

An online photographic catalog of primary types of Platygastroidea (Hymenoptera) in the National Museum of Natural History, Smithsonian Institution

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Abstract

A photographic catalog of primary types of Platygastroidea housed in the National Insect Collection, National Museum of Natural History, is here made available online at the image database at The Ohio State University (specimage.osu.edu). Following examination of this collection we enact the following taxonomic changes: *Leptacis piniella* MacGown **syn. n.** is treated as a junior synonym of *Leptacis pinicola* MacGown; *Sacespalus indicus* Mani is transferred to *Platygaster* Latreille; *Platygaster indica* Mukerjee is given the replacement name *Platygaster chaos* Talamas, **n. n.**; *Synopeas rugiceps* (Ashmead), **comb. n.** is transferred from *Leptacis* Förster; *Axea atriclava* (Kieffer), **comb. n.** is transferred from *Psilanteris* Kieffer; *Chakra pachmarhica* (Sharma), **comb. n.** is transferred from *Paridris* Kieffer; *Paridris dubeyi* Sharma, **syn. n.** is treated as a junior synonym of *Chakra pachmarhica*; *Holoteleia indica* (Mani) is transferred to

Opisthacantha Ashmead and given a replacement name, *Opisthacantha nomados* Talamas, **n. n.**; *Psilanteris nigriclavata* (Ashmead), **comb. n.** is transferred from *Anteris* Förster; *Probaryconus grenadensis* (Ashmead), **comb. n.** is transferred from *Monoteleia* Kieffer; *Monoteleia* **syn.n.** is treated as a junior synonym of *Pro-baryconus* Kieffer; *Paridris karnatakensis* Sharma, **syn. n.** is treated as a junior synonym of *Pro-baryconus cauverycus* Saraswat; *Pro-baryconus punctatus* (Ashmead), **comb. n.** is transferred from *Oxyteleia* Kieffer; *Triteleia bengalensis* (Saraswat), **comb. n.** is transferred from *Alloteleia* Kieffer; *Trimorus varius* Fouts, **syn. n.** and *Trimorus pulchricornis* Fouts, **syn. n.** are treated as junior synonyms of *Trimorus annulicornis* (Ashmead); Neotypes are designated for *Gryon leptocorisae* (Howard), *Idris seminiger* (Ashmead), *Telenomus graptae* Howard, *Telenomus persimilis* Ashmead, and *Telenomus rileyi* Howard; lectotypes are designated for *Cremastobaeus bicolor* Ashmead, *Oethecoctonus insularis* (Ashmead), *Oethecoctonus laticinctus* (Ashmead) and *Pro-baryconus punctatus* (Ashmead).

Keywords

Taxonomy, Scelionidae, Platygastriidae

Introduction

Stability in taxonomic name usage derives from the objectivity provided by primary type specimens. The National Insect Collection, housed in the National Museum of Natural History Museum, Smithsonian Institution, presently houses 728 primary types of Platygastroidea, and an additional eight species are represented by syntypes. The past decade has seen huge advancements in the amount of data that can be disseminated electronically, but also has seen a continuation of species descriptions that do not include examination of primary types. Our intention is to make high quality images of primary types easily accessible to facilitate proper recognition and to contribute to a functional classification of Platygastroidea. We also hope that our effort to making holotype images available online will encourage others to do the same.

In addition to imaging primary types, we photographed a large number of determined species in the National Insect Collection, focusing on paratypes when possible and when needed to supplement images of primary types. For specimens without indication of a determiner, we make no guarantees about their accuracy, and these should be considered as simply a digital representation of the collection, and not necessarily a basis for making taxonomic decisions. The determiner of each specimen, when these data were available, are indicated in the specimen records.

Authorship

This project would not have been possible in the time frame allotted without the contribution of many participants in the Smithsonian Internship Program. Because this publication is a photographic catalog, all contributors are included as authors according to the number of primary types photographed. Non-photographic contributions are as follows: specimen databasing: EJT, NFJ, AAV; intern training: EJT; taxonomy:

EJT; manuscript preparation: EJT, NFJ, AAV, MLB; database development and maintenance: NFJ; project oversight: EJT, MLB.

In some cases, primary types were photographed and made publicly available during the course of the Platygastroidea Planetary Biodiversity Inventory. These types were given identifiers in the format “USNM” or “USNM Type No. ”, which we maintain as alternative identifiers in addition to “USNMENT” collecting unit identifiers. We reference the publications in which these images were made available in Suppl. material 1.

Materials and methods

The list of primary types is presented in Suppl. material 1 and contains paratype or paralectotype specimens that were photographed to supplement images of incomplete primary types. Photographs are available for many determined species of *Platygastroidea* housed in USNM. A list of these species and specimens is presented in Suppl. material 2.

The numbers prefixed with “USNMENT” or “OSUC” are unique collecting unit identifiers (CUIDs) for the individual specimens (note the blank space after some 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. Persistent URIs for each taxonomic concept were minted by xBio:D in accordance with best practices recommend by Hagedorn et al. (2013). Taxonomic synopses were generated by the Hymenoptera Online Database (hol.osu.edu).

Photographs were captured with a Z16 Leica lens with a JVC KY-F75U digital camera using Cartograph or Automontage software, or a Leica DMRB compound microscope with a GT-Vision Lw11057C-SCI digital camera attached. In both systems, lighting was achieved using techniques summarized in Buffington et al. (2005), Kerr et al. (2009) and Buffington and Gates (2009). Single montage images were produced from image stacks with the either Automontage or CombineZP. In some cases, multiple montage images were stitched together in Photoshop CS4 to produce larger images at high resolution and magnification.

Full resolution images are archived at the image database at The Ohio State University (specimage.osu.edu) which is searchable by taxon name and CUID.

Taxonomy

Leptacis pinicola MacGown

http://bioguid.osu.edu/xbiod_concepts/11677

Figures 1–6

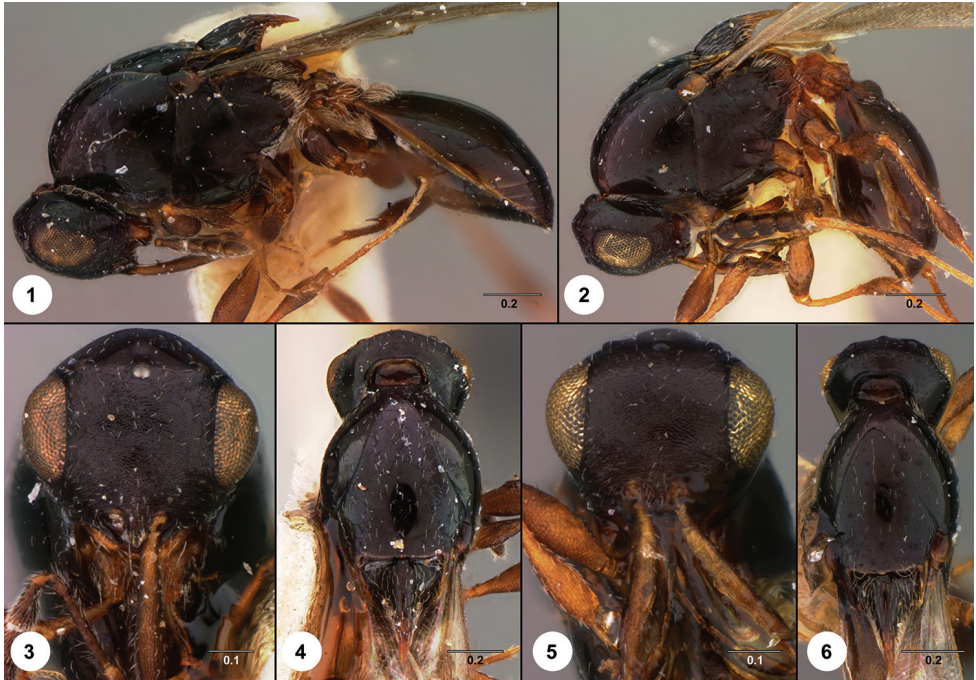
Leptacis pinicola MacGown, 1979: 24, 101 (original description. Keyed).

Leptacis piniella MacGown, **syn. n.**, 1979: 24, 104 (original description. Keyed).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=11677>

Material examined. Holotype of *L. pinicola*, female: UNITED STATES: VA, Fairfax Co., Vienna, 20.XI.1941, J. C. Bridwell, USNMENT01059099 (deposited in USNM). Holotype of *L. piniella*, female: UNITED STATES: CO, Jefferson Co., Evergreen, 30.VIII.1937, USNMENT01059210 (deposited in USNM).

Comments. The treatment of *L. pinicola* and *L. piniella* as different species is perplexing, given that they were described in the same publication. The key to species in McGown (1979) separated them on the basis of the scape “long and slim” versus “stouter, not noticeably long and slim”. Our examination reveals that the shapes of the scape in these species are essentially identical (Figures 3, 5)



Figures 1–6. 1 *Leptacis piniella*, holotype female (USNMENT01059210), head, mesosoma, metasoma, lateral view 2 *Leptacis pinicola*, holotype female (USNMENT01059099), head, mesosoma, metasoma, lateral view 3 *Leptacis piniella*, holotype female (USNMENT01059210), head, anterior view 4 *Leptacis piniella*, holotype female (USNMENT01059210), head and mesosoma, dorsal view 5 *Leptacis pinicola*, holotype female (USNMENT01059099), head, anterior view 6 *Leptacis pinicola*, holotype female (USNMENT01059099), head and mesosoma, dorsal view. Scale bars in millimeters.

***Platygaster indica* (Mani), comb. n.**

http://bioguid.osu.edu/xbiod_concepts/12100

Figures 7–8

Sacepalus indicus Mani, 1975: 75 (original description, spelling error).

Sacepalus indicus Mani: Mani and Sharma 1982: 213 (description); Vlug 1995: 74 (cataloged, type information); Buhl 2009: 901 (keyed).

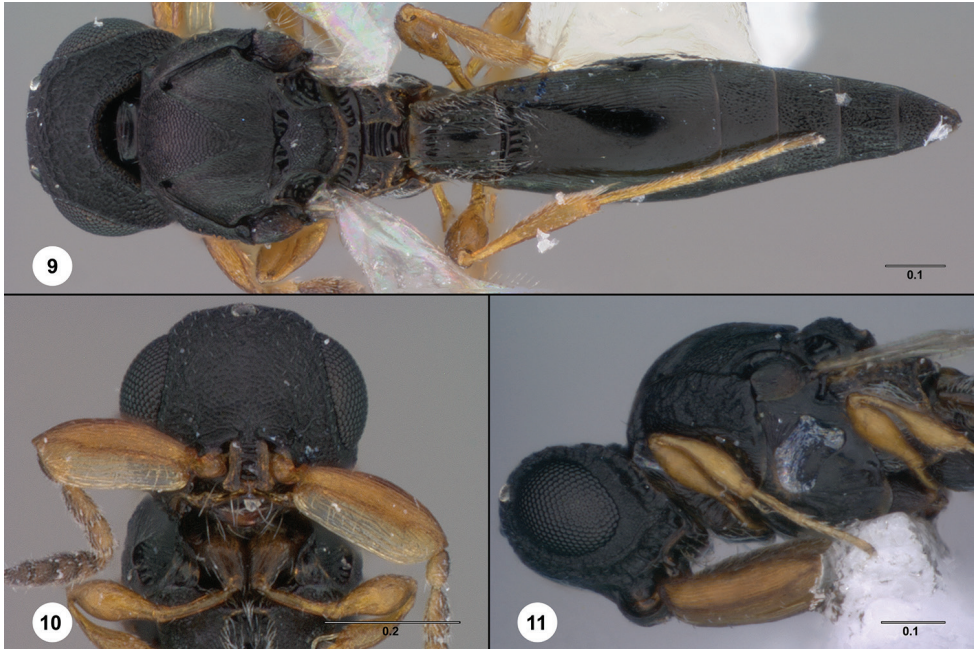


Figures 7–8. *Platygaster indica* (Mani), holotype female (USNMENT01109916) **7** head, mesosoma, metasoma, dorsal view **8** head, mesosoma, metasoma, ventral view. Scale bars in millimeters.

Link to distribution map. <http://hol.osu.edu/map-large.html?id=12100>

Material examined. Holotype, female: **INDIA:** Maharashtra, Mahabaleshwar, 16.IX.1971, Mani, USNMENT01109916 (deposited in USNM).

Comments. This species clearly does not belong in *Sacespalus* Kieffer (Figures 9–11): it has distinct felt fields on S2, A2 is not lamellate, and it lacks the robustly crenulate orbit of the compound eye. Despite the flattened state of the specimen, the characters of this specimen are surprisingly accessible.



Figures 9–11. *Sacespalus* **9** female (OSUC 334129), head, mesosoma, metasoma, dorsal view **10** female (OSUC 334129), head, anterior view **11** female (OSUC 240805), head and mesosoma, lateral view. Scale bars in millimeters.

