Revision of the *Paridris nephta* species group
(Hymenoptera, Platygastroidea, Platygastridae)

Elijah J. Talamas¹⁺, Lubomír Masner²⁺, Norman F. Johnson³§

¹ Department of Entomology, The Ohio State University, 1315 Kinnear Road, Columbus, Ohio 43212, 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.

⁺ urn:lsid:zoobank.org:author:19124B60-4D11-46AF-ADBF-E48A9988B102
§ urn:lsid:zoobank.org:author:3508C4FF-F027-445F-8417-90AB4AB8F30D

Corresponding author: Elijah J. Talamas (talamas.1@osu.edu)

Academic editor: Michael Sharkey

Received 26 May 2011 | Accepted 1 August 2011 | Published 5 October 2011

Citation: Talamas EJ, Masner L, Johnson NF (2011) Revision of the *Paridris nephta* species group (Hymenoptera, Platygastroidea, Platygastridae). ZooKeys 133: 49–94 doi: 10.3897/zookeys.133.1613

Abstract

The *Paridris nephta* group is revised (Hymenoptera: Platygastridae). Fifteen species are described, 14 of which are new: *Paridris atrox* Talamas, sp. n. (Yunnan Province, China), *P. bunun* Talamas, sp. n. (Taiwan), *P. ferus* Talamas, sp. n. (Thailand), *P. kagemono* Talamas, sp. n. (Japan), *P. minator* Talamas, sp. n. (Laos, Thailand), *P. mystax* Talamas, sp. n. (Laos, Thailand), *P. nephta* (Kozlov) (Japan, North Korea, South Korea, Far Eastern Russia), *P. nilaka* Talamas, sp. n. (Thailand), *P. reptilis* Talamas, sp. n. (Taiwan), *P. rugulosus* Talamas, sp. n. (Laos, Vietnam), *P. solaris* Talamas, sp. n. (Laos, Thailand, Vietnam), *P. teres* Talamas, sp. n. (Vietnam), *P. toketoki* Talamas, sp. n. (Taiwan), *P. verrucosus* Talamas, sp. n. (Guangdong Province, China), *P. yak* Talamas, sp. n. (Thailand).

Keywords

Egg-parasitoid, Platygastroidea, key, species description, taxonomic revision
Introduction

In 1978, M. Kozlov described a new genus of scelionine wasps based on material from the Russian Far East, with *Tuora nephta* Kozlov as its sole species. No major taxonomic changes occurred in this group until Kononova and Kozlov (2008) treated *Tuora* as a junior synonym of *Paridris* Kieffer, a huge cosmopolitan group. Examination of material from East and Southeast Asia has brought to light many new species that are morphologically close to *Paridris nephta*, constituting a rather homogenous group that may be readily separated from the remainder of *Paridris*.

The goals of this paper are to define the *Paridris nephta* group and describe its species. This work is conducted as part of the Platygastroidea Planetary Biodiversity Inventory and represents a step toward revision of Scelionini sensu lato and resolution of the relationships between its constituent genera. The contributions of the authors are as follows: E.J. Talamas: character definition, species group concept development, species concept development, imaging, key development, manuscript preparation; N.F. Johnson: species concept development, key development, manuscript preparation; L. Masner: species group concept development, manuscript preparation.

Materials and methods

**Specimens:** This work is based upon specimens deposited in the following collections, with abbreviations used in the text: CNCI, Canadian National Collection of Insects, Ottawa, Canada¹; IEBR, Institute of Ecology and Biological Resources, Hanoi, Vietnam²; IZCAS, Chinese Academy of Sciences, Institute of Zoology, Beijing, China³; OSUC, C.A. Triplehorn Insect Collection, Columbus, OH⁴; QSBG, Queen Sirikit Botanic Garden, Chiang Mai, Thailand⁵; ROME, Royal Ontario Museum, Ontario, Canada⁶; RMNH, Leiden Nationaal Natuurhistorische Museum, Netherlands⁷.

**Morphology:** 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 medio-tergite 1, 2, ... 7.; posterior vertex: area between the posterior ocelli and the occipital carina. Morphological terminology largely follows Mikó et al. 2007; the following are illustrated and labeled to facilitate their use.

