

# Systematics of *Trichoteleia* Kieffer and *Paridris* Kieffer (Hymenoptera, Platygastroidea, Platygastriidae)

Elijah J. Talamas<sup>1,†</sup>, Lubomír Masner<sup>2,‡</sup>, Norman F. Johnson<sup>3,§</sup>

**1** Systematic Entomology Lab, USDA/ARS c/o USNM, Smithsonian Institution, Washington, D.C. 20560, U.S.A. **2** Agriculture and Agri-Food Canada, K.W. Neatby Building, Ottawa, Ontario K1A 0C6, Canada **3** Department of Evolution, Ecology and Organismal Biology, The Ohio State University, 1315 Kinnear Road, Columbus, Ohio 43212, U.S.A.

† <http://zoobank.org/19124B60-4D11-46AF-ADBF-E48A9988B102>

‡ <http://zoobank.org/FA505310-F606-4F6C-A1DF-74B9A0055B2E>

§ <http://zoobank.org/3508C4FF-F027-445F-8417-90AB4AB8FE0D>

Corresponding author: *Elijah J. Talamas* ([elijah.talamas@ars.usda.gov](mailto:elijah.talamas@ars.usda.gov))

---

Academic editor: *Matthew Yoder* | Received 18 January 2013 | Accepted 21 June 2013 | Published 5 August 2013

<http://zoobank.org/65D86C7A-5BAC-441E-8493-764EEE334BE0>

---

**Citation:** Talamas EJ, Masner L, Johnson NF (2013) Systematics of *Trichoteleia* Kieffer and *Paridris* Kieffer (Hymenoptera, Platygastroidea, Platygastriidae). *Journal of Hymenoptera Research* 34: 1–79. doi: 10.3897/JHR.34.4714

---

## Abstract

*Paridris* Kieffer and *Trichoteleia* Kieffer are morphologically similar genera of solitary egg parasitoids with little overlap between their distributions: *Paridris* is found commonly worldwide with the exceptions of Madagascar, from which a single specimen is known, and New Zealand, from which no records are known; *Trichoteleia* is endemic to the Malagasy islands. Here we present the first phylogenetic analysis of platygastroid wasps that combines and compares morphological and molecular data. We find the results of the phylogenetic analyses of the two data sources to be largely congruent for the species treated here. *Paridris* and *Trichoteleia* are found to be monophyletic, as are two morphologically well-defined species groups within *Paridris*. *Neoparidris* Galloway is found to belong within *Paridris* and is treated as a junior synonym, **syn. n.** The faunas of *Paridris* from Africa, Melanesia and the Indo-Malay islands are revised. Fifteen species are described of which 9 are new: *Paridris anikulapo* Talamas, **sp. n.** (sub-Saharan Africa); *Paridris densiclava* (Kieffer), (Seychelles); *Paridris bispinosa* (Masner), (Gabon); *Paridris nigriclava* (Kief-

fer), (Seychelles); *Paridris nitidiceps* (Kieffer), (Seychelles); *Paridris tenuis* (Nixon), (sub-Saharan Africa); *Paridris trispinosa* Talamas & Masner, **sp. n.**, (Cameroon, Democratic Republic of the Congo); *Paridris bifurcata* (Dodd), **comb. n.**, (Australia, Papua New Guinea); *Paridris mnestros* Talamas & Masner, **sp. n.**, (Indonesia, Malaysia); *Paridris pantex* Talamas, **sp. n.**, (Fiji); *Paridris pbrikos* Talamas & Masner, **sp. n.**, (Fiji); *Paridris skolops* Talamas & Masner, **sp. n.**, (Fiji); *Paridris sulcata* Talamas, **sp. n.**, (Vanuatu); *Paridris taekuli* Talamas & Masner, **sp. n.**, (Australia, Bangladesh, Fiji, India, Indonesia, Ivory Coast, Madagascar, New Caledonia, Thailand, Vietnam); *Paridris xestos* Talamas & Masner, **sp. n.**, (Fiji). *Paridris flaviclava* (Kieffer), **syn. n.**, and *P. nigraticeps* (Kieffer), **syn. n.**, are treated as junior synonyms of *P. nigriclava*.

### Keywords

Egg-parasitoid, Platygastroidea, key, *Paridris*, *Trichoteleia*, revision, phylogeny



**Table of contents**

Introduction.....	4
Materials and methods .....	5
Results of phylogenetic analysis .....	8
Discussion.....	9
Taxonomy .....	12
<i>Paridris pallipes</i> species group .....	12
African <i>Paridris</i> .....	13
Key to African <i>Paridris</i> .....	13
<i>Paridris anikulapo</i> Talamas, sp. n. ....	14
<i>Paridris bispinosa</i> (Masner).....	17
<i>Paridris densiclava</i> (Kieffer) .....	19
<i>Paridris nigriclava</i> (Kieffer).....	20
<i>Paridris nitidiceps</i> (Kieffer) .....	23
<i>Paridris tenuis</i> (Nixon) .....	24
<i>Paridris trispinosa</i> Talamas & Masner, sp. n. ....	26
<i>Paridris</i> of Melanesia and the Indo-Malay Islands.....	28
<i>Neoparidris</i> Galloway, syn. n. ....	30
<i>Paridris bifurcata</i> (Dodd), comb. n.....	30
<i>Paridris mnestros</i> Talamas & Masner, sp. n.....	33
<i>Paridris pantex</i> Talamas, sp. n. ....	35
<i>Paridris phrikos</i> Talamas & Masner, sp. n.....	37
<i>Paridris skolops</i> Talamas & Masner, sp. n. ....	39
<i>Paridris sulcata</i> Talamas, sp. n. ....	41
<i>Paridris taekuli</i> Talamas & Masner, sp. n. ....	43
<i>Paridris xestos</i> Talamas & Masner, sp. n. ....	45
Synopsis of species included in phylogenetic analysis, but not taxonomically treated by the present authors.....	48
<i>Paridris armigera</i> Rajmohana .....	48
<i>Paridris gloria</i> Kononova.....	48
<i>Paridris spinosa</i> Rajmohana .....	48
<i>Paridris</i> asian sp. 1.....	48
Synopsis of <i>Paridris</i> not treated in this publication .....	48
Plates.....	51
Acknowledgements.....	72
References .....	72
Endnotes.....	75
Appendix I .....	78
Appendix II.....	78
Appendix III.....	78
Appendix IV.....	79
Appendix V .....	79

## Introduction

*Paridris* is a genus of minute wasps that, extrapolating from a single host record from North America (Masner and Muesebeck 1968), are parasitoids of cricket eggs (Orthoptera: Gryllidae). The genus is nearly cosmopolitan in distribution: it is not known from New Zealand and its presence in Madagascar is known from a single specimen. Significantly, the putative sister group to *Paridris*, *Trichoteleia*, is endemic to the Malagasy Islands. The nearly exclusive distributions of these genera and their morphological similarity suggested the possibility that *Trichoteleia* was an apomorphic lineage derived from within *Paridris*. To test this hypothesis we conducted a phylogenetic analysis of these genera based on molecular and morphological data. This is the culmination of our examination of these groups of parasitoids, following our revision of *Trichoteleia* at the species level and evaluation of its generic limits (Talamas et al. 2011a), a generic level assessment of *Paridris*, and species descriptions of the *nephta* group (formerly the genus *Tuora*, Talamas et al. 2011b) and the New World species of *Paridris* (Talamas et al. 2012).

Among platygastroid genera, the diversity of species revealed by recent taxonomy is often an order of magnitude greater than was previously known (e.g., Johnson et al. 2008, Taekul et al. 2008), and *Paridris* is no exception. Revision of the *Paridris nephta* species group increased the number of species from 1 to 15 (Talamas et al. 2011b), and treatment of the New World fauna resulted in a similar increase from 2 valid species to 15 (Talamas et al. 2012). Here we continue our revision of *Paridris* with two goals. First, we strive to examine the gamut of morphological diversity within the genus to produce a maximally informed coding scheme for phylogenetic characters and form an accurate, robust generic concept. Second, we seek to document the species level diversity and distribution of *Paridris* and produce identification tools that make these data usable for future biological studies. We present the following as a single publication because we consider it best to make taxonomic decisions, such as the synonymy of *Neoparidris*, in a phylogenetic context.

Our focus for this revision is on the geographical regions of Africa, Melanesia and the Indo-Malay islands based on the accessibility of primary types. Kononova and Kozlov (2008) produced a key to the species of the Palearctic, Rajmohana (2007) published a key to the species of India, and Kozlov and Lê (2000) published a key to the species of Vietnam. Together with the present work, these publications treat most of the world's geographic areas. Only the fauna of Australia remains largely unexplored.

Although we were unable to access the type material for the Indian species, the high quality images of *Paridris spinosa* Rajmohana and the key to Indian species (Rajmohana 2007) allowed us to identify this species and *P. armigera* among the material at hand and include them in our analysis. Our analyses include a species from Southeast Asia that was likely described by Kozlov and Lê (2000). We were unable to unambiguously identify this species with their key and it is indicated as *Paridris* asian sp. 1. Synopses of the species not analyzed taxonomically or phylogenetically by the present authors may be found following the species descriptions.

Previous phylogenetic analyses of platygastroids have used morphological data (Iqbal and Austin 2000, Valerio et al. 2010) or molecular data (Carey et al. 2006, Murphy et al. 2007), but to date none have compared the two datatypes with the same set of taxa or conducted a combined analysis. Here we demonstrate the utility of morphological characters at the species level, and to some extent at the generic level. We show that morphological characters, though demonstrably homoplasious at times, are useful for reconstructing relationships, particularly when combined with molecular data. These analyses represent the first comparison between analyses of molecular and morphological data within the superfamily.

This work is conducted as part of the Platygastroidea Planetary Biodiversity Inventory and represents a step toward a species-level revision of the Scelionini *sensu lato*. The contributions of the authors are as follows: E.J. Talamas: DNA extraction and amplification; sequence alignment and phylogenetic analysis, character definition and coding, species concept development, imaging, key development, manuscript preparation; L. Masner: aggregation of specimens, species concept development, manuscript preparation; N.F. Johnson: software and database development, character definition; manuscript preparation.

## Materials and methods

**Primary types:** The primary types of J. J. Kieffer and G. E. J. Nixon in The Natural History Museum were photographed by E. Talamas during a visit to this collection in 2009. Our assessment of *Neoparidris*, and ultimately its treatment as a junior synonym of *Paridris*, was facilitated by images of the type species taken by N. F. Johnson in 2004 at the Queensland Museum, Brisbane, Australia. Continual access to images of the type material made this project possible without risking damage to specimens during shipping. We hope that this demonstration of the utility of such photographs will encourage the imaging of type material as standard practice in taxonomy.

**Specimens:** This work is based upon specimens deposited in the following collections, with abbreviations used in the text:

<b>AEIC</b>	American Entomological Institute, Gainesville, USA <sup>1</sup>
<b>BMNH</b>	Natural History Museum, London, England <sup>2</sup>
<b>BPBM</b>	Bishop Museum, Honolulu, USA <sup>3</sup>
<b>CASC</b>	California Academy of Sciences, San Francisco, USA <sup>4</sup>
<b>CNCI</b>	Canadian National Collection of Insects, Ottawa, Canada <sup>5</sup>
<b>FNIC</b>	Fiji National Insect Collection, Suva, Fiji <sup>6</sup>
<b>MCZ</b>	Harvard University Museum of Comparative Zoology, Cambridge, USA <sup>7</sup>
<b>MZLU</b>	Lund Museum of Zoology, Lund University, Lund, Sweden <sup>8</sup>
<b>MNHN</b>	Muséum National d'Histoire Naturelle, Paris, France <sup>9</sup>
<b>OSUC</b>	C.A. Triplehorn Insect Collection, Columbus, USA <sup>10</sup>
<b>QSBG</b>	Queen Sirikit Botanic Garden, Chiang Mai, Thailand <sup>11</sup>

- RMNH** Leiden Nationaal Natuurhistorische Museum, Netherlands<sup>12</sup>  
**SAMC** Iziko Museums of Cape Town, South Africa<sup>13</sup>  
**USNM** Smithsonian National Museum of Natural History, Washington DC, USA<sup>14</sup>

**Morphological terminology:** Abbreviations and morphological terms used in text: A1, A2, ... A12: antennomere 1, 2, ... 12; claval formula: distribution of the multiporous basiconic sensilla on the underside of apical antennomeres of the female, with the antennomere interval specified followed by the number of sensilla per segment (Bin 1981); palpal formula: number of maxillary and labial palpal segments, respectively; S1, S2, ... S6: metasomal mediosternite 1, 2, ... 6; T1, T2, ... T7: metasomal mediotergite 1, 2, ... 7.; posterior vertex: area between the posterior ocelli and the occipital carina. Morphological terminology largely follows Mikó et al. 2007. Terminology for wing venation follows Mason 1986. The following are illustrated and labeled to facilitate their use:

- anterior propodeal projection (app: Figs 12, 75, 79, 92)
- felt field (ff: Figs 18–23 )
- occipital carina (occ: Figs 6, 7, 9)
- post gena (pg: Figs 7, 8, 9)
- posterior mesepimeral area (pmma: Figs 28, 45)
- transverse carina of T2 (trc: Fig. 79 ).

Morphological terms used in this revision were matched to the Hymenoptera Anatomy Ontology (HAO, Yoder et al. 2010) (Appendix I). Identifiers (URIs) in the format [http://purl.obolibrary.org/obo/HAO\\_XXXXXXX](http://purl.obolibrary.org/obo/HAO_XXXXXXX) represent anatomical concepts in HAO version <http://purl.obolibrary.org/obo/hao/2011-05-18/hao.owl>. They are provided to enable readers to confirm their understanding of the anatomical structures being referenced. To find out more about a given structure, including, images, references, and other metadata, use the identifier as a web-link, or use the HAO:XXXXXXX (note colon replaces underscore) as a search term at <http://glossary.hymao.org>.

The description of surface sculpture is presented in two formats. Areas of the exoskeleton in which the sculptural elements are inseparable are described simply as “sculpture”. For areas in which the sculptural elements vary independently, sculpture is divided into three categories: punctuation: round depressions associated with setae; macrosculpture: raised or sunken patterns of texture that are oriented linearly or radially with respect to punctuation or the axes of the body; microsculpture: unoriented, very fine wrinkles or pustulations that occur on, in, or between elements of macrosculpture and punctuation.

**Information management:** The locality data reported for primary types are not a literal transcription of the labels: some abbreviations are expanded; additional data from the collectors are also included. The holotypes should be unambiguously identifiable by means of the unique identifier or the red holotype label. The numbers prefixed with “OSUC ” and “CASENT ” are unique identifiers for the individual

specimens (note the blank space after the acronyms). Details on the data associated with these specimens may be accessed at the following link, [purl.oclc.org/NET/hymenoptera/hol](http://purl.oclc.org/NET/hymenoptera/hol), and entering the identifier in the form. This monograph also features simultaneous publication and distribution of taxonomic and occurrence records through the Global Biodiversity Information Facility (GBIF) using DarwinCore Archives. All new species have been prospectively registered with Zoobank (Polaszek et al. 2005) and other taxonomic names have been retrospectively registered therein. All names are also registered in the Hymenoptera Name Server ([hns.osu.edu](http://hns.osu.edu)). Life sciences identifiers, lsids, may be resolved at the URLs specified in the footnotes or at [lsid.tdwg.org](http://lsid.tdwg.org).

**Cybertools:** The species descriptions are generated by a database application, vSysLab ([purl.oclc.org/NET/hymenoptera/vSysLab](http://purl.oclc.org/NET/hymenoptera/vSysLab)), designed to facilitate the generation of taxon by character data matrices, to integrate these with the existing taxonomic and specimen-level database, and to export the data both as text and as input files for other applications (Johnson 2010). The output is in the format of “Character: Character state(s).” Intraspecific variability is indicated by character states separated by a semicolon. The illustrated matrix of morphological characters used in our phylogenetic analysis can be found at [http://vsyslab.osu.edu/show\\_matrix.html?project\\_id=106](http://vsyslab.osu.edu/show_matrix.html?project_id=106).

**Imaging:** Images were produced using Combine ZP and AutoMontage extended-focus software. The individual images are archived at the image database at The Ohio State University ([purl.oclc.org/NET/hymenoptera/specimage](http://purl.oclc.org/NET/hymenoptera/specimage)) and with MorphBank ([www.morphbank.net](http://www.morphbank.net)). The latter also contains collections of images organized by plate.

**Species concept:** For the purpose of this revision, species are defined as taxa diagnosable by putative autapomorphies or a unique combination of fixed character states.

**Molecular data:** DNA was extracted nondestructively with a Qiagen DNeasy extraction kit and amplified according to standard protocols with the primers of Murphy et al. (2007). Sequences of ribosomal genes were aligned by eye according to the structural models of Gillespie et al. (2005) and Gillespie et al. (2005). CO1 sequences, and the variable loop regions of 18S and 28S, were aligned with MUSCLE (Edgar 2004). The CUIDs of voucher species and Genbank accession numbers are presented in Appendix IV.

**Phylogenetic analysis:** We analyzed our data under the criterion of parsimony using TNT (Goloboff et al. 2008) with gaps treated as missing data in all analyses and equal weights for all characters. We consider parsimony to be the optimal method for our dataset because it contains both morphological and molecular data, and the latter are missing for two thirds of the species, creating a pitfall for parameter estimation in model-based analyses. Parsimony also enables comparison between the signal in morphological and molecular data within the same analysis paradigm. We used the script of Peña et al. (2006) to perform a Partitioned Bremer Support analysis in TNT with four data partitions, morphology, 28S, 18S and CO1, to examine the contributions of each data set to support for the nodes in the strict consensus tree. The composite consistency and retention indices (CI and RI) are listed in the figure captions for each phylogeny. The matrix used for phylogenetic analysis is included as Appendix V.

**Composite terminals:** The CO1 sequence for our outgroup terminal, *Archaeoteleia*, was amplified from *Archaeoteleia mellea*, and 18S and 28S sequences from *A. onamata*. Morphology was coded from *A. mellea*. For the morphological characters used in our analysis, these species of *Archaeoteleia* are essentially isomorphic. The sequence data for *Paridris aeneus* came from two specimens: OSUC 261872 for CO1 and OSUC 265221 for 18S and 28S.

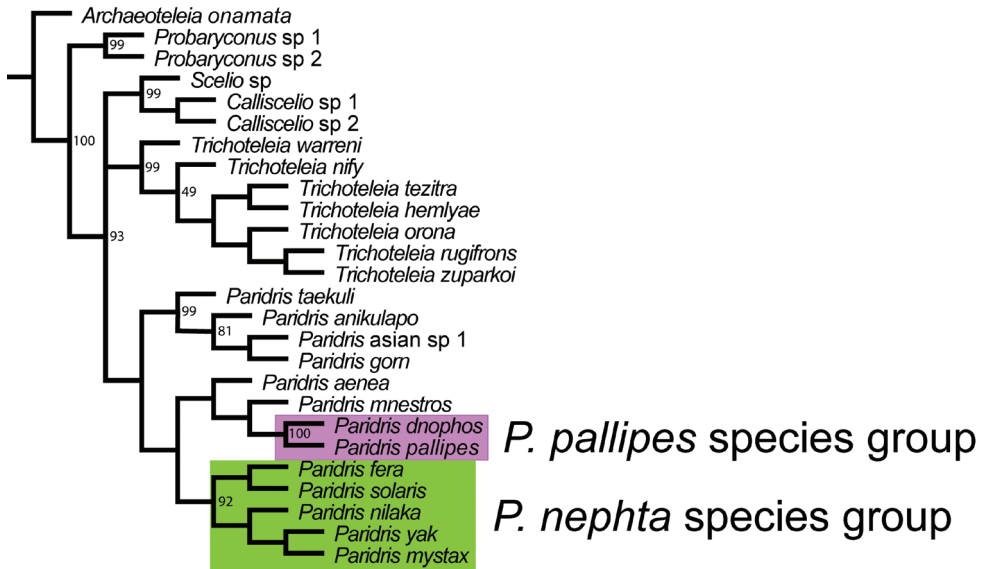
**Excluded species:** We excluded *P. armata* Talamas, *P. invicta* Talamas, *P. nitidiceps* and *P. densiclava* from our final analyses. *Paridris armata*, *P. invicta*, and *P. nitidiceps* are known only from males, lacking phylogenetically important female characters, and are of uncertain affinity. The morphological characters of *P. nitidiceps* and *P. densiclava* were coded from photographs of the type specimens. Consequently, we were unable to observe a number of the characters that we consider to be phylogenetically informative. Apart from a loss of resolution, analyses that included these species did not differ from those presented in Figs 2–3.

## Results of phylogenetic analysis

All of our analyses confirmed monophyly of the *P. nephta* and *P. pallipes* species groups and *Trichoteleia* (Figs 1–3) with strong bootstrap support for these clades in the molecular and combined analyses. *Trichoteleia* and the *P. nephta* group had significant support in the morphological analysis, but support for the *P. pallipes* group here was poor, reflecting the homoplasious nature of the characters that delimit this group. Similarly, *Paridris* was retrieved as a monophyletic group in all of the analyses, but its highest bootstrap value of 49, retrieved in the analysis of combined data, is still low. From a morphological perspective this is unsurprising because all of the synapomorphies for *Paridris* are also found in other genera or are lost secondarily. The presence of *Probaryconus* sp. 2 among *Paridris* in the morphological analysis (Fig. 2) is also not unexpected, particularly because this specimen was selected for its similarity to *Paridris*: it lacks an epomial carina and has setose compound eyes. Topologically, the only character that separates this species from *Paridris* is the externally undifferentiated metascutellum. Even this character must be carefully assessed because in some species of both *Paridris* and *Probaryconus* the horn of T1 may be very large and preclude observation of the metanotum. However, the high bootstrap support for *Probaryconus* in the molecular and combined analyses ultimately affirms confidence in our concepts for these genera. A subset of characters that are diagnostic for genera and species treated in this analysis (see Appendix II) are mapped onto the combined data phylogeny in Figure 3.

The analysis of Partitioned Bremer Support (see Appendix III) indicates that contributions to clade support from the four data partitions, morphology, 28S, 18S, and CO1, are clade dependent. Within *Trichoteleia*, 28S provided minimal clade support with values of zero for most of the nodes. CO1 contained the most contrarian signal for this genus and accounted for nearly all of the disagreement between partitions with nega-





**Figure 1.** Strict consensus tree based on 18S, 28S and CO1 sequences. Bootstrap support of 49 and higher indicated on tree. CI: 0.515. RI: 0.476.

tive values for six of the twenty nodes. However, none of these were less than negative one, indicating that the incongruence of CO1 with the other data partition is small in magnitude for *Trichoteleia*. The *P. nephta* species group yielded a similar pattern with no contribution to node support from 28S and a small degree of incongruence from CO1 and 18S. At each node within this group morphology provided the strongest signal.

The pattern of clade support from 18S was consistent with a relatively slow rate of evolution in this gene; nodes at the base of *Paridris* had 18S support values an order of magnitude higher than those toward the tips. Within the the *Scelio*+*Calliscelio* clade the support values for all three genes were the largest (both positive and negative) with the signal of 18S and CO1 conflicting with, and overriding, that of 28S.