***Platygaster chaos* Talamas, n. n.**

http://bioguid.osu.edu/xbiod_concepts/11875

Platygaster indicus Mukerjee, 1978: 88 (original description); Mani and Sharma 1982: 212 (description); Vlug 1995: 55 (cataloged, type information); Ushakumari 2004: 590 (keyed); Buhl 2008: 552 (keyed).

Link to distribution map. [<http://hol.osu.edu/map-full.html?id=11875>]

Material examined. Holotype, female, *P. indicus*: **INDIA**: Himachal Pradesh, Kullu Valley, Naggur, 18.VI.1972, Mani, USNMENT01109854 (deposited in USNM).

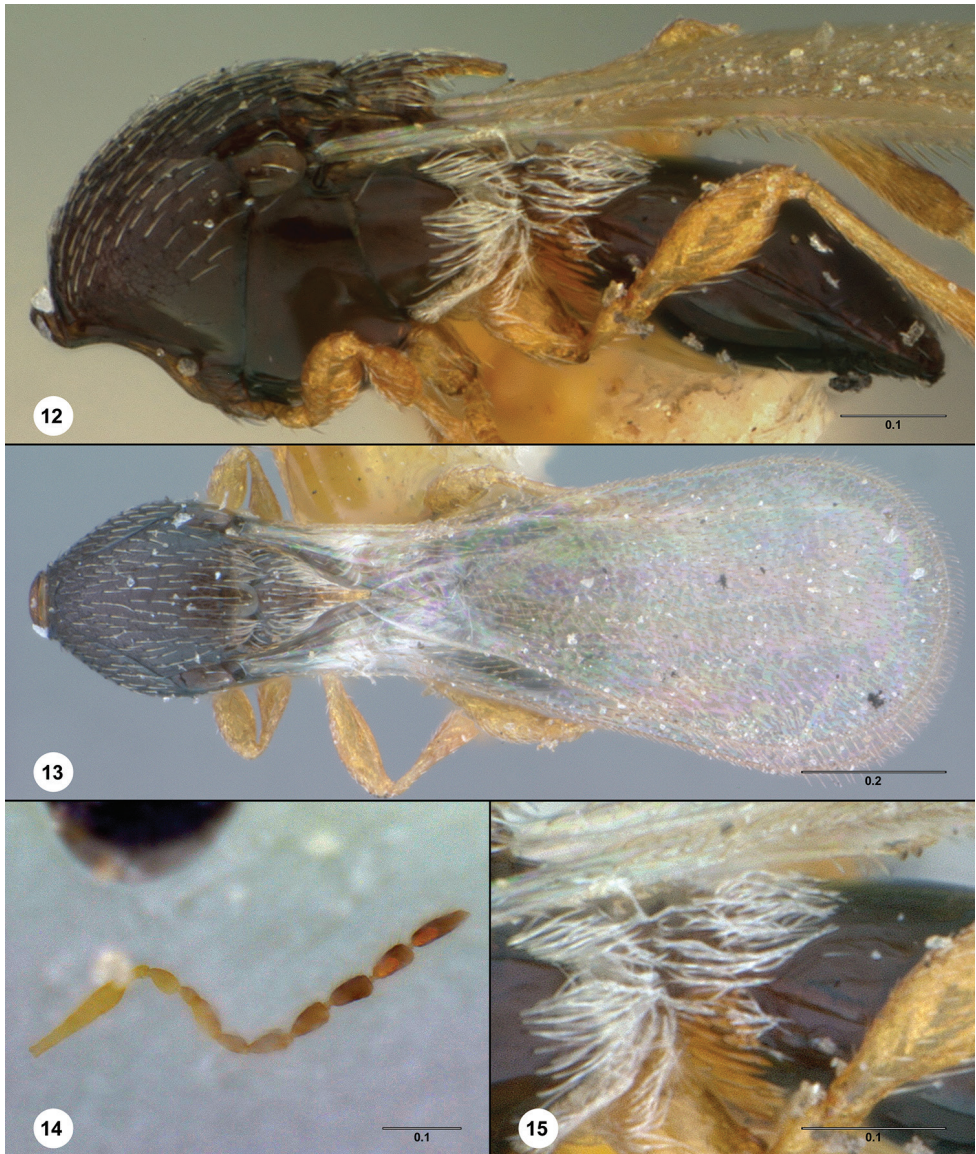
Replacement name. The transfer of *Sacespalus indicus* Mani (1975) into *Platygaster* creates a homonym with *Platygaster indica* Mukerjee (1978). The former species name has priority and thus we provide a replacement name, “chaos”, for *Platygaster indica*, reflecting the present taxonomic state of *Platygaster*.

***Synopeas rugiceps* (Ashmead)**

http://bioguid.osu.edu/xbiod_concepts/11685

Figures 12–15

Amblyaspis rugiceps Ashmead, 1893: 267, 269 (original description. Keyed).



Figures 12–15. *Synopeas rugiceps*, lectotype male (USNMENT00979264) **12** mesosoma and metasoma, lateral view **13** mesosoma and fore wings, dorsal view **14** antenna, lateral view **15** metapleuron, T1–T2, S1–S2, lateral view. Scale bars in millimeters.

Leptacis rugiceps (Ashmead): Fouts 1924: 117, 122 (description, generic transfer, lectotype designation, keyed); Kieffer 1926: 637, 643 (description, keyed); Masner and Muesebeck 1968: 82 (type information); Vlug 1995: 38 (cataloged, type information).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=11685>

Material examined. Lectotype, male, *A. rugiceps*: **UNITED STATES**: Washington, 23-VI, USNMENT00979264 (deposited in USNM).

Comments. The absence of a long fringe of setae on the posterior margin of the fore wing and the fusion of T1 and T2 place this species in *Synopeas* Förster, not *Leptacis* Förster. Fouts described numerous species in *Leptacis* that were later transferred to *Synopeas* (Masner, in Krombein and Burks 1967), and his transfer of this species from *Amblyaspis* Förster into *Synopeas* reflects his concepts of these genera.

***Axea atriclava* (Kieffer), comb. n.**

http://bioguid.osu.edu/xbiod_concepts/5135

Figures 16–21

Psilanteris atriclava Kieffer, 1916: 177 (original description. Keyed); Kieffer 1926: 433, 434 (description, keyed); Dodd 1931: 77 (description, position uncertain); Baltazar 1966: 182 (cataloged, distribution); Masner 1976: 51 (description, excluded from *Psilanteris*, type information); Johnson 1992: 468 (cataloged, type information).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=5135>

Material examined. Holotype, female: **PHILIPPINES**: Laguna Prov., Luzon Isl., Mount Makiling, no date, Baker, USNMENT01059257 (deposited in USNM).

Comments. Masner (1976) stated that this species did not belong in *Psilanteris* and suggested that it belonged in an undescribed genus. This has proven to be the case, as the genus into which we transfer this species was described by Masner and Johnson (Yoder et al. 2009). *Axea atriclava* does not match any of the species described in Yoder et al. (2009) and is a new species for the genus.

***Chakra pachmarhica* (Sharma), comb. n.**

http://bioguid.osu.edu/xbiod_concepts/313332

Figures 22–29

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

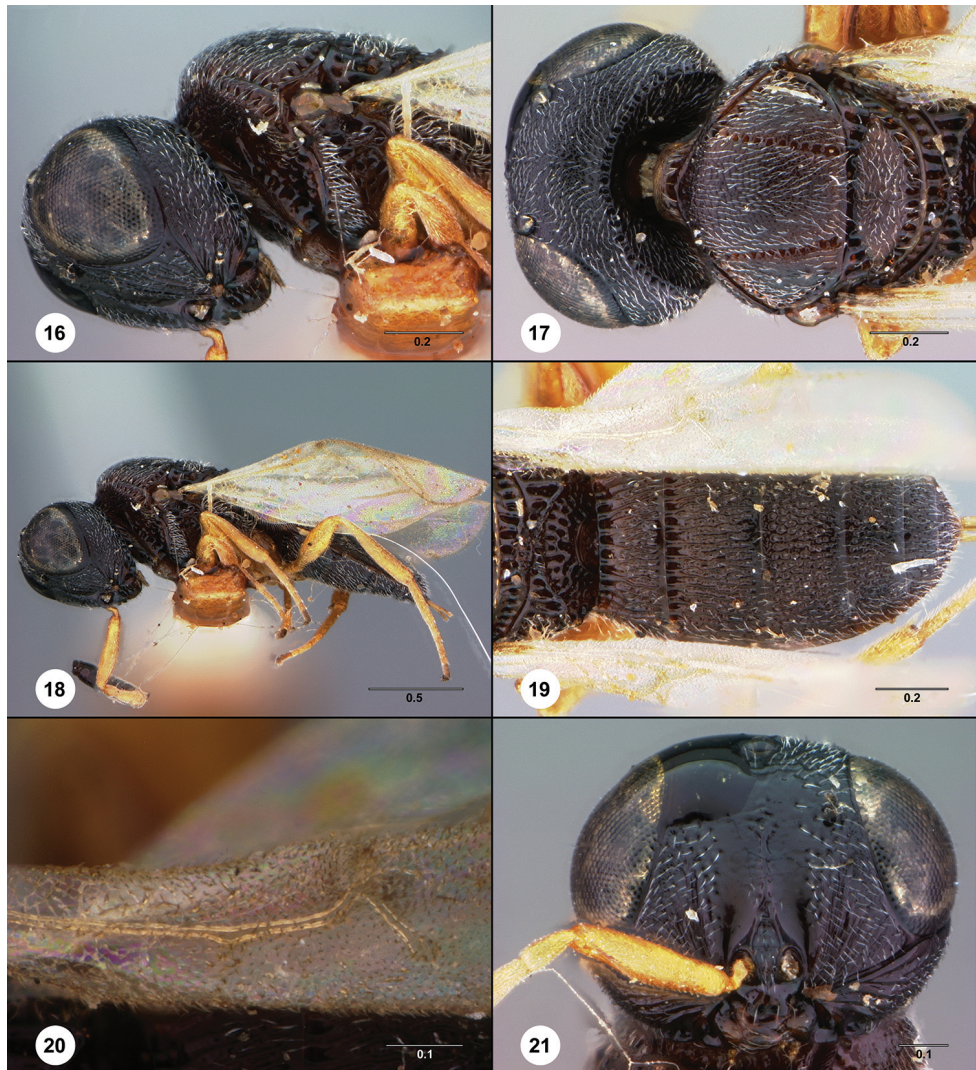
Paridris dubeyi Sharma, **syn. n.**, 1982: 336 (original description); Johnson 1992: 459 (cataloged); Rajmohana 2007: 57 (keyed).

Paridris pachmarhicus (Sharma): Mani and Sharma 1982: 178 (description); Johnson 1992: 460 (cataloged); Rajmohana 2007: 57 (keyed).

Paridris pachmarhica (Sharma): Talamas et al. 2012: 32 (gender emended).

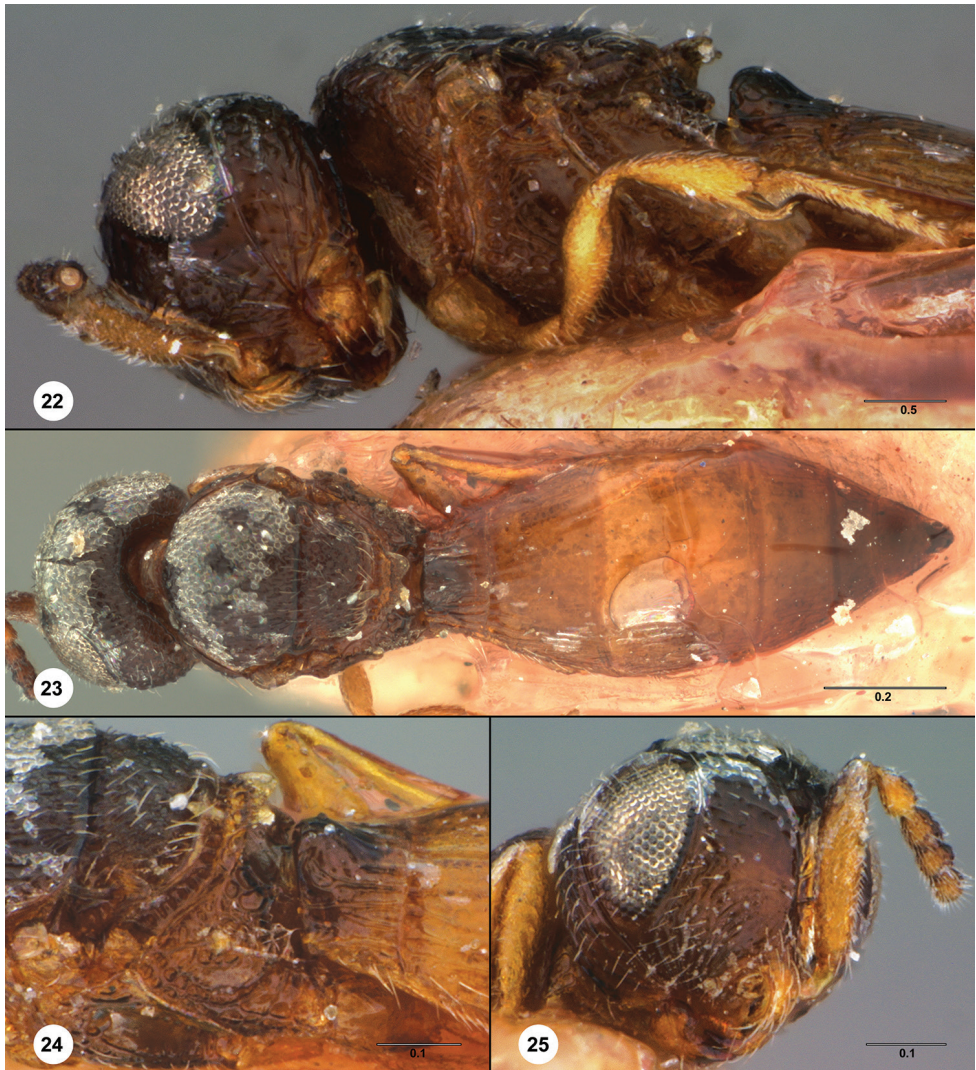
Link to distribution map. <http://hol.osu.edu/map-full.html?id=313332>