Axillular carina (axc: Figs 15–16)
Epomial carina (epc; Fig. 7)
Lateral ocellus (loc; Figs 10–11)
Metapleural sulcus (mtps; Fig. 36)
Paracoxal sulcus (pcxs; Fig. 36)
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Transverse carina of T2 (trc; Fig. 12)
Transverse pronotal carina (tpc; Fig. 7)

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 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. Notable changes in term usage from a previous taxonomic work (Talamas et al. 2011) are given in Appendix I.

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: punctation: round depressions associated with setae; macrosculpture: raised or sunken patterns of texture that are oriented linearly or radially with respect to punctation or the axes of the body; microsculpture: unoriented, very fine wrinkles or pustulations that occur on, in, or between elements of macrosculpture and punctation.

Information Management: The locality data reported for primary types are not literal transcriptions 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, 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 as in Talamas et al. (2011). 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). Life sciences identifiers, lsids, may be resolved at the URLs specified in the footnotes or at lsid.tdwg.org.

Cybertools: The species descriptions are generated by a database application, vSysLab (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. The output is in the format of “Character: Character state(s).”

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) and with MorphBank (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.

**Comments on Paridris Kieffer**

The genus *Idris* was described by Arnold Förster in 1856, and the name has been used as the root for a number of generic names in Platygastroidea. Wheeler (1935) proposed that it would be a useful root for names within the Formicidae, relieving the stress on roots such as *–myrmex* and *–myrma*. According to Wheeler, the name is a substantive noun, derived from classical Greek, meaning “the knowing or provident one.” As such, it may be either masculine or feminine in grammatical gender. While workers in Platygastroidea have treated the name and its derivatives as masculine, myrmecologists have used names with this root as feminine nouns. Here, we continue our tradition and use *Paridris* as a masculine noun.

The Nearctic *Paridris brevipennis* Fouts has one documented host association with *Gryllus pennsylvanicus* Burmeister (label data of a specimen in the USNM reported by Masner and Muesebeck, 1968). Based on this information, we speculate that the species of the *P. nephta* group are also parasitoids of gryllid eggs.

With the exception of Masner (1976), previous workers treated *Paridris* within only a restricted geographical context (Mani and Sharma 1982, Galloway and Austin 1984, Kozlov and Kononova 1985, Kozlov and Kononova 1990, Kononova and Petrov 2000, Lê 2000, Mineo 2005, Rajmohana 2006, Kononova and Kozlov 2008). Perhaps unsurprisingly, the characters they used for identification of the genus are insufficient when the world fauna is considered: the length of R1 (postmarginal vein) is variable; the shape of the metascutellum is highly variable, and in females may be entirely obscured by the horn of T1; the lateral ocellus is often close to the inner orbit of the compound eye; and the horn of T1 is missing in some members of the *P. nephta* species group.

Previous authors have mentioned that *Paridris* may be confused with *Probaryconus* (Galloway and Austin 1984) and *Anteris* Förster (Masner 1976). Masner (1976) indicated that *Anteris* and Neotropical *Paridris* are close to each other, and indeed they are highly similar in most of the external characters typically used for identification. Based on a yet unpublished phylogeny, we consider many of the similarities between these two genera to be convergent and not indicative of close relationship.

Separation of *Paridris* from *Probaryconus* is a more complicated matter because both are polytypic. *Probaryconus* has neither notauli (Fig. 9–10) nor an externally developed metascutellum (Figs 9–10), and always has spines, points, or dense tufts of setae on the propodeum (Figs 9–10). The epomial carina (Fig. 7) is present in *Probaryconus* (always absent in *Paridris*), with the exception of one widespread species group (Fig. 8) that also has setose eyes and a strongly reduced postmarginal vein. The
transverse carina of T2 (Fig. 12) unambiguously identifies *Paridris* but is not present in all species (e.g. the *P. nephta* species group). In some Neotropical and Oceanic species of *Paridris*, the lateral propodeal carinae form two points lateral to the metasomal depression, similar to the propodeal points in *Probaryconus* Kieffer. The following key separates *Probaryconus* and *Anteris* from *Paridris* with the fewest characters possible.