## Discussion

Morphological homoplasy within Platygastroidea has been mentioned by previous authors (Masner and Huggert 1989, Iqbal and Austin 2000) and it is present in our data as well. However, *Paridris*, for which no uncontroverted synapomorphy exists in our data set, nonetheless formed a clade in all of our analyses, with the caveat that *Probaryconus* sp. 2 is present in this clade in the analysis of morphology alone. Our reductionist coding system (vs. composite characters) may eliminate some important characters that contribute to this erroneous placement. Specifically, the pattern of punctuation and microsculpture on the mesoscutum of *Probaryconus* is found throughout this genus and is recognizable to the experienced taxonomist, but when broken into component characters the characters no longer define *Probaryconus* as a group because of the dif-

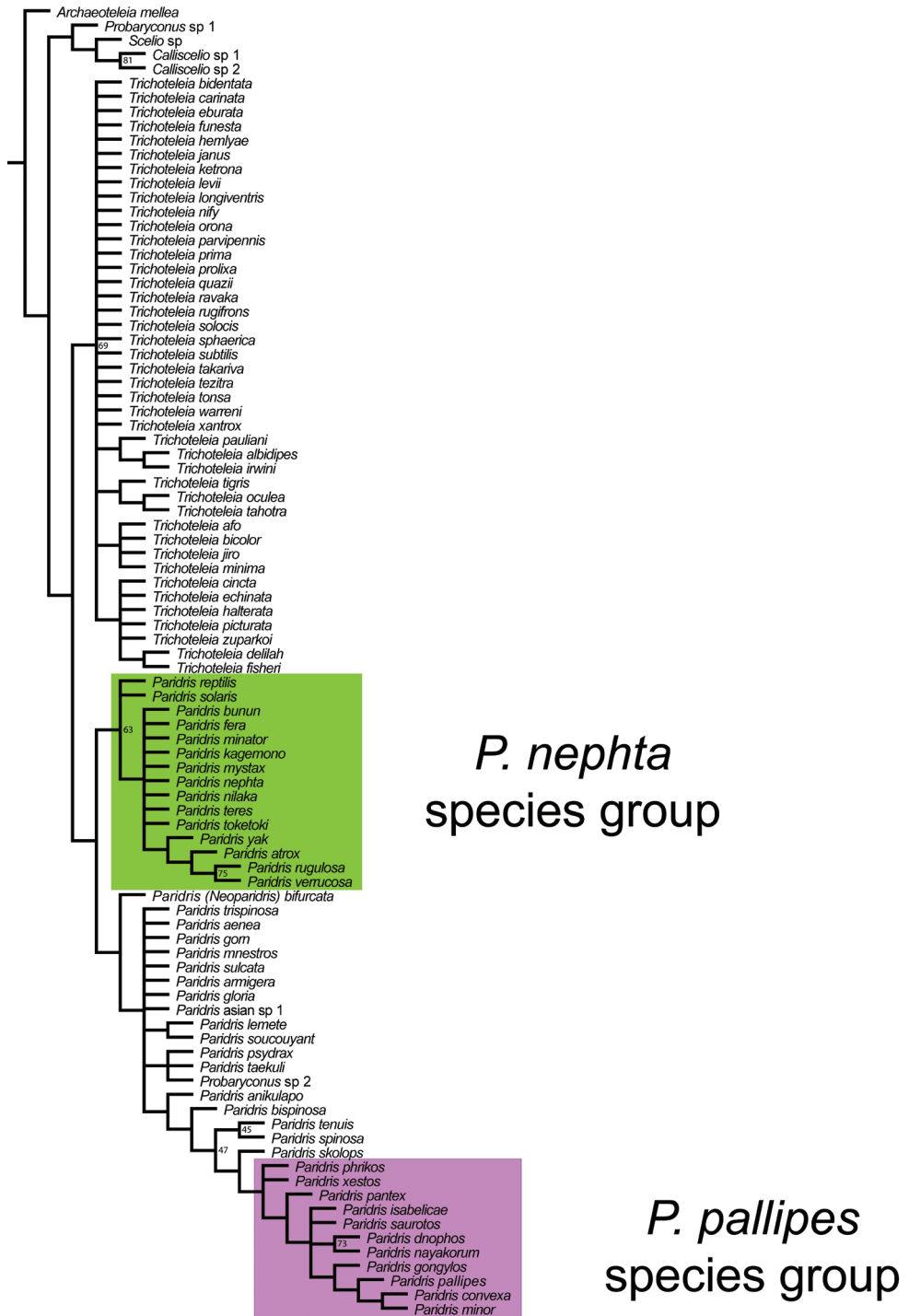
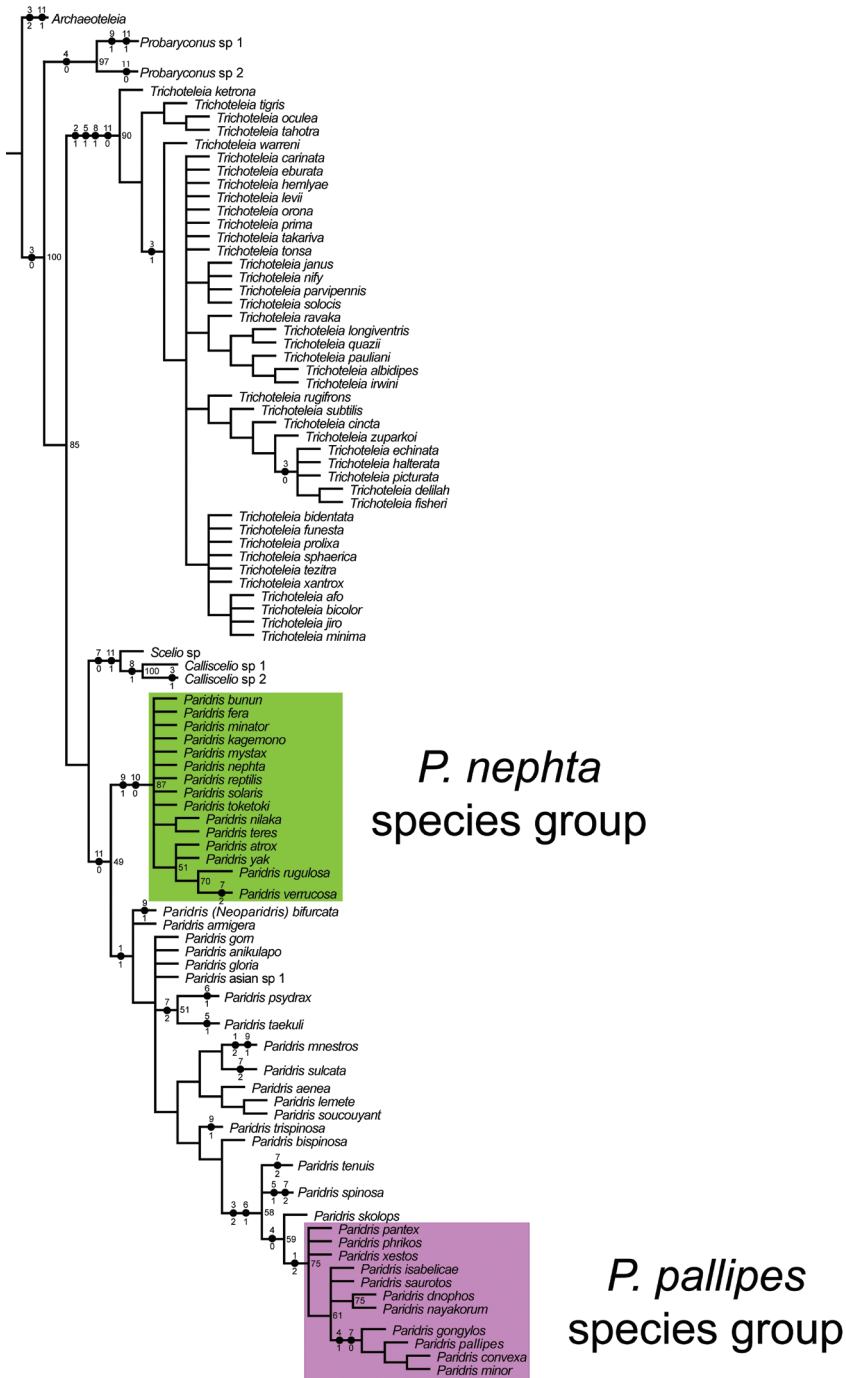


Figure 2. Strict consensus tree based on 72 parsimony informative morphological characters. Bootstrap support of 45 and higher indicated on tree. CI: 0.289. RI: 0.782.





**Figure 3.** Strict consensus tree based on combined dataset of 72 morphological characters and 18S, 28S, and CO1 sequences. Bootstrap support of 49 and higher indicated on tree. CI: 0.481. RI: 0.585. Black circles indicate the optimization of characters from Appendix II. Numbers above the circles indicate the character; numbers below the circles indicate the character state.

faculty in accurately coding and articulating subtly different forms of microsculpture. We emphasize that the use of morphological data can be extremely useful by allowing the inclusion of taxa for which molecular data is not available.

We note that the genera within Scelioninae are typically well-defined groups, but are based on unique combinations of characters found throughout the subfamily, that are thus homoplasious in phylogenetic analyses. In polytypic groups, such as *Paridris*, even the characters that define the group are either secondarily lost (transverse carina on T2), or are apparently homoplasious (metascutellum). *Trichoteleia* is a group well defined by multiple synapomorphies (felt fields of T1 and S2, setose metascutellum), but these characters do little to ally it with other genera. For example, setation of the eyes is common, and may be present or absent within genera (*Idris*, *Probaryconus*). Metascutellar setation, though uncommon, is found in *P. spinosa* and *P. taekuli* as well as in genera that are morphologically more distant (*Chromoteleia*, *Bracalba*, *Sceliacanthella* (OSUC 150176)) and in a species of Teleasinae (OSUC 281605).

The outgroups in our analysis represent a small fraction of the subfamily Scelioninae, and we do not conclude from these results any relationships at the level of genera, only that *Trichoteleia* is not derived from within *Paridris*, answering our primary question.

## Taxonomy

### *Paridris pallipes* species group

The *P. pallipes* species group is morphologically distinct from the remainder of *Paridris*, noticeable immediately by the relative absence of macrosculpture from the head and mesosoma. The geographical distribution of this group is perplexing- it is found throughout North and South America and in the Fijian Islands. This suggested the possibility of “tramp” species, yet no species are shared between the two regions. Additionally, *P. pantex* (Fiji) has a highly apomorphic form of the felt fields on S2 that we consider unlikely to have evolved during recent history in which humans have been able to travel rapidly between Fiji and the Americas. It is possible that the group was once widespread, and the distribution we see now is the result of extinction, or that one of the centers of diversity is simply a radiation of the other. Either way, our understanding of the group, and *Paridris* as a whole, will be greatly furthered by additional host and biological data that allows us to make more informed inferences.

The association between the *P. pallipes* species group and islands is noteworthy. In addition to the three species known from the Fijian islands, 6 of the 8 species of the *P. pallipes* group in the New World are found on Caribbean islands, 4 of them exclusively so.

**Diagnosis.** The *P. pallipes* species group can be separated from the remainder of *Paridris* by the following combination of characters: genal striae strongly reduced, rarely extending to midpoint of compound eye; occipital carina absent below foramen magnum; occipital carina complete dorsally; dorsal frons and vertex without macrosculpture; plical carina absent; posterior margin of metascutellum straight to convex;

antecostal sulcus of T2 present as a constriction or line of foveae, without carina along its posterior margin; postmarginal vein punctiform.

In addition to these ubiquitously present characters, species of the *P. pallipes* group often have dense setation on the postgena and S1. All species except for *P. pantex* have the felt field present as a line of dense setae along a longitudinal ridge. In a few specimens of *P. dnophos* and *P. pallipes* the lateral ocellus is less than two ocellar diameters from the inner orbit of the compound eye. However, in the vast majority of specimens of these species, and in all other members of this species group, the lateral ocellus is distinctly remote from the inner orbits.

### **African *Paridris***

The fauna of *Paridris* in continental Africa is surprisingly small with just five species. Two of these, *P. tenuis* and *P. anikulapo*, are widespread in distribution and found in eastern, western and southern Africa. Our knowledge about their presence in central Africa, and the existence of other species of *Paridris*, is currently limited by a dearth of collecting in this region.

Three valid species are known from the Seychelles. *Paridris densiclava* and *P. nitidiceps* were described by J. J. Kieffer from singletons of opposite sex. We have no additional material of either species, and because we found characters to separate them we consider it best to keep them as separate species. However, we acknowledge that we are currently unable to assess intraspecific variation, and that examination of more material may reveal them to be conspecific.

The single species from Madagascar, *P. taekuli*, is known from the Ivory Coast, South and Southeast Asia, Fiji, New Caledonia and Northern Australia from a modest number of specimens. Its sister species in the New World, *P. psydrax*, ranges from Argentina to California and is similarly known from a rather short series given its wide distribution.

### **Key to African *Paridris***

#### **Females** (unknown for *P. nitidiceps*)

- |   |   |  |
|---|---|--|
| 1 | Metascutellum setose (Figs 87, 89) .....  | <i>Paridris taekuli</i> Talamas & Masner, sp. n. |
| – | Metascutellum glabrous (Figs 31, 35, 41, 49) .....  | 2  |
| 2 | Occipital carina absent or incomplete and not reaching base of mandible (Figs 8–9); postmarginal vein less than half as long stigmal vein (Figs 14, 42) ..... | 3  |
| – | Occipital carina extending to base of mandible (Figs 6–7); postmarginal vein as long as stigmal vein (Figs 17, 38) .....                                      | 4  |
| 3 | Frons without central keel (Fig. 50); horn of T1 with posteriorly directed spine (Fig. 51) .....  | <i>Paridris tenuis</i> (Nixon)                   |

- Frons with central keel (Fig. 43); horn of T1 unarmed (Fig. 44).....  
..... *Paridris nigriclava* (Kieffer)
- 4 T6 transverse and evenly rounded posteriorly (Fig. 37).....  
..... *Paridris densiclava* (Kieffer)
- 6 about as long as wide and constricted apically (Figs 29, 33, as in Fig. 24).... 5
- 5 Horn of T1 with posteriorly directed spine (Figs 52, 55).....  
..... *Paridris trispinosa* Talamas & Masner, sp. n.
- Horn of T1 unarmed (Figs 31, 35)..... 6
- 6 Gena along posterodorsal margin of eye smooth and shining (Fig 28); notaulus percurrent (Fig. 29)..... *Paridris anikulapo* Talamas, sp. n.
- Gena along posterodorsal margin of eye with coarse surface sculpture (Fig. 32); notaulus present as single fovea at posterior margin of mesoscutum (Figs 33, 35)..... *Paridris bispinosa* (Masner)

**Key to Males** (unknown for *P. nigriclava*, *P. densiclava*, *P. bispinosa*)

- 1 Metascutellum setose (Figs 87, 89).....  
..... *Paridris taekuli* Talamas & Masner, sp. n.
- Metascutellum glabrous (Figs 31, 35, 49)..... 2
- 2 Occipital carina incomplete and not reaching base of mandible (Fig 8–9); postmarginal vein less than half as long stigmal vein (Fig. 14).....  
..... *Paridris tenuis* (Nixon)
- Occipital carina extending to base of mandible (Figs 6–7); postmarginal vein as long as stigmal vein (Figs 17, 38)..... 3
- 3 Gena along posterodorsal margin of eye with coarse surface sculpture (Fig. 52)..... *Paridris trispinosa* Talamas & Masner, sp. n.
- Gena along posterodorsal margin of eye smooth and shining (Figs 28, 46).... 4
- 4 Posterior mesepimeral area with large nonsetigerous punctures (Fig. 45).....  
..... *Paridris nitidiceps* (Kieffer)
- Posterior mesepimeral area entirely smooth (Fig. 28).....  
..... *Paridris anikulapo* Talamas, sp. n.

***Paridris anikulapo* Talamas, sp. n.**

<http://zoobank.org/2ACC4433-32AE-4CF6-9A14-ACBD006E8705>

[http://species-id.net/wiki/Paridris\\_anikulapo](http://species-id.net/wiki/Paridris_anikulapo)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:303979](urn:lsid:biosci.ohio-state.edu:osuc_concepts:303979)

Figures 7, 17, 28–31; Morphbank<sup>15</sup>

**Description.** Female body length: 1.32–1.75 mm (n=20). Male body length: 1.04–2.02 mm (n=19).

Number of basiconic sensilla on A8: one. Shape of male flagellomeres: spherical.

Color of head: brown to black. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: straight. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Anterodorsal node on interantennal process: absent. Central keel: absent. Length of OOL: less than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: dorsoventrally strigose; absent. Patch of microsculpture posterior to lateral ocellus in male: absent. Patch of microsculpture posterior to lateral ocellus in female: absent. Patch of microsculpture between median and lateral ocelli: absent. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: present. Shape of gena: not receding posterior to eye. Macrosculpture of posterior vertex: absent. Patch of microsculpture on temples: absent. Occipital carina above occipital foramen: appressed toward ocelli. Anterior margin of occipital carina above occipital foramen: comprised of cells. Ventral extent of occipital carina: extending to base of mandible. Setation of postgena: sparse.

Color of mesosoma: brown to black.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: present in posterior half of pronotum. Dorsal half of pronotal cervical sulcus: present as line of small cells. Ventral half of pronotal cervical sulcus: present as line of small cells. Sculpture of pronotal setal patch: punctate.

Anterior notaulus: reaching mesoscutal suprahumeral sulcus as row of punctures. Orientation of notauli: converging posteriorly. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: absent. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of short parallel striae. Median carina on posterior mesoscutellum: present. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: present; absent. Size of punctures on dorsal part of posterior mesepimeral area: very fine. Mesopleural carina: present. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: emarginate.

Setation of metapleural triangle: sparse. Paracoxal and metapleural sulci: separate. Sculpture of posterodorsal part of ventral metapleural area: mostly rugose with small smooth patch; smooth. Dorsal metapleural area: smooth defined area; coarsely sculptured. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: absent. Setation of metasomal depression: absent. Posterior projection of the propodeum: present as a point formed by plical and lateral propodeal carinae. Plical carina: indistinguishable from propodeal sculpture except at posterior apex. Lateral propodeal area: undifferentiated from plical area. Shape of lateral propodeal area: continuous with prespiracular propodeal area. Sculpture of lateral propodeal area: punctate rugulose.

Length of postmarginal vein: slightly longer than stigmalis ( $<1.5\times$ ); equal to stigmalis. Rs in fore wing: nebulous; spectral. Cu vein in fore wing: nebulous; spectral.

M vein in forewing: nebulous; spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of costal cell in male: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. Color of cubito-medial area in male: hyaline. Color of anal margin in male: hyaline. RS+M in forewing: nebulous. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout; reduced anad of submarginal vein.

Color of metasoma: brown to black. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: absent. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: present. Sublateral tergal carina on T2: absent. Microsculpture on T2: absent. Macrosculpture of T2 in female: longitudinally striate. Macrosculpture of T2 in male: longitudinally striate throughout. Carina along posterior margin of transverse sulcus on T2 in male: present. Microsculpture on T3: absent. Macrosculpture of medial T3 in female: longitudinally striate; weakly longitudinally striate. Macrosculpture of lateral T3 in female: longitudinally striate. Macrosculpture of medial T3 in male: longitudinally strigose. Macrosculpture of lateral T3 in male: longitudinally strigose. Macrosculpture of T4 in male: weakly crenulate laterally. Macrosculpture of female T5: absent. Microsculpture on female T6: present throughout. Constriction of apical T6 in female: present. Macrosculpture of S1: longitudinally striate; rugose. Setation of S1: absent. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: lateral row or patch of setigerous punctures. Marginal depression on S3: absent. Marginal depressions on S4: present. Marginal depression on S5: present.

**Diagnosis.** *Paridris anikulapo* is closest to *P. bispinosa*, and may be separated by the smooth and shining gena along the posterodorsal orbit of the compound eye.

**Etymology.** The species epithet “anikulapo” is a Yoruban name meaning “he who carries death in his pouch”. It is given to this species as a reference to the parasitoid life history and is treated as a noun in apposition.

**Link to distribution map.**<sup>16</sup>

**Material examined.** Holotype, female: **IVORY COAST:** Lamto Research Station, 29.V.1986, J. Y. Rasplus, OSUC 58723 (deposited in OSUC). *Paratypes:* (99 females, 19 males) **BENIN:** 2 females, 1 male, OSUC 181239, 453642–453643 (CNCI). **CAMEROON:** 11 females, 1 male, OSUC 181241, 453644–453649, 453651–453655 (CNCI). **CENTRAL AFRICAN REPUBLIC:** 4 females, 1 male, OSUC 243529, 265246–265249 (SAMC). **GHANA:** 2 females, OSUC 181672, 260561 (OSUC). **IVORY COAST:** 69 females, 12 males, OSUC 181234, 181238, 453657–453730 (CNCI); OSUC 58697–58698, 58718, 58720, 58724 (OSUC). **KENYA:** 3 females, OSUC 181236, 453731 (CNCI); OSUC 58707 (OSUC). **NIGERIA:** 1 female, 3 males, OSUC 181243, 181270, 453732–453733 (CNCI). **SIERRA LEONE:** 1 male, OSUC 405077 (MZLU). **SOUTH AFRICA:**

2 females, OSUC 181237, 265183 (CNCI). **TANZANIA:** 1 female, OSUC 181240 (CNCI). **UGANDA:** 1 female, OSUC 181235 (CNCI). **ZIMBABWE:** 3 females, OSUC 453615, 453734–453735 (CNCI). *Other material:* **CAMEROON:** 1 female, OSUC 453650 (CNCI).

***Paridris bispinosa* (Masner)**

[http://species-id.net/wiki/Paridris\\_bispinosa](http://species-id.net/wiki/Paridris_bispinosa)

[url:lsid:biosci.ohio-state.edu:osuc\\_concepts:5063](http://url:lsid:biosci.ohio-state.edu:osuc_concepts:5063)

Figures 32–35; Morphbank<sup>17</sup>

*Aellenia bispinosa* Masner, 1958: 50 (original description).

*Paridris bispinosa* (Masner): Masner 1976: 36 (generic transfer).

**Description.** Female body length: 1.83 mm (n=1). Male body length: 2.28 mm (n=1).

Number of basiconic sensilla on A8: one. Shape of male flagellomeres: longer than wide by a factor less than 2.

Color of head: black; reddish brown. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: convex. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: continuous with sculpture of dorsal frons. Anterodorsal node on interantennal process: present. Central keel: absent. Length of OOL: less than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: dorsoventrally strigose. Patch of microsculpture posterior to lateral ocellus in female: absent. Patch of microsculpture between median and lateral ocelli: absent. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: absent. Shape of gena: not receding posterior to eye. Macrosculpture of posterior vertex: rugulose to rugose with faint concentric tendency. Patch of microsculpture on temples: absent. Occipital carina above occipital foramen: simple. Anterior margin of occipital carina above occipital foramen: comprised of cells. Ventral extent of occipital carina: extending to base of mandible. Setation of postgena: sparse.

Color of mesosoma: brown; reddish brown.

Shape of pronotal shoulder in dorsal view: without dorsal surface. Transverse pronotal carina: present in posterior half of pronotum. Dorsal half of pronotal cervical sulcus: present as line of small cells. Ventral half of pronotal cervical sulcus: present as line of small cells. Sculpture of pronotal setal patch: striate, striae short and poorly defined.

Anterior notaulus: absent. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: absent. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of short parallel striae. Median carina on posterior mesoscutellum: absent. Posterior scutellar sulcus: comprised of shallow round cells.



Punctures on dorsal part of posterior mesepimeral area: absent. Mesopleural carina: present. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: emarginate.

Setation of metapleural triangle: sparse. Paracoxal and metapleural sulci: separate. Sculpture of posterodorsal part of ventral metapleural area: smooth. Dorsal metapleural area: smooth defined area. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: absent. Setation of metasomal depression: absent. Posterior projection of the propodeum: lamellate extension formed from lateral propodeal carina. Plical carina: absent. Lateral propodeal area: indicated by lesser degree of setation. Shape of lateral propodeal area: continuous with prespiracular propodeal area. Sculpture of lateral propodeal area: areolate rugose.

Length of postmarginal vein: equal to stigmalis. Rs in fore wing: nebulous. Cu vein in fore wing: nebulous. M vein in forewing: nebulous. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. RS+M in forewing: nebulous. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: brown; reddish brown. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: absent. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: present. Sublateral tergal carina on T2: absent. Microsculpture on T2: absent. Macrosculpture of T2 in female: longitudinally striate. Microsculpture on T3: absent. Macrosculpture of medial T3 in female: weakly longitudinally striate. Macrosculpture of lateral T3 in female: longitudinally striate. Macrosculpture of female T5: absent. Microsculpture on female T6: present throughout. Constriction of apical T6 in female: present. Macrosculpture of S1: rugose. Setation of S1: absent. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: lateral row or patch of setigerous punctures. Marginal depression on S3: absent. Marginal depressions on S4: absent. Marginal depression on S5: absent.

**Diagnosis.** In *P. bispinosa*, the metascutellum is distinctly bispinose and T6 is sharply constricted in its apical half, separating it from all but two African species, *P. anikulapo* and *P. trispinosa*. The females of *P. bispinosa* have the notaulus present as a single fovea on the posterior margin of the mesoscutum and in females of *P. anikulapo* the notaulus extends to the anterior mesoscutum. In the specimen of *P. bispinosa* examined here, the gena is coarsely sculptured throughout and in *P. anikulapo* the gena along the posterior margin of the eye is smooth and shining. *Paridris trispinosa* may be separated from *P. bispinosa* by the presence of a posteriorly directed spine on the horn of T1.

**Link to distribution map.**<sup>18</sup>

**Material examined.** *Other material:* (1 female) **GABON:** 1 female, OSUC 265181 (CNCI).



**Comments.** We did not examine any males of *P. bispinosa* in this revision, but we speculate that they will have an abbreviate notaulus, as in the females of this species, and that this will enable separation from males of *P. trispinosa*.

***Paridris densiclava* (Kieffer)**

[http://species-id.net/wiki/Paridris\\_densiclava](http://species-id.net/wiki/Paridris_densiclava)

urn:lsid:biosci.ohio-state.edu:osuc\_concepts:5066

Figures 36–39; Morphbank<sup>19</sup>

*Paranteris densiclava* Kieffer, 1910: 293, 553 (original description. Keyed); Kieffer 1912: 65, 67 (redescribed as new, keyed); Kieffer 1926: 430, 431 (description, keyed).

*Paridris densiclava* (Kieffer): Masner 1965: 88 (type information, generic transfer).

**Description.** Female body length: 1.15 mm (n=1).

Color of head: reddish brown. Distal margin of clypeus: smooth. Shape of distal margin of clypeus in anterior view: convex. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Central keel: absent. Macrosculpture of frons between median ocellus and inner orbit of eye: absent. Microsculpture on dorsal head: pustulate. Shape of gena: weakly to moderately receding posterior to eye. Macrosculpture of posterior vertex: absent. Occipital carina above occipital foramen: simple. Anterior margin of occipital carina above occipital foramen: comprised of cells. Ventral extent of occipital carina: extending to base of mandible.

Color of mesosoma: pale brown.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: present in posterior half of pronotum.

Anterior notaulus: absent. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: pustulate. Macrosculpture of anterior medial mesoscutum: irregularly rugulose. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of round cells. Median carina on posterior mesoscutellum: absent. Posterior scutellar sulcus: comprised of deep cells.

Punctures on dorsal part of posterior mesepimeral area: absent. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: emarginate.

Setation of metapleural triangle: sparse. Paracoxal and metapleural sulci: separate. Dorsal metapleural area: smooth defined area.

Anterior projection of the propodeum: absent. Setation of metasomal depression: absent. Posterior projection of the propodeum: present as a point formed by plical and lateral propodeal carinae. Plical carina: present. Lateral propodeal area: raised above propodeal surface and indicated by lesser setation. Shape of lateral propodeal area: con-

tinuous with prespiracular propodeal area. Sculpture of lateral propodeal area: weakly to moderately rugose.

Length of postmarginal vein: equal to stigmalis. Rs in fore wing: spectral. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. RS+M in forewing: nebulous. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: reddish brown. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: absent. Patch of dense fine setae on anterolateral T1: absent. Constriction of apical T6 in female: absent.

**Diagnosis.** *Paridris densiclava* shares the smoothly convex shape of T6 with *P. nigriclava*, and differs by having a postmarginal vein as long as the stigmal vein. This venation is shared by *P. nitidiceps*, also from the Seychelles and known from a single male. We separate these species on the basis of the complete notaulus and punctate posterior mesepimeral area in *P. nitidiceps*. The notaulus of *P. densiclava* is present as a single fovea on the posterior margin of the mesoscutum and the posterior mesepimeral area is entirely smooth.

**Link to distribution map.**<sup>20</sup>

**Material examined.** Holotype, female, *P. densiclava*: **SEYCHELLES**: Mahé Isl., scrubby forest vegetation, top of Mount Sebert, 1800ft+, I-1909, B.M. TYPE HYM. 9.454 (deposited in BMNH).