Comments. *Paridris dubeyi* and *Probaryconus pachmarhicus*, despite that they are conspecific, were placed in separate genera by Sharma (1972, 1982). The concept of



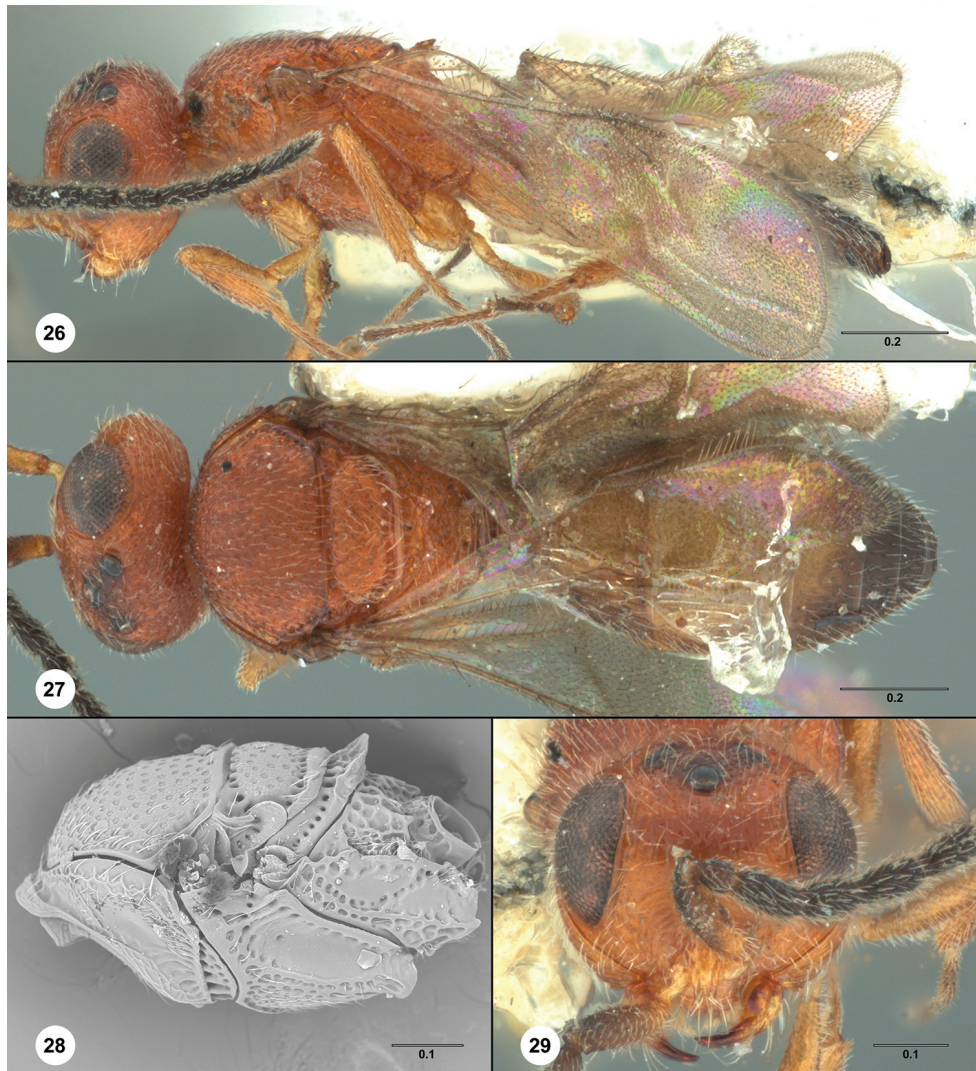
Figures 16–21. *Axea atriclava*, female holotype (USNMENT01059257) **16** head and mesosoma, lateral view **17** head and mesosoma, dorsal view **18** head, mesosoma, metasoma, lateral view **19** metasoma, dorsal view **20** fore wing venation, dorsal view **21** head, anterior view. Scale bars in millimeters.

Probaryconus, at least since Masner (1976), excludes species with a metascutellum that projects posteriorly (“armed”), and includes species that have spines or protrusions on the propodeum. *Chakra pachmarhica* matches neither of these character states. *Paridris* is a more polymorphic genus that was recently diagnosed by Talamas et al. (2011) and does not include species with an epomial carina. Until now, *Chakra* has been a monotypic genus, and the metascutellum of *C. sarvatra* Rajmohana & Veenakumari has a metascutellum with a single spine. We here expand the concept of *Chakra* to include species with two or three metascutellar spines. The salient



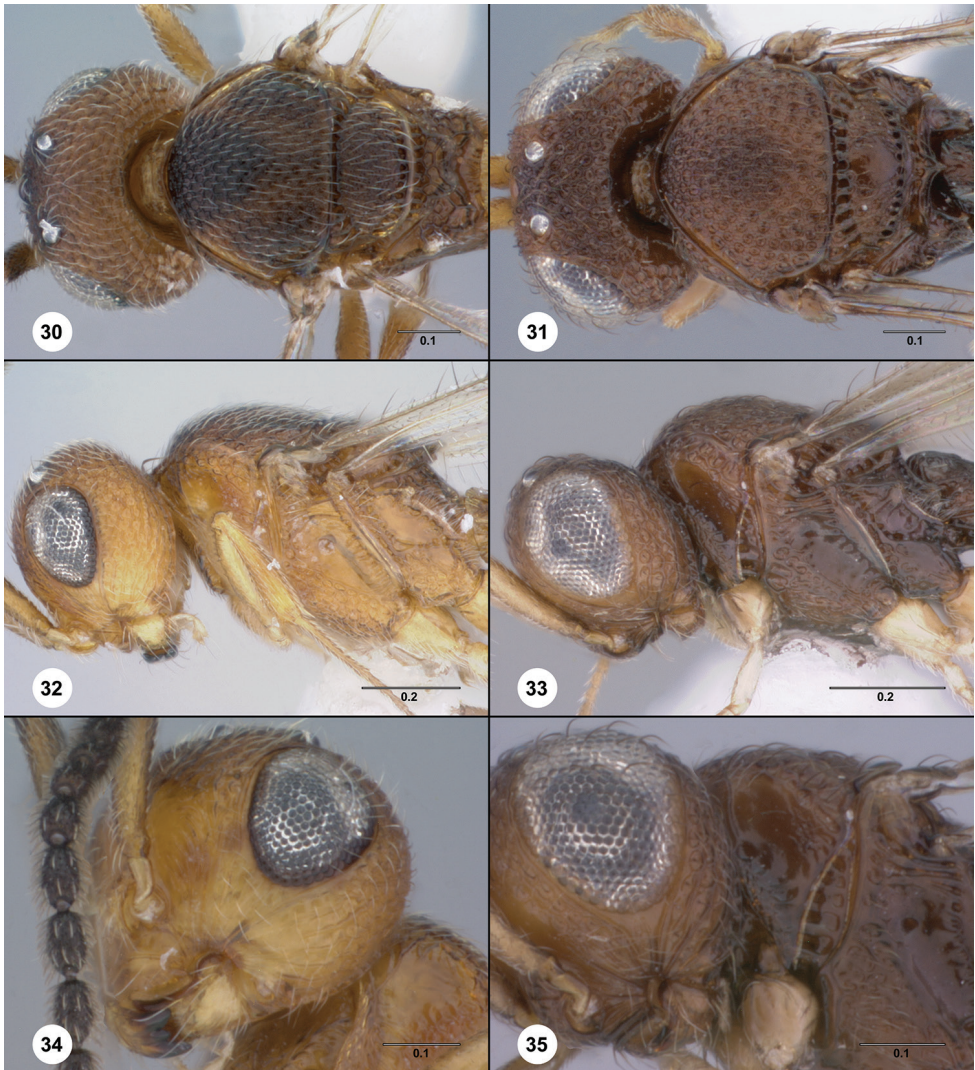
Figures 22–25. *Chakra pachmarbicus* (Sharma), female holotype (USNMENT01109836) **22** head and mesosoma, lateral view **23** head, mesosoma, metasoma, dorsal view **24** mesoscutellum, metascutellum, propodeum, T1, dorsolateral view **25** head, anterolateral view. Scale bars in millimeters.

characters of *Chakra*, as mentioned by Rajmohana and Veenakumari (2014), are the diagnostic form of sculpture on the head, mesoscutum, and mesoscutellum; the postmarginal vein shorter than the stigmal vein, and *Scelio*-type ovipositor. The limits of *Chakra* with respect to *Trissoscelio* (presently a junior synonym of *Opisthacantha*) are unclear. The presence of an epomial carina in *Chakra* holds promise as a diagnostic character, but this character exhibits a significant degree of variation among the undescribed African species of *Chakra*. A species of *Chakra* from Southeast Asia has a trispinose metascutellum (Figure 31) and the length of these spines exhibits a great



Figures 26–29. *Chakra pachmarhicus*. **26** male holotype of *Paridris dubeyi* Sharma (USNMENT01197116), head, mesosoma, metasoma, lateral view **27** male holotype of *Paridris dubeyi* Sharma (USNMENT01197116), head, mesosoma, metasoma, dorsal view **28** male (USNMENT01109626), mesosoma, lateral view **29** male holotype of *Paridris dubeyi* Sharma (USNMENT01197116), head, anterior view. Scale bars in millimeters.

deal of size related variation. Consequently, *Chakra* is a genus with a hypervariable metascutellum and this structure is of only modest use for identifying the genus. We think it is noteworthy that all of the species of *Chakra* that we have examined have the metapleural and paracoxal sulci well-defined and separate in the dorsal half of the metapleuron (Figures 32–33) and, at the moment, this serves as a useful diagnostic character for the genus.



Figures 30–35. **30** *Chakra* sp., male (OSUC 170290), head and mesosoma, dorsal view **31** *Chakra* sp., female (OSUC 261908), head and mesosoma, dorsal view **32** *Chakra* sp., male (OSUC 170291), head and mesosoma, lateral view **33** *Chakra* sp., female (OSUC 261908), head and mesosoma, lateral view **34** *Chakra* sp., male (OSUC 170291), head and pronotum, anterolateral view **35** *Chakra* sp., female (OSUC 261908), head and mesosoma, anterolateral view. Scalebars in millimeters.

Diagnosis of *Chakra*. *Scelio*-type ovipositor; propodeum coarsely rugose; epomial carina present; head, mesoscutum and mesoscutellum punctate with interstitial microsculpture; malar striae present; facial striae present; occipital carina complete; lines of sculpture extending around interantennal process; clypeus divided dorsoventrally by transverse furrow.

***Cremastobaeus bicolor* Ashmead**http://bioguid.osu.edu/xbioid_concepts/4225

Cremastobaeus bicolor Ashmead, 1893: 229 (original description); Ashmead 1894: 228 (redescribed as new, keyed); Kieffer 1926: 354 (description, keyed); Johnson 1992: 365 (cataloged).

Link to distribution map. [<http://hol.osu.edu/map-full.html?id=4225>]

Lectotype designation. We here designate specimen USNM01223775 as the lectotype female of *Cremastobaeus bicolor*: **SAINT VINCENT AND THE GRENADINES**: Saint Vincent Island, no date, H. H. Smith, (deposited in USNM).

***Gryon leptocorisae* (Howard)**http://bioguid.osu.edu/xbioid_concepts/4416

Figures 36–39

Hadronotus leptocorisae Howard, 1885: 215 (original description); Ashmead 1893: 230, 231 (description, keyed); Brues 1910: 47 (keyed); Kieffer 1926: 454, 462 (description, keyed).