**Key to separate Paridris, Probaryconus and Anteris**

1. Palpal formula 2-1 (Fig. 1); female T7+8, when extruded with ovipositor, connected to T6 by short, unsegmented conjunctiva (Fig. 3) ............ *Anteris*
   - Palpal formula 4-2 (Fig. 2); female T7+8, when extruded with ovipositor, connected to T6 by long, segmented conjunctiva (Fig. 4) ............ *Paridris*

2. Metanotum visible medially and unaltered by horn of T1, or horn absent (Figs 10, 12) ............................................................................................... *Probaryconus*
   - Metanotum obscured medially by horn of T1 (Figs 9, 11) ........... *Paridris*

3. Metascutellum visible externally, shape variable (Fig. 12) ............ *Paridris*
   - Metascutellum not visible externally (Fig. 10) ................... *Probaryconus*

4. Lateral ocellus remote from inner orbit, separated by distance of at least one ocellar diameter (Fig. 11) .................................................................*Paridris*
   - Lateral ocellus contiguous with inner orbit or separated by distance less than one ocellar diameter (Fig. 10) .................................................. *Probaryconus*

**Diagnosis of nephta species group**

The *P. nephta* species group can be separated from the remainder of *Paridris* by the combination of the following characters: occipital carina reaching base of mandible; mesoscutal suprahumeral sulcus absent mesal to notaulus; scutoscutellar and posterior scutellar sulci comprised of deep cells; metascutellum bispinose, glabrous; mesepisternum below femoral groove with coarse rugose sculpture; paracoxal and metapleural sulci not fused in dorsal half of metapleuron (Fig. 32); posterior margin of metapleuron with triangular point above metapleural sulcus; propodeum coarsely punctate rugose; plica indistinguishable or poorly distinguished from background sculpture of propodeum; anterior T2 without transverse carina; T6 evenly rounded, without dense microsculpture; felt field on S2 punctate, present throughout length of sternite.

Sexual dimorphism combined with the small number of males prevented us from associating males with females for all but two species, *P. mystax* and *P. nephta*. Consequently, only females are treated in the key and descriptions. Males for *P. mystax* and *P. nephta* have been entered as determined material, but not as paratypes for *P. mystax*. Four other male morphotypes have been imaged and can be found online at specim-age.osu.edu and www.morphbank.net\(^8,9,10,11\).
Key to females of the *Paridris nephta* species group (a Lucid key is included as a Appendix II).

1 Brachypterous, forewing not reaching apex of metasoma in repose (Figs 31, 33, 67, 69) ......................................................................................................................... 2
   – Macropterous, forewing extending beyond apex of metasoma in repose...... 3
A7 with basiconic sensillum (Fig. 14); sculpture of T3 reduced medially (Fig. 33); metapleural sulcus simple dorsally (Fig. 36).................................................................Paridris ferus Talamas, sp. n.

A7 without basiconic sensillum (Fig. 13); sculpture of T3 not reduced medially (Fig. 72); metapleural sulcus foveolate dorsally (Fig. 68).................................................................Paridris reptilis Talamas, sp. n.

Ventral clypeal margin edentate (Fig. 89); T3 covered in finely reticulate microsculpture (Fig. 90).................................................................Paridris teres Talamas, sp. n.

Ventral clypeal margin serrate (Figs 53, 101, 107); sculpture of T3 variable...

Ventral metapleural area entirely setose (Fig. 50); frons densely setose ventrolaterally (Fig. 53); head and metasoma black (Fig. 49).................................................................Paridris mystax Talamas, sp. n.

Ventral metapleural area with glabrous area (Fig. 62); frons moderately to sparsely setose ventrolaterally (Fig. 107); body color variable ................Paridris atrox Talamas, sp. n.

Frons immediately below median ocellus smooth (Fig. 23); axillular carina rounded dorsally (Fig. 16); S3 with longitudinal striae (Fig. 18) ....................Paridris yak Talamas, sp. n.

A7 with basiconic sensillum (Fig. 14) .................................................................Paridris bunun Talamas, sp. n.

A7 without basiconic sensillum (Fig. 13) .................................................................................................................................Paridris minator Talamas, sp. n.

R1 (postmarginal vein) distinctly shorter than r-rs (stigmal vein) (Fig. 109); T3 smooth with weakly impressed longitudinal striae laterally (Fig. 30), microsculpture absent; punctation of head fine (Fig. 29).................................................................Paridris verrucosus Talamas, sp. n.