### *Paridris nigriclava* (Kieffer)

[http://species-id.net/wiki/Paridris\\_nigriclava](http://species-id.net/wiki/Paridris_nigriclava)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:5074](urn:lsid:biosci.ohio-state.edu:osuc_concepts:5074)

Figures 40–44; Morphbank<sup>21</sup>

*Paranteris nigriclava* Kieffer, 1910: 292 (original description); Kieffer 1912: 65, 66 (redescribed as new, keyed); Kieffer 1926: 430 (description, keyed); Nixon 1933: 554, 555 (keyed).

*Paridris nigriclava* (Kieffer): Masner 1965: 88 (type information, generic transfer).

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:5074](urn:lsid:biosci.ohio-state.edu:osuc_concepts:5074)

*Paranteris flaviclava* Kieffer, 1910: 292 (original description), **syn. n.**; Kieffer 1912: 65, 67 (redescribed as new, keyed); Kieffer 1926: 430, 431 (description, keyed); Nixon 1933: 555 (keyed).

*Paridris flaviclava* (Kieffer): Masner 1965: 88 (type information, generic transfer).

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:9510](urn:lsid:biosci.ohio-state.edu:osuc_concepts:9510)

*Paranteris nigraticeps* Kieffer, 1910: 292 (original description), **syn. n.**; Kieffer 1912: 65, 66 (redescribed as new, keyed); Kieffer 1926: 430 (description, keyed); Nixon 1933: 554, 555 (keyed).

*Paridris nigraticeps* (Kieffer): Masner 1965: 88 (type information, generic transfer).

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:9515](urn:lsid:biosci.ohio-state.edu:osuc_concepts:9515)

*Paranteris striatigena* Kieffer, 1910: 292 (original description. Synonymized by Nixon 1933); Kieffer 1912: 65, 67 (redescribed as new, keyed); Kieffer 1926: 430, 431 (description, keyed); Nixon 1933: 554 (junior synonym of *Paranteris nigriticeps* Kieffer);

*Paridris striatigena* (Kieffer): Masner 1965: 89 (type information).

urn:lsid:biosci.ohio-state.edu:osuc\_concepts:9514

**Description.** Female body length: 1.86–2.13 mm (n=4).

Number of basiconic sensilla on A8: one.

Color of head: brown to black; dark yellow; reddish brown. Distal margin of clypeus: smooth. Shape of distal margin of clypeus in anterior view: convex. Width of clypeus: equal to or less than width across toruli. Lateral corner of clypeus: rounded. Length of mediofacial striae: not extending above midpoint of compound eye. Anterodorsal node on interantennal process: absent. Central keel: present. Length of OOL: less than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: absent. Microsculpture on dorsal head: reticulate microfissures. Microsculpture of posterior gena: present. Shape of gena: not receding posterior to eye. Macrosculpture of posterior vertex: absent. Occipital carina above occipital foramen: absent. Ventral extent of occipital carina: absent below occipital foramen. Setation of postgena: sparse.

Color of mesosoma: dark yellow; pale brown; reddish brown.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: absent. Dorsal half of pronotal cervical sulcus: present as smooth furrow. Ventral half of pronotal cervical sulcus: present as line of large cells. Sculpture of pronotal setal patch: punctate; striate, striae short and poorly defined.

Anterior notaulus: absent. Orientation of notauli: converging posteriorly. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: reticulate microfissures. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of short parallel striae. Median carina on posterior mesoscutellum: absent. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: absent. Mesopleural carina: present. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: convex.

Setation of metapleural triangle: sparse. Paracoxal and metapleural sulci: fused. Sculpture of posterodorsal part of ventral metapleural area: smooth. Dorsal metapleural area: smooth defined area; tiny smooth strip. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: absent. Setation of metasomal depression: present. Posterior projection of the propodeum: lamellate extension formed from lateral propodeal carina. Plical carina: absent. Lateral propodeal area: undifferentiated from plical area.

Length of postmarginal vein: less than half as long as stigmal vein. Rs in fore wing: spectral. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. RS+M in forewing: spectral. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: yellow; pale brown; reddish brown. Longitudinal median carina on horn of T1: present. Armature on posterior surface of T1 horn: absent. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: present; absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: present. Sublateral tergal carina on T2: absent. Microsculpture on T2: present. Macrosculpture of T2 in female: longitudinally striate. Microsculpture on T3: absent. Macrosculpture of medial T3 in female: longitudinally striate; absent; weakly longitudinally striate. Macrosculpture of lateral T3 in female: weakly longitudinally striate; longitudinally striate. Macrosculpture of female T5: absent. Microsculpture on female T6: absent. Constriction of apical T6 in female: absent. Macrosculpture of S1: rugose. Setation of S1: absent. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: lateral row or patch of setigerous punctures. Marginal depression on S3: absent. Marginal depressions on S4: absent. Marginal depression on S5: absent.

**Diagnosis.** *Paridris nigriclava* is the only species of *Paridris* treated by the present authors in which the frons bears a prominent central keel. Additionally, the punctiform postmarginal vein and convex shape of the metascutellum separate it from the other species of the Seychelles.

**Comments.** The species that we here synonymize differ only in color.

**Material examined.** Lectotype (by present designation), female, *P. nigriclava*: **SEYCHELLES**: Mahé Island, 1908 – 1909, B.M. TYPE HYM. 9.450 (deposited in BMNH). Paralectotype, sex not recorded, *P. nigriclava*: **SEYCHELLES**: Silhouette Island, 1908, BMNH(E)#790063 (deposited in BMNH). Paralectotype, sex not recorded, *P. nigriclava*: **SEYCHELLES**: Mahé Island, 1908 – 1909, BMNH(E)#790064 (deposited in BMNH). Lectotype (by present designation), female, *P. flaviclava*: **SEYCHELLES**: Mahé Isl., forest, nr. Mount Harrison, 1700ft, 2.III.1909, B.M. TYPE HYM. 9.452 (deposited in BMNH). Paralectotype, female, *P. flaviclava*: **SEYCHELLES**: Silhouette Island, 1908, BMNH(E)#790069 (deposited in BMNH). Holotype, female, *P. striatigena*: **SEYCHELLES**: Silhouette Isl., nr. Mount Pot-a-Eau, ~1500ft, VIII-1908, B.M. TYPE HYM. 9.451 (deposited in BMNH). Syntype, female, *P. nigraticeps*: **SEYCHELLES**: Silhouette Island, 1908, BMNH(E)#790065 (deposited in BMNH). Syntype, female, *P. nigraticeps*: **SEYCHELLES**: Mahé Isl., forest, nr. Mount Harrison, 1700ft, 2.III.1909, BMNH(E)#790066 (deposited in BMNH). Syntype, unknown, *P. nigraticeps*: **SEYCHELLES**: Silhouette Island, 1908, BMNH(E)#790068 (deposited in BMNH). Other material: **SEYCHELLES**: 3 females, OSUC 256852–256853 (CNCI); OSUC 210273 (OSUC).

***Paridris nitidiceps* (Kieffer)**[http://species-id.net/wiki/Paridris\\_nitidiceps](http://species-id.net/wiki/Paridris_nitidiceps)

urn:lsid:biosci.ohio-state.edu:osuc\_concepts:5076

Figures 45–46; Morphbank<sup>22</sup>

*Paranteris nitidiceps* Kieffer, 1910: 292 (original description); Kieffer 1912: 65, 67 (redescribed as new, keyed); Kieffer 1926: 430, 431 (description, keyed); Nixon 1933: 553, 555 (description, keyed).

*Paridris nitidiceps* (Kieffer): Masner 1965: 89 (type information).

**Description.** Male body length: 1.86 mm (n=1).

Shape of male flagellomeres: longer than wide by a factor less than 2.

Color of head: dark brown. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: convex. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Central keel: absent. Macrosculpture of frons between median ocellus and inner orbit of eye: absent. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: absent. Ventral extent of occipital carina: extending to base of mandible.

Color of mesosoma: reddish brown.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: present in posterior half of pronotum.

Anterior notaulus: reaching mesoscutal suprahumeral sulcus as continuous furrow. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: absent. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: uniform throughout.

Punctures on dorsal part of posterior mesepimeral area: present. Size of punctures on dorsal part of posterior mesepimeral area: large. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: emarginate.

Setation of metapleural triangle: moderately dense. Paracoxal and metapleural sulci: separate. Sculpture of posterodorsal part of ventral metapleural area: smooth. Dorsal metapleural area: coarsely sculptured. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Length of postmarginal vein: equal to stigmalis. Rs in fore wing: nebulous. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in male: hyaline. Color of cubito-medial area in male: infusate. Color of anal margin in male: infusate. RS+M in forewing: nebulous. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: reddish brown. Patch of dense fine setae on anterolateral T1: absent. Macrosculpture of S1: longitudinally striate. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: lateral row or patch of setigerous punctures.

**Diagnosis.** *Paridris nitidiceps* has conspicuous glabrous punctures throughout the posterior mesepimeral area, a rather uncommon character for *Paridris*. It is on the basis of this and the percurrent notaulus that we separate it from *P. densiclava*.

**Link to distribution map.**<sup>23</sup>

**Material examined.** Lectotype (by present designation), male, *P. nitidiceps*: **SEYCHELLES**: Mahé Isl., nr. Mount Blanc, X-1908, B.M. TYPE HYM. 9.453 (deposited in BMNH). Paralectotype, male, *P. nitidiceps*: **SEYCHELLES**: Mahé Isl., nr. Mount Blanc, X-1908, BMNH(E)#790067 (deposited in BMNH).

### *Paridris tenuis* (Nixon)

[http://species-id.net/wiki/Paridris\\_tenuis](http://species-id.net/wiki/Paridris_tenuis)  
[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:5081](urn:lsid:biosci.ohio-state.edu:osuc_concepts:5081)

Figures 14, 25, 47–51; Morphbank<sup>24</sup>

*Paranteris tenuis* Nixon, 1933: 553, 555, 556 (original description. Keyed); Sundholm 1970: 378 (variation).

*Paridris tenuis* (Nixon): Masner 1965: 89 (type information, generic transfer).

**Description.** Female body length: 1.47–2.05 mm (n=20). Male body length: 1.47–2.14 mm (n=20).

Number of basiconic sensilla on A8: two. Shape of male flagellomeres: longer than wide by a factor less than 2.

Color of head: brown to black; reddish brown. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: concave with median bulge. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Anterodorsal node on interantennal process: absent. Central keel: absent. Length of OOL: greater than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: absent. Patch of microsculpture posterior to lateral ocellus in male: absent. Patch of microsculpture posterior to lateral ocellus in female: absent. Patch of microsculpture between median and lateral ocelli: absent. Microsculpture on dorsal head: pustulate. Microsculpture of posterior gena: present. Shape of gena: not receding posterior to eye. Macrosculpture of posterior vertex: absent. Patch of microsculpture on temples: absent. Occipital carina above occipital foramen: appressed toward ocelli. Anterior margin of occipital carina above occipital foramen: simple. Ventral extent of occipital carina: absent below occipital foramen. Setation of postgena: dense.

Color of mesosoma: brown to black; reddish brown.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: absent. Dorsal half of pronotal cervical sulcus: present as line of small cells; present as smooth furrow. Ventral half of pronotal cervical sulcus: present as line of large cells. Sculpture of pronotal setal patch: irregular striae to rugulose; punctate.



Anterior notaulus: absent; reaching mesoscutal suprahumeral sulcus as row of punctures. Orientation of notauli: converging posteriorly. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: pustulate. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of short parallel striae. Median carina on posterior mesoscutellum: absent. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: absent. Mesopleural carina: present. Postacetabular sulcus: crenulate; smoothly furrowed. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: straight; emarginate; convex.

Setation of metapleural triangle: sparse. Paracoxal and metapleural sulci: fused. Sculpture of posterodorsal part of ventral metapleural area: rugose. Dorsal metapleural area: smooth defined area; coarsely sculptured. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: absent. Setation of metasomal depression: absent. Posterior projection of the propodeum: lamellate extension formed from lateral propodeal carina. Plical carina: absent. Lateral propodeal area: undifferentiated from plical area.

Length of postmarginal vein: less than half as long as stigmal vein. Rs in fore wing: spectral. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of costal cell in male: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. Color of cubito-medial area in male: hyaline. Color of anal margin in male: hyaline. RS+M in forewing: spectral. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: spectral. Setation of hind wing: reduced and of submarginal vein.

Color of metasoma: yellow; pale brown; brown to black. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: present. Form of armature on posterior surface of T1 horn: posteriorly projecting spine. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: present. Sublateral tergal carina on T2: absent. Microsculpture on T2: absent. Macrosculpture of T2 in female: longitudinally striate. Macrosculpture of T2 in male: longitudinally striate throughout. Carina along posterior margin of transverse sulcus on T2 in male: present. Microsculpture on T3: absent. Macrosculpture of medial T3 in female: longitudinally striate. Macrosculpture of lateral T3 in female: longitudinally striate. Macrosculpture of medial T3 in male: weakly longitudinally striate. Macrosculpture of lateral T3 in male: weakly longitudinally striate. Macrosculpture of T4 in male: absent. Macrosculpture of female T5: absent. Microsculpture on female T6: absent. Constriction of apical T6 in female: absent. Macrosculpture of S1: rugose. Setation of S1: medial tuft. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of

S2: longitudinally striate. Form of S2 felt field: line of dense setae along longitudinal ridge. Marginal depression on S3: absent. Marginal depressions on S4: absent. Marginal depression on S5: absent.

**Diagnosis.** *Paridris tenuis* is the only species of continental Africa that has a punctiform postmarginal vein and T6 without an apical constriction.

**Link to distribution map.**<sup>25</sup>

**Associations.** Collected on *cotton* : [Malvales: Malvaceae].

**Material examined.** Lectotype (by present designation), female: **SOUTH AFRICA**: Eastern Cape Prov., Somerset East, 27.I–31.I.1931, R. E. Turner, B.M. TYPE HYM. 9.455 (deposited in BMNH). Paralectotype, male: **SOUTH AFRICA**: BMNH(E)#790070 (deposited in BMNH). *Other material*: (96 females, 55 males) **BURKINA FASO**: 1 female, OSUC 181272 (CNCI). **CAMEROON**: 8 females, 1 male, OSUC 181271, 453743–453750 (CNCI). **GAMBIA**: 1 female, OSUC 243651 (MZLU). **GHANA**: 2 females, OSUC 453528–453529 (CNCI). **IVORY COAST**: 19 females, 4 males, OSUC 453530, 453532–453534, 453536–453551 (CNCI); OSUC 148134, 58719, 58722 (OSUC). **KENYA**: 7 females, 5 males, CASENT 2042596 (CASC); OSUC 58706, 58708–58717 (OSUC). **NIGERIA**: 3 females, 2 males, OSUC 181232, 453552–453553 (CNCI); OSUC 237360–237361 (OSUC). **SIERRA LEONE**: 1 male, OSUC 405078 (MZLU). **SOUTH AFRICA**: 8 females, 3 males, OSUC 203131 (AEIC); BMNH(E)#790072 (BMNH); OSUC 181230–181231, 181233, 265182, 453596–453600 (CNCI). **SWAZILAND**: 1 female, 1 male, OSUC 266126–266127 (MZLU). **TANZANIA**: 9 females, 2 males, OSUC 453601–453611 (CNCI). **UGANDA**: 1 male, OSUC 453612 (CNCI). **ZIMBABWE**: 37 females, 35 males, OSUC 181229, 453554–453595, 453613–453614, 453616–453641 (CNCI); OSUC 57115 (OSUC).

**Comments.** The posterior margin of the metascutellum, a character used previously in identification keys for this species, is typically emarginate, but may be straight or convex.

***Paridris trispinosa* Talamas & Masner, sp. n.**

[http://species-id.net/wiki/Paridris\\_trispinosa](http://species-id.net/wiki/Paridris_trispinosa)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:315505](urn:lsid:biosci.ohio-state.edu:osuc_concepts:315505)

Figures 52–56; Morphbank<sup>26</sup>

**Description.** Female body length: 1.63–1.76 mm (n=6). Male body length: 1.68–2.28 mm (n=2).

Number of basiconic sensilla on A8: two. Shape of male flagellomeres: longer than wide by a factor less than 2.

Color of head: dark brown. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: convex. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye; continuous with sculpture of dorsal frons. Anterodorsal node on interantennal process: absent. Central keel: absent. Length of OOL: less than 2 ocellar diameters. Macrosculpture of frons between median ocellus



and inner orbit of eye: dorsoventrally strigose. Patch of microsculpture posterior to lateral ocellus in male: absent. Patch of microsculpture posterior to lateral ocellus in female: absent. Patch of microsculpture between median and lateral ocelli: absent. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: absent. Shape of gena: not receding posterior to eye. Macrosculpture of posterior vertex: punctate rugose. Patch of microsculpture on temples: absent. Occipital carina above occipital foramen: simple. Anterior margin of occipital carina above occipital foramen: comprised of cells. Ventral extent of occipital carina: extending to base of mandible. Setation of postgena: sparse.

Color of mesosoma: brown; reddish brown.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: absent. Dorsal half of pronotal cervical sulcus: present as smooth furrow. Ventral half of pronotal cervical sulcus: present as line of large cells. Sculpture of pronotal setal patch: irregular striae to rugulose.

Anterior notaulus: reaching mesoscutal suprahumeral sulcus as row of punctures. Orientation of notauli: parallel. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: pustulate. Macrosculpture of anterior medial mesoscutum: irregularly rugulose. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of round cells. Median carina on posterior mesoscutellum: absent. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: present. Size of punctures on dorsal part of posterior mesepimeral area: large. Mesopleural carina: present. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: emarginate.

Setation of metapleural triangle: sparse. Paracoxal and metapleural sulci: separate. Sculpture of posterodorsal part of ventral metapleural area: rugose. Dorsal metapleural area: coarsely sculptured. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: absent. Setation of metasomal depression: absent. Posterior projection of the propodeum: lamellate extension formed from lateral propodeal carina. Plical carina: absent. Lateral propodeal area: indicated by lesser degree of setation. Shape of lateral propodeal area: continuous with prespiracular propodeal area. Sculpture of lateral propodeal area: punctate rugulose.

Length of postmarginal vein: shorter than stigmal vein by less than one half length of stigmal vein; equal to stigmalis. Rs in fore wing: nebulous. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of costal cell in male: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. Color of cubito-medial area in male: hyaline. Color of anal margin in male: hyaline. RS+M in forewing: nebulous. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: spectral. Setation of hind wing: reduced anad of submarginal vein.

Color of metasoma: reddish brown. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: present. Form of armature on posterior surface of T1 horn: posteriorly projecting spine. Interstitial sculpture of T1: finely rugu-

lose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: present. Sublateral tergal carina on T2: absent. Microsculpture on T2: absent. Macrosculpture of T2 in female: longitudinally striate. Macrosculpture of T2 in male: longitudinally striate throughout. Carina along posterior margin of transverse sulcus on T2 in male: present. Microsculpture on T3: present. Macrosculpture of medial T3 in female: weakly longitudinally strigose. Macrosculpture of lateral T3 in female: longitudinally strigose. Macrosculpture of medial T3 in male: longitudinally strigose. Macrosculpture of lateral T3 in male: longitudinally strigose. Macrosculpture of T4 in male: longitudinally strigose laterally. Macrosculpture of female T5: absent. Microsculpture on female T6: present throughout. Constriction of apical T6 in female: present. Macrosculpture of S1: rugose. Setation of S1: absent. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: lateral row or patch of setigerous punctures. Marginal depression on S3: present. Marginal depressions on S4: present. Marginal depression on S5: absent.

**Diagnosis.** *Paridris trispinosa* is most similar to *P. bispinosa*. Females of *P. trispinosa* may be separated by the posteriorly directed spine on the horn of T1 (absent in *P. bispinosa*) and percurrent notauli (abbreviate in *P. bispinosa*). Among the specimens examined in this revision, the surface sculpture of *P. trispinosa* is coarser than that of *P. bispinosa*, particularly on the lateral mesoscutum.

**Etymology.** The Latin adjectival epithet “trispinosa” is given to this species for the spines of the metascutellum and horn of T1.

**Link to distribution map.**<sup>27</sup>

**Material examined.** Holotype, female: **CAMEROON**: Nkoemvom, IX-1979, malaise trap, P. Jackson, OSUC 453737 (deposited in CNCI). *Paratypes*: **CAMEROON**: 5 females, 1 male, OSUC 181269, 453736, 453738, 453740–453742 (CNCI). *Other material*: **CAMEROON**: 1 female, OSUC 453739 (CNCI).

**Comments.** We did not examine any males of *P. bispinosa* in this revision, but we speculate that they will have an abbreviate notaulus, as in the females of this species, and that this will enable separation from males of *P. trispinosa*.

### *Paridris* of Melanesia and the Indo-Malay Islands

From the islands of Borneo and Sulawesi we describe a single species. Although this region has few species of *Paridris*, it harbors a species, *P. mnestros*, which is important for understanding morphological diversity in this genus. Its form of the felt field on S2 is unique, and it is the only species outside the *P. nephta* group with bright and patterned coloration of the body.

With five species, the Fijian islands are a hotspot of diversity for *Paridris*. Three of these species belong to the *P. pallipes* species group, a lineage otherwise known only from the New World.

In addition to the specimens of *P. bifurcata*, we examined a single male specimen (OSUC 265189) from Papua New Guinea that exhibits characteristics of the *P. pallipes* species group and does not belong to any of the species treated here. We believe that mention of this species is noteworthy, but we choose not to describe it on the basis of single male specimen outside the context of a comprehensive revision of the species from mainland Southeast Asia and Australia.

### Key to Females

- 1 Metascutellum setose (Figs 87, 89) ... ***Paridris taekuli* Talamas & Masner, sp. n.**
- Metascutellum glabrous (Figs 58, 65, 69, 75, 79, 92) ..... **2**
- 2 Metascutellum bispinose (Figs 58, 62, 65, 82); occipital carina extending to base of mandible (Figs 6–7); T6 constricted apically (Figs 24, 62) ..... **3**
- Posterior margin of metascutellum straight or convex (Figs 12–13, 79); occipital carina absent or not extending below foramen magnum (Figs 8–9); T6 evenly convex (Figs 25, 27) ..... **5**
- 3 S2 felt field present anterolaterally in coarsely rugose excavation (Fig. 22); metasoma banded (Fig. 62) ... ***Paridris mnestros* Talamas & Masner, sp. n.**
- S2 felt field present laterally as a longitudinal patch of setigerous punctures (Fig. 23); metasoma uniform in color (Figs 61, 85) ..... **4**
- 4 Horn of T1 with posteriorly directed spine (Fig. 80); A8 with 1 basiconic sensillum (as in Fig. 5) ..... ***Paridris sulcata* Talamas, sp. n.**
- Horn of T1 without spine (Fig. 61); A8 with 2 basiconic sensilla (Fig. 4) ..... ***Paridris bifurcata* (Galloway), comb. n.**
- 5 Occipital carina absent, occipital rim without border of cells or crenulae anteriorly (Fig. 10); antecostal sulcus of T2 bordered posteriorly by transverse carina (Figs 77, 79); metasomal depression setose anterolaterally (Fig. 79); postgena densely setose (Figs 8, 10, 76) ..... ***Paridris skolops* Talamas & Masner, sp. n.**
- Occipital carina present, bordered anteriorly by punctures or crenulae (Fig. 11); antecostal sulcus of T2 present as simple constriction (Figs 69, 75); metasomal depression glabrous (Figs 69, 75); postgena glabrous or sparsely setose (Figs 9, 92) ..... **6**
- 6 Felt field of S2 present anteromedially (Figs 18–19); notaulus straight posteriorly (Fig. 11, 67); anterior propodeal projection absent or indicated by weak protuberance (Fig. 13) ..... ***Paridris pantex* Talamas, sp. n.**
- Felt field of S2 present laterally as longitudinal line of setae (Figs 20–21); notaulus expanded posteriorly (Fig. 10); anterior propodeal projection present as conspicuous point or spine (Figs 12, 75) ..... **7**
- 7 Horn of T1 smooth or with median longitudinal carina (Fig. 90, 92); T3 without surface sculpture (Fig. 95) ..... ***Paridris xestos* Talamas & Masner, sp. n.**
- Horn of T1 with transverse ridge (Fig. 75); T3 longitudinally striate laterally (Fig. 67) ..... ***Paridris phrikos* Talamas & Masner, sp. n.**

## Key to Males

- 1 Metascutellum bispinose (Figs 58, 65); occipital carina extending to base of mandible (Figs 6–7)..... **2**
- Posterior margin of metascutellum straight or convex (Figs 12–13, 79); occipital carina absent or not extending below foramen magnum (Figs 8–9)... **3**
- 2 S2 felt field present anterolaterally in coarsely rugose excavation (Fig. 21); metasoma banded (Fig. 62) ... ***Paridris mnestros* Talamas & Masner, sp. n.**
- S2 felt field present laterally as a longitudinal patch of setigerous punctures (Fig. 23); metasoma black (Fig. 61) .... ***Paridris bifurcata* (Dodd), comb. n.**
- 3 Metascutellum setose (Figs 87, 89)... ***Paridris taekuli* Talamas & Masner, sp. n.**
- Metascutellum glabrous (Figs 12–13) ..... **4**
- 4 Occipital carina absent, occipital rim without border of punctures or crenulae anteriorly (Fig. 10); transverse sulcus of T2 bordered posteriorly by carina (Figs 77, 79); metasomal depression setose anterolaterally (Fig. 79); postgena densely setose (Figs 8, 10, 76)... ***Paridris skolops* Talamas & Masner, sp. n.**
- Occipital carina present, bordered anteriorly by punctures or crenulae (Fig. 11); antecostal sulcus of T2 present as a simple constriction (Figs 69, 75); metasomal depression glabrous (Figs 69, 75); postgena glabrous or sparsely setose (Figs 9, 11) ..... **5**
- 5 Felt field of S2 present anteromedially (Figs 18–19); notaulus straight (Figs 11, 67); anterior propodeal projection absent or indicated by weak protuberance (Fig. 13)..... ***Paridris pantex* Talamas, sp. n.**
- Felt field of S2 present laterally as longitudinal line of setae (Figs 20–21); notaulus expanded posteriorly (Fig. 10); anterior propodeal projection present as conspicuous point or spine (Fig. 12) ..... **6**
- 6 T3 weakly longitudinally striate laterally ..... ***Paridris phrikos* Talamas & Masner, sp. n.**
- T3 without surface sculpture ..... ***Paridris xestos* Talamas & Masner, sp. n.**

***Neoparidris* Galloway, syn. n.**

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:519](http://urn:lsid:biosci.ohio-state.edu:osuc_concepts:519)

*Neoparidris* Galloway, 1984: 7, 25 (original description. Type. *Oxyteleia bifurcata* Dodd, by monotypy and original designation. Keyed); Johnson 1992: 441 (catalog of world species).

