type material ex ***Sturnus sinensis*** [as ***Sturnopastor sinensis sinensis*]: Syntypes:** 2♂, Nepal, Mar. 1937, R. Meinertzhagen, 9253 (NHML).
Non-types ex ***Sturnus sinensis*** [as ***Sturnopastor sinensis sinensis*]:** 9♂, 13♀, Bihar, India, Mar. 1937, R. Meinertzhagen, 9253 (NHML).

Turdinirmus daumae **(Clay, 1936)**
Type material ex ***Zoothera dauma dauma*** **Holotype** ♂, "Himalayas", Oct. 1912, R. Meinertzhagen, 2712 (NHML); **paratypes:** 3♀, same data as holotype (NHML).
Type material ex ***Zoothera dauma aurae*: Paratypes** 4♂, 1♀, Myanmar, Mar. 1902, R. Meinertzhagen, 3544 (NHML).
Non-types ex ***Zoothera dauma aurea*:** 1♂, 1♀, Tsunoshima, Yamaguchi Prefecture, Japan, 22 Apr. 1965, H.E. McClure, SE-1727, 12343 [on reverse] (OSUS).
Non-types ex ***Zoothera dauma dauma*:** 1♂, 1♀, Nuwakot [as Newakot], Bagmati Zone, Central region, Nepal, 1 Apr. 1967, C.O. Maser, MN-304 (NHML); 1♀, Sikkim, India, Oct. 1925, R. Meinertzhagen, 3543 (NHML); 1♂, Dehradun, India, Jun. 1940, R. Meinertzhagen, 13937 (NHML). 1♀, Kohima, Assam, India, 28 Jan. 1952, R. Meinertzhagen, 19880, BM 1952-143 (NHML); ; 1♂, 1♀, Trisuli, Newakot District, Nepal, 1 Apr. 1967, C.O. Maser, MN-304 (OSUS).

Turdinirmus stresemanni **(Clay, 1936)**
Type material ex ***Zoothera monticola monticola*: Holotype** ♂, Sikkim, India, Nov. 1900, R. Meinertzhagen, 3114 (NHML); **paratypes:** 1♂, 4♀, same data as holotype (NHML); 2♂, 3♀, Sikkim, India, Jan. 1926, R. Meinertzhagen, 2720, 3539 (NHML).

Turdinirmus zootherae **(Clay, 1936)**
Type material ex ***Zoothera marginata*: Holotype** ♂, Vietnam [as "Annam"], Jan. 1897, R. Meinertzhagen, 3113 (NHML); **paratypes:** 6♂, 6♀, same data as holotype (NHML); 2♂, 5♀, Sikkim, India, Jan. 1926, R. Meinertzhagen, 3540 (NHML); 4♀, "Himalayas", Dec. 1952, R. Meinertzhagen, 2722 (NHML).
Non-types ex ***Zoothera marginata*:** 1♂, 1♀, Phu Lom Lu Mountain, Kok Sathon, Dan Sai District, Loei Province, Thailand, 22 Feb. 1955, R.E. Elbel, RE-4766, BM 1960-518 (NHML); 1♂, 1♀, same locality and collector, 27 Feb. 1955, RE-4797 (OSUS);

1♂, 7♀, Doi Suthep, Chaing Mai Province, Thailand, 11 Apr. 1962, K. Thonglongya, 751, BM 1965-630 (NHML); 6♂, 6♀, same data as previous (OSUS); 2♂, 2♀, Khao Soi Dao Tai, Chanthaburi Province, Thailand, 13 Mar. 1966 (OSUS); 1♀, Phom Thong, Chiang Mai Province, Thailand, 30 Jan. 1971, XIE-228, KT-1263 (OSUS); 4♂, 4♀, Kangpokpi, Manipur, India, 16 Jan. 1952, R. Meinertzhagen, 19865, BM 1952-143 (NHML).

Material referred to other genera

Emersoniella coniceps **(Piaget, 1880)**
Type material ex ***Aceros cassidix*****: Holotype** ♀, locality unknown, Piaget Collection, 1227 (NHML).

Emersoniella docophoroides **(Piaget, 1885)**
Type material ex ***Terpsiphone paradisi*****: Holotype** ♂, locality unknown, Piaget Collection, 1246 (NHML).

Emersoniella paraboliceps **(Piaget, 1880)**
Type material ex ***Psittacus aterrimus*****: Holotype** ♂, locality unknown, Piaget Collection, 1353 (NHML).

Quadraceps nesiotes **(Kellogg & Mann, 1912)**
Type material ex ***Haematopus bachmani*****: Holotype** ♀, San Martin Island, Baja California, México, [1897, R.C. McGregor], 10, EMEC 75441 (EMEC).

Incertae sedis

Nirmus eustigmus **Kellogg 1896**
Type material ex ***Trochilus anna*****: Holotype** ♀, Palo Alto, California, U.S.A., 1896, V.L. K[ellogg], 379a, EMEC 75397 (EMEC).