R1 (postmarginal vein) about as long as r-rs (stigmal vein) (Fig. 111); T3 with prominent longitudinal strigae laterally, often strigose throughout, microsculpture usually present (Fig. 48); punctation of head variable, often coarse (Fig. 47).................................................................................................Paridris minator Talamas, sp. n.

Mesoscutellum punctate, interspaces between punctures smooth and usually broad (Figs. 58, 82) ..................................................................................Paridris minator Talamas, sp. n.
Figures 7–12. 7 *Probaryconus* sp., pronotum, lateral view, female (OSUC 146809) 8 *Probaryconus* sp., head and pronotum, female (OSUC 58741) 9 *Probaryconus* sp., mesosoma and T1, dorsal view, female (OSUC 404933) 10 *Probaryconus rufipes* (Kieffer), head and mesosoma, dorsal view, female (OSUC 396820) 11 *Paridris* sp., head, mesosoma, T1, dorsal view, female (OSUC 262120) 12 *Paridris* sp., metascutellum, propodeum, T1–T2, dorsal view, female (OSUC 265183). Scale bar in millimeters.

11 Frons evenly striate throughout, striae directly above interantennal process sometimes effaced (Fig. 59); interstitial punctuation on frons very fine (Fig. 59)................................. *Paridris nephta* (Kozlov)
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Paridris atrox Talamas, sp. n.
urn:lsid:zoobank.org:pub:BCD3BD6E-5E29-447F-AEB6-176C19EEF3E8
urn:lsid:biosci.ohio-state.edu:osuc_concepts:275737
http://species-id.net/wiki/Paridris_atrox
Figures 16, 19–24; Morphbank


Figures 13–18. 64 13 Paridris nilaka, sp. n., antennal clava, ventral view, female (OSUC 334247) 14 Paridris minator, sp. n., antennal clava, ventral view, female holotype (OSUC 237531) 15 Paridris yak, sp. n., scuto-axillar complex, lateral view, female holotype (OSUC 237530) 16 Paridris atrox, sp. n., scuto-axillar complex, lateral view, female holotype (OSUC 241473) 17 Paridris verrucosus, sp. n., S2–S3, ventrolateral view, female holotype (OSUC 334249) 18 Paridris atrox, sp. n., S3, ventrolateral view, female holotype (OSUC 241473). Scale bars in millimeters.

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**Diagnosis.** *Paridris atrox* may be separated from the other members of the *P. nephta* species group by the absence of notauli and the presence of striation on S3.

**Etymology.** *Paridris atrox* is named for the severe appearance of its head, its mandibles in particular. The specific epithet is adjectival, and means “fearsome” in Latin.

**Link to Distribution Map.**

Paridris bunun Talamas, sp. n.
urn:lsid:zoobank.org:act:A3CA8ADB-0B8F-47C1-A757-9CEAE44779A2
urn:lsid:biosci.ohio-state.edu:osuc_concepts:273886
http://species-id.net/wiki/Paridris_bunun
Figures 25–30; Morphbank


Diagnosis. Paridris bunun is most similar to P. minator, though the two have widely disjunct distributions, Taiwan and Southeast Asia, respectively. The two may be separated by the medially smooth T3 and short R1 (postmarginal vein) of P. bunun and the longer setation of the body in P. minator. P. bunun is a much larger species than P. minator, but it is known from a single specimen and thus we are not able to assess its size variation. Some species of the P. nephta group are known to exhibit significant size variation (e.g. P. nilaka) and thus size should be used cautiously.
Revision of the Paridris nephta species group...


**Etymology.** The species is named for the Bunun tribe of Taiwan that historically occupied the region where it was collected. The name is treated as a noun in apposition.

**Link to Distribution Map.**

**Material Examined.** Holotype, female: TAIWAN: Taiwan Prov., Pingtung Co., T’eng-chih (Tengchi) Medium-Altitude Experiment Station, 23°05.75’N 120°47.37’E, 1660m, 3.VI–5.VI.2008, yellow pan trap, L. Masner, OSUC 262237 (deposited in CNCI).
**Paridris ferus** Talamas, sp. n.

urn:lsid:biosci.ohio-state.edu:osuc_concepts:241281
http://species-id.net/wiki/Paridris_ferus

Figures 31–36; Morphbank16


**Diagnosis.** *Paridris ferus* and *P. reptilis* are the only brachypterous species known in the *P. nephta* group. Aside from this character, these two species are not particularly similar and may be separated by the presence of a basiconic sensillum on A7, the smooth form of the metapleural sulcus and longitudinal striation of S3 in *P. ferus*.