***Paridris bifurcata* (Dodd), comb. n.**

[http://species-id.net/wiki/Paridris\\_bifurcata](http://species-id.net/wiki/Paridris_bifurcata)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:4931](http://urn:lsid:biosci.ohio-state.edu:osuc_concepts:4931)

Figures 4, 23–24, 56–61; Morphbank<sup>28</sup>

*Oxyteleia bifurcata* Dodd, 1927: 72 (original description); Galloway 1976: 100 (type information).

*Paridris bifurcata* (Dodd): Masner 1976: 36 (generic transfer made with reservations, systematic position).

*Neoparidris bifurcata* (Dodd): Galloway and Austin 1984: 26 (generic transfer, description).

**Description.** Female body length: 2.39–3.07 mm (n=7). Male body length: 2.36–2.63 mm (n=4).

Number of basiconic sensilla on A8: two. Shape of male flagellomeres: spherical.

Color of head: brown to black. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: straight. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: continuous with sculpture of dorsal frons. Anterodorsal node on interantennal process: present. Central keel: absent. Length of OOL: less than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: dorsoventrally strigose. Patch of microsculpture posterior to lateral ocellus in male: absent. Patch of microsculpture posterior to lateral ocellus in female: absent. Patch of microsculpture between median and lateral ocelli: absent. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: absent. Shape of gena: not receding posterior to eye. Macrosculpture of posterior vertex: irregularly rugulose. Patch of microsculpture on temples: absent. Occipital carina above occipital foramen: appressed toward ocelli. Anterior margin of occipital carina above occipital foramen: comprised of cells. Ventral extent of occipital carina: extending to base of mandible. Setation of postgena: sparse.

Color of mesosoma: brown to black.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: present in posterior half of pronotum. Dorsal half of pronotal cervical sulcus: present as smooth furrow. Ventral half of pronotal cervical sulcus: present as smooth furrow. Sculpture of pronotal setal patch: punctate.

Anterior notaulus: reaching mesoscutal suprahumeral sulcus as row of punctures. Orientation of notauli: converging posteriorly. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: pustulate. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of short parallel striae. Median carina on posterior mesoscutellum: present. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: absent. Mesopleural carina: present. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: emarginate.

Setation of metapleural triangle: moderately dense. Paracoxal and metapleural sulci: separate. Sculpture of posterodorsal part of ventral metapleural area: smooth.

Dorsal metapleural area: smooth defined area. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: absent. Setation of metasomal depression: absent. Posterior projection of the propodeum: present as a point formed by plical and lateral propodeal carinae. Plical carina: present. Lateral propodeal area: raised above propodeal surface and indicated by lesser setation. Shape of lateral propodeal area: continuous with prespiracular propodeal area. Sculpture of lateral propodeal area: areolate rugose.

Length of postmarginal vein: equal to stigmalis. Rs in fore wing: nebulous. Cu vein in fore wing: nebulous. M vein in forewing: nebulous. Color of costal cell in female: infusate. Color of sub-radial area in female: infusate. Color of costal cell in male: infusate. Color of cubito-medial area in female: infusate. Color of anal margin in female: infusate. Color of cubito-medial area in male: infusate. Color of anal margin in male: infusate. RS+M in forewing: nebulous. Color of sub-stigmal area in male: infusate. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: brown to black. Longitudinal median carina on horn of T1: present; absent. Armature on posterior surface of T1 horn: absent. Interstitial sculpture of T1: smooth. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: present. Sublateral tergal carina on T2: absent. Microsculpture on T2: present. Macrosculpture of T2 in female: longitudinally striate. Macrosculpture of T2 in male: longitudinally striate throughout. Carina along posterior margin of transverse sulcus on T2 in male: present. Microsculpture on T3: present. Macrosculpture of medial T3 in female: rugulose. Macrosculpture of lateral T3 in female: longitudinally strigose. Macrosculpture of medial T3 in male: weakly rugulose. Macrosculpture of lateral T3 in male: longitudinally strigose. Macrosculpture of T4 in male: longitudinally strigose laterally. Macrosculpture of female T5: weakly crenulate laterally. Microsculpture on female T6: present throughout. Constriction of apical T6 in female: present. Macrosculpture of S1: rugose. Setation of S1: absent. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: lateral row or patch of setigerous punctures. Marginal depression on S3: present. Marginal depressions on S4: present. Marginal depression on S5: present.

**Diagnosis.** Excluding members of the *Paridris nephta* species group, *P. bifurcata* is the only species of *Paridris* in Southeast Asia with two basiconic sensilla on A8.

**Link to distribution map.**<sup>29</sup>

**Material examined.** Holotype, female, *O. bifurcata*: AUSTRALIA: QLD, Cairns Dist., Kuranda, 1.XI.1919, A. P. Dodd, QMBA HY3193H (deposited in QMBA). *Other material*: (6 females, 4 males) AUSTRALIA: 1 male, OSUC 181075 (CNCI). PAPUA NEW GUINEA: 6 females, 3 males, OSUC 181072–181074, 181076–181079, 265159, 265187 (CNCI).

**Comments.** Galloway (1984) erected *Neoparidris* to accommodate a species that had attributes of *Paridris* but lacked the small eyes, compact ocellar triangle, and incomplete notaulus that characterized his concept of the group. In his discussion of



*Neoparidris*, Galloway commented that this species may ultimately belong in *Paridris* when its limits became clearer, and this is indeed the case.

***Paridris mnestros* Talamas & Masner, sp. n.**

<http://zoobank.org/2175995B-D8E1-4A82-8766-EAE0B0411799>

[http://species-id.net/wiki/Paridris\\_mnestros](http://species-id.net/wiki/Paridris_mnestros)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:305675](urn:lsid:biosci.ohio-state.edu:osuc_concepts:305675)

Figures 5, 22, 62–65; Morphbank<sup>30</sup>

**Description.** Female body length: 2.53–2.78 mm (n=6). Male body length: 2.34–2.46 mm (n=3).

Number of basiconic sensilla on A8: one. Shape of male flagellomeres: between 2 and 3 times as long as wide.

Color of head: reddish brown; orange. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: convex. Width of clypeus: equal to or less than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: continuous with sculpture of dorsal frons. Anterodorsal node on interantennal process: present. Central keel: absent. Length of OOL: less than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: dorsoventrally strigose. Patch of microsculpture posterior to lateral ocellus in male: absent. Patch of microsculpture posterior to lateral ocellus in female: absent. Patch of microsculpture between median and lateral ocelli: absent. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: absent. Shape of gena: weakly to moderately receding posterior to eye. Macrosculpture of posterior vertex: irregularly rugulose. Patch of microsculpture on temples: absent. Occipital carina above occipital foramen: simple. Anterior margin of occipital carina above occipital foramen: comprised of cells. Ventral extent of occipital carina: extending to base of mandible. Setation of postgena: sparse.

Color of mesosoma: reddish brown; orange.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: absent; present in posterodorsal corner of pronotum. Dorsal half of pronotal cervical sulcus: present as smooth furrow. Ventral half of pronotal cervical sulcus: present as smooth furrow. Sculpture of pronotal setal patch: punctate.

Anterior notaulus: absent; reaching mesoscutal suprahumeral sulcus as row of punctures. Orientation of notauli: parallel. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: pustulate. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: uniform throughout. Scutoscutellar sulcus: comprised of short parallel striae. Median carina on posterior mesoscutellum: present. Posterior scutellar sulcus: comprised of deep cells.

Punctures on dorsal part of posterior mesepimeral area: present. Size of punctures on dorsal part of posterior mesepimeral area: large. Mesopleural carina: present. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: present.

Setae on metascutellum: absent. Posterior margin of metascutellum: emarginate.

Setation of metapleural triangle: moderately dense. Paracoxal and metapleural sulci: fused. Sculpture of posterodorsal part of ventral metapleural area: smooth. Dorsal metapleural area: smooth defined area. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: absent. Setation of metasomal depression: absent. Posterior projection of the propodeum: present as a point formed by plical and lateral propodeal carinae. Plical carina: present. Lateral propodeal area: raised above propodeal surface and indicated by lesser setation. Shape of lateral propodeal area: continuous with prespiracular propodeal area. Sculpture of lateral propodeal area: punctate rugulose.

Length of postmarginal vein: shorter than stigmal vein by less than one half length of stigmal vein; equal to stigmalis. Rs in fore wing: nebulous. Cu vein in fore wing: nebulous. M vein in forewing: nebulous. Color of costal cell in female: hyaline along stigmal vein, infusate distally. Color of sub-radial area in female: infusate. Color of costal cell in male: infusate distally, hyaline along stigmal vein. Color of cubito-medial area in female: infusate. Color of anal margin in female: infusate. Color of cubito-medial area in male: infusate. Color of anal margin in male: infusate. RS+M in forewing: nebulous. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: nebulous. Setation of hind wing: reduced anad of submarginal vein.

Color of metasoma: posterolateral T2–T3 and T5–T6 dark brown, otherwise yellow to dark orange. Longitudinal median carina on horn of T1: present; absent. Armature on posterior surface of T1 horn: present. Form of armature on posterior surface of T1 horn: posteriorly projecting spine. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: absent. Sublateral tergal carina on T2: absent. Microsculpture on T2: absent. Macrosculpture of T2 in female: longitudinally striate. Macrosculpture of T2 in male: longitudinally striate throughout. Carina along posterior margin of transverse sulcus on T2 in male: present. Microsculpture on T3: absent. Macrosculpture of medial T3 in female: weakly longitudinally striate. Macrosculpture of lateral T3 in female: longitudinally striate. Macrosculpture of medial T3 in male: longitudinally striate. Macrosculpture of lateral T3 in male: longitudinally striate. Macrosculpture of T4 in male: weakly crenulate laterally. Macrosculpture of female T5: absent. Microsculpture on female T6: present throughout. Constriction of apical T6 in female: present. Macrosculpture of S1: rugose. Setation of S1: absent. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: anterior excavation of coarse rugae. Marginal depression on S3: present. Marginal depressions on S4: present. Marginal depression on S5: present.

**Diagnosis.** *Paridris mnestros* uniquely has the felt field of S2 as an anteriorly located pit of coarse rugae. The constriction of the apex of T6 into a rather sharp point is also not found in any other species of *Paridris*. Lastly, this is the only species outside of the *P. nephta* species group to exhibit bright coloration of the body and a banded metasoma.



**Etymology.** The Greek word for marriage “mnestros” is given to this species to commemorate the wedding of Ryan St. Clair to Grace Wong, and because this species combines morphological structures commonly found in *Paridris* (i.e. apical constriction of T6, posteriorly directed spine on horn of T1) with the coloration, mesoscutal surface sculpture, and very long setation found in the *P. nephta* species group.

**Link to distribution map.**<sup>31</sup>

**Material examined.** Holotype, female: **MALAYSIA:** Sarawak St., Borneo Isl., Headhunters Trail, camp 5, ROM\_OSU 308035, Gunung Mulu National Park, 04°08.552'N, 114°53.510'E, 140m, 10.XI–4.XII.2009, malaise trap, B. Hubley & D. C. Darling, OSUC 381335 (deposited in OSUC). *Paratypes:* (5 females, 3 males) **INDONESIA:** 2 females, OSUC 181286, 265166 (CNCI). **MALAYSIA:** 3 females, 4 males, OSUC 181069–181070, 265157 (CNCI); OSUC 334155–334156, 334177 (MZLU); OSUC 404105 (OSUC).

***Paridris pantex* Talamas, sp. n.**

<http://zoobank.org/261C8A0F-44C0-4B24-915C-1A33D77D3E0D>

[http://species-id.net/wiki/Paridris\\_pantex](http://species-id.net/wiki/Paridris_pantex)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:303879](urn:lsid:biosci.ohio-state.edu:osuc_concepts:303879)

Figures 11, 13, 15, 18–19, 66–69; Morphbank<sup>32</sup>

**Description.** Female body length: 1.34–1.82 mm (n=20). Male body length: 1.19–1.62 mm (n=10).

Number of basiconic sensilla on A8: one. Shape of male flagellomeres: more than 3 times as long as wide.

Color of head: dark brown; reddish brown. Distal margin of clypeus: smooth. Shape of distal margin of clypeus in anterior view: convex. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Anterodorsal node on interantennal process: present. Central keel: absent. Length of OOL: greater than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: absent. Patch of microsculpture posterior to lateral ocellus in male: present; absent. Patch of microsculpture posterior to lateral ocellus in female: present. Patch of microsculpture between median and lateral ocelli: present. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: absent. Shape of gena: weakly to moderately receding posterior to eye. Macrosculpture of posterior vertex: absent. Patch of microsculpture on temples: present. Occipital carina above occipital foramen: simple. Anterior margin of occipital carina above occipital foramen: comprised of cells. Ventral extent of occipital carina: absent below occipital foramen. Setation of postgena: dense.

Color of mesosoma: pale brown; reddish brown.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: absent. Dorsal half of pronotal cervical sulcus: present as line of small cells; present

as smooth furrow. Ventral half of pronotal cervical sulcus: present as line of small cells; present as smooth furrow. Sculpture of pronotal setal patch: irregular striae to rugulose.

Anterior notaulus: reaching mesoscutal suprahumeral sulcus as continuous furrow. Orientation of notauli: parallel. Shape of posterior notaulus: parallel-sided. Microsculpture on anterior half of medial mesoscutum: absent. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of round cells. Median carina on posterior mesoscutellum: absent. Posterior scutellar sulcus: comprised of deep cells.

Punctures on dorsal part of posterior mesepimeral area: absent. Mesopleural carina: present. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: convex.

Setation of metapleural triangle: sparse. Paracoxal and metapleural sulci: fused. Sculpture of posterodorsal part of ventral metapleural area: smooth. Dorsal metapleural area: smooth defined area. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: present. Setation of metasomal depression: absent. Posterior projection of the propodeum: lamellate extension formed from lateral propodeal carina. Plical carina: absent. Lateral propodeal area: undifferentiated from plical area.

Length of postmarginal vein: less than half as long as stigmal vein. Rs in fore wing: spectral. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of costal cell in male: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. Color of cubito-medial area in male: hyaline. Color of anal margin in male: hyaline. RS+M in forewing: nebulous. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: yellow; pale brown. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: present. Form of armature on posterior surface of T1 horn: transverse ridge. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: simple constriction. Posterior margin of transverse sulcus on T2: weakly convex. Carina along posterior margin of transverse sulcus on T2 in female: absent. Sublateral tergal carina on T2: absent. Microsculpture on T2: absent. Macrosculpture of T2 in female: striate anteriorly, few striae reaching T3. Macrosculpture of T2 in male: striate anteriorly, with few striae reaching T3. Carina along posterior margin of transverse sulcus on T2 in male: absent. Microsculpture on T3: absent. Macrosculpture of medial T3 in female: absent. Macrosculpture of lateral T3 in female: absent. Macrosculpture of medial T3 in male: absent. Macrosculpture of lateral T3 in male: absent. Macrosculpture of T4 in male: absent. Macrosculpture of female T5: absent. Microsculpture on female T6: absent. Constriction of apical T6 in female: absent. Setation of S1: densely present throughout. Macrosculpture of S2: absent. Form of S2 felt field: anteromedial tuft of dense setae. Marginal depression on S3: absent. Marginal depressions on S4: absent. Marginal depression on S5: absent.

**Diagnosis.** *Paridris pantex* may be distinguished from all known species in this genus by the dense tufts of setae on anteromedial S2.

**Etymology.** The epithet “pantex”, meaning “paunch” is given to this species for the dense tufts of setae on anteromedial S2. The name is treated as a noun in apposition.

**Link to distribution map.**<sup>33</sup>

**Material examined.** Holotype, female: **FIJI**: Northern Div., Cakaudrove Prov., Taveuni Isl., 5.6km SE Tavuki, MT1, Devo Peak, 16.843°S 179.966°W, 1187m, 14.XI–21.XI.2002, malaise trap, E. I. Schlinger & M. Tokota’a, FBA129283 (deposited in BPBM). *Paratypes*: **FIJI**: 33 females, 11 males, FBA027347, FBA027348, FBA027349, FBA028805, FBA042163, FBA042173, FBA047914, FBA052819, FBA052879, FBA058960, FBA059019, FBA070878, FBA072047, FBA098108, FBA098117, FBA098124, FBA099701, FBA099702, FBA105142, FBA126508, FBA134676, FBA154041, FBA164305, FBA164530, FBA164535, FBA164541, FBA164542, FBA164785 (BPBM); FBA042172, FBA052820, FBA072107, FBA089264, FBA099697, FBA164308, OSUC 265164, OSUC 265177, OSUC 265178, OSUC 265179 (CNCI); FBA059009, FBA089263 (FNIC); FBA105665, FBA115167, FBA115171, FBA134681 (OSUC).

***Paridris phrikos* Talamas & Masner, sp. n.**

<http://zoobank.org/0A93BF85-DEEF-4293-8A35-2C225A080084>

[http://species-id.net/wiki/Paridris\\_phrikos](http://species-id.net/wiki/Paridris_phrikos)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:303882](urn:lsid:biosci.ohio-state.edu:osuc_concepts:303882)

Figures 70–75; Morphbank<sup>34</sup>

**Description.** Female body length: 1.98–2.18 mm (n=4). Male body length: 2.24–2.33 mm (n=3).

Number of basiconic sensilla on A8: one. Shape of male flagellomeres: more than 3 times as long as wide.

Color of head: dark brown; reddish brown. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: convex; concave with median bulge. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Anterodorsal node on interantennal process: absent. Central keel: absent. Length of OOL: greater than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: absent. Patch of microsculpture posterior to lateral ocellus in male: absent. Patch of microsculpture posterior to lateral ocellus in female: present. Patch of microsculpture between median and lateral ocelli: present. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: absent. Shape of gena: weakly to moderately receding posterior to eye. Macrosculpture of posterior vertex: absent. Patch of microsculpture on temples: absent. Occipital carina above occipital foramen: simple. Anterior margin of occipital carina above occipital foramen:

comprised of cells. Ventral extent of occipital carina: absent below occipital foramen. Setation of postgena: sparse.

Color of mesosoma: pale brown; orange.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: present in posterior half of pronotum. Dorsal half of pronotal cervical sulcus: present as smooth furrow. Ventral half of pronotal cervical sulcus: present as line of large cells. Sculpture of pronotal setal patch: irregular striae to rugulose.

Anterior notaulus: reaching mesoscutal suprahumeral sulcus as continuous furrow. Orientation of notauli: parallel. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: absent. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of short parallel striae. Median carina on posterior mesoscutellum: present. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: absent. Mesopleural carina: absent; present. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: straight.

Setation of metapleural triangle: sparse. Paracoxal and metapleural sulci: fused. Sculpture of posterodorsal part of ventral metapleural area: rugose; smooth. Dorsal metapleural area: smooth defined area. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: present. Setation of metasomal depression: absent. Posterior projection of the propodeum: lamellate extension formed from lateral propodeal carina. Plical carina: absent. Lateral propodeal area: undifferentiated from plical area.

Length of postmarginal vein: less than half as long as stigmal vein. Rs in fore wing: spectral. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of costal cell in male: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. Color of cubito-medial area in male: hyaline. Color of anal margin in male: hyaline. RS+M in forewing: nebulous. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: yellow; pale brown. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: present. Form of armature on posterior surface of T1 horn: transverse ridge. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: simple constriction. Posterior margin of transverse sulcus on T2: weakly convex. Carina along posterior margin of transverse sulcus on T2 in female: absent. Sublateral tergal carina on T2: absent. Microsculpture on T2: absent. Macrosculpture of T2 in female: longitudinally striate. Macrosculpture of T2 in male: longitudinally striate throughout. Carina along posterior margin of transverse sulcus on T2 in male: absent. Microsculpture on T3: absent. Macrosculpture of medial T3 in female: absent; weakly longitu-

dinally striate. Macrosculpture of lateral T3 in female: weakly longitudinally striate; longitudinally striate. Macrosculpture of medial T3 in male: absent. Macrosculpture of lateral T3 in male: weakly longitudinally striate; absent. Macrosculpture of female T5: absent. Microsculpture on female T6: absent. Constriction of apical T6 in female: absent. Macrosculpture of S1: rugose. Setation of S1: sparse throughout. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: line of dense setae along longitudinal ridge. Marginal depression on S3: absent. Marginal depressions on S4: absent. Marginal depression on S5: absent.

**Diagnosis.** *Paridris phrikos* is most similar to *P. xestos* and females may be separated by the presence of a transverse ridge on the horn of T1 and longitudinal striation on lateral T3. Males lack this character and are separated from those of *P. xestos* solely on the basis of having weak striation on lateral T3. For this reason, males are excluded from the paratype series.

**Etymology.** The Greek word “phrikos”, meaning “ruffling of a smooth surface”, refers to the transverse ridge on the horn of T1. The name is treated as a noun in apposition.

**Link to distribution map.**<sup>35</sup>

**Material examined.** Holotype, female: **FIJI**: Northern Div., Cakaudrove Prov., Taveuni Isl., 5.3km SE Tavuki, MT3, Devo Peak, 16.841°S 179.968°W, 1064m, 10.X–17.X.2002, malaise trap, Schlinger & M. Tokota’a, FBA134675 (deposited in BPBM). *Paratypes*: **FIJI**: 3 females, FBA136321 (BPBM); OSUC 265165 (CNCI); FBA184230 (FNIC). *Other material*: **FIJI**: 3 males, FBA105673 (BPBM); FBA127991 (CNCI); FBA164300 (FNIC).

***Paridris skolops* Talamas & Masner, sp. n.**

<http://zoobank.org/F78BE709-AB13-4AC6-9B3A-6316BEC832DB>

[http://species-id.net/wiki/Paridris\\_skolops](http://species-id.net/wiki/Paridris_skolops)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:303880](urn:lsid:biosci.ohio-state.edu:osuc_concepts:303880)

Figures 8, 10, 21, 76–79; Morphbank<sup>36</sup>

**Description.** Female body length: 2.23–2.35 mm (n=6). Male body length: 2.25–2.38 mm (n=3).

Number of basiconic sensilla on A8: one. Shape of male flagellomeres: between 2 and 3 times as long as wide.

Color of head: black. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: convex. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Anterodorsal node on interantennal process: present. Central keel: absent. Length of OOL: less than 2 ocellar diameters; greater than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: absent. Patch of microsculpture posterior to lateral ocellus in male: absent. Patch of microsculpture posterior to lateral ocellus in female: absent. Patch of

microsculpture between median and lateral ocelli: absent. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: absent. Shape of gena: weakly to moderately receding posterior to eye. Macrosculpture of posterior vertex: absent. Patch of microsculpture on temples: absent. Ventral extent of occipital carina: absent below occipital foramen. Setation of postgena: dense.

Color of mesosoma: pale brown.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: present in posterior half of pronotum. Dorsal half of pronotal cervical sulcus: present as smooth furrow. Ventral half of pronotal cervical sulcus: present as line of large cells. Sculpture of pronotal setal patch: irregular striae to rugulose.

Anterior notaulus: reaching mesoscutal suprahumeral sulcus as continuous furrow. Orientation of notauli: parallel. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: absent. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of short parallel striae. Median carina on posterior mesoscutellum: present; absent. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: absent. Mesopleural carina: absent. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: straight.

Setation of metapleural triangle: moderately dense. Paracoxal and metapleural sulci: fused. Sculpture of posterodorsal part of ventral metapleural area: rugose. Dorsal metapleural area: smooth defined area. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: present. Setation of metasomal depression: present. Posterior projection of the propodeum: lamellate extension formed from lateral propodeal carina. Plical carina: absent. Lateral propodeal area: undifferentiated from plical area.

Length of postmarginal vein: less than half as long as stigmal vein. Rs in fore wing: nebulous. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of costal cell in male: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. Color of cubito-medial area in male: hyaline. Color of anal margin in male: hyaline. RS+M in forewing: nebulous. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: yellow. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: present. Form of armature on posterior surface of T1 horn: transverse ridge. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: present. Sublateral tergal carina on T2: present. Microsculpture on T2: absent. Macrosculpture of T2 in female: longitudinally striate. Macrosculpture of T2 in male: longitudinally striate throughout. Carina along posterior margin of transverse sulcus on T2 in male: absent. Microsculpture on T3:



present. Macrosculpture of medial T3 in female: absent. Macrosculpture of lateral T3 in female: longitudinally striate. Macrosculpture of medial T3 in male: weakly longitudinally striate. Macrosculpture of lateral T3 in male: longitudinally striate. Macrosculpture of T4 in male: absent. Macrosculpture of female T5: absent. Microsculpture on female T6: absent. Constriction of apical T6 in female: absent. Setation of S1: medial tuft. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: lateral row or patch of setigerous punctures. Marginal depression on S3: present. Marginal depressions on S4: present. Marginal depression on S5: present.

**Diagnosis.** *Paridris skolops* is unique among the *Paridris* species in Fiji because the female has a carina along the posterior margin of the antecostal sulcus on T2. Males and females have a setose metasomal depression and dense fine setae along the postgena which serve to separate them from the other species treated in this revision.

**Etymology.** The Greek epithet “skolops” meaning “anything pointed” refers to the posteriorly directed spine on the horn of T1 in females of this species. The name is treated as a noun in apposition.