Hadronotus hungaricus Szabó, 1966: 430, 433 (original description. Keyed. Preoccupied by *Hadronotellus hungaricus* Szabó (1966) and *Pannongryon hungaricum* Szabó (1966). Synonymized by Mineo (1980)); Johnson 1992: 386 (type information).

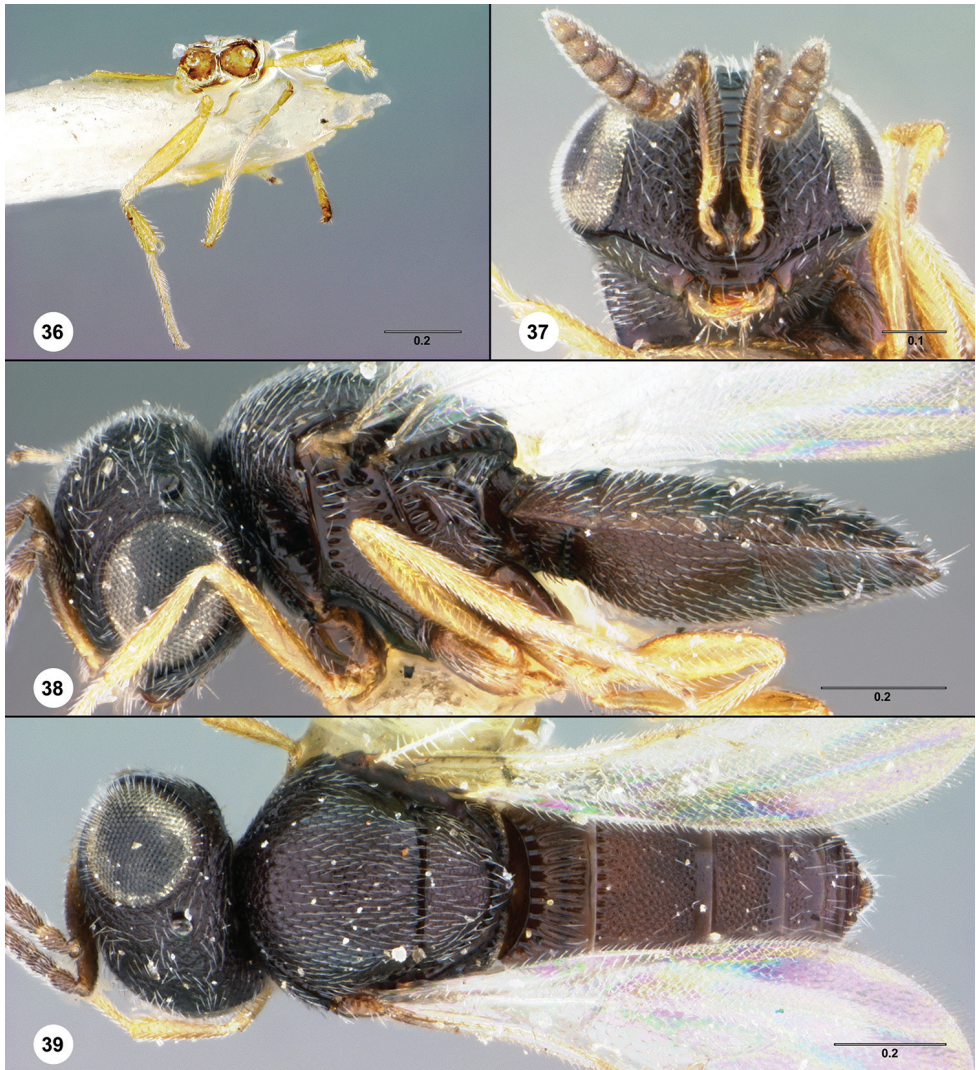
Gryon leptocorisae (Howard): Muesebeck and Masner 1967: 299 (generic transfer); Masner and Muesebeck 1968: 36 (lectotype designation); Mineo 1980: 197 (synonymy); Mineo 1981: 119, 132 (variation, keyed); Masner 1983: 154 (description); Mineo 1990: 52 (assigned to *leptocorisae* species group); Johnson 1992: 386 (cataloged, type information); Mineo and Caleca 1994: 122 (distribution); Kononova and Kozlov 2008: 326, 370 (description, keyed).

Gryon reduwiophagus Kozlov, 1971: 48 (original description. Synonymized by Mineo (1979)); Viggiani and Mineo 1974: 154, 160 (diagnosis, keyed); Kozlov 1978: 620 (description); Mineo 1979: 257 (junior synonym of *Gryon hungaricus* (Szabó)); Kozlov and Kononova 1989: 79 (keyed); Kozlov and Kononova 1990: 267, 285 (description, keyed); Johnson 1992: 387 (cataloged, type information); Kononova 1995: 84 (keyed); Kononova and Petrov 2002: 54 (keyed).

Gryon hungaricus Szabó: Mineo 1979: 251 (variation).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=4416>

Neotype designation. The lectotype specimen is essentially lost, as only a few legs remain glued to the point (Figure 36). We here designate paralectotype specimen (USNM00989860) as the neotype for *Gryon leptocorisae*. This specimen was reared from the same egg mass as the lectotype and has identical collection data.



Figures 36–39. *Gryon leptocorisae* **36** remnants of lectotype specimen (USNMENT00989859) **37** neotype female (USNMENT00989860), head, anterior view **38** neotype female (USNMENT00989860), head, mesosoma, metasoma, lateral view **39** neotype female (USNMENT00989860), head, mesosoma, metasoma, dorsal view. Scale bars in millimeters.

Material examined. Lectotype, female, *H. leptocorisae*: **UNITED STATES**: FL, Putnam Co., Crescent City, no date, reared from egg, H. G. Hubbard, USNMENT00989859 (deposited in USNM). Neotype, female, *H. leptocorisae*: **UNITED STATES**: FL, Putnam Co., Crescent City, no date USNMENT00989860 (deposited in USNM).

***Idris seminiger* (Ashmead)**

http://bioguid.osu.edu/xbiod_concepts/9176

Figures 40–41

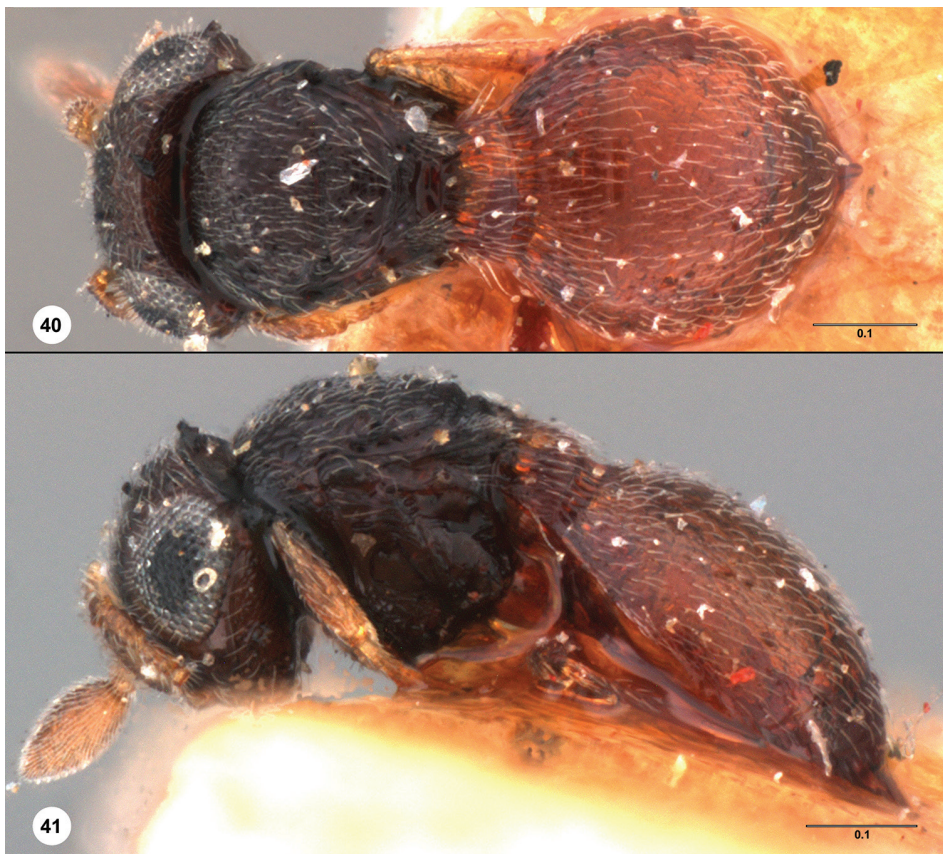
Acoloides seminiger Ashmead, 1893: 170, 173 (original description. Keyed. Synonymized by Huggert (1979)); Harrington 1900: 184 (type information); Kieffer 1926: 166, 168 (description, keyed); Johnson 1992: 416 (type information).

Idris seminiger (Ashmead): Masner and Muesebeck 1968: 39 (lectotype designation); Huggert 1979: 6 (junior synonym of *Idris subapterus* (Ashmead)).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=9176>

Neotype designation. The lectotype designated by Masner and Muesebeck (1968) is lost. We here designate the paralectotype female (USNMENT01109324), which has label data identical to that of the previous lectotype, to be the neotype of *Acoloides seminiger*.

Material examined. Neotype female, *Acoloides seminiger*: **CANADA**: Ontario, Ottawa, no date, W. H. Harrington USNMENT01109324 (deposited in USNM).



Figures 40–41. *Idris seminiger*, neotype female (USNMENT01109324) **40** head, mesosoma, metasoma, dorsal view **41** head, mesosoma, metasoma, lateral view. Scale bars in millimeters.

***Oethecoctonus insularis* (Ashmead)**

http://bioguid.osu.edu/xbiod_concepts/4952

Cacus insularis Ashmead, 1894: 226, 227 (original description. Keyed); Ashmead 1900: 243, 328 (distribution).

Cacellus insularis (Ashmead): Kieffer 1908: 120 (generic transfer); Kieffer 1926: 414 (description, keyed).

Oethecoctonus insularis (Ashmead): Johnson 1992: 444 (cataloged).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=4952>

Lectotype designation. We here designate specimen USNMENT01109356 as the lectotype female of *Oethecoctonus insularis*: **SAINT VINCENT AND THE GRENADINES**: Saint Vincent Island, no date, H. H. Smith, (deposited in USNM).

***Oethecoctonus laticinctus* (Ashmead)**

http://bioguid.osu.edu/xbiod_concepts/4953

Cacus laticinctus Ashmead, 1894: 226, 227 (original description. Keyed); Ashmead 1900: 328 (distribution).

Cacellus laticinctus (Ashmead): Kieffer, 1908: 120 (generic transfer); Kieffer 1926: 414, 415 (description, keyed).

Oethecoctonus laticinctus (Ashmead): Masner, 1965: 85 (type information); Johnson 1992: 444 (cataloged, type information).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=4953>

Lectotype designation. We here designate specimen USNMENT01109358 as the lectotype female of *Oethecoctonus laticinctus*: **SAINT VINCENT AND THE GRENADINES**: Saint Vincent Island, no date, H. H. Smith, USNMENT01109358 (deposited in USNM).