**Etymology.** The adjectival epithet “ferus” means “wild” or “untamed” in Latin and refers to the “savage” appearance of this species.

**Link to Distribution Map.**

Figures 31–36. *Paridris ferus* sp. n., female holotype (OSUC 192426) 31 Lateral habitus 32 Head and mesosoma, lateral view 33 Dorsal habitus 34 Head and mesosoma, dorsal view 35 Head, anterior view 36 Metapleuron, lateral view. Scale bars in millimeters.
**Paridris kagemono Talamas, sp. n.**
urn:lsid:zoobank.org:act:59410F97-5DD7-4E7E-A7C3-2F25DD7665AE
urn:lsid:biosci.ohio-state.edu:osuc_concepts:273916
http://species-id.net/wiki/Paridris_kagemono
Figures 37–42; Morphbank


**Diagnosis.** *Paridris kagemono* is most similar to *P. nephta*. It may be separated from it, and all other members of the *P. nephta* species group, by the presence of microsculpture between the striae of the frons.

**Etymology.** The epithet “kagemono” means “supernatural creature of the night” in Japanese. It is used as a noun in apposition.

**Link to Distribution Map.**

**Material Examined.** Holotype, female: JAPAN: Fukuoka Pref., Kyushu Isl., primary evergreen forest, Mount Tachibana, 1.VII–6.VII.1979, yellow pan trap, K. Yamagishi, OSUC 262193 (deposited in CNCI).
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Figures 37–42. *Paridris kagemono* sp. n., female holotype (OSUC 262193) 37 Lateral habitus 38 Mesosoma, lateral view 39 Forewing, dorsal view 40 Head and mesosoma, dorsal view 41 Head, anterior view 42 Metasoma, dorsal view. Scale bars in millimeters.
Paridris minator Talamas, sp. n.
urn:lsid:biosci.ohio-state.edu:osuc_concepts:241284
http://species-id.net/wiki/Paridris_minator
Figures 14, 43–48; Morphbank20


Diagnosis. Paridris minator is similar to P. solaris in size, habitus and distribution and to P. bunun in its diagnostic characters. It is best separated from P. solaris by the presence of a basiconic sensillum on A7 and from P. bunun by the coarse punctuation of the head and prominent striae of lateral T3.

Etymology. The Latin epithet “minator” means “threatener” and is given to this species for its fierce appearance.

Link to Distribution Map.21

Material Examined. Holotype, female: THAILAND: Chiang Mai Prov., checkpoint 2, T73, Doi Inthanon National Park, 18°31.559’N 98°29.941’E, 1700m,
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Figures 43–48. *Paridris minator* sp. n., female holotype (OSUC 237531) 43 Lateral habitus 44 Head and mesosoma, lateral view 45 Dorsal habitus 46 Head and mesosoma, dorsal view 47 Head, anterior view 48 Metasoma, dorsal view. Scale bars in millimeters.

15.VII–22.VII.2006, malaise trap, Y. Areeluck, OSUC 237531 (deposited in QSBG). **Paratypes**: (8 females) **LAOS**: 1 female, OSUC 334241 (CNCI). **THAILAND**: 7 females, OSUC 262239, 334245, 396845 (CNCI); OSUC 334205 (OSUC); OSUC 334005, 334215, 334246 (QSBG).
**Paridris mystax** Talamas, sp. n.

urn:lsid:zoobank.org:act:67E77FD7-4ECC-494F-B7B0-497E4B82AB59
urn:lsid:biosci.ohio-state.edu:osuc_concepts:241282
http://species-id.net/wiki/Paridris_mystax

Figures 49–54, 111; Morphbank


**Diagnosis.** *Paridris mystax* is one of the most distinctive species and can be easily identified by the dense setation throughout the ventral metapleural area and on the ventrolateral frons.

**Etymology.** The epithet “mystax”, meaning “hair on the upper lip” in Greek, is given to this species for the conspicuous setation of the ventral frons.