**Link to distribution map.**<sup>37</sup>

**Material examined.** Holotype, female: **FIJI**: Northern Div., Cakaudrove Prov., Taveuni Isl., 5.3km SE Tavuki, MT3, Devo Peak, 16.841°S, 179.968°W, 1064m, 24.X–31.X.2002, malaise trap, Schlinger & M. Tokota’a, FBA105671 (deposited in BPBM). *Paratypes*: **FIJI**: 6 females, 3 males, FBA098119, FBA098120, FBA134348, FBA164536 (BPBM); FBA127987, FBA134351 (CNCI); FBA099707, FBA105669 (FNIC); FBA105674 (OSUC).

***Paridris sulcata* Talamas, sp. n.**

<http://zoobank.org/6E89D176-7404-4A04-8FCF-9E369D63F701>

[http://species-id.net/wiki/Paridris\\_sulcata](http://species-id.net/wiki/Paridris_sulcata)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:303975](urn:lsid:biosci.ohio-state.edu:osuc_concepts:303975)

Figures 80–85; Morphbank<sup>38</sup>

**Description.** Male body length: 2.21 mm (n=1).

Number of basiconic sensilla on A8: one.

Color of head: black. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: convex. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Anterodorsal node on interantennal process: absent. Central keel: absent. Length of OOL: less than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: rugose. Patch of microsculpture posterior to lateral ocellus in female: absent. Patch of microsculpture between median and lateral ocelli: absent. Microsculpture on dorsal head: pustulate. Microsculpture of posterior gena: present. Shape of gena: not receding posterior to eye. Macrosculpture of posterior vertex: punctate rugose. Patch of microsculpture on



temples: absent. Occipital carina above occipital foramen: appressed toward ocelli. Anterior margin of occipital carina above occipital foramen: comprised of cells. Ventral extent of occipital carina: extending to base of mandible. Setation of postgena: sparse.

Color of mesosoma: brown.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: present in posterior half of pronotum. Dorsal half of pronotal cervical sulcus: present as smooth furrow. Ventral half of pronotal cervical sulcus: present as line of large cells. Sculpture of pronotal setal patch: coarsely striate.

Anterior notaulus: reaching mesoscutal suprahumeral sulcus as continuous furrow. Orientation of notauli: converging posteriorly. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: pustulate. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: uniform throughout. Scutoscutellar sulcus: comprised of round cells. Median carina on posterior mesoscutellum: absent. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: absent. Mesopleural carina: absent. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: emarginate.

Setation of metapleural triangle: sparse. Paracoxal and metapleural sulci: separate. Sculpture of posterodorsal part of ventral metapleural area: smooth. Dorsal metapleural area: smooth defined area. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: absent. Setation of metasomal depression: absent. Posterior projection of the propodeum: present as a point formed by plical and lateral propodeal carinae. Plical carina: present. Lateral propodeal area: raised above propodeal surface and indicated by lesser setation. Shape of lateral propodeal area: separate from prespiracular propodeal area. Sculpture of lateral propodeal area: areolate rugose.

Length of postmarginal vein: slightly longer than stigmalis ( $<1.5X$ ). Rs in fore wing: nebulous. Cu vein in fore wing: nebulous. M vein in forewing: nebulous. Color of costal cell in female: hyaline along stigmal vein, infusate distally. Color of subradial area in female: infusate. Color of cubito-medial area in female: infusate. Color of anal margin in female: infusate. RS+M in forewing: nebulous. Basal vein in hind wing: nebulous. Setation of hind wing: reduced and of submarginal vein.

Color of metasoma: brown. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: present. Form of armature on posterior surface of T1 horn: posteriorly projecting spine. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: present. Sublateral tergal carina on T2: absent. Microsculpture on T2: present. Macrosculpture of T2 in female: longitudinally striate. Microsculpture on T3: present. Macrosculpture of medial T3 in female: weakly longitudinally strigose. Macrosculpture of lateral T3 in female: longitudinally strigose. Macrosculpture of female T5: absent. Microsculpture on female T6:

present throughout. Constriction of apical T6 in female: present. Macrosculpture of S1: rugose. Setation of S1: absent. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: lateral row or patch of setigerous punctures. Marginal depression on S3: present. Marginal depressions on S4: present. Marginal depression on S5: present.

**Diagnosis.** *P. sulcata* is morphologically closest to *P. bifurcata*. Females may be separated by the posteriorly directed spine on the horn of T1 and the single basiconic sensillum on A8.

**Etymology.** The adjectival Latin epithet “sulcata” means “furrowed” and refers to the clearly defined and separate metapleural and paracoxal sulci.

**Link to distribution map.**<sup>39</sup>

**Material examined.** Holotype, male: VANUATU: Sanma Prov., Espiritu Santo Isl., 900B ground / moist lowland forest, MG09B1, Penaoru, 900m, 6.XI–18. XI.2006, malaise trap, OSUC 283363 (deposited in MNHN).

***Paridris taekuli* Talamas & Masner, sp. n.**

<http://zoobank.org/36C38B4E-89A0-428B-822C-C9517B9AE5BF>

[http://species-id.net/wiki/Paridris\\_taekuli](http://species-id.net/wiki/Paridris_taekuli)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:303974](urn:lsid:biosci.ohio-state.edu:osuc_concepts:303974)

Figures 16, 26, 86–89; Morphbank<sup>40</sup>

**Description.** Female body length: 1.63–2.71 mm (n=11). Male body length: 1.38–1.62 mm (n=2).

Number of basiconic sensilla on A8: one. Shape of male flagellomeres: spherical.

Color of head: brown to black. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: straight. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Anterodorsal node on interantennal process: absent. Central keel: absent. Length of OOL: greater than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: absent. Patch of microsculpture posterior to lateral ocellus in male: absent. Patch of microsculpture posterior to lateral ocellus in female: absent. Patch of microsculpture between median and lateral ocelli: absent. Microsculpture on dorsal head: pustulate. Microsculpture of posterior gena: present. Shape of gena: not receding posterior to eye. Macrosculpture of posterior vertex: absent. Patch of microsculpture on temples: absent. Occipital carina above occipital foramen: absent. Ventral extent of occipital carina: extending to base of mandible. Setation of postgena: dense.

Color of mesosoma: brown to black.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: present in posterior half of pronotum. Dorsal half of pronotal cervical sulcus: present as line of small cells. Ventral half of pronotal cervical sulcus: present as line of small cells. Sculpture of pronotal setal patch: punctate.

Anterior notaulus: absent. Orientation of notauli: converging posteriorly. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: pustulate. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of round cells. Median carina on posterior mesoscutellum: absent. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: present. Size of punctures on dorsal part of posterior mesepimeral area: very fine. Mesopleural carina: absent. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: present. Posterior margin of metascutellum: straight; emarginate.

Setation of metapleural triangle: moderately dense. Paracoxal and metapleural sulci: separate. Sculpture of posterodorsal part of ventral metapleural area: smooth. Dorsal metapleural area: coarsely sculptured. Posterior margin of metapleuron below propodeal spiracle: straight to moderately convex.

Anterior projection of the propodeum: absent. Setation of metasomal depression: present. Posterior projection of the propodeum: present as a point formed by plical and lateral propodeal carinae. Plical carina: present. Lateral propodeal area: raised above propodeal surface and indicated by lesser setation. Shape of lateral propodeal area: continuous with prespiracular propodeal area. Sculpture of lateral propodeal area: punctate rugulose.

Length of postmarginal vein: shorter than stigmal vein by less than one half length of stigmal vein; slightly longer than stigmalis ( $<1.5\times$ ); equal to stigmalis. Rs in fore wing: spectral. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of costal cell in male: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin in female: hyaline. Color of cubito-medial area in male: hyaline. Color of anal margin in male: hyaline. RS+M in forewing: spectral. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: pale brown; brown to black. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: absent. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: transverse furrow. Posterior margin of transverse sulcus on T2: straight. Carina along posterior margin of transverse sulcus on T2 in female: present. Sublateral tergal carina on T2: absent. Microsculpture on T2: absent. Macrosculpture of T2 in female: longitudinally striate. Macrosculpture of T2 in male: longitudinally striate throughout. Carina along posterior margin of transverse sulcus on T2 in male: present. Microsculpture on T3: absent. Macrosculpture of medial T3 in female: weakly longitudinally striate. Macrosculpture of lateral T3 in female: longitudinally striate. Macrosculpture of medial T3 in male: weakly longitudinally striate. Macrosculpture of lateral T3 in male: longitudinally striate. Macrosculpture of T4 in male: absent. Macrosculpture of female T5: absent. Microsculpture on female T6: present throughout. Constriction of apical T6 in female: present. Macrosculpture of S1: rugose. Setation of

S1: absent. Distribution of longitudinal striae on S2: present throughout. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: lateral row or patch of setigerous punctures. Marginal depression on S3: absent. Marginal depressions on S4: absent. Marginal depression on S5: absent.

**Diagnosis.** The setose metascutellum of *P. taekuli* is known to occur in one other species of *Paridris*, *P. spinosa* Rajomohana, from India. *P. taekuli* lacks an occipital carina, has a postmarginal vein about as long as the stigmal vein, and an apically constricted T6. *Paridris spinosa* has an occipital carina dorsally, a punctiform postmarginal vein and an evenly convex T6.

**Etymology.** This species is named after Charuwat Taekul, a friend, student and colleague of the authors, for his contributions to the taxonomy and systematics of Platyastroidea.

**Link to distribution map.**<sup>41</sup>

**Material examined.** Holotype, female: **NEW CALEDONIA:** Nord Prov., Pouembout Commune, Tiéa Forest, 7.XII–14.XII.2000, malaise trap, M. E. Irwin, OSUC 266150 (deposited in MNHN). *Paratypes:* (12 females, 4 males) **BANGLADESH:** 1 female, OSUC 436199 (CNCI). **FIJI:** 2 females, FBA015309 (BPBM); FBA015307 (FNIC). **INDIA:** 1 female, OSUC 436198 (CNCI). **INDONESIA:** 1 male, OSUC 58726 (OSUC). **IVORY COAST:** 2 females, 1 male, OSUC 181228, 453531, 453535 (CNCI). **THAILAND:** 5 females, 2 males, OSUC 436197, 453753 (CNCI); OSUC 266168 (OSUC); OSUC 266169, 266173–266175 (QSBG). **VIETNAM:** 1 female, OSUC 265232 (RMNH). *Other material:* **MADAGASCAR:** 1 male, OSUC 334142 (CASC).

**Comments.** Specimen OSUC 334142 lacked setae on the metascutellum, as well as on other parts of the body, following the DNA extraction process that we believe caused loss of setation. Because setation of the metascutellum is the most diagnostic character for this species, we exclude the male DNA voucher specimen from the paratype series. The three specimens from the Ivory Coast exhibit notable variability in some of the diagnostic characters, namely, the posterior margin of the metascutellum is slightly emarginate; the setation of the metascutellum is medially reduced; and the postmarginal vein is slightly longer than the stigmal vein whereas it is equal to or less than the length of the stigmal vein in specimens from Asia and Madagascar.

***Paridris xestos* Talamas & Masner, sp. n.**

<http://zoobank.org/751BBAC9-1381-4117-BD44-121654413F11>

[http://species-id.net/wiki/Paridris\\_xestos](http://species-id.net/wiki/Paridris_xestos)

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:303881](urn:lsid:biosci.ohio-state.edu:osuc_concepts:303881)

Figures 5, 9, 12, 20, 27, 90–95; Morphbank<sup>42</sup>

**Description.** Female body length: 1.56–2.51 mm (n=20). Male body length: 1.26–2.32 mm (n=12).

Number of basiconic sensilla on A8: one. Shape of male flagellomeres: more than 3 times as long as wide.

Color of head: brown to black; reddish brown. Distal margin of clypeus: serrate. Shape of distal margin of clypeus in anterior view: straight. Width of clypeus: greater than width across toruli. Lateral corner of clypeus: projecting into acute angle. Length of mediofacial striae: not extending above midpoint of compound eye. Anterodorsal node on interantennal process: absent. Central keel: absent. Length of OOL: greater than 2 ocellar diameters. Macrosculpture of frons between median ocellus and inner orbit of eye: absent. Patch of microsculpture posterior to lateral ocellus in male: absent. Patch of microsculpture posterior to lateral ocellus in female: present. Patch of microsculpture between median and lateral ocelli: present. Microsculpture on dorsal head: absent. Microsculpture of posterior gena: absent. Shape of gena: weakly to moderately receding posterior to eye. Macrosculpture of posterior vertex: absent. Patch of microsculpture on temples: present; absent. Occipital carina above occipital foramen: simple. Anterior margin of occipital carina above occipital foramen: comprised of cells. Ventral extent of occipital carina: absent below occipital foramen. Setation of postgena: sparse.

Color of mesosoma: pale brown; reddish brown.

Shape of pronotal shoulder in dorsal view: narrow and striplike. Transverse pronotal carina: present in posterodorsal corner of pronotum. Dorsal half of pronotal cervical sulcus: present as smooth furrow. Ventral half of pronotal cervical sulcus: present as line of large cells. Sculpture of pronotal setal patch: irregular striae to rugulose.

Anterior notaulus: reaching mesoscutal suprahumeral sulcus as continuous furrow. Orientation of notauli: parallel. Shape of posterior notaulus: ovoid. Microsculpture on anterior half of medial mesoscutum: absent. Macrosculpture of anterior medial mesoscutum: absent. Pattern of punctation density on medial mesoscutum: increasing anteriorly. Scutoscutellar sulcus: comprised of short parallel striae. Median carina on posterior mesoscutellum: present. Posterior scutellar sulcus: comprised of shallow round cells.

Punctures on dorsal part of posterior mesepimeral area: absent. Mesopleural carina: absent. Postacetabular sulcus: crenulate. Striae ventrad of mesopleural carina: absent.

Setae on metascutellum: absent. Posterior margin of metascutellum: straight.

Setation of metapleural triangle: moderately dense. Paracoxal and metapleural sulci: fused. Sculpture of posterodorsal part of ventral metapleural area: mostly rugose with small smooth patch; smooth. Dorsal metapleural area: smooth defined area. Posterior margin of metapleuron below propodeal spiracle: with triangular point above metapleural sulcus.

Anterior projection of the propodeum: present. Setation of metasomal depression: absent. Posterior projection of the propodeum: lamellate extension formed from lateral propodeal carina. Plical carina: absent. Lateral propodeal area: undifferentiated from plical area.

Length of postmarginal vein: less than half as long as stigmal vein. Rs in fore wing: spectral. Cu vein in fore wing: spectral. M vein in forewing: spectral. Color of costal cell in female: hyaline. Color of sub-radial area in female: hyaline. Color of costal cell in male: hyaline. Color of cubito-medial area in female: hyaline. Color of anal margin

in female: hyaline. Color of cubito-medial area in male: hyaline. Color of anal margin in male: hyaline. RS+M in forewing: nebulous. Color of sub-stigmal area in male: hyaline. Basal vein in hind wing: spectral. Setation of hind wing: uniform throughout.

Color of metasoma: pale brown; reddish brown. Longitudinal median carina on horn of T1: absent. Armature on posterior surface of T1 horn: absent. Interstitial sculpture of T1: finely rugulose. Patch of dense fine setae on anterolateral T1: absent. Form of T2 sulcus: simple constriction. Posterior margin of transverse sulcus on T2: weakly convex. Carina along posterior margin of transverse sulcus on T2 in female: absent. Sublateral tergal carina on T2: absent. Microsculpture on T2: absent. Macrosculpture of T2 in female: longitudinally striate, medial striae not reaching posterior margin. Macrosculpture of T2 in male: longitudinally striate throughout. Carina along posterior margin of transverse sulcus on T2 in male: absent. Microsculpture on T3: absent. Macrosculpture of medial T3 in female: absent. Macrosculpture of lateral T3 in female: absent. Macrosculpture of medial T3 in male: absent. Macrosculpture of lateral T3 in male: weakly longitudinally striate. Macrosculpture of T4 in male: absent. Macrosculpture of female T5: absent. Microsculpture on female T6: absent. Constriction of apical T6 in female: absent. Macrosculpture of S1: rugose. Setation of S1: sparse throughout. Distribution of longitudinal striae on S2: present anteromedially. Macrosculpture of S2: longitudinally striate. Form of S2 felt field: line of dense setae along longitudinal ridge. Marginal depression on S3: absent. Marginal depressions on S4: absent. Marginal depression on S5: absent.

**Diagnosis.** Females of *P. xestos* may be separated from *P. phrikos* by the smooth T3 and absence of armature on the horn of T1. Males are separated on the sole character of T3 without surface sculpture, compared with weak striation in *P. phrikos*. This character is the only consistent difference we found between the two series of males, and as a measure of caution, we exclude the males from of *P. xestos* (as those of *P. phrikos*) from the type series.

**Etymology.** The adjectival epithet “xestos” is Greek for “smoothed” or “polished” and refers to the smoothness of metasomal tergites 3–6.

**Link to distribution map.**<sup>43</sup>

**Material examined.** Holotype, female: **FIJI**: Northern Div., Cakaudrove Prov., Taveuni Isl., 5.6km SE Tavuki, MT1, Devo Peak, 16.843°S, 179.966°W, 1187m, 14.XI–21.XI.2002, malaise trap, E. I. Schlinger & M. Tokota’a, FBA129279 (deposited in BPBM). *Paratypes*: **FIJI**: 40 females, FBA019799, FBA019814, FBA019830, FBA019834, FBA041001, FBA042153, FBA042184, FBA042197, FBA042216, FBA052822, FBA054137, FBA057544, FBA057550, FBA072049, FBA072106, FBA099700, FBA104357, FBA105661, FBA107839, FBA107841, FBA110235, FBA129278, FBA134354, FBA134430, FBA136326, FBA149714, FBA149722, FBA149728, FBA149729, FBA164529, FBA164540, FBA164885, OSUC 436195, OSUC 436196 (BPBM); FBA042174, FBA042189, FBA057543 (CNCI); FBA110237 (FNIC); FBA042185, FBA149720 (OSUC). *Other material*: **FIJI**: 12 males, FBA019809, FBA104330, FBA113214, FBA146506, FBA146508, FBA149371, FBA185056 (BPBM); FBA057542, FBA059058, FBA113217 (CNCI); FBA164310 (FNIC); FBA129282 (OSUC).

### Synopsis of species included in phylogenetic analysis, but not taxonomically treated by the present authors

#### *Paridris armigera* Rajmohana

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:224533](https://nbn-resolving.org/urn:lsid:biosci.ohio-state.edu:osuc_concepts:224533)

*Paridris armigera* Rajmohana.

**Material examined.** *Other material:* **INDIA:** 1 female, 3 males, OSUC 265180, 265190 (CNCI); OSUC 58725, 58727 (OSUC).

#### *Paridris gloria* Kononova

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:313330](https://nbn-resolving.org/urn:lsid:biosci.ohio-state.edu:osuc_concepts:313330)

*Paridris glorius* Kononova, 2008: 278, 280 (original description, keyed).

**Material examined.** *Other material:* **JAPAN:** 1 female, OSUC 265173 (CNCI).

#### *Paridris spinosa* Rajmohana

[urn:lsid:biosci.ohio-state.edu:osuc\\_concepts:313335](https://nbn-resolving.org/urn:lsid:biosci.ohio-state.edu:osuc_concepts:313335)

*Paridris spinosus* Rajmohana, 2011: 9 (original description).

**Material examined.** *Other material:* **INDIA:** 1 female, OSUC 404966 (USNM).

#### *Paridris* asian sp. 1

**Material examined.** *Other material:* (17 females, 14 males, 1 unknown) **LAOS:** 4 females, 4 males, 1 unknown, OSUC 262201–262209 (CNCI). **THAILAND:** 11 females, 6 males, OSUC 262236 (CNCI); OSUC 225460–225464, 237420, 266167, 266170–266172, 266176–266178, 381815, 404961, 405076 (OSUC). **VIETNAM:** 2 females, 4 males, OSUC 265231, 265233 (RMNH); OSUC 261907, 266160–266162 (ROME).

### Synopsis of *Paridris* not treated in this publication

#### Vietnam

#### *Paridris bispores* Kozlov & Lê

*Paridris bispores* Kozlov & Lê, 2000: 65, 335 (original description, keyed).



***Paridris circus* Kozlov & Lê**

*Paridris circus* Kozlov & Lê, 2000: 65, 66, 336 (original description, keyed).

***Paridris genaris* Kozlov & Lê**

*Paridris genaris* Kozlov & Lê, 2000: 65, 67, 337 (original description, keyed).

***Paridris macrurous* Kozlov & Lê**

*Paridris macrurous* Kozlov & Lê, 2000: 65, 69, 337 (original description, keyed).

***Paridris stigmalshortis* Kozlov & Lê**

*Paridris stigmalshortis* Kozlov & Lê, 2000: 65, 70, 338 (original description, keyed).

***Paridris striaefrons* Kozlov & Lê**

*Paridris striaefrons* Kozlov & Lê, 2000: 65, 71, 339 (original description, keyed).

***Paridris* from India*****Paridris coorgensis* Sharma**

*Paridris coorgensis* Sharma, 1978: 26 (original description); Mani & Sharma, 1982: 177 (description); Rajmohana K., 2007: 57 (keyed).

***Paridris dubeyi* Sharma**

*Paridris dubeyi* Sharma, 1982: 336 (original description); Rajmohana K., 2007: 57 (keyed).

***Paridris dunensis* Mukerjee**

*Paridris dunensis* Mukerjee, 1994: 10 (original description); Rajmohana K., 2007: 57 (keyed).

***Paridris karnatakensis* Sharma**

*Paridris karnatakensis* Sharma, 1982: 338 (original description); Rajmohana K., 2007: 57 (keyed).

***Paridris mahadeoensis* Sharma**

*Paridris mahadeoensis* Sharma, 1978: 28 (original description); Mani & Sharma, 1982: 178 (description); Rajmohana K., 2007: 57 (keyed).

***Paridris pachmarhica* (Sharma)**

*Probaryconus pachmarhicus* Sharma, 1978: 24 (original description).

*Paridris pachmarhicus* (Sharma): Mani & Sharma, 1982: 178 (description); Rajmohana K., 2007: 57 (keyed).

**Palaearctic *Paridris******Paridris leda* Kozlov & Kononova**

*Paridris leda* Kozlov & Kononova, 1985: 39 (original description); Kozlov & Kononova, 1990: 181 (description); Kononova & Petrov, 2000: 31 (keyed); Kononova & Kozlov, 2008: 278, 279 (description, keyed).

***Paridris stena* Kononova & Petrov**

*Paridris stenus* Kononova & Petrov, 2000: 31 (original description, keyed); Kononova & Kozlov, 2008: 279, 283 (description, keyed).

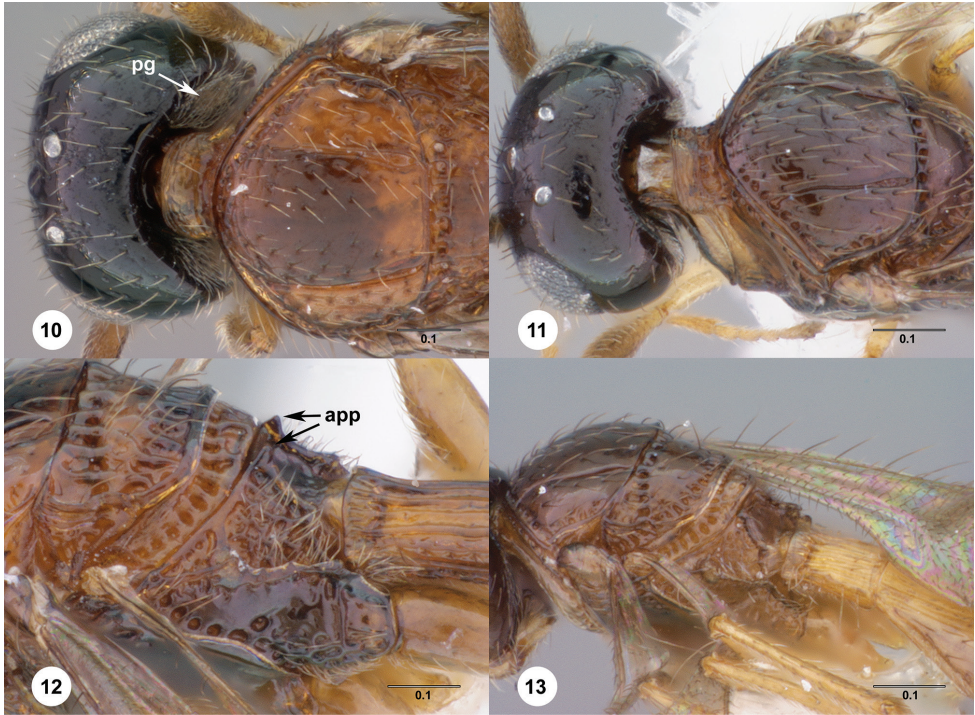
**Australian *Paridris******Paridris parvocolata* Galloway**

*Paridris parvocolatus* Galloway, 1984: 24 (original description).