***Opisthacantha nomados* Talamas n. n.**

http://bioguid.osu.edu/xbiod_concepts/4550

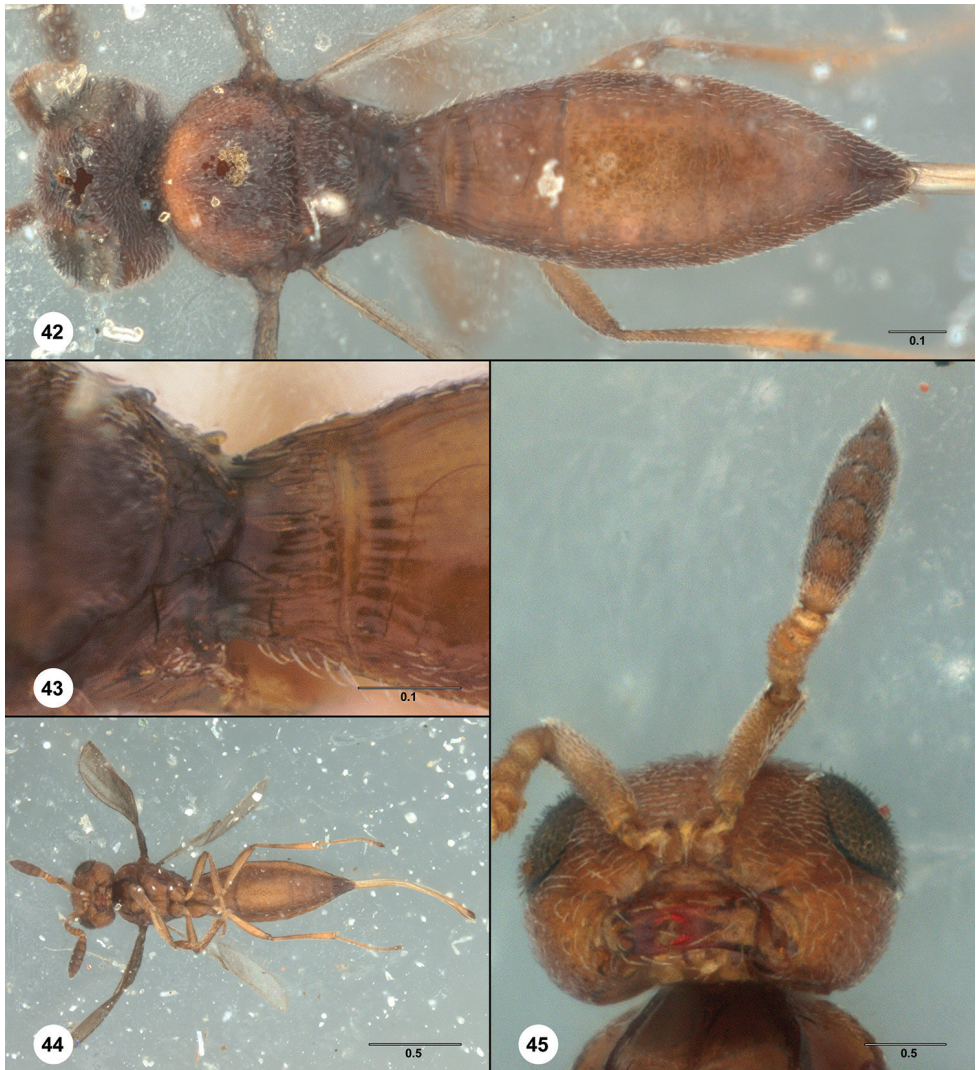
Figures 42–45

Baryconus (Holoteleia) indica Mani, 1975: 73 (original description).

Holoteleia indica (Mani): Mani and Sharma 1982: 181 (description, generic transfer); Johnson 1992: 401 (cataloged, type information).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=4550>

Material examined. Holotype, female: **INDIA**: Maharashtra St., Khandala, 21.IX–22.IX.1971, Mani, USNMENT01109813 (deposited in USNM).



Figures 42–45. *Opisthacantha indica*, female holotype (USNMENT01109813) **42** head, mesosoma, metasoma, dorsal view **43** mesoscutellum, mesoscutellum, propodeum, T1, T2, dorsolateral view **44** head, mesosoma, metasoma, ventral view **45** head, ventral view. Scale bars in millimeters.

Replacement name. Mani (1975) described *Opisthacantha indica* in the same paper in which *Baryconus* (*Holoteleia*) *indica* was originally described. We resolve this homonymy by proposing a replacement name for the latter. We selected the epithet, “nomados”, which is Greek for “wanderer” for this species as it roams from one genus to another. The name is treated as a noun in apposition.

Comments. Malar and facial striae are present in the holotype specimen of *O. nomados*, both of which exclude this species from *Holoteleia* in the concept of this genus presented by Masner (1980), Masner (1994) and Talamas and Buffington (2015). The

placement of *Baryconus indica* by Mani and Sharma (1982) in *Holoteleia* is also inconsistent with the concept of the genus presented by Mani and Sharma (1982), which stated that the genus has a “metanotum narrow, medially without lamina or lamella”. Examination of the holotype reveals that the metascutellum forms a large posteriorly projecting plate (Figure 43), consistent with the form found in *Opisthacantha* (*Trissoscelio nigriceps* Kieffer. *Trissoscelio* Kieffer is currently treated as a junior synonym of *Opisthacantha* Ashmead, but changes to the classification of the genera presently treated as *Opisthacantha* are likely to occur when this complex is reanalyzed. We note that *O. nomados* should follow *Opisthacantha* (*Trissoscelio nigriceps*) in the event of such change.

***Probaryconus* Kieffer**

http://bioguid.osu.edu/xbioid_concepts/544

Baryconus (*Probaryconus*) Kieffer, 1908: 118, 165, 168 (original description. Type: *Baryconus* (*Probaryconus*) *spinus* Kieffer, by monotypy. Keyed); Kieffer 1910: 64, 84 (description, list of species, keyed).

Procacus Kieffer, 1910: 319 (original description. Type: *Procacus striatigena* Kieffer, by monotypy. Synonymized by Masner (1976)); Kieffer 1910: 64, 77 (description, list of species, keyed); Kieffer 1913: 228 (description); Kieffer 1926: 269, 415 (key to subgenera, keyed); Nixon 1931: 356 (keyed); Nixon 1933: 292 (keyed); Muesebeck and Walkley 1956: 388 (citation of type species); Baltazar 1966: 180 (cataloged, catalog of species of the Philippines); Masner 1976: 33 (junior synonym of *Probaryconus* Kieffer); De Santis 1980: 314 (catalog of species of Brazil).

Amblyconus Kieffer, 1913: 221 (original description. Type: *Amblyconus quadridens* Kieffer, first included species. Synonymized by Masner (1965)); Kieffer 1914: 325 (description); Kieffer 1926: 269, 484 (description, keyed); Muesebeck and Walkley 1956: 327 (citation of type species).

Neurocacus Kieffer, 1913: 428 (original description. Type: *Neurocacus philippinensis* Kieffer, by monotypy and original designation. Synonymized by Kieffer (1926)); Muesebeck and Walkley 1956: 374 (citation of type species).

Probaryconus Kieffer: Kieffer 1913: 220 (description, change to generic status); Kieffer 1914: 323 (description); Kieffer 1926: 270, 485 (description, keyed, key to species); Maneval 1940: 113 (keyed); Mani 1941: 28 (catalog of species of India); Muesebeck and Walkley 1956: 388 (citation of type species); Muesebeck and Masner 1967: 299 (second supplement to Muesebeck and Walkley (1951)); Kozlov 1971: 40 (keyed); Kozlov 1971: 40 (keyed); Masner 1976: 33 (description, key to *Calliscelio* Ashmead, *Paridris* Kieffer, *Oethecoctonus* Ashmead, and *Probaryconus* Kieffer); Kozlov 1978: 614 (description); Muesebeck 1979: 1155 (catalog of species of U.S. and Canada); Mani and Sharma 1982: 176 (description); Galloway and Austin 1984: 7, 20, 28, 36 (diagnosis, list of species described from Australia, keyed); Kozlov and Kononova 1990: 95, 173 (keyed); Johnson 1992: 462 (cataloged, catalog of world species);

Kononova 1995: 60, 69 (keyed, diagnosis, key to species of Russian Far East); Austin and Field 1997: 22, 68 (structure of ovipositor system, discussion of phylogenetic relationships); Lê 2000: 31, 72 (keyed, description, key to species); Loiácono and Margaria 2002: 558 (catalog of Brazilian species); Mineo 2006: 45 (genotype information); Rajmohana 2006: 116, 129 (description, keyed); Kononova and Kozlov 2008: 22, 219 (description, keyed); Talamas et al. 2011: 53 (keyed); Popovici and Johnson 2012: 381 (description of internal genitalia).

Procacus (*Neurocacus*) Kieffer: Kieffer 1926: 416 (description, change to subgeneric status).

Procacus (*Procacus*) Kieffer: Kieffer 1926: 415 (description).

Urundia Risbec, 1957: 142 (original description. Type: *Urundia biarmata* Risbec, by monotypy and original designation. Synonymized by Masner (1976)); Masner 1976: 34 (junior synonym of *Probaryconus* Kieffer).

Monoteleia Kieffer, **syn. n.**, 1926: 272, 545 (original description. Type: *Macroteleia grenadensis* Ashmead, by original designation. Keyed, key to species); Muesebeck and Walkley 1956: 372 (citation of type species); Masner 1976: 35 (description, taxonomic status); Johnson 1992: 440 (cataloged, catalog of world species).

Comments. *Probaryconus* is a cosmopolitan and variable genus that includes numerous elongate forms. We agree with the suggestion of Masner (1976) that *Monoteleia* represents a morphological extreme of *Probaryconus*, not a phylogenetically distinct lineage. Our concept of *Probaryconus* accommodates *Monoteleia* without issue, and we note that metasomal length alone has not proven to be of real use at the generic level anywhere in *Platygastridae*.

***Probaryconus grenadensis* (Ashmead), comb. n.**

http://bioguid.osu.edu/xbiod_concepts/4929

Figures 46–51

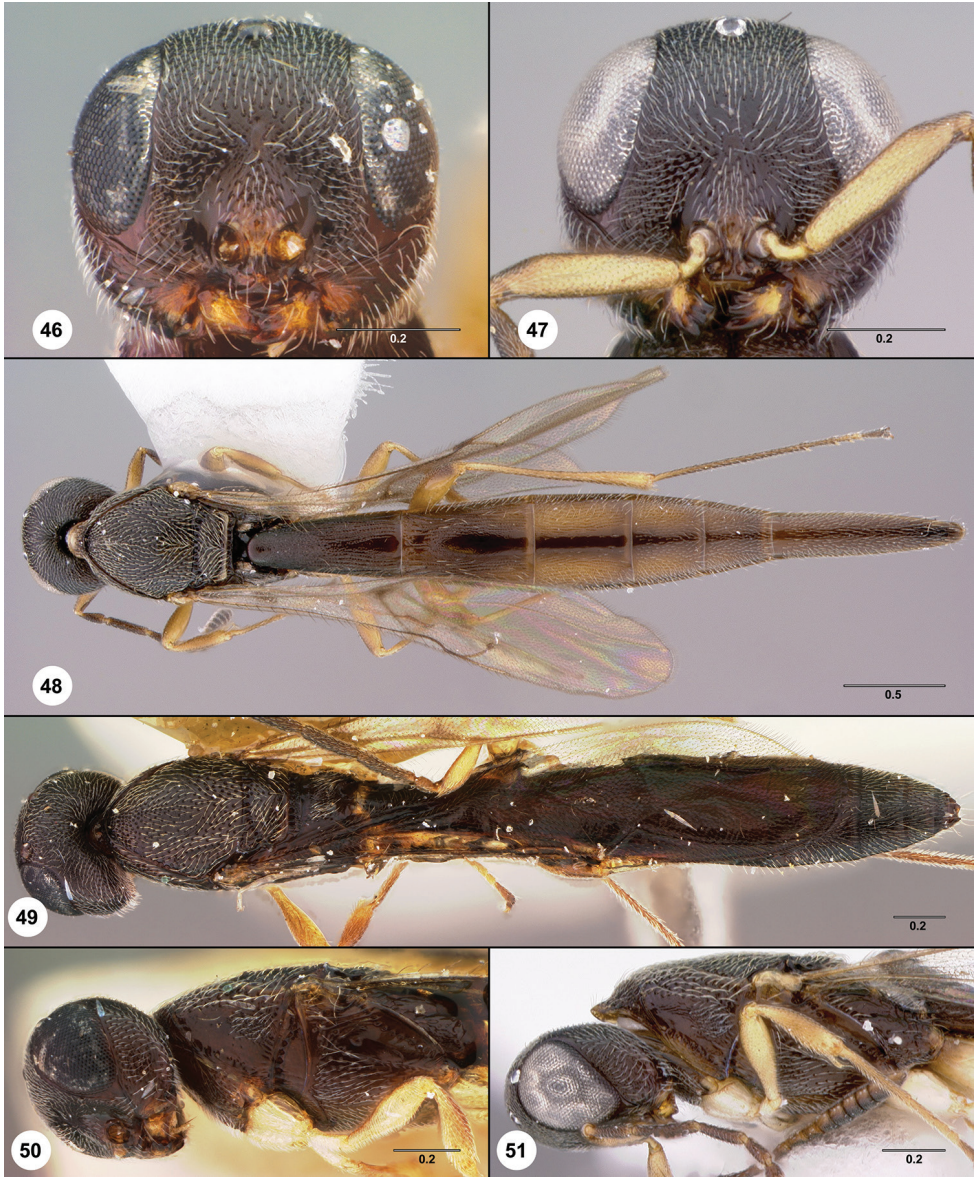
Macroteleia grenadensis Ashmead, 1900: 243, 327 (original description); Kieffer 1908: 170 (keyed).

Cacellus grenadensis (Ashmead): Kieffer 1908: 120 (generic transfer).

Monoteleia grenadensis (Ashmead): Kieffer 1926: 545 (generic transfer, description, keyed); Masner 1976: 35 (description, type information); Johnson 1992: 440 (cataloged, type information).

Link to distribution map. <http://hol.osu.edu/map-full.html?id=4929>

Material examined. Holotype, male, *M. grenadensis*: **GRENADA**: Saint Andrew Parish, windward side, Grand Etang Lake, 1900ft, no date, H. H. Smith, USNM-01059137 (deposited in USNM). *Other material*: (1 female, 1 male) **GRENADA**: 1 female, OSUC 396818 (CNCI). **SAINT VINCENT AND THE GRENADINES**: 1 male, OSUC 396819 (CNCI).