**Link to Distribution Map.**

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Figures 49–54. *Paridris mystax* sp. n. 49 Lateral habitus, female holotype (OSUC 237667) 50 Meso-
soma, lateral view, female holotype (OSUC 237667) 51 Head and mesosoma, dorsal view, female holo-
type (OSUC 237667) 52 Metasoma, dorsal view, female (OSUC 262229) 53 Head, anterior view, female 
(OSUC 237533) 54 T4–T6, dorsal view, female holotype (OSUC 237667). Scale bars in millimeters.

254570, 254594–254595, 334210, 381817, 396837 (OSUC); OSUC 237533, 
254569, 265198–265199, 334209, 334224–334226, 334228 (QSBG). Other ma-
terial: THAILAND: 18 males, OSUC 181202, 181292, 237529, 396844, 396847 
(CNCI); OSUC 254552, 265200, 334208, 334211, 334216 (OSUC); OSUC 
237666, 261871, 265201, 266164, 334202–334203, 334212, 334227 (QSBG).
Paridris nephta (Kozlov)


Diagnosis. Paridris nephta is best distinguished by the uniform striation of the frons below the median ocellus, absence of microsculpture on the head and the smooth interspaces of the mesoscutellum. Color patterns are highly variable in this species and should be avoided entirely for identification.

Link to Distribution Map.

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Figures 55–60.71 Paridris nephta 55 Lateral habitus, female (OSUC 265087) 56 Head and mesosoma, lateral view, female (OSUC 265087) 57 Dorsal habitus, female (OSUC 265150). 58, Head and mesosoma, dorsal view, female (OSUC 262229) 59 Head, anterolateral view, female (OSUC 143437) 60 Metasoma, dorsal view, female (OSUC 265195). Scale bars in millimeters.

**Paridris nilaka** Talamas, sp. n.
urn:lsid:zoobank.org:act:EC0F912C-9AA2-4401-9251-4906A7B2BD1A
urn:lsid:biosci.ohio-state.edu:osuc_concepts:273890
http://species-id.net/wiki/Paridris_nilaka
Figures 13, 61–66, 109; Morphbank


**Diagnosis.** The rugulose sculpture of the dorsal mesoscutum and mesoscutellum in *P. nilaka* is shared with *P. rugulosus* and *P. toketoki*; it may be separated from both by the dense, fine setation of the pronotal shoulder. Additionally, the typically black color of the body may be useful for identification, but should be used with caution given the color plasticity seen in many species.

**Etymology.** The epithet “nilaka” means “black” in Thai, and is used as a noun in apposition.

**Link to Distribution Map.**
**Revision of the Paridris nephta species group...**


**Material Examined.** Holotype, female: **THAILAND:** Chiang Mai Prov., checkpoint 2, T1909, Doi Inthanon National Park, 18°31.554’N 98°29.940’E, 1700m, 14.XI–15.XI.2006, pan trap, Y. Areeluck, OSUC 266165 (deposited in QSBG). **Paratypes:** **THAILAND:** 6 females, OSUC 334247 (CNCI); OSUC 254613, 381811 (OSUC); OSUC 334223, 334295, 396843 (QSBG).
**Paridris reptilis** Talamas, sp. n.

urn:lsid:biosci.ohio-state.edu:osuc_concepts:273878
http://species-id.net/wiki/Paridris_reptilis

Figures 67–72; Morphbank28


**Diagnosis.** *Paridris reptilis* and *P. ferus* are the only known brachypterous species in the *P. nephta* group. *Paridris ferus* has a basiconic sensillum on A7 and lacks interstitial microsculpture on T2. *Paridris reptilis* does not have a sensillum on A7 and T2 is densely microsculptured.

**Etymology.** The adjectival epithet “reptilis”, meaning “crawling” in Latin, refers to the reduced wing size in this species.

**Link to Distribution Map.**29

Figures 67–72. *Paridris reptilis* sp. n., female holotype (OSUC 181211) **67** Lateral habitus **68** Head and mesosoma, lateral view **69** Dorsal habitus **70** Head and mesosoma, dorsal view **71** Head, anterior view **72** Metasoma, dorsal view. Scale bars in millimeters.
**Paridris rugulosus** Talamas, sp. n.
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urn:lsid:biosci.ohio-state.edu:osuc_concepts:273914
http://species-id.net/wiki/Paridris_rugulosus
Figures 73–78; Morphbank30


**Diagnosis.** *Paridris rugulosus* is most similar to *P. toketoki* and may be separated by the smooth surface of the lateral pronotum.