## Plates

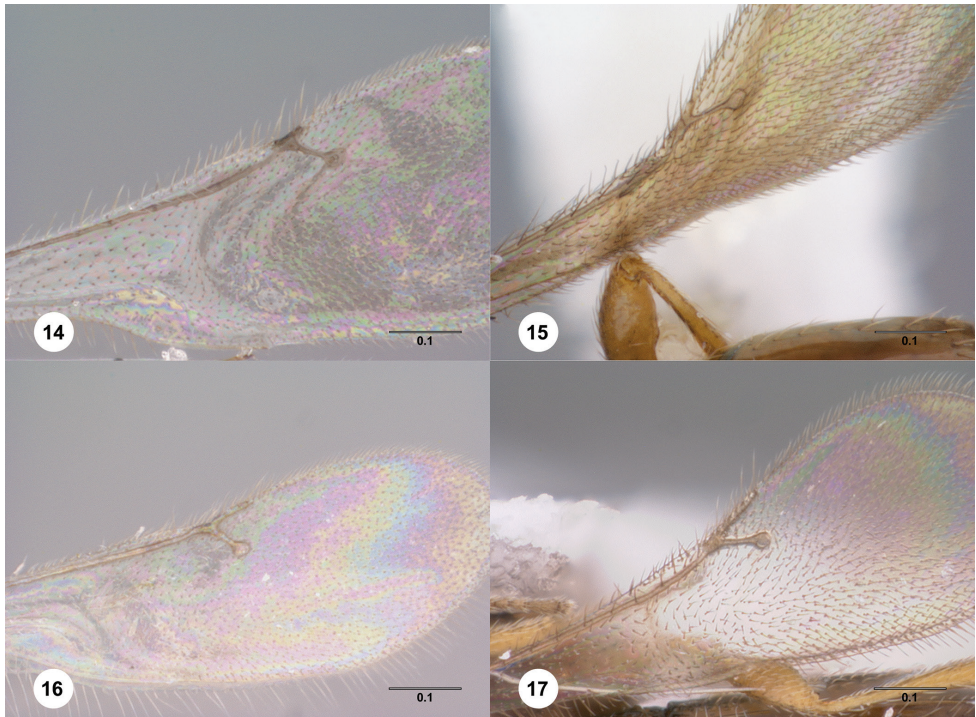


**Figures 4–9.**<sup>79</sup> **4** *Paridris bifurcata* (Dodd), Antennal clava, ventral view, female (OSUC 265159) **5** *Paridris xestos* sp. n., Antennal clava, ventral view, female (FBA019830) **6** *Paridris mnestros* sp. n., Head, posterolateral view, female (OSUC 181070) **7** *Paridris anikulapo* sp. n., Head, posterior view, male (OSUC 243529) **8** *Paridris skolops* sp. n., Head, ventral view, female (FBA105669) **9** *Paridris xestos* sp. n., Head, posteroventral view, female (FBA019830).

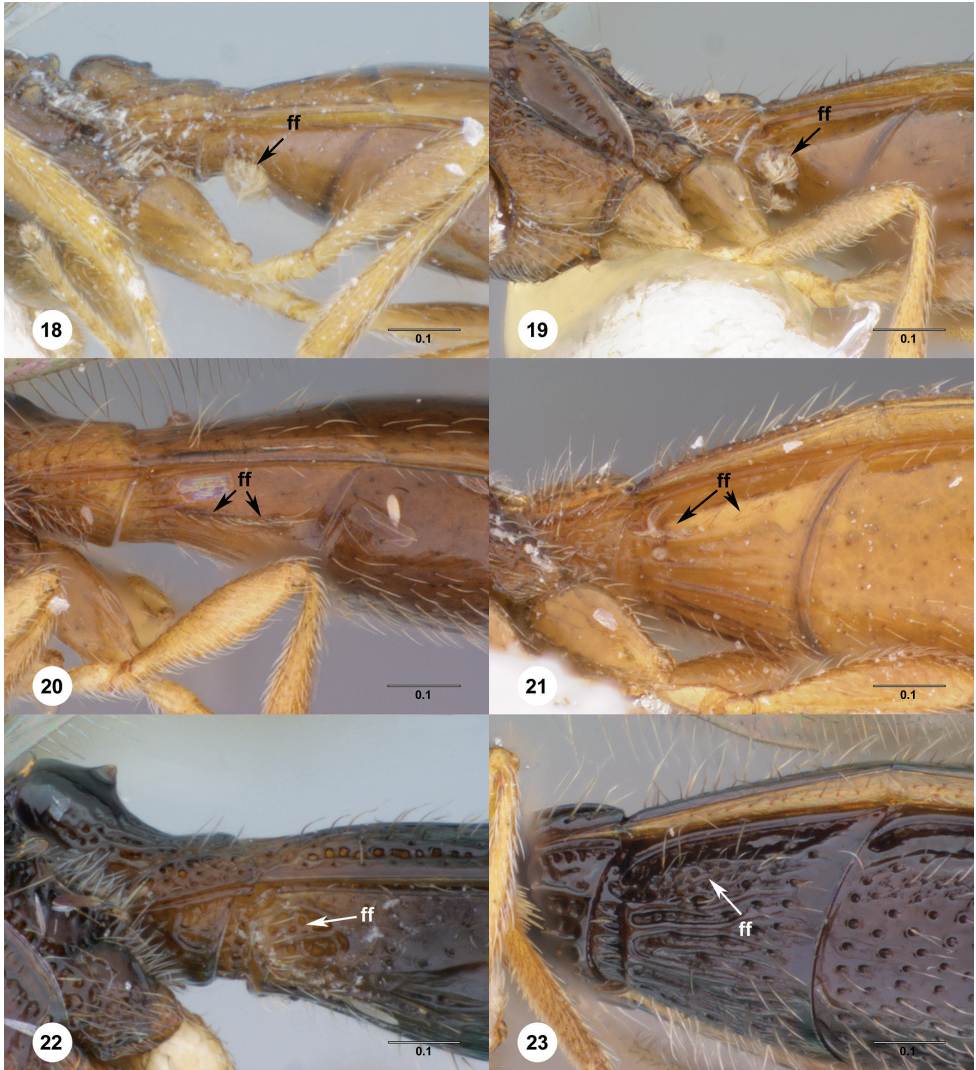


**Figures 10–13.**<sup>80</sup> **10** *Paridris skolops* sp. n., Head and mesosoma, dorsal view, female (FBA134348) **11** *Paridris pantex* sp. n., Head and mesosoma, dorsal view, female (FBA070878) **12** *Paridris xestos* sp. n., propodeum, dorsolateral view, male (FBA185056) **13** *Paridris pantex* sp. n., propodeum, dorsolateral view, male (FBA058960).

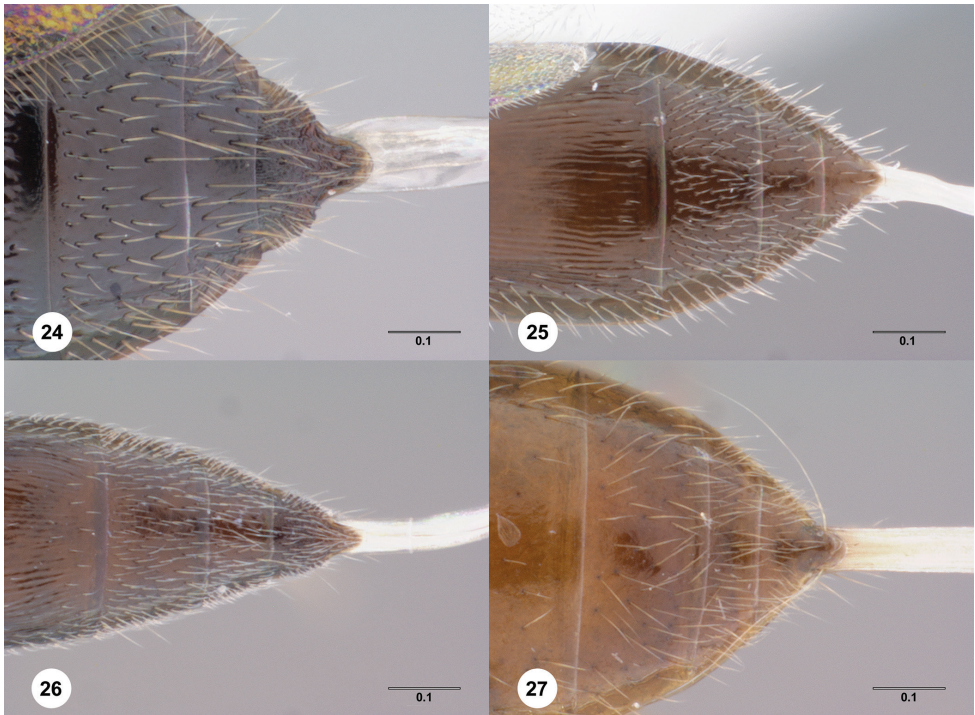




**Figures 14–17.**<sup>81</sup> **14** *Paridris tenuis* (Nixon), Venation of forewing, dorsal view, female (CASENT 2042596) **15** *Paridris pantex* sp. n., Venation of forewing, dorsal view, female (FBA129283) **16** *Paridris taekuli* sp. n., Venation of forewing, ventral view, female (OSUC 266150) **17** *Paridris anikulapo* sp. n., Venation of forewing, dorsal view, female (OSUC 265247).

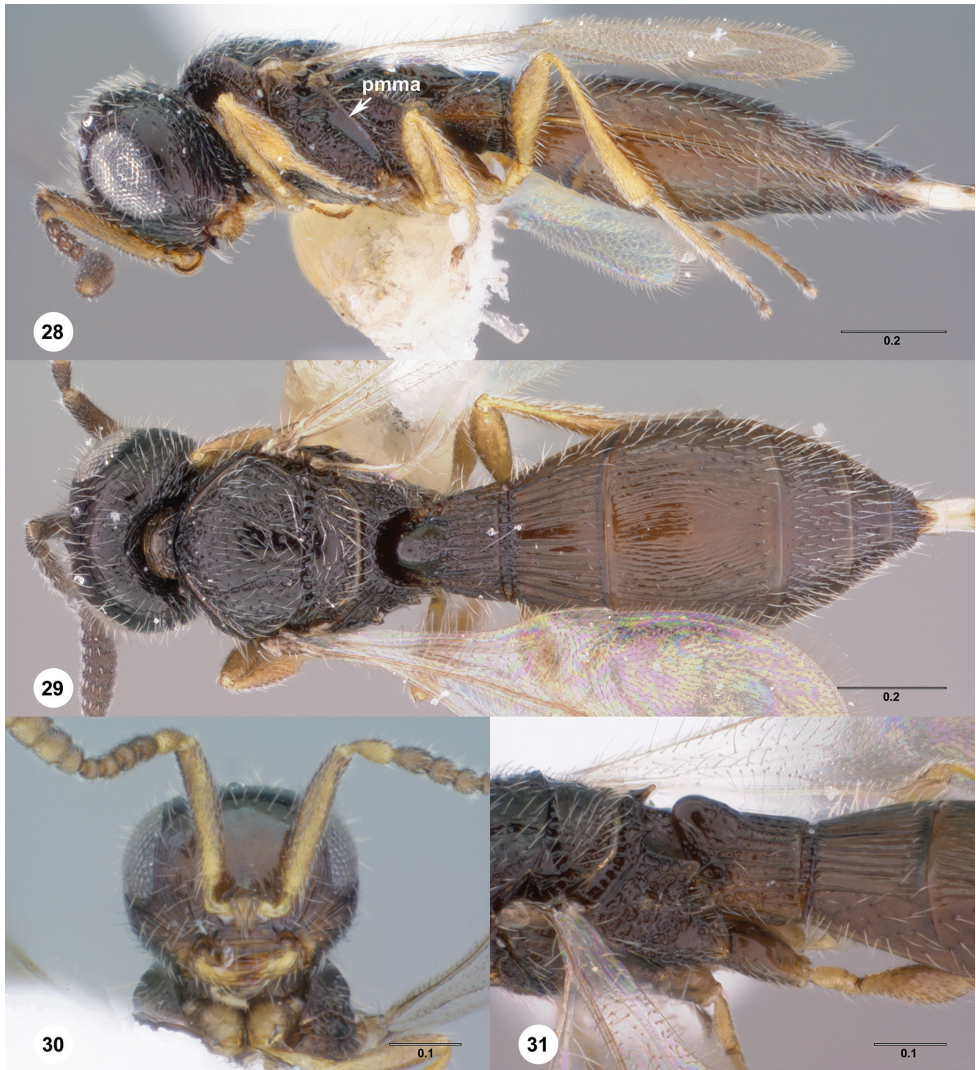


**Figures 18–23.**<sup>82</sup> **18** *Paridris pantex* sp. n., T1–T2, S1–S2, lateral view, female (FBA164535) **19** *Paridris pantex* sp. n., S1–S2, ventrolateral view, female (FBA134681) **20** *Paridris xestos* sp. n., T1–T2, S1–S2, lateral view, female (FBA019830) **21** *Paridris skolops* sp. n., S1–S2, ventrolateral view, female (FBA164536) **22** *Paridris mnestros* sp. n., T1–T2, S1–S2, lateral view, female (OSUC 181286) **23** *Paridris bifurcata* (Dodd), S1–S2, ventrolateral view, male (OSUC 181077).

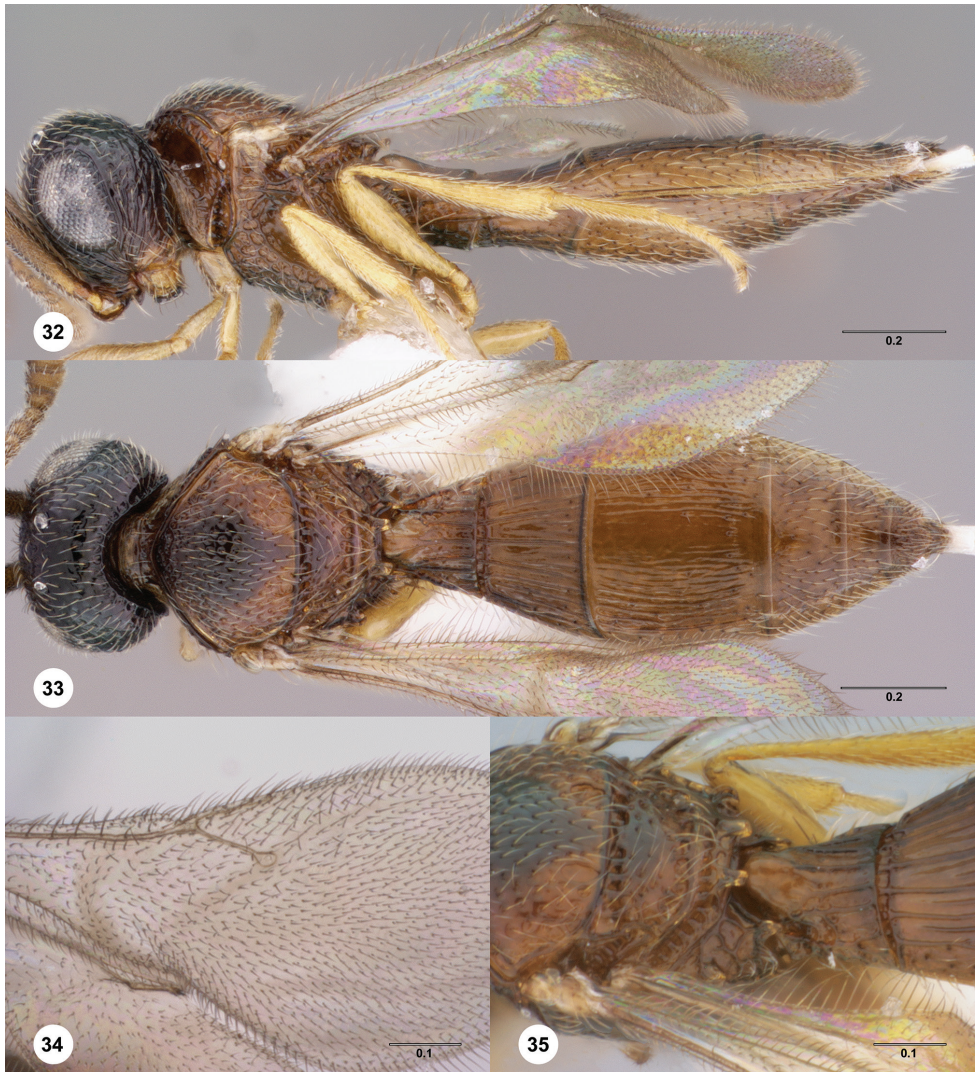


**Figures 24–27.**<sup>83</sup> **24** *Paridris bifurcata* (Dodd), T4–T6, dorsal view, female (OSUC 181076) **25** *Paridris tenuis* (Nixon), T3–T6, dorsal view, female (OSUC 58708) **26** *Paridris taekuli* sp. n., T3–T6, dorsal view, female holotype (OSUC 266150) **27** *Paridris xestos* sp. n., T4–T6, dorsal view, female (FBA057544).



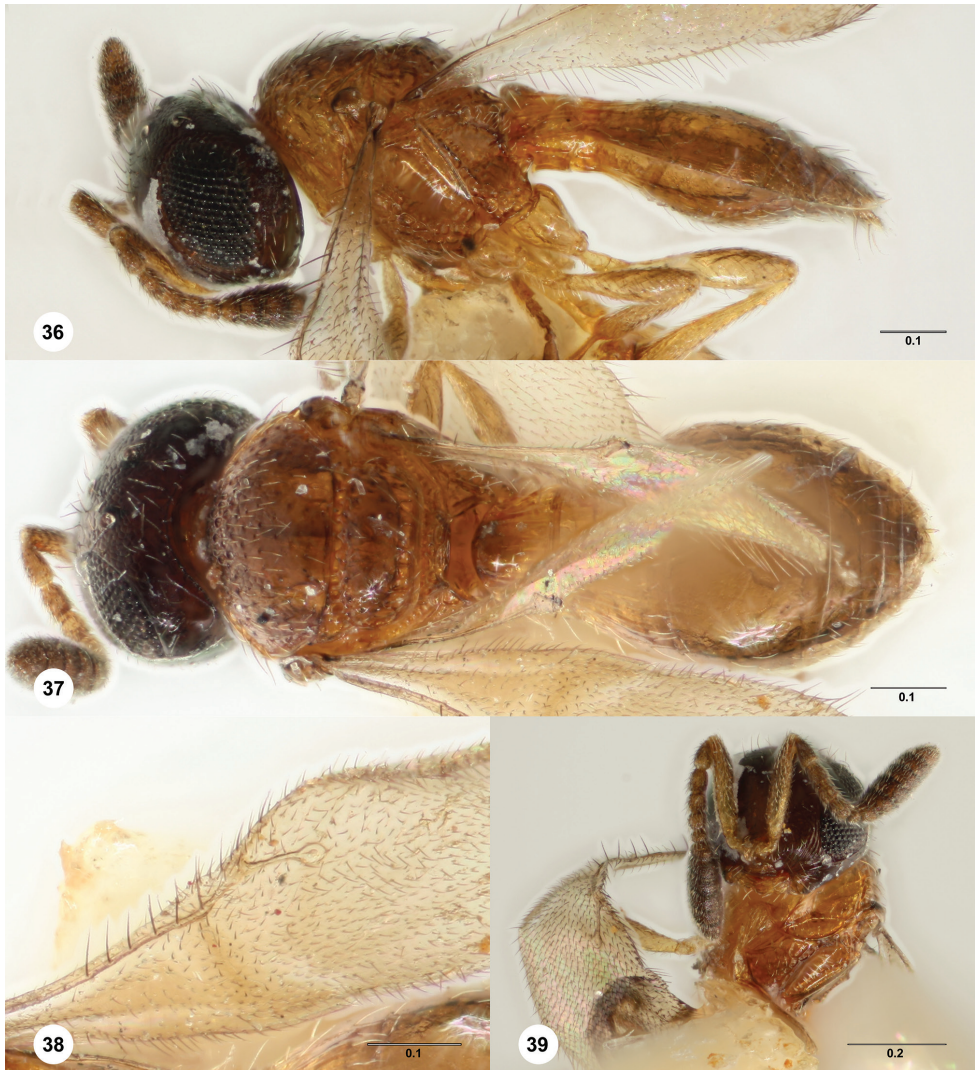


**Figures 28–31.**<sup>84</sup> *Paridris anikulapo* sp. n. **28** Lateral habitus, female holotype (OSUC 58723) **29** Dorsal habitus, female holotype (OSUC 58723) **30** Head, anterior view, female (OSUC 265246) **31** Mesoscutellum, metascutellum, propodeum, T1–T2, dorsolateral view, female (OSUC 265248).

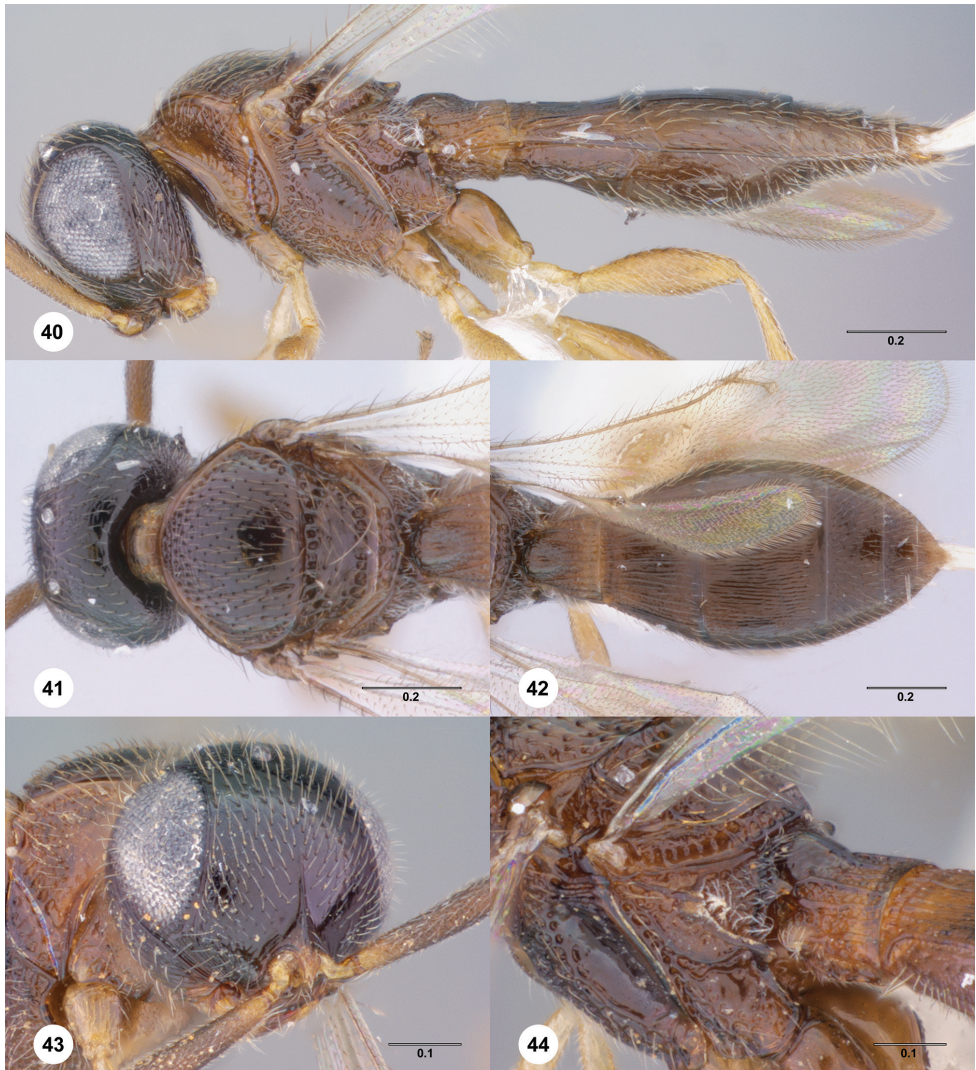


**Figures 32–35.**<sup>85</sup> *Paridris bispinosa* (Masner), female (OSUC 265181) **32** Lateral habitus **33** Dorsal habitus **34** Wing venation, dorsal view **35** Mesonotum, metascutellum, propodeum, T1–T2, dorsolateral view.





**Figures 36–39.**<sup>86</sup> *Paridris densiclava* (Kieffer), female holotype (B.M. TYPE HYM. 9.454) **36** Lateral habitus **37** Head and mesosoma, dorsal view **38** Wing venation, dorsal view **39** Head and forewing, anterior view.

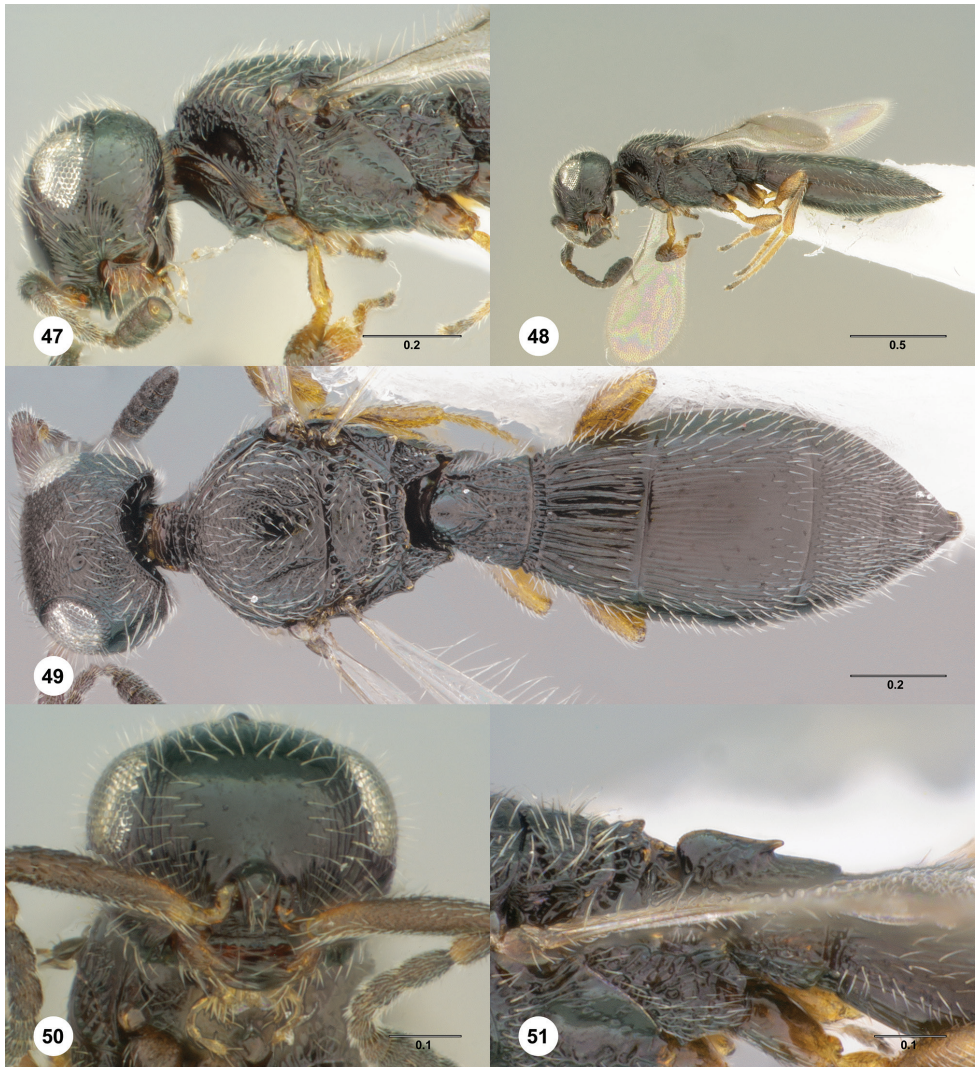


**Figures 40–44.**<sup>87</sup> *Paridris nigriclava* (Kieffer) **40** Lateral habitus, female (OSUC 256853) **41** Head and mesosoma, lateral view, female (OSUC 256853) **42** Metasoma, dorsal view, female (OSUC 256853) **43** Head, anterolateral view, female (OSUC 210273) **44** Propodeum, posterolateral view, female (OSUC 210273).