Figures 46–51. *Probaryconus grenadensis* **46** holotype male (USNMENT01059137), head, anterior view **47** female (OSUC 396818), head, anterior view **48** female (OSUC 396818), head, mesosoma, metasoma, dorsal view **49** holotype male (USNMENT01059137), head, mesosoma, metasoma, dorsal view **50** holotype male (USNMENT01059137), head and mesosoma, lateral view **51** female (OSUC 396818), head and mesosoma, lateral view. Scale bars in millimeters.

***Probaryconus cauverycus* Saraswat**

http://bioguid.osu.edu/xbirod_concepts/5096

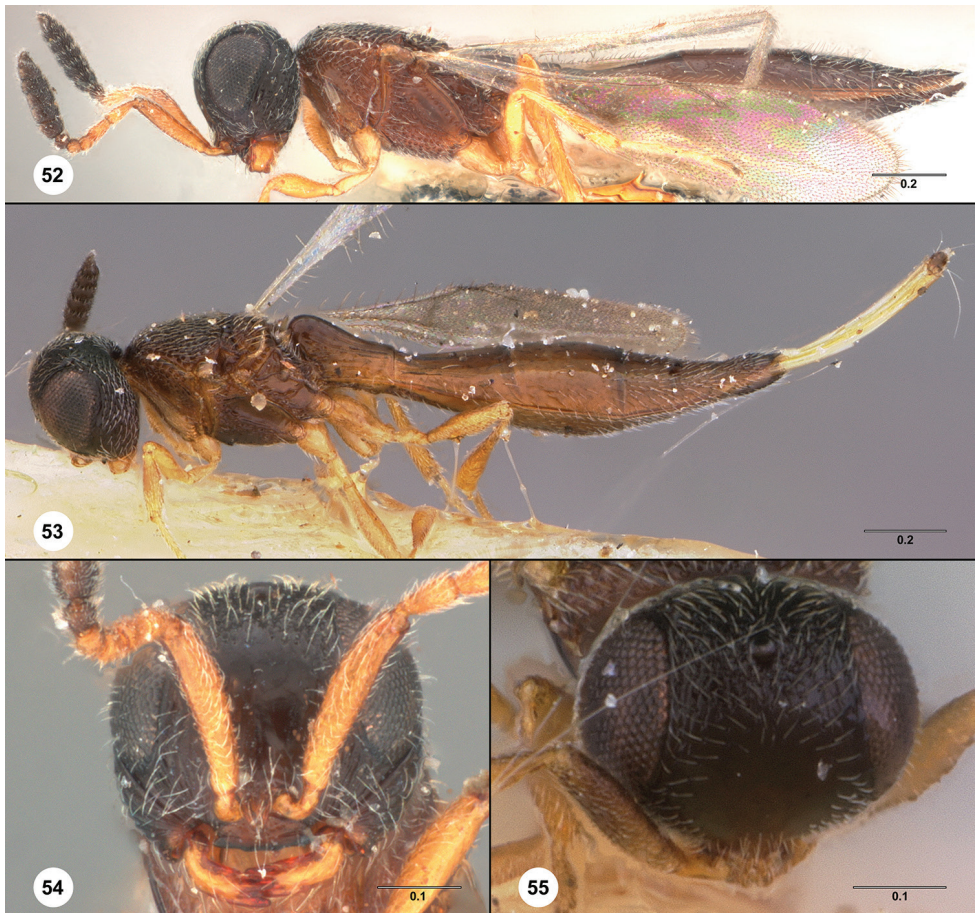
Figures 52–57

Probaryconus cauverycus Saraswat, 1978: 22 (original description); Mani and Sharma 1982: 176 (description); Johnson 1992: 463 (cataloged).

Probaryconus karnatakensis (Sharma), **syn. n.**, 1982: 338 (original description); Johnson 1992: 459 (cataloged); Rajmohana 2007: 57 (keyed).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=5096>

Material examined. Female holotype of *Probaryconus cauverycus*: **INDIA:** Karnataka St., Tala Kaveri, 10.III.1975, M. S. Mani, USNMENT01109607 (deposited



Figures 52–55. *Probaryconus cauverycus* **52** female holotype of *Paridris karnatakensis* (USNMENT01109963), head, mesosoma, metasoma, lateral view **53** female holotype of *Probaryconus cauverycus* (USNMENT01109607), head, mesosoma, metasoma, lateral view **54** female holotype of *Paridris karnatakensis* (USNMENT01109963), head, anterior view **55** female holotype of *Probaryconus cauverycus* (USNMENT01109607), head, anterior view. Scale bars in millimeters.



Figures 56–57. *Probaryconus cauverycus* **56** female holotype of *Paridris karnatakensis* (USNMMENT01109963), head, mesosoma, metasoma, dorsal view **57** female holotype of *Probaryconus cauverycus* (USNMMENT01109607), head, mesosoma, metasoma, dorsal view. Scale bars in millimeters.

in USNM). Female holotype of *Paridris karnatakensis*: **INDIA**: Karnataka St., Attur, 20.V–10.VI.1978, M. S. Mani, USNMMENT01109963 (deposited in USNM). *Other material*: **THAILAND**: 1 female, USNMMENT01223894 (USNM).

***Probaryconus punctatus* (Ashmead), comb. n.**

http://bioguid.osu.edu/xbioid_concepts/5042

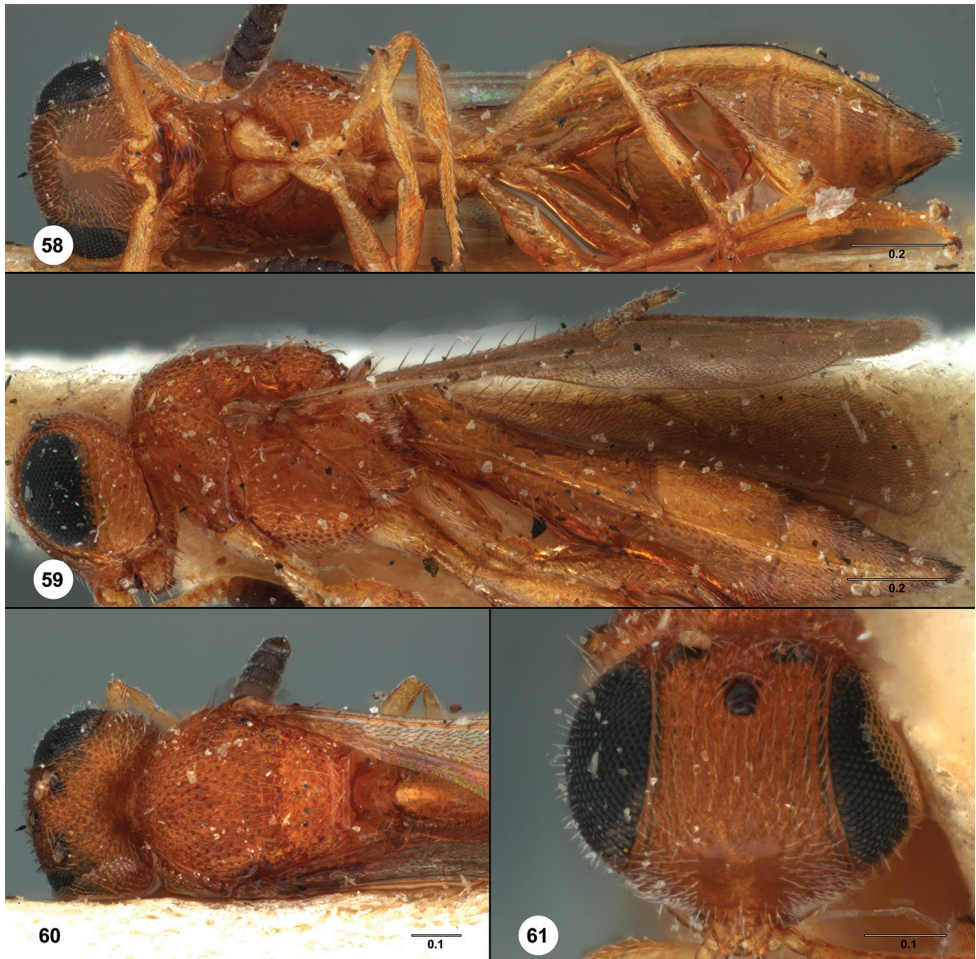
Figures 58–61

Caloteleia punctata Ashmead, 1894: 218, 221 (original description. Keyed); Ashmead 1900: 327 (distribution).

Ceratoteleia punctata (Ashmead): Kieffer 1908: 121 (generic transfer. Kieffer, in the same publication, placed this name under both *Oxyteleia* and *Ceratoteleia*).

Oxyteleia punctata (Ashmead): Kieffer 1908: 118 (generic transfer); Kieffer 1926: 516 (description, keyed); Johnson 1992: 455 (cataloged).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=5042>



Figures 58–61. *Probaryconus punctatus*, female holotype (USNMMENT01109350) **58** head, mesosoma, metasoma, ventral view **59** head, mesosoma, metasoma, lateral view **60** head and mesosoma, lateral view **61** head, anterior view. Scale bars in millimeters.

Lectotype designation. We here designate specimen USNMENT01109350 as the lectotype female of *Probaryconus punctatus* (Ashmead).

Material examined. Lectotype, female, *Caloteleia punctata*: **SAINT VINCENT AND THE GRENADINES**: Saint Vincent Island, no date, H. H. Smith, USNMENT01109350 (deposited in USNM). Paralectotype, female, *Caloteleia punctata*: **SAINT VINCENT AND THE GRENADINES**: Saint Vincent Island, no date, H. H. Smith, USNMENT01109351 (deposited in USNM).

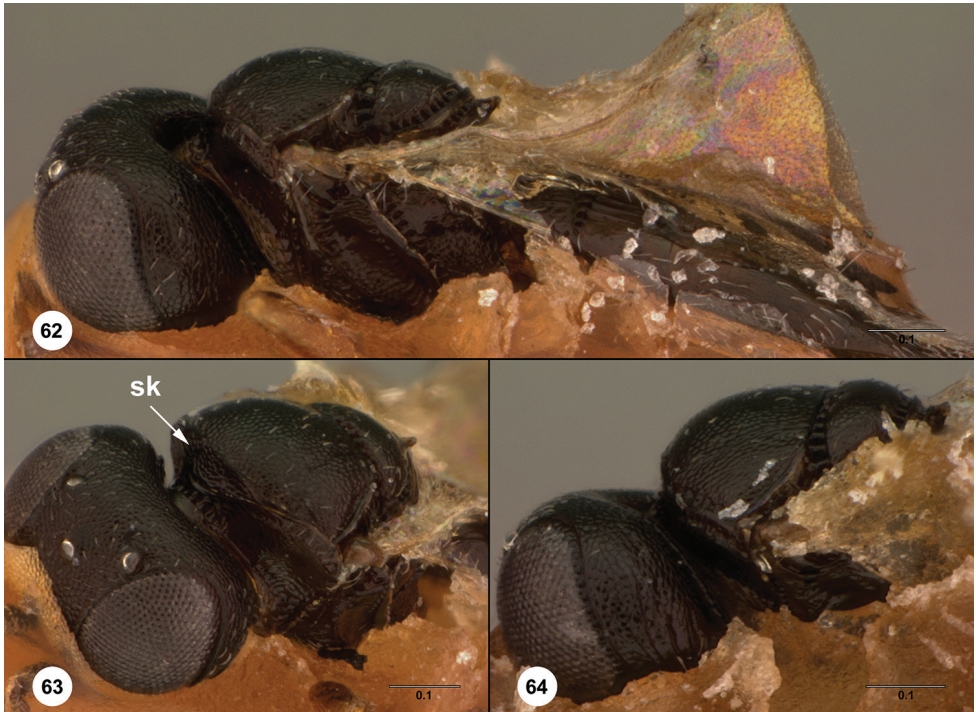
Comments. *Oxyteleia* Kieffer has an Oriental distribution and this species does not have its most obvious diagnostic characters: a bispinose metascutellum and posteriorly directed spines derived from the axillular carinae on the lateral mesoscutellum.

***Psilanteris nigriclavata* (Ashmead), comb. n.**

http://bioguid.osu.edu/xbiod_concepts/3971

Figures 62–64

Opisthacantha nigriclavata Ashmead, 1905: 399 (original description); Kieffer 1926: 398 (description, keyed); Baltazar 1966: 179 (cataloged, type information, distribution).



Figures 62–64. *Psilanteris nigriclavata*, female holotype (USNMENT0089029) **62** head, mesosoma, metasoma, lateral view **63** head and mesosoma, anterodorsal view (sk=skaphion) **64** head and mesosoma, lateral view. Scale bars in millimeters.