**Etymology.** The Latin adjectival epithet “rugulosus” refers to the rugulose sculpture of the head and dorsal mesosoma in this species.

**Link to Distribution Map.**

Figures 73–78. *Paridris rugulosus* sp. n., female holotype (OSUC 265238) 73 Lateral habitus 74 Head and mesosoma, lateral view 75 Head and mesosoma, ventral view 76 Head and mesosoma, dorsal view 77 Head and pronotum, anterolateral view 78 T2–T4, dorsolateral view. Scale bars in millimeters.
**Paridris solaris** Talamas, sp. n.
urn:lsid:zoobank.org:act:B2878DA2-1E8F-4B6E-96C4-86B571C11F04
urn:lsid:biosci.ohio-state.edu:osuc_concepts:241280
http://species-id.net/wiki/Paridris_solaris
Figures 79–84, 110; Morphbank32


**Diagnosis.** *Paridris solaris* is most similar to *P. minator*. It may be separated from it by the absence of a basiconic sensillum on A7.

**Etymology.** The adjectival epithet “solaris” means “of the sun” in Latin and references the bright yellow-orange color present in many individuals of this species.

**Link to Distribution Map.**

**Material Examined.** Holotype, female: VIETNAM: Thua Thien-Hue Prov., ~1.5km NE along trail behind upper guesthouse, light gap / semi-tropical evergreen forest, ROM 2000512, Bach Ma National Park, 16°11’50.3”N 107°51’17.7”E, 1200m, 6.VI–17.VI.2000, malaise trap/pan trap, B. Hubley, OSUC 240944 (deposited in ROME). *Paratypes*: (21 females) LAOS: 3 females, OSUC 334242–334243,
Revision of the Paridris nephta species group.

Figures 79–84. *Paridris solaris* sp. n. 79 Lateral habitus, female holotype (OSUC 240944) 80 Head and mesosoma, lateral view, female holotype (OSUC 240944) 81 Lateral habitus, female (OSUC 237532). 82, Head and mesosoma, dorsal view, female holotype (OSUC 240944) 83 Head, anterior view, female (OSUC 240948) 84 Metasoma, dorsal view, female (OSUC 240946). Scale bars in millimeters.

334248 (CNCI). **THAILAND:** 5 females, OSUC 334144, 396849 (OSUC); OSUC 237532, 265212, 334207 (QSBG). **VIETNAM:** 13 females, OSUC 240940 (IEBR); OSUC 240945, 404917–404918 (OSUC); OSUC 265234–265236, 277369, 281520 (RMNH); OSUC 240946, 240948, 266180, 404919 (ROME).

**Comments.** The color of specimens of *P. solaris* varies significantly according to geographical location. Those from Vietnam are typically yellow throughout (Fig. 79) and those from Thailand are variably orange, red, and black (Fig. 81).
**Paridris teres** Talamas, sp. n.
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urn:lsid:biosci.ohio-state.edu:osuc_concepts:273893
http://species-id.net/wiki/Paridris_teres
Figures 85–90; Morphbank


**Diagnosis.** *Paridris teres* may be easily identified by the smooth ventral margin of the clypeus.

**Etymology.** The epithet “teres”, meaning smooth in Latin, refers to the smooth margin of the clypeus and is used as a noun in apposition.

**Link to Distribution Map.**


**Comments.** The sole specimen of this species was damaged during examination after it was imaged. The head, propleuron and forelegs are now mounted on the point separate from the remainder of the body; A7–12 of the right antenna are lost.
Figures 85–90. *Paridris teres* sp. n., female holotype (OSUC 265237) 85 Lateral habitus 86 Head and mesosoma, lateral view 87 Dorsal habitus 88 Head and mesosoma, dorsal view 89 Head, anterior view 90 Metasoma, dorsal view. Scale bars in millimeters.
**Paridris toketoki** Talamas, sp. n.
urn:lsid:zoobank.org:act:628BBEF3-C3BA-4EE4-A905-3334CBD8ED7F
urn:lsid:biosci.ohio-state.edu:osuc_concepts:273915
http://species-id.net/wiki/Paridris_toketoki
Figures 91–96; Morphbank


**Diagnosis.** *Paridris toketoki* is most similar to *P. rugulosus*. It differs most conspicuously in having the lateral face of the pronotum densely punctate along its dorsal margin.