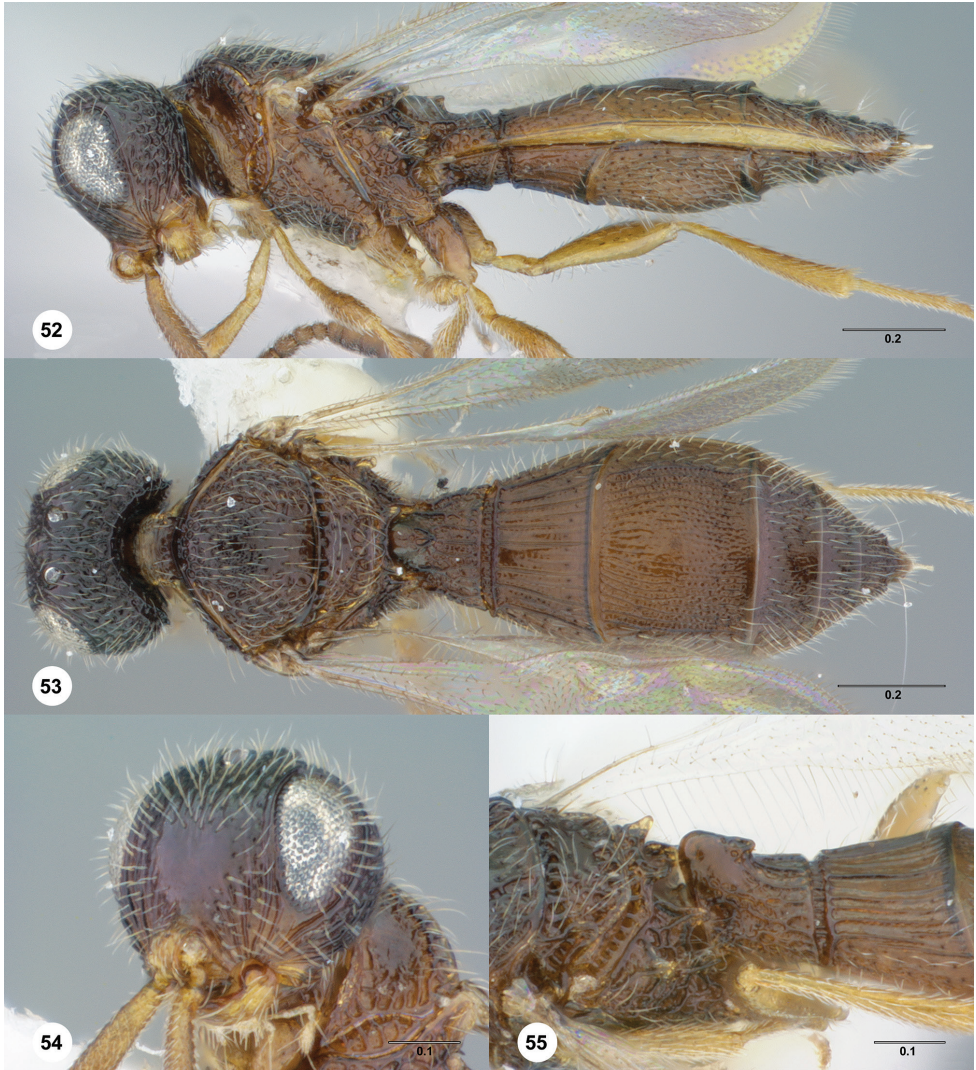


**Figures 45–46.**<sup>88</sup> *Paridris nitidiceps* (Kieffer), male holotype (B.M. TYPE HYM. 9.453) **45** Ventrolateral habitus **46** Dorsolateral habitus.



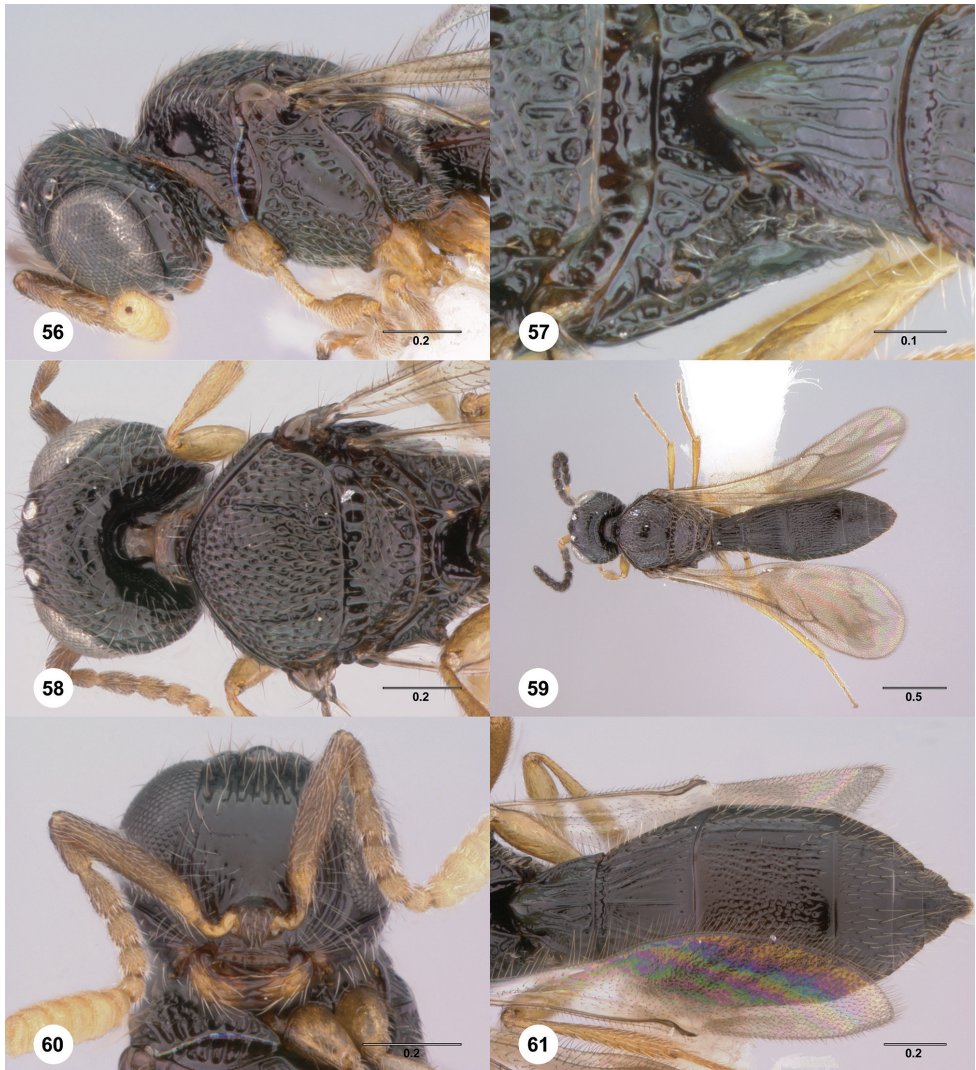
**Figures 47–51.**<sup>89</sup> *Paridris tenuis* (Dodd), female (CASENT 2042596) **47** Head and mesosoma, lateral view **48** Lateral habitus **49** Dorsal habitus **50** Head, anterior view **51** Mesoscutellum, metascutellum, propodeum, T1–T2, dorsolateral view.





**Figures 52–55.**<sup>90</sup> *Paridris trispinosa* sp. n. **52** Lateral habitus **53** Dorsal habitus **54** Head, anterolateral view **55** Mesoscutellum, metascutellum, propodeum, T1–T2, dorsolateral view.





**Figures 56–61.**<sup>91</sup> *Paridris bifurcata* (Dodd). **56** Head and mesosoma, lateral view, female (OSUC 181073) **57** Metascutellum, propodeum, T1, dorsal view, female (OSUC 181078) **58** Head and mesosoma, dorsal view, female (OSUC 181076) **59** Dorsal habitus, female (OSUC 181076) **60** Head, anterior view, female (OSUC 181073) **61** Metasoma, dorsal view, female (OSUC 181076).

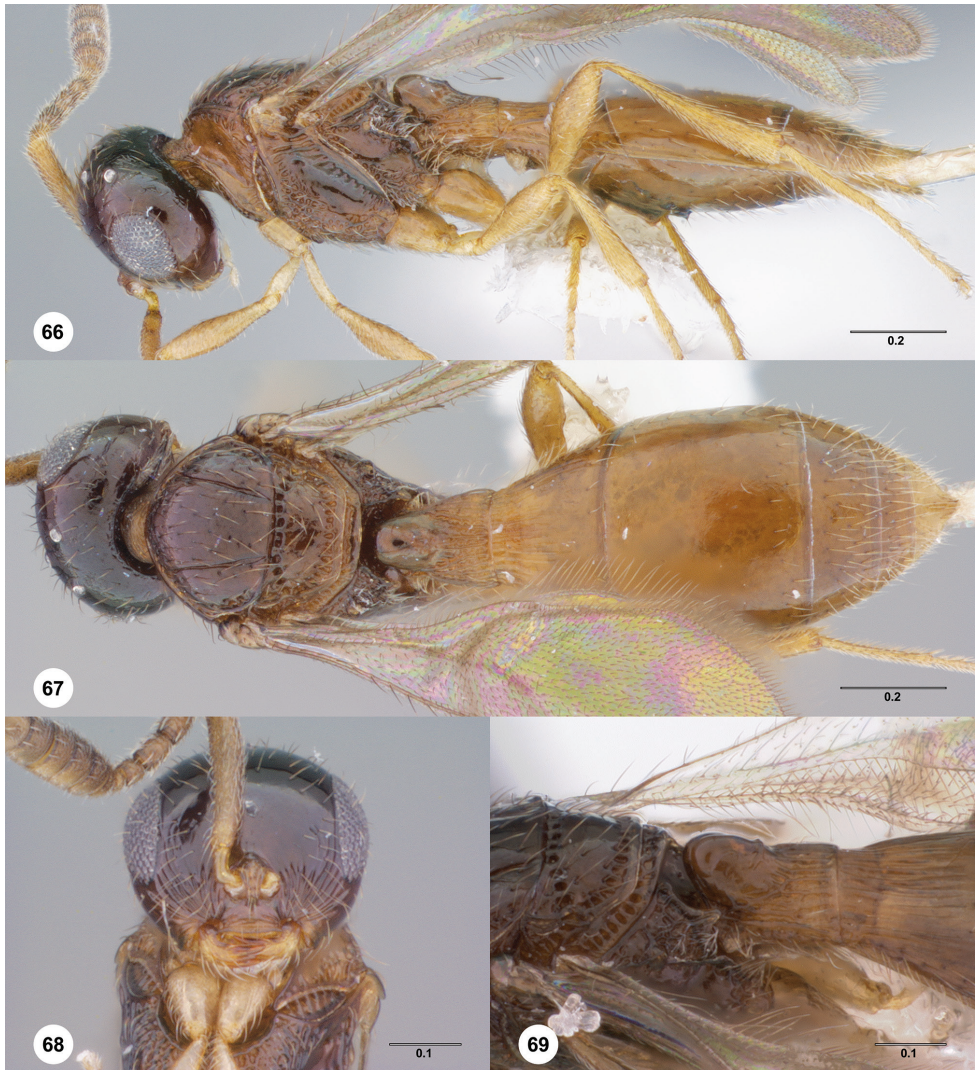


**Figure 62.**<sup>92</sup> **62** *Paridris mnestros* sp. n., Dorsal habitus, female holotype (OSUC 381335).



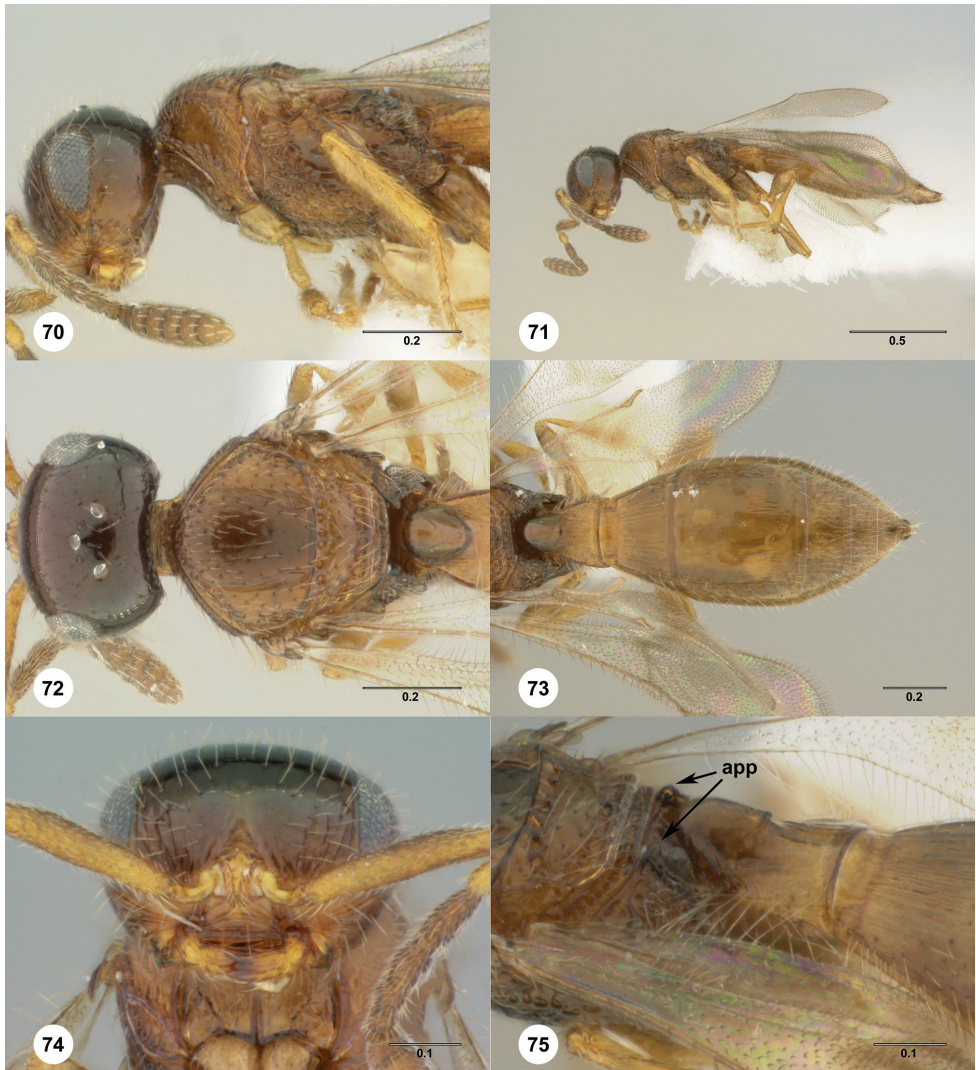


**Figures 63–65.**<sup>93</sup> *Paridris mnestros* sp. n. **63** Lateral habitus, female (265157) **64** Head, anterior view, female (OSUC 265166) **65** Mesoscutellum, metascutellum, anterodorsal view, (OSUC 181069).

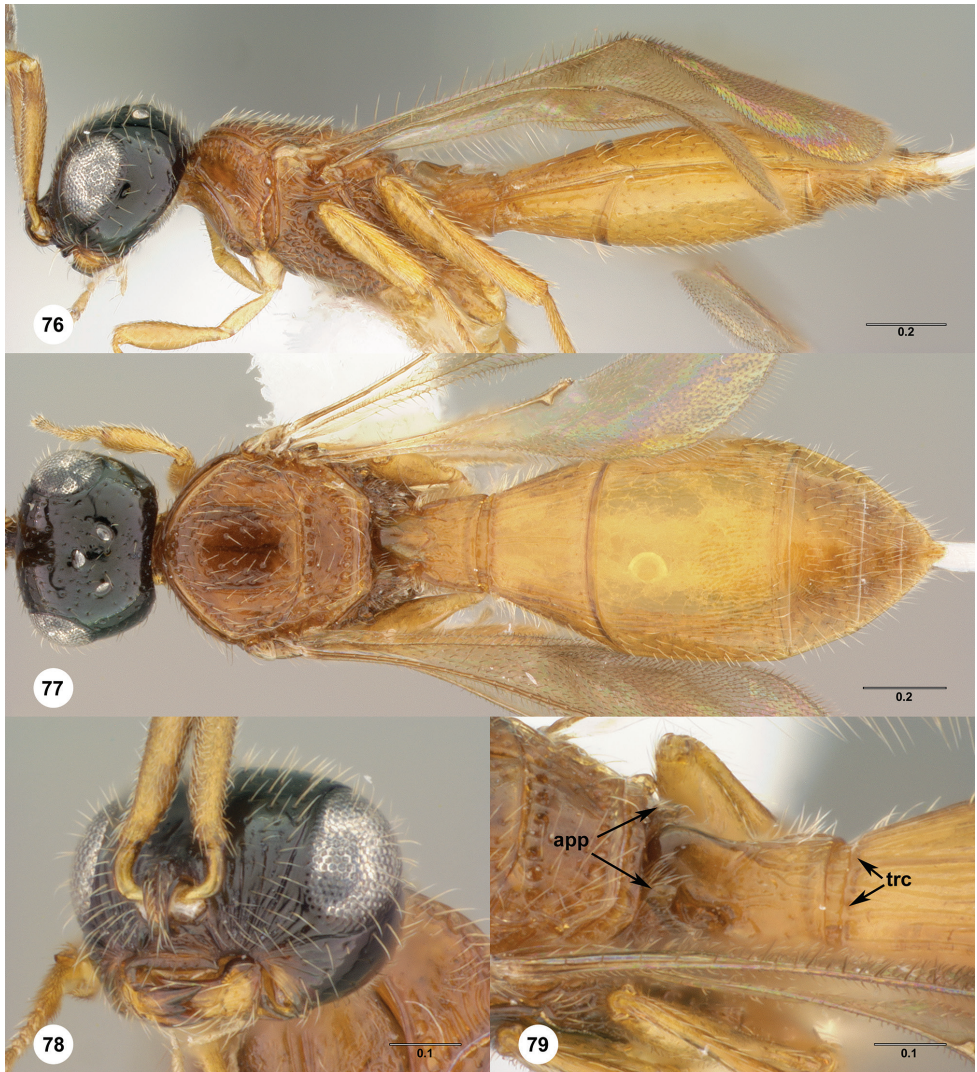


**Figures 66–69.**<sup>94</sup> *Paridris pantex* sp. n. **66** Lateral habitus, female holotype (FBA129283) **67** Dorsal habitus, female holotype (FBA129283) **68** Head, anterior view, female (FBA265177) **69** Mesoscutellum, metascutellum, propodeum, T1–T2, dorsolateral view, female (FBA105142).



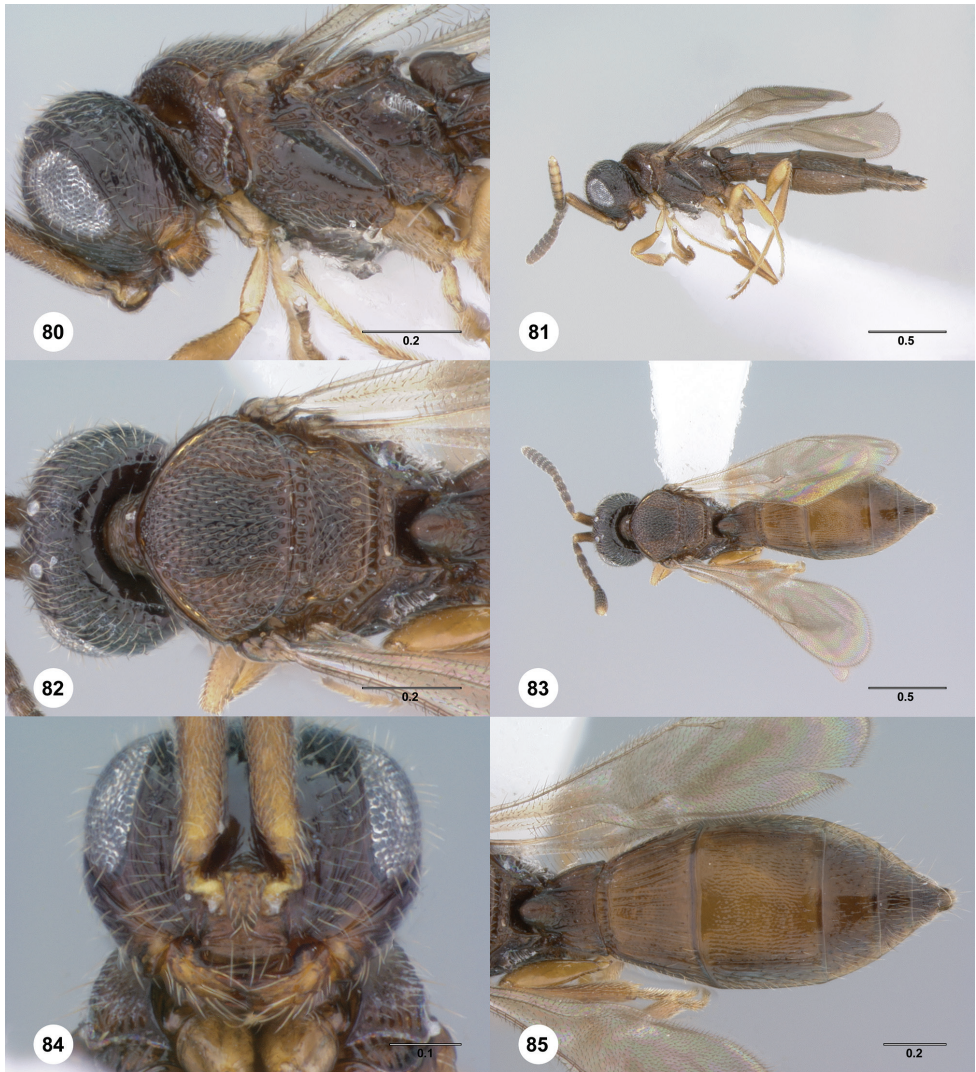


**Figures 70–75.**<sup>95</sup> *Paridris phrikos* sp. n., female holotype (FBA134675) **70** Head and mesosoma, lateral view **71** Lateral habitus **72** Head and mesosoma, dorsal view **73** Metasoma, dorsal view **74** Head, anterior view **75** Mesoscutellum, metascutellum, propodeum, T1–T1, dorsolateral view.



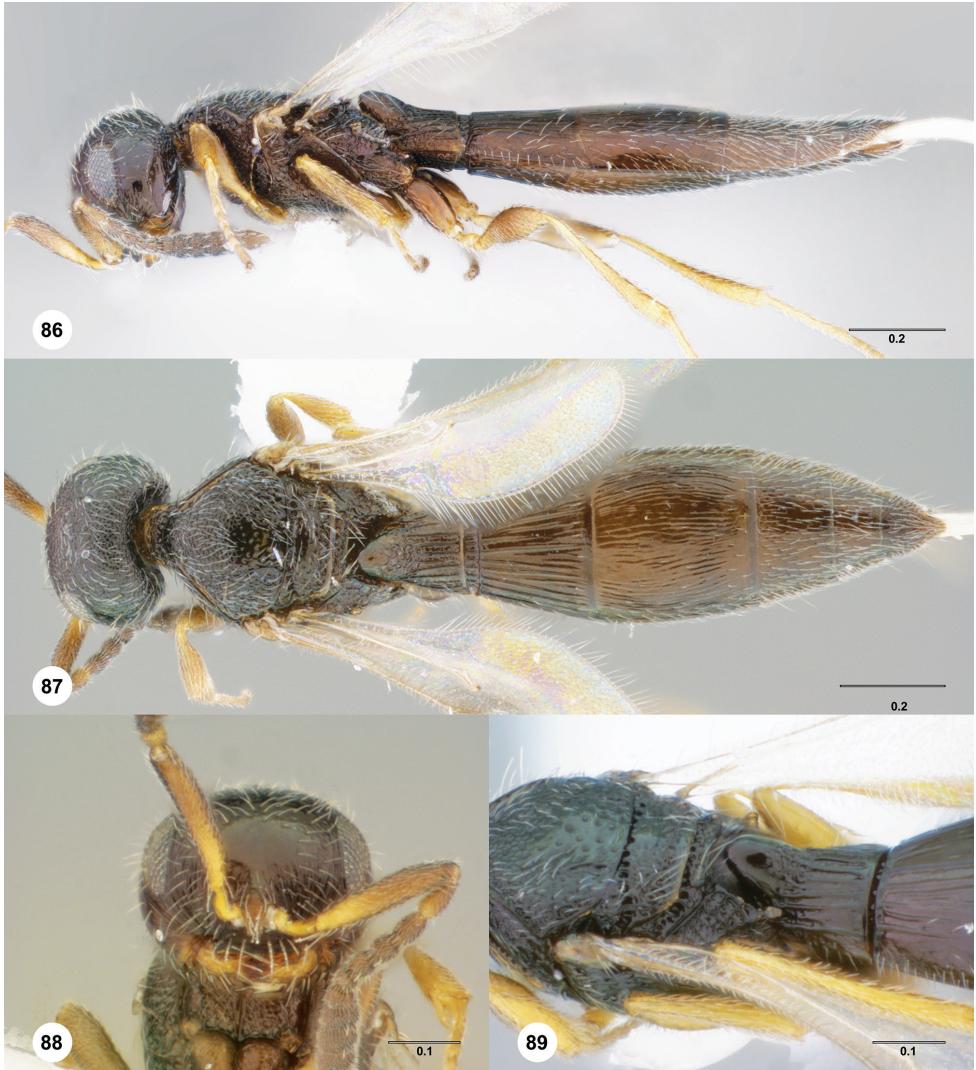
**Figures 76–79.**<sup>96</sup> *Paridris skolops* sp. n., female holotype (FBA105671) **76** Lateral habitus **77** Dorsal habitus **78** Head, anterolateral view **79** Mesoscutellum, metascutellum, propodeum, T1–T2, dorsolateral view.