Paratrimorus nigriclavatus (Ashmead): Masner and Muesebeck 1968: 41 (type information, generic transfer).

Anteris nigriclavata (Ashmead): Johnson 1992: 337 (cataloged, type information).

Link to distribution map. <http://hol.osu.edu/map-full.html?id=3971>

Material examined. Holotype, female, *O. nigriclavata*: **PHILIPPINES**: Metropolitan Manila Reg., Manila, no date, R. Brown, USNMMENT00989029 (deposited in USNM).

Comments. Placement of this species in the correct genus has undoubtedly been hampered by glue that obscured some of its diagnostic characters. In order to sufficiently assess the specimen it was soaked in ethanol until the glue became soft enough for removal with forceps and a fine pin to observe the skaphion and dorsal head. The specimen was then left in the remaining glue (as seen in Figs 62–64). The presence of a skaphion, single metascutellar spine, and absence of a postmarginal vein enable us to confidently place this species in *Psilanteris*.

***Triteleia bengalensis* (Saraswat), comb. n.**

http://bioguid.osu.edu/xbiod_concepts/3960

Figures 65–69

Alloteleia bengalensis Saraswat, 1978: 18 (original description); Mani and Sharma 1982: 173 (description); Johnson 1992: 335 (cataloged).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=3960>

Material examined. Holotype, female: **INDIA**: Assam St., Jaldhpara, 13.IV–15.IV.1976, M. S. Mani, USNMMENT01109608 (deposited in USNM).

***Trimorus annulicornis* (Ashmead)**

http://bioguid.osu.edu/xbiod_concepts/3467

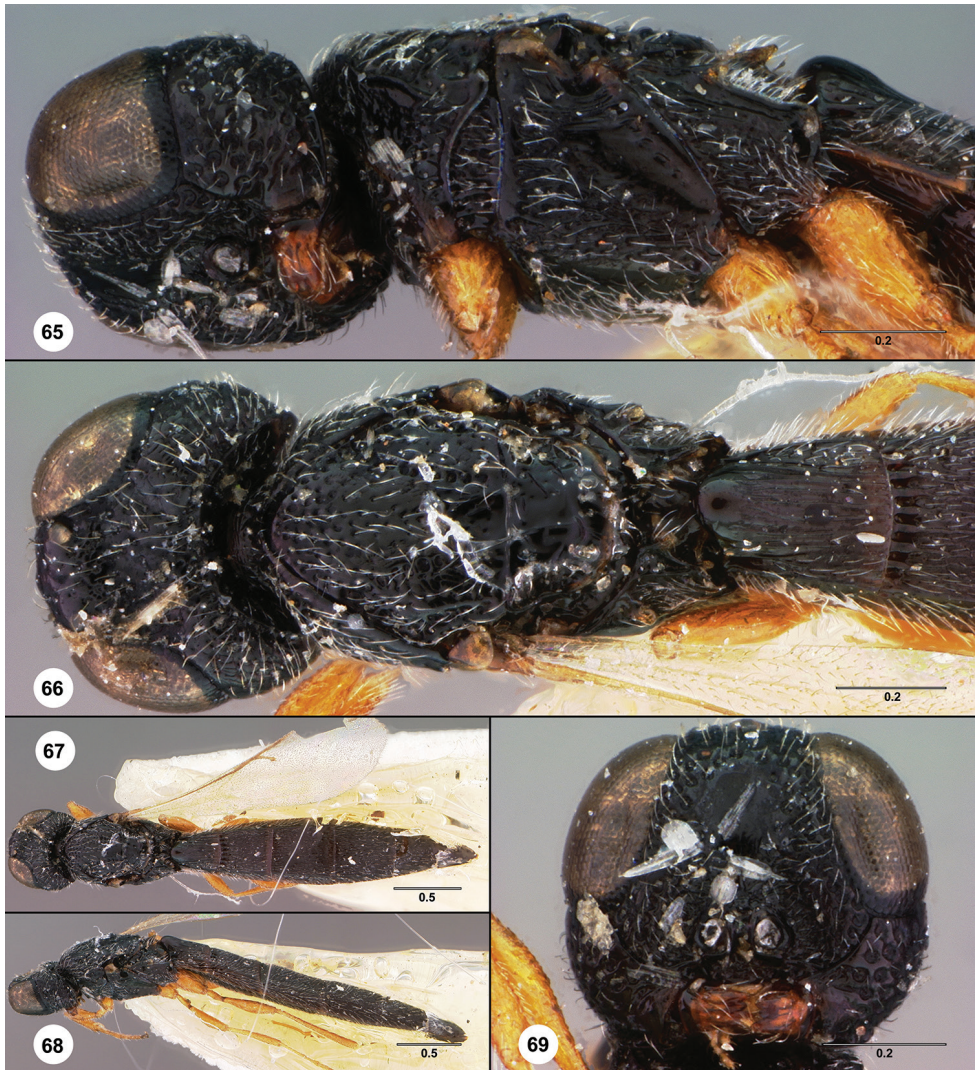
Figures 70–79

Prosacantha annulicornis Ashmead, 1893: 186, 188 (original description. Keyed).

Hoplogryon (*Allogryon*) *annulicornis* (Ashmead): Kieffer 1910: 95 (subgeneric assignment); Kieffer 1926: 221, 231 (description, keyed).

Trimorus annulicornis (Ashmead): Fouts 1948: 100, 129 (generic transfer, type information, keyed); Masner and Muesebeck 1968: 47 (lectotype designation); Johnson 1992: 523 (cataloged, type information).

Trimorus pulchricornis Fouts, **syn. n.**, 1948: 98, 104 (original description. Keyed); Masner and Muesebeck 1968: 56 (type information); Johnson 1992: 546 (cataloged, type information).

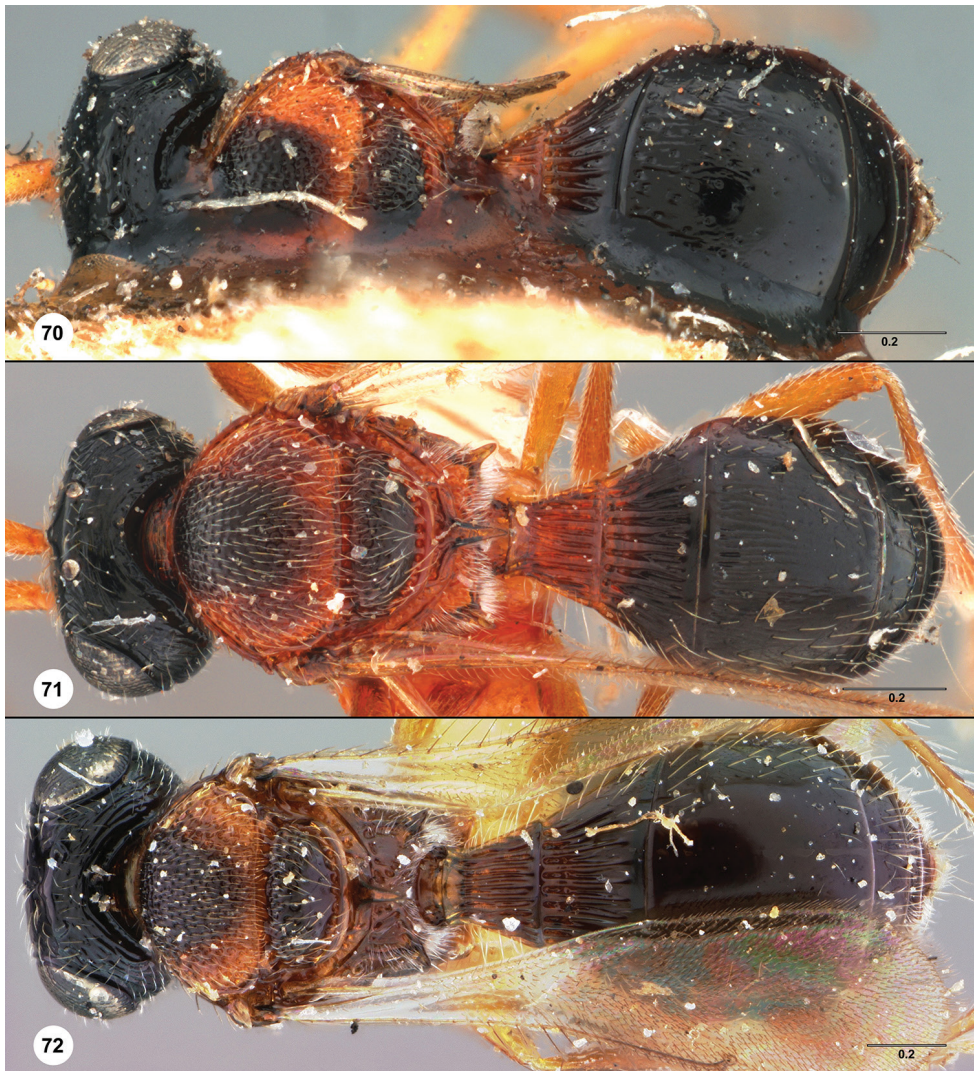


Figures 65–69. *Triteleia bengalensis*, female holotype (USNMENT01109608) **65** head and mesosoma, lateral view **66** head and metasoma, dorsal view **67** head, mesosoma, metasoma, dorsal view **68** head, mesosoma, metasoma, lateral view **69** head, anterior view. Scale bars in millimeters.

Trimorus varius Fouts, **syn. n.**, 1948: 99, 120 (original description. Keyed); Masner and Muesebeck 1968: 59 (type information); Johnson 1992: 555 (cataloged, type information).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=3467>

Material examined. Lectotype, male, *P. annulicornis*: **UNITED STATES:** Washington, 14-X, USNMENT01059271 (deposited in USNM). *Paralectotype:* **UNITED STATES:** 1 unsexed, USNMENT01029368 (USNM). *Other material:* **UNIT-**



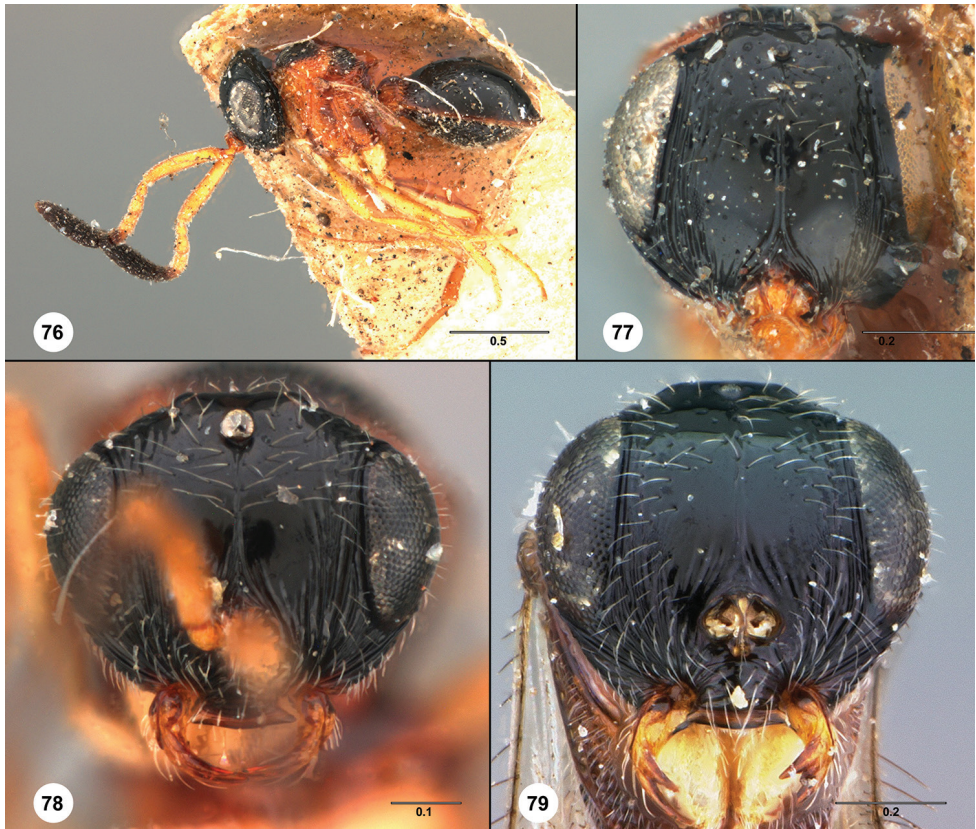
Figures 70–72. **70** *Trimorus pulchricornis*, female holotype (USNMENT01109147), head, mesosoma, metasoma, dorsal view **71** *Trimorus varius*, male holotype (USNMENT01109222), head, mesosoma, metasoma, dorsal view **72** *Trimorus annulicornis*, female (USNMENT01059271), head, mesosoma, metasoma, dorsal view. Scale bars in millimeters.