**Etymology.** This species is named for the great Paiwan chief, Toketok.

**Link to Distribution Map.**

**Material Examined.** Holotype, female: TAIWAN: Taiwan Prov., Nantou Co., Jihyüeh (Sun Moon) Lake, H025, Te-hua-she (Tehuache), 800m, 5.VI.1980, J. Heraty, OSUC 181200 (deposited in CNCI).
Figures 91–96. *Paridris toketoki* sp. n., female holotype (OSUC 181200) 91 Lateral habitus 92 Head and mesosoma, lateral view 93 Dorsal habitus 94 Head and mesosoma, dorsal view 95 Head, anterior view 96 Metasoma, dorsal view. Scale bars in millimeters.
**Paridris verrucosus** Talamas, sp. n.
urn:lsid:zoobank.org:act:CCEB3258-CADF-4F0F-B2E2-983F94AF5372
urn:lsid:biosci.ohio-state.edu:osuc_concepts:275741
http://species-id.net/wiki/Paridris_verrucosus
Figures 17, 97–102; Morphbank38


**Diagnosis.** *Paridris verrucosus* is the only species in the *P. nephta* group with microsculpture on S3.

**Etymology.** The adjectival epithet “verrucosus” means “full of warts” in Latin; it is given to this species for the dense microsculpture of the metasoma.

**Link to Distribution Map.**

Figures 97–102. *Paridris verrucosus* sp. n., female holotype (OSUC 334249) 97 Lateral habitus 98 Head and mesosoma, lateral view 99 Head and mesosoma, dorsal view 100 Metasoma, dorsal view 101 Head, anterior view 102 T3–T6, dorsolateral view. Scale bars in millimeters.
**Paridris yak Talamas, sp. n.**
urn:lsid:zoobank.org:act:37D0E197-226E-4EB5-B367-76F0C5D46276
urn:lsid:biosci.ohio-state.edu:osuc_concepts:241283
http://species-id.net/wiki/Paridris_yak
Figures 15, 103–108; Morphbank


**Diagnosis.** *Paridris yak* is a large distinctive species best identified by its reduced or absent notaulus, dorsally rugose frons and dorsally pointed axillular carina.

**Etymology.** The word “yak” is Thai for a mythological ogre. It is treated as a noun in apposition.

**Link to Distribution Map.**

**Material Examined.** Holotype, female: THAILAND: Trang Prov., forest research center, Khao Chong Mountain, 07°33.2’N 99°47.22’E, 75m, XI–2005, malaise trap, D. Lohman, OSUC 237530 (deposited in QSBG). Paratypes: THAILAND: 3 females, OSUC 396848 (OSUC); OSUC 266085, 334214 (QSBG).
Acknowledgments

Thanks to A. Bennett, D.C. Darling, W. Pulawski, K. van Achterberg and M. Sharkey (Thai specimens collected under NSF grant No. DEB-0542864) for the loans of material for this study; to I. Mikó and M. Yoder for generating the appendix of morphological terms; 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.

Figures 109–111.  109 Paridris nilaka sp. n., R1 (postmarginal vein) and r-rs (stigmal vein), dorsal view, female holotype (OSUC 266165) 110 Paridris solaris, sp. n., R1 (postmarginal vein) and r-rs (stigmal vein), dorsal view, female holotype (OSUC 240944) 111 Paridris mystax, sp. n., fore and hind wing, dorsal view, male (OSUC 265200). Scale bars in millimeters.
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Mineo G (2005) New scelionid wasps from Italy (Hymenoptera). Scelionidae (Hymenoptera) 1:17–32. 56


Endnotes

1 http://biocol.org/urn:lsid:biocol.org:col:1012
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41 http://hol.osu.edu/map-large.html?id=241283
## Appendix I

### Abbreviations Label Used in Text Unique Identifier of HAO class Label Used in Talamas et al. 2011

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Appendix II

Lucid key to females of the *Paridris nephta* species group. (doi: 10.3897/zookeys.133.1613.app)

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_Citation_: Talamas EJ, Masner L, Johnson NF (2011) Revision of the *Paridris nephta* species group (Hymenoptera, Platygastroidea, Platygastriidae). ZooKeys 133: 49–92. doi: 10.3897/zookeys.133.1613.app