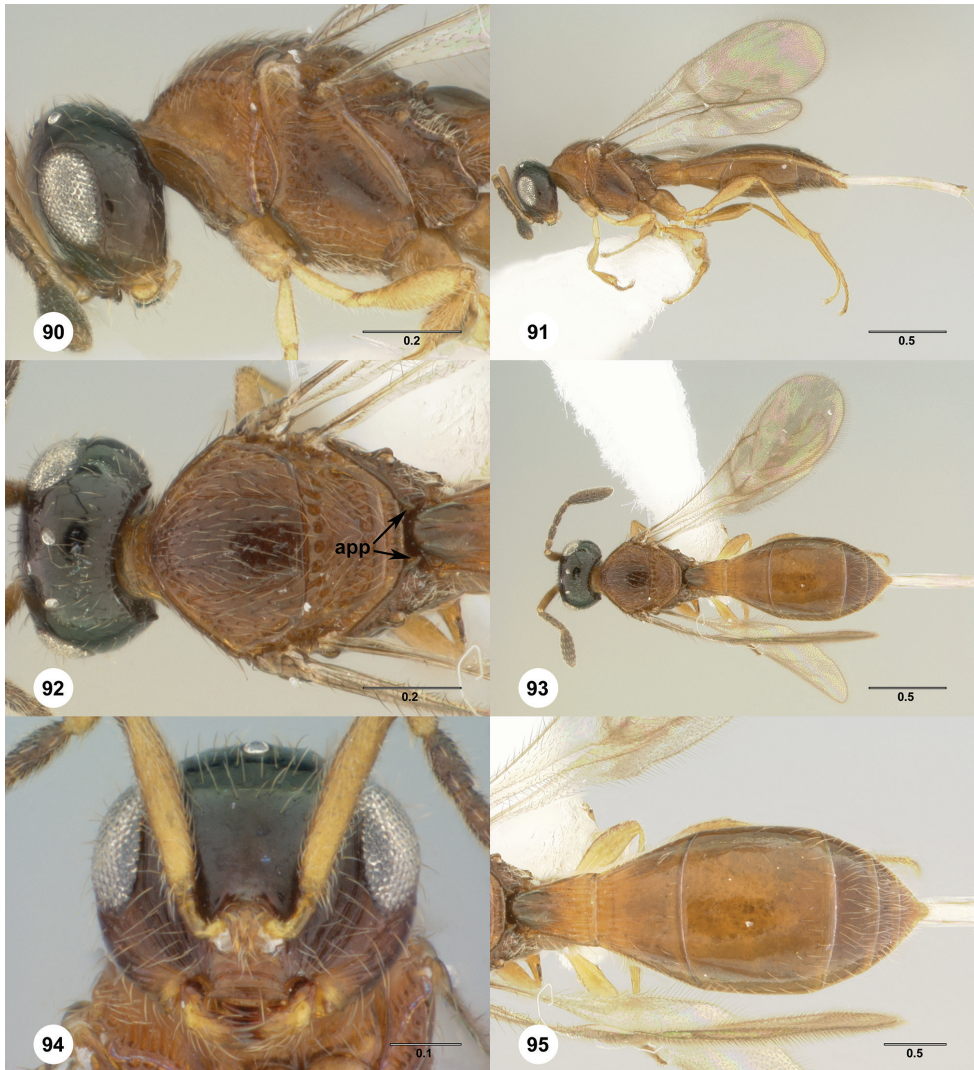


**Figures 80–85.**<sup>97</sup> *Paridris sulcata* sp. n., female holotype (OSUC 283363) **80** Head and mesosoma, lateral view **81** Lateral habitus **82** Head and mesosoma, dorsal view **83** Dorsal habitus **84** Head, anterior view **85** Metasoma, dorsal view.





**Figures 86–89.**<sup>98</sup> *Paridris taekuli* sp. n. **86** Lateral habitus, female holotype (OSUC 266150) **87** Dorsal habitus, female holotype (OSUC 266150) **88** Head, anterior view, female holotype (OSUC 266150) **89** Mesoscutellum, metascutellum, propodeum, T1–T2, dorsolateral view, female (OSUC 266173).



**Figures 90–95.**<sup>99</sup> *Paridris xestos* sp. n., female holotype (FBA129279) **90** Head and mesosoma, lateral view **91** Lateral habitus **92** Head and mesosoma, dorsal view **93** Dorsal habitus **94** Head, anterior view **95** Metasoma, dorsal view.

## Acknowledgements

Thanks to K. van Achterberg, M. Buffington, R. Danielsson, T. Nuhn, S. van Noort, and M. Sharkey (Thai specimens collected under NSF grant No. DEB-0542864) for the loans of material for this study, to A. Polaszek and V. Blagoderov for help with imaging type material at BMNH, and to L. Musetti, J. Cora, and S. Hemly for critical assistance with specimen handling, software and databasing. This material is based upon work supported in part by the National Science Foundation under grant No. DEB-0614764 to N.F. Johnson and A.D. Austin.

## References

- Bin F (1981) Definition of female antennal clava based on its plate sensilla in Hymenoptera Scelionidae Telenominae. *Redia* 64: 245–261.<sup>44</sup>
- Carey D, Murphy NP, Austin AD (2006) Molecular phylogenetics and the evolution of wing reduction in the Baecini (Hymenoptera: Scelionidae): parasitoids of spider eggs. *Invertebrate Systematics* 20: 489–501.<sup>45</sup>
- Dodd AP (1927) Notes on parasitic Hymenoptera from Australia, with descriptions of new species. *Memoirs of the Queensland Museum* 9: 63–75.<sup>46</sup>
- Edgar RC (2004) MUSCLE: multiple sequence alignment with high accuracy and high throughput. *Nucleic Acids Research* 32: 1792–1797.<sup>47</sup>
- Galloway ID (1976) The types of Australian species of the subfamily Scelioninae (Hymenoptera: Scelionidae). *Queensland Journal of Agricultural and Animal Sciences* 33(1): 83–114.<sup>48</sup>
- Galloway ID, Austin AD (1984) Revision of the Scelioninae (Hymenoptera: Scelionidae) in Australia. *Australian Journal of Zoology Supplementary Series* 99: 1–138.<sup>49</sup>
- Gillespie JJ, Yoder MJ, Wharton RA (2005) Predicted secondary structures for 28S and 18S rRNA from Ichneumonoidea (Insecta: Hymenoptera: Apocrita): Impact on sequence alignment and phylogeny estimation. *Journal of Molecular Evolution* 61: 114–137.<sup>50</sup>
- Gillespie JJ, Munro JB, Heraty JM, Yoder MJ, Owen AK, Carmichael AE (2005) A secondary structural model of the 28S rRNA expansion segments D2 and D3 for chalcidoid wasps (Hymenoptera: Chalcidoidea). *Molecular Biology and Evolution* 22: 1593–1608.<sup>51</sup>
- Goloboff PA, Farris JS, Nixon KC (2008) TNT, a free program for phylogenetic analysis. *Cladistics* 15: 415–428.<sup>52</sup>
- Iqbal M, Austin AD (2000) A preliminary phylogeny for the Baecini (Hymenoptera: Scelionidae): endoparasitoids of spider eggs. In: Austin & Downton. *Hymenoptera: evolution, biodiversity and biological control*. CSIRO, Collingwood, Australia, 178–191.<sup>53</sup>
- Johnson NF, Masner L, Musetti L, van Noort S, Rajmohana K, Darling DC, Guidotti A, Polaszek A (2008) Revision of world species of the genus *Heptascelio* Kieffer (Hymenoptera: Platygastroidea, Platygastriidae). *Zootaxa* 1776: 1–51.<sup>54</sup>
- Johnson NF (2010) Future taxonomy today: new tools applied to accelerate the taxonomic process. In: Polaszek A (Ed) *Systema Naturae 250: the Linnaean ark*. CRC Press Taylor & Francis Group, London, 137–147.<sup>55</sup> doi: 10.1201/EBK1420095012-c13



- Kieffer JJ (1910) Diagnoses de nouveaux genres et de nouvelles espèces de Scelionides (Hym.) des îles Sechêlles. *Bulletin de la Société Entomologique de France* 1910: 292–294.<sup>56</sup>
- Kieffer JJ (1912) Hymenoptera, Proctotrupoidea. *Transactions of the Linnean Society of London, Zoology* 15: 45–80.<sup>57</sup>
- Kieffer JJ (1926) Scelionidae. *Das Tierreich*. Vol. 48. Walter de Gruyter & Co., Berlin, 885 pp.<sup>58</sup>
- Kononova SV, Kozlov MA (2008) [Scelionids of the Palearctic (Hymenoptera, Scelionidae). Subfamily Scelioninae.] *Tovarishchestvo Nauchnykh Izdaniy KMK, Saint Petersburg*, 489 pp.<sup>59</sup>
- Kozlov MA, Lê XH (2000) Egg-parasites of family Scelionidae (Hymenoptera). *Fauna of Vietnam*, vol. 3. Science and Technics Publishing House, Hanoi, 386 pp.
- Masner L (1958) Neue Scelioniden aus Grotten von Französisch Äquatorial-Afrika (Hym. Scelionioidea). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 31: 45–51.<sup>60</sup>
- Masner L (1965) The types of Proctotrupoidea (Hymenoptera) in the British Museum (Natural History) and in the Hope Department of Entomology, Oxford. *Bulletin of the British Museum (Natural History) Entomology Supplement* 1: 1–154.<sup>61</sup>
- Masner L (1976) Revisionary notes and keys to world genera of Scelionidae (Hymenoptera: Proctotrupoidea). *Memoirs of the Entomological Society of Canada* 97: 1–87.<sup>62</sup> doi: 10.4039/entm10897fv
- Masner L, Huggert L (1989) World review and keys to genera of the subfamily Inostemmatinae with reassignment of the taxa to the Platygastriinae and Sceliotrachelinae (Hymenoptera: Platygastriidae). *Memoirs of the Entomological Society of Canada* 147: 1–214.<sup>63</sup> doi: 10.4039/entm121147fv
- Masner L, Muesebeck CFW (1968) The types of Proctotrupoidea (Hymenoptera) in the United States National Museum. *Bulletin of the United States National Museum* 270: 1–143.<sup>64</sup> doi: 10.5479/si.03629236.270
- Mason WRM (1986) Standard drawing conventions and definitions for venational and other features of wings of Hymenoptera. *Proceedings of the Entomological Society of Washington* 88: 1–7.<sup>65</sup>
- Mikó I, Vilhelmsen L, Johnson NF, Masner L, Péntzes Z (2007) Skeletomusculature of Scelionidae (Hymenoptera: Platygastroidea): head and mesosoma. *Zootaxa* 1571: 1–78.<sup>66</sup>
- Murphy NP, Carey D, Castro LR, Dowton M, Austin AD (2007) Phylogeny of the platygastroid wasps (Hymenoptera) based on sequences from the 18S rRNA, 28S rRNA and cytochrome oxidase *I* genes: implications for the evolution of the ovipositor system and host relationships. *Biological Journal of the Linnean Society* 91: 659–669.<sup>67</sup> doi: 10.1111/j.1095-8312.2007.00825.x
- Nixon GEJ (1933) A further contribution to the study of South Africa Scelionidae (Insecta, Hymenoptera, Proctotrupoidea). *Annals and Magazine of Natural History* 12: 288–563.<sup>68</sup> doi: 10.1080/00222933308655417
- Peña C, Wahlberg N, Weingartner E, Kodandaramaiah U, Nylin S, Freitas AVL, Brower AVZ (2006) Higher level phylogeny of Satyrinae butterflies (Lepidoptera: Nymphalidae) based on DNA sequence data. *Molecular Phylogenetics and Evolution*, 40: 29–49.<sup>69</sup>
- Polaszek A, Agosti D, Alonso-Zarazaga M, Beccaloni G, de Place Bjørn P, Bouchet P, Brothers DJ, Earl of Cranbrook, Evenhuis NL, Godfray HCJ, Johnson NF, Krell FT, Lipscomb D, Lyal CHC, Mace GM, Mawatari SF, Miller SE, Minelli A, Morris S, Ng PKL, Pat-

- tersen DJ, Pyle RL, Robinson N, Rogo L, Taverne J, Thompson FC, van Tol J, Wheeler QD, Wilson EO (2005) A universal register for animal names. *Nature* 437: 477.<sup>70</sup> doi: 10.1038/437477a
- Rajmohana K (2007) Insecta: Scelionidae (Platygastroidea): Hymenoptera. Fauna of Kudremukh National Park, Conservation Area Series 32: 49–69.<sup>71</sup>
- Sundholm A (1970) Hymenoptera: Proctotrupoidea. *South African Animal Life* 14: 305–401.<sup>72</sup>
- Taekul C, Johnson NF, Masner L, Rajmohana K, Shu-Pei C (2008) Revision of the world species of the genus *Fusicornia* Risbec (Hymenoptera: Platygastridae, Scelioninae.) *Zootaxa* 1966: 1–69.<sup>73</sup>
- Talamas EJ, Masner L, Johnson NF (2011a) Revision of the Malagasy genus *Trichoteleia* Kieffer (Hymenoptera, Platygastroidea, Platygastridae). *ZooKeys* 80: 1–126.<sup>74</sup> doi: 10.3897/zookeys.80.907
- Talamas EJ, Masner L, Johnson NF (2011b) Revision of the *Paridris nephta* species group (Hymenoptera, Platygastroidea, Platygastridae). *ZooKeys* 133: 49–94.<sup>75</sup> doi: 10.3897/zookeys.133.1613
- Talamas EJ, Masner L, Johnson NF (2012) *Paridris* Kieffer of the New World (Hymenoptera, Platygastroidea, Platygastridae). *ZooKeys* 233: 31–90.<sup>76</sup> doi: 10.3897/zookeys.233.3455
- Yoder MJ, Mikó I, Seltmann K, Bertone MA, Deans AR (2010) A gross anatomy ontology for Hymenoptera. *PLoS ONE* 5(12): e15991<sup>77</sup>
- Valerio AA, Masner L, Austin AD (2010) Systematics of *Cyphacolus* Priesner (Hymenoptera: Platygastridae s.l.), an Old World genus of spider egg parasitoid. *Zootaxa*, 2645: 1–48.<sup>78</sup>

**Endnotes**

- 1 <http://biocol.org/urn:lsid:biocol.org:col:1008>
- 2 <http://biocol.org/urn:lsid:biocol.org:col:1009>
- 3 <http://biocol.org/urn:lsid:biocol.org:col:1010>
- 4 <http://biocol.org/urn:lsid:biocol.org:col:1011>
- 5 <http://biocol.org/urn:lsid:biocol.org:col:1012>
- 6 <http://biocol.org/urn:lsid:biocol.org:col:33357>
- 7 <http://biocol.org/urn:lsid:biocol.org:col:33791>
- 8 <http://biocol.org/urn:lsid:biocol.org:col:33943>
- 9 <http://biocol.org/urn:lsid:biocol.org:col:33864>
- 10 <http://biocol.org/urn:lsid:biocol.org:col:1014>
- 11 <http://biocol.org/urn:lsid:biocol.org:col:1016>
- 12 <http://biocol.org/urn:lsid:biocol.org:col:34212>
- 13 <http://biocol.org/urn:lsid:biocol.org:col:1018>
- 14 <http://biocol.org/urn:lsid:biocol.org:col:1019>
- 15 <http://morphbank.net/?id=796511>
- 16 <http://hol.osu.edu/map-large.html?id=303979>
- 17 <http://morphbank.net/?id=796513>
- 18 <http://hol.osu.edu/map-large.html?id=5063>
- 19 <http://morphbank.net/?id=796512>
- 20 <http://hol.osu.edu/map-large.html?id=5066>
- 21 <http://morphbank.net/?id=796514>
- 22 <http://morphbank.net/?id=796515>
- 23 <http://hol.osu.edu/map-large.html?id=5076>
- 24 <http://morphbank.net/?id=796516>
- 25 <http://hol.osu.edu/map-large.html?id=5081>
- 26 <http://hol.osu.edu/map-full.html?id=813379>
- 27 <http://hol.osu.edu/map-full.html?id=315505>
- 28 <http://morphbank.net/?id=796716>
- 29 <http://hol.osu.edu/map-large.html?id=4931>
- 30 <http://morphbank.net/?id=796717>
- 31 <http://hol.osu.edu/map-large.html?id=305675>
- 32 <http://morphbank.net/?id=796718>
- 33 <http://hol.osu.edu/map-large.html?id=303879>
- 34 <http://morphbank.net/?id=796719>
- 35 <http://hol.osu.edu/map-large.html?id=303882>
- 36 <http://morphbank.net/?id=796720>
- 37 <http://hol.osu.edu/map-large.html?id=303880>
- 38 <http://morphbank.net/?id=796721>
- 39 <http://hol.osu.edu/map-large.html?id=303975>
- 40 <http://morphbank.net/?id=796722>
- 41 <http://hol.osu.edu/map-large.html?id=303974>

- 42 <http://morphbank.net/?id=796723>  
43 <http://hol.osu.edu/map-large.html?id=303881>  
44 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:131](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:131)  
45 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:21126](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:21126)  
46 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:460](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:460)  
47 doi: 10.1093/nar/gkh340  
48 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:353](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:353)  
49 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:339](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:339)  
50 doi: 10.1007/s00239-004-0246-x  
51 doi: 10.1093/molbev/msi152  
52 doi: 10.1111/j.1096-0031.2008.00217.x  
53 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:22787](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:22787)  
54 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:21725](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:21725)  
55 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:23446](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:23446)  
56 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:386](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:386)  
57 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:387](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:387)  
58 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:310](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:310)  
59 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:22163](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:22163)  
60 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:349](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:349)  
61 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:342](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:342)  
62 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:311](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:311)  
63 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:12273](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:12273)  
64 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:312](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:312)  
65 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:7039](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:7039)  
66 <http://www.mapress.com/zootaxa/2007f/zt01571p078.pdf>  
67 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:21247](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:21247)  
68 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:336](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:336)  
69 doi: 10.1016/j.ympev.2006.02.007  
70 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:20959](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:20959)  
71 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:21327](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:21327)  
72 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:379](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:379)  
73 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:22369](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:22369)  
74 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:23390](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:23390)  
75 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:23583](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:23583)  
76 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:23802](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:23802)  
77 doi: 10.1371/journal.pone.0015991  
78 [http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc\\_pubs:23164](http://lsid.tdwg.org/urn:lsid:biosci.ohio-state.edu:osuc_pubs:23164)  
79 <http://morphbank.net/?id=796518>  
80 <http://morphbank.net/?id=796519>  
81 <http://morphbank.net/?id=796520>  
82 <http://morphbank.net/?id=796521>  
83 <http://morphbank.net/?id=796522>  
84 <http://morphbank.net/?id=796523>



- 85 <http://morphbank.net/?id=796524>
- 86 <http://morphbank.net/?id=796512>
- 87 <http://morphbank.net/?id=796525>
- 88 <http://morphbank.net/?id=796515>
- 89 <http://morphbank.net/?id=796526>
- 90 <http://morphbank.net/?id=813380>
- 91 <http://morphbank.net/?id=796724>
- 92 <http://morphbank.net/?id=796725>
- 93 <http://morphbank.net/?id=796726>
- 94 <http://morphbank.net/?id=796727>
- 95 <http://morphbank.net/?id=796728>
- 96 <http://morphbank.net/?id=796729>
- 97 <http://morphbank.net/?id=796730>
- 98 <http://morphbank.net/?id=796731>
- 99 <http://morphbank.net/?id=796732>

## Appendix I

URI table of HAO morphological terms. (doi: [10.3897/JHR.34.4714.app](https://doi.org/10.3897/JHR.34.4714.app)) File format: Microsoft Word Open XML Document (docx).

**Copyright notice:** This dataset is made available under the Open Database License (<http://opendatacommons.org/licenses/odbl/1.0/>). The Open Database License (ODbL) is a license agreement intended to allow users to freely share, modify, and use this Dataset while maintaining this same freedom for others, provided that the original source and author(s) are credited.

---

**Citation:** Talamas EJ, Masner L, Johnson NF (2013) Systematics of *Trichoteleia* Kieffer and *Paridris* Kieffer (Hymenoptera, Platygastroidea, Platygastridae). Journal of Hymenoptera Research 34: 1–79. doi: [10.3897/JHR.34.4714](https://doi.org/10.3897/JHR.34.4714) URI table of HAO morphological terms. doi: [10.3897/JHR.34.4714.app](https://doi.org/10.3897/JHR.34.4714.app)

---

## Appendix II

List of morphological characters and character states mapped onto the strict consensus phylogeny of combined morphological and molecular data. (doi: [10.3897/JHR.34.4714.app2](https://doi.org/10.3897/JHR.34.4714.app2)) File format: Microsoft Word Open XML Document (docx).

**Copyright notice:** This dataset is made available under the Open Database License (<http://opendatacommons.org/licenses/odbl/1.0/>). The Open Database License (ODbL) is a license agreement intended to allow users to freely share, modify, and use this Dataset while maintaining this same freedom for others, provided that the original source and author(s) are credited.

---

**Citation:** Talamas EJ, Masner L, Johnson NF (2013) Systematics of *Trichoteleia* Kieffer and *Paridris* Kieffer (Hymenoptera, Platygastroidea, Platygastridae). Journal of Hymenoptera Research 34: 1–79. doi: [10.3897/JHR.34.4714](https://doi.org/10.3897/JHR.34.4714) List of morphological characters and character states mapped onto the strict consensus phylogeny of combined morphological and molecular data. doi: [10.3897/JHR.34.4714.app2](https://doi.org/10.3897/JHR.34.4714.app2)

---

## Appendix III

Strict consensus phylogeny of combined morphological and molecular data with Partitioned Bremer Support assigned to resolved nodes. Partition 1: morphology; Partition 2: 28S; Partition 3: 18S; Partition 4: CO1. (doi: [10.3897/JHR.34.4714.app3](https://doi.org/10.3897/JHR.34.4714.app3)) File format: Portable Network Graphics (png).

**Copyright notice:** This dataset is made available under the Open Database License (<http://opendatacommons.org/licenses/odbl/1.0/>). The Open Database License

(ODbL) is a license agreement intended to allow users to freely share, modify, and use this Dataset while maintaining this same freedom for others, provided that the original source and author(s) are credited.

---

**Citation:** Talamas EJ, Masner L, Johnson NF (2013) Systematics of *Trichoteleia* Kieffer and *Paridris* Kieffer (Hymenoptera, Platygastridae, Platygastridae). Journal of Hymenoptera Research 34: 1–79. doi: [10.3897/JHR.34.4714](https://doi.org/10.3897/JHR.34.4714) Strict consensus phylogeny of combined morphological and molecular data with Partitioned Bremer Support assigned to resolved nodes. Partition 1: morphology; Partition 2: 28S; Partition 3: 18S; Partition 4: CO1. doi: [10.3897/JHR.34.4714.app3](https://doi.org/10.3897/JHR.34.4714.app3)

---

## Appendix IV

Tables of CUIDs for DNA voucher specimens and Genbank accession numbers for sequences used in phylogenetic analyses. (doi: [10.3897/JHR.34.4714.app4](https://doi.org/10.3897/JHR.34.4714.app4)) File format: Microsoft Word Open XML Document (docx).

**Copyright notice:** This dataset is made available under the Open Database License (<http://opendatacommons.org/licenses/odbl/1.0/>). The Open Database License (ODbL) is a license agreement intended to allow users to freely share, modify, and use this Dataset while maintaining this same freedom for others, provided that the original source and author(s) are credited.

---

**Citation:** Talamas EJ, Masner L, Johnson NF (2013) Systematics of *Trichoteleia* Kieffer and *Paridris* Kieffer (Hymenoptera, Platygastridae, Platygastridae). Journal of Hymenoptera Research 34: 1–79. doi: [10.3897/JHR.34.4714](https://doi.org/10.3897/JHR.34.4714) Tables of CUIDs for DNA voucher specimens and Genbank accession numbers for sequences used in phylogenetic analyses. doi: [10.3897/JHR.34.4714.app4](https://doi.org/10.3897/JHR.34.4714.app4)

---

## Appendix V

Interpolated matrix used for phylogenetic analysis. Partition 1: morphology; Partition 2: 28S; Partition 3: 18S; Partition 4: CO1. (doi: [10.3897/JHR.34.4714.app5](https://doi.org/10.3897/JHR.34.4714.app5)) File format: TNT Matrix File (TNT).

**Copyright notice:** This dataset is made available under the Open Database License (<http://opendatacommons.org/licenses/odbl/1.0/>). The Open Database License (ODbL) is a license agreement intended to allow users to freely share, modify, and use this Dataset while maintaining this same freedom for others, provided that the original source and author(s) are credited.

---

**Citation:** Talamas EJ, Masner L, Johnson NF (2013) Systematics of *Trichoteleia* Kieffer and *Paridris* Kieffer (Hymenoptera, Platygastridae, Platygastridae). Journal of Hymenoptera Research 34: 1–79. doi: [10.3897/JHR.34.4714](https://doi.org/10.3897/JHR.34.4714) Interpolated matrix used for phylogenetic analysis. Partition 1: morphology; Partition 2: 28S; Partition 3: 18S; Partition 4: CO1. doi: [10.3897/JHR.34.4714.app5](https://doi.org/10.3897/JHR.34.4714.app5)

---