ED STATES: 6 females, 1 male, USNMENT01109667, USNMENT01197090, USNMENT01197091, USNMENT01197092, USNMENT01197093, USNMENT01197094, USNMENT01197279 (USNM). Holotype of *Trimorus varius*, male: **UNITED STATES:** MD, Montgomery Co., Cabin John, 30.VII.1924, Fouts, USNMENT01109222 (deposited in USNM). Holotype of *Trimorus pulchricornis*, female: **UNITED STATES:** MD, Montgomery Co., Glen Echo, no date, R. M. Fouts, USNMENT01109147 (deposited in USNM).



Figures 73–75. **73** *Trimorus pulchricornis*, female holotype (USNMENT01109147), head, mesosoma, metasoma, lateral view **74** *Trimorus varius*, male holotype (USNMENT01109222), head, mesosoma, metasoma, lateral view **75** *Trimorus annulicornis*, female lectotype (USNMENT01059271), head, mesosoma, metasoma, lateral view. Scale bars in millimeters.

Comments. Fouts's (1948) described *Trimorus pulchricornis* and *T. varius* in the same publication, which also included *T. annulicornis* in his key to species. Even a cursory examination suggests that these three belong to a single species, giving us serious doubts about the quality of Fouts's taxonomy, at least as far as *Trimorus* is concerned. We suspect that many more of Fouts species of *Trimorus* will be treated



Figures 76–79. **76** *Trimorus pulchricornis*, female holotype (USNMENT01109147), head, mesosoma, metasoma, lateral view **77** *Trimorus pulchricornis*, female holotype (USNMENT01109147), head, anterior view **78** *Trimorus varius*, male holotype (USNMENT01109222), head, anterior view **79** *Trimorus annulicornis*, female lectotype (USNMENT01059271), head, mesosoma, metasoma, dorsal view. Scale bars in millimeters.

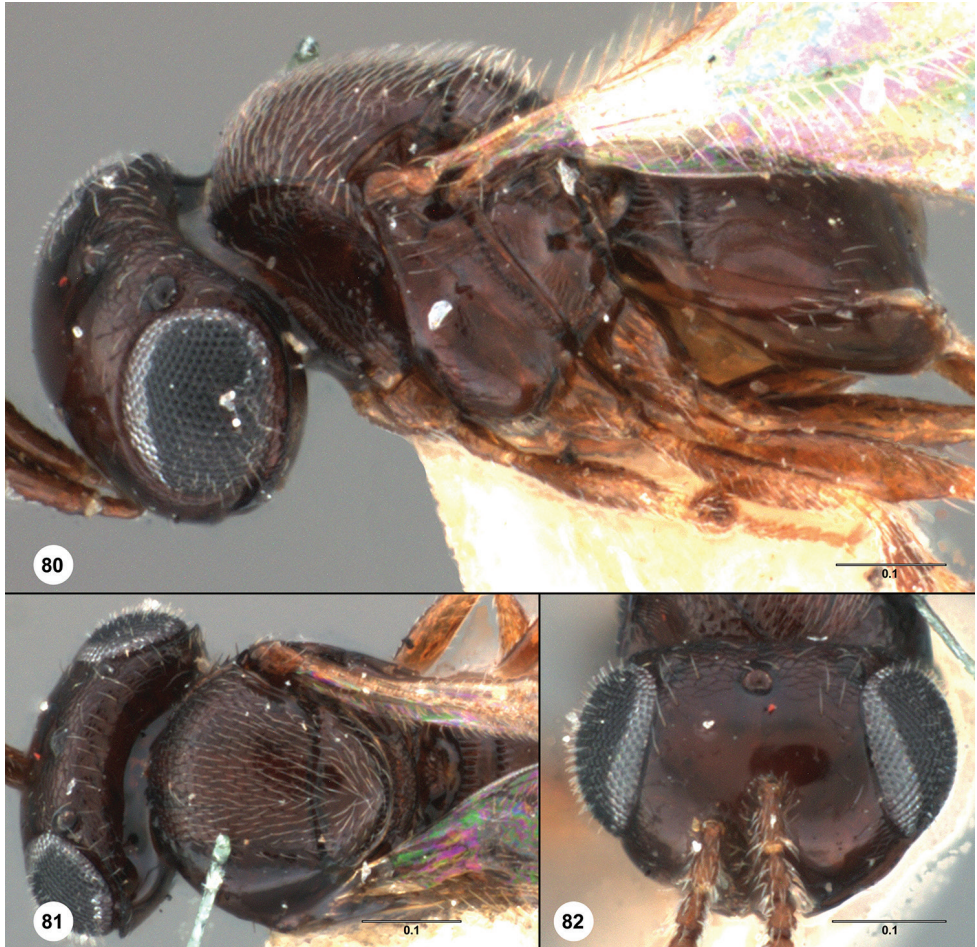
as junior synonyms but will require more thorough study that is beyond the scope of this publication.

Telenomus graptae Howard

http://bioguid.osu.edu/xbiod_concepts/2821

Figures 80–82

Telenomus graptae Howard, 1889: 1896 (original description. Type not found in USNM (Masner and Muesebeck 1968)); Ashmead 1893: 144, 145, 151 (description, keyed); Brues 1916: 545, 546 (description, keyed); Kieffer 1926: 28, 45 (description, keyed); Masner and Muesebeck 1968: 65 (type information); Johnson 1992: 590 (cataloged, type information).



Figures 80–82. *Telenomus graptae*, female neotype (USNMENT01109318) **80** head, mesosoma, metasoma, lateral view **81** head and mesosoma, dorsal view **82** head, anterior view. Scale bars in millimeters.

Link to distribution map. <http://hol.osu.edu/map-large.html?id=2821>

Neotype designation. We here designate specimen USNMENT01109318 to be the neotype female of *Telenomus graptae*: **UNITED STATES:** White Mountains, 6.VIII.1887, reared from egg, (deposited in USNM).

Comments. Masner and Muesebeck (1968) clarified that this specimen could not be the holotype of *T. graptae* because the original male and female syntypes were mounted on slides, both of which are lost. This specimen bears a label “LECTOTYPE ♀ *Telenomus graptae* How. By L. Masner, 1964”, but it is not eligible to be a lectotype because lectotypes must be selected from a syntype series. This specimen is in the best condition among those of this species determined by Howard and thus we consider it to be the best candidate for a neotype.

***Telenomus persimilis* Ashmead**

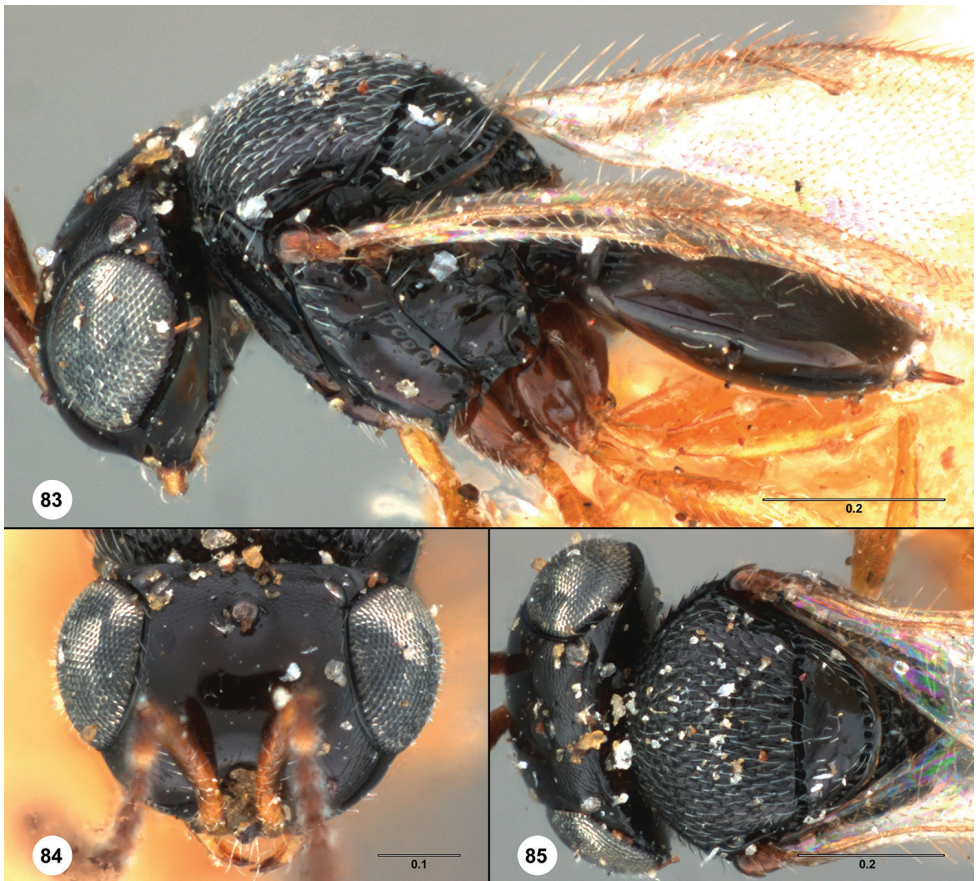
http://bioguid.osu.edu/xbioid_concepts/3018

Figures 83–85

Telenomus persimilis Ashmead, 1893: 143, 150 (original description. Type lost (Masner and Muesebeck 1968). Keyed); Brues 1916: 545, 546 (description, keyed); Masner and Muesebeck 1968: 69 (type information); Johnson 1984: 50, 63 (description, keyed); Johnson 1992: 607 (cataloged, type information).

Microphanurus persimilis (Ashmead): Kieffer 1926: 93, 107 (description, generic transfer, keyed).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=3018>



Figures 83–84. *Telenomus persimilis*, female neotype (USNMENT01109322) **83** head, mesosoma, metasoma, lateral view **84** head, anterior view **85** head and mesosoma, dorsal view. Scale bars in millimeters.

Neotype designation. *Telenomus persimilis* was described from a single specimen, and in the original description Ashmead (1893) stated that he had since examined specimens from Agricultural College, Michigan, that were conspecific. Masner and Muesebeck (1968) stated that these specimens have since been used for identification of this species. We here designate one of the females from this series (USNMENT01109322) as the neotype of this species.

Material examined. *Neotype female:* UNITED STATES: Michigan, 4.VIII.1901, reared from hemipteran egg USNMENT01109322 (USNM)).

Telenomus rileyi Howard

http://bioguid.osu.edu/xbiod_concepts/3067

Figures 86–88

Telenomus rileyi Howard, 1889: 1896 (original description. Type lost (Masner and Muesebeck 1968)); Brues 1916: 545, 548 (description, keyed); Masner and Muesebeck 1968: 70 (type information); Johnson 1992: 611 (cataloged, type information).

Telenomus Rileyi Howard: Ashmead 1893: 144, 156 (description of male, keyed).

Phanurus rileyi (Howard): Kieffer 1926: 51, 58 (description, generic transfer, keyed).

Link to distribution map. <http://hol.osu.edu/map-large.html?id=3067>

Neotype designation. The disappearance of the type series of *Telenomus rileyi* was documented by Masner and Muesebeck (1968). A series with “type” labels was reared from the same host, *Asterocampa clyton* (Boidival & Leconte), as the type series in 1884, and likely was determined as *T. rileyi* by Howard. We here designate a female from this series (OSUC 115283) to be the neotype specimen

Material examined. *Neotype female:* UNITED STATES: IL, Livingston Co., Fairbury, III-1884 (OSUC 115283 (USNM)).

Acknowledgments

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Figures 86–88. *Telenomus riley*, female neotype (OSUC 115283) **86** head, mesosoma, metasoma, lateral view **87** head, anterior view **88** head and mesosoma, dorsal view. Scale bars in millimeters.

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Supplementary material I

Primary type specimens of Platygastroidea in USNM

Authors: E. J. Talamas, J. Thompson, A. Cutler, S. Fitzsimmons Schoenberger, A. Cuminale, T. Jung, N.F. Johnson, A.A. Valerio, A. B. Smith, V. Haltermann, E. Alvarez, C. Schwantes, C. Blewer, C. Bodenreider, A. Salzberg, P. Luo, D. Meislin, M.L. Buffington
 Data type: Microsoft Excel spreadsheet

Explanation note: This table contains a list of all primary types of Platygastroidea in USNM. This list includes paratypes and paralectotypes that were photographed to supplement images of primary types that are incomplete or damaged.

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Supplementary material 2

Non-primary type specimens of Platygastroidea in USNM

Authors: Authors: E. J. Talamas, J. Thompson, A. Cutler, S. Fitzsimmons Schoenberger, A. Cuminale, T. Jung, N.F. Johnson, A.A. Valerio, A. B. Smith, V. Haltermann, E. Alvarez, C. Schwantes, C. Blewer, C. Bodenreider, A. Salzberg, P. Luo, D. Meislin, M.L. Buffington
 Data type: Microsoft Excel spreadsheet

Explanation note: This table contains a list of species and specimens in USNM that are determined to species, but not represented by primary types, and for which images are publicly available.

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