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Monograph

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Still counting: new records, nomenclatural notes, and three new species of Phaeogenini (Hymenoptera, Ichneumonidae, Ichneumoninae) from the Afrotropical region

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[4]urn:lsid:zoobank.org:author:7CCD166F-F1FA-43DA-B582-4E84EAF59AD1
[5]urn:lsid:zoobank.org:author:C1DC90BF-047B-46BE-AA74-3842FDEEB576

Abstract. A synthesis of the Phaeogenini occurring in the Afrotropical region is provided. Three species are newly described: *Centeterichneumon nambi* Dal Pos, Diller & Di Giovanni sp. nov. from Uganda, *Chauvinia ganota* Claridge sp. nov. from Kenya, and *Kibalus nonnaritae* Dal Pos & Di Giovanni sp. nov. from Uganda. *Heterischnus mfongosi* Rousse & van Noort, 2013 is newly recorded for Kenya and Tanzania and the male of the species is diagnosed for the first time. Also, the female of *Arearia oxymoron* Rousse & van Noort, 2013 is diagnosed for the first time from one of the paratype localities. *Lusius tenuissimus* (Heinrich, 1938) and *Chauvinia nyanga* Rousse & van Noort, 2013 are recorded for the first time for Uganda and Kenya, respectively. In addition, new localities are given for *Chauvinia nitida* (Heinrich, 1938), *Heterischnus olsoufieffi* (Heinrich, 1938) and *Hoplophaeogenes curticornis* Heinrich, 1938. A new combination, *Nesostenodontus mkomazi* (Rousse & van Noort, 2013) comb. nov., is proposed to accommodate *Heterischnus mkomazi*. An updated key to the Afrotropical genera of Phaeogenini and keys to the Afrotropical species of the genera *Arearia* Seyrig, *Centeterichneumon* Heinrich, *Chauvinia* Heinrich, *Heterischnus* Heinrich, *Hoplophaeogenes* Heinrich, *Kibalus* Rousse, van

Noort & Diller, and *Lusius* Tosquinet are provided. Updated online Lucid keys to genera and species are available from http://www.waspweb.org.

Keywords. Darwin wasps, taxonomy, distribution, nomenclature, Africa.

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Introduction

With more than 44 genera and 500 species worldwide, Phaeogenini Förster, 1869 is a relatively large monophyletic tribe of the subfamily Ichneumoninae Latreille, 1802 (Hymenoptera Linnaeus, 1758, Ichneumonidae Latreille, 1802) (Diller & Shaw 2014; Yu *et al.* 2016; Santos *et al.* 2021). Members of the tribe are usually of small size and characterized by small, circular propodeal spiracles, petiole usually not flattened, anterior margin of propodeum with medial protuberance, and a convex clypeus in lateral view (Tereshkin 2009; Santos *et al.* 2021).

The biology of Phaeogenini is fairly homogeneous, with the wasps usually attacking various microlepidopteran pupae or prepupae (e.g., Gelechiidae Stainton, 1854, Plutellidae Guenée, 1845) (Selfa & Diller 1994; Diller & Shaw 2014; Yu *et al.* 2016; Broad *et al.* 2018). However, Shaw & Bennett (2001) reported an exception in the genus *Colpognatus* Wesmael, 1845, which attacks Crambidae (Lepidoptera Linnaeus, 1758) at the larval stage, subsequently inducing mummification of the hosts before emerging from the prepupa. As noted by Broad *et al.* (2018), even though some host associations are known and corroborated, the biology of most of the species is poorly understood.

In the Afrotropical region, the tribe is composed of 11 genera, 25 species, and 1 subspecies (Yu *et al.* 2016). With the exceptions of the species *Dicaelotus cariniscutis* (Cameron, 1906) described by Cameron (1906) from South Africa, and *Heterischnus africanus* (Heinrich, 1936) described by Heinrich (1936) from Kenya, the very first comprehensive assessment of the African Phaoegenini fauna was carried out by Heinrich (1938), with his work on the Malagasy Ichneumoninae. In his monograph, Heinrich described 6 new species and proposed 3 new genera, namely *Aethiopischnus* Heinrich, 1938 (now a synonym of *Heterischnus* Wesmael, 1859), *Chauvinia* Heinrich, 1938, and *Hoplophaeogenes* Heinrich, 1938, and provided a dichotomous key to all the species of the entire subfamily for the region. Subsequently, Seyrig (1952) added a new monotypic genus to the list, *Arearia* Seyrig 1952, wrongly placing it into the subfamily Cryptinae (later moved into Ichneumoninae by Townes 1971: 233).

After these works, the tribe remained unstudied for years. In fact, the so-far biggest monograph series on Afrotropical Ichneumoninae by Heinrich (1967) completely ignored the tribe Phaeogenini, while Townes & Townes (1973) only provided a species catalogue and a key to the genera. It was Diller & Schönitzer (1999), 47 years later, who, focusing on the genus *Heterischnus*, described a new species, *Heterischnus krausi* Schönitzer, 1999, while a few years later, Rousse *et al.* (2013) added a new genus, *Kibalus* Rousse, van Noort & Diller, 2013, and 12 new species. The latter is, so far, the latest and most comprehensive treatment of the tribe for the Afrotropical region.

The purpose of the current contribution is to provide a synthesis of the tribe for the Afrotropical region. Three new species of Phaeogenini are described: *Centeterichneumon nambi* Dal Pos, Diller & Di Giovanni sp. nov. from Uganda, *Chauvinia ganota* Claridge sp. nov. from Kenya, and *Kibalus*

nonnaritae Dal Pos & Di Giovanni sp. nov. from Uganda. New and interesting records are presented, accompanied by distributional maps. The first male of *Heterischnus mfongosi* Rousse & van Noort, 2013 and the first female of *Arearia oxymoron* Rousse & van Noort, 2013 are illustrated and diagnosed. The generic placement of *Heterischnus mkomazi* Rousse & van Noort, 2013 is discussed, and the new combination *Nesostenodontus mkomazi* (Rousse & van Noort, 2013) comb. nov. is proposed. Taxonomic and nomenclatural remarks are provided where necessary. A key to the Afrotropical genera is also provided and, for each genus treated, a key to the species is presented to aid identification. Images and online interactive Lucid identification keys to the Afrotropical Phaeogenini are available at WaspWeb (http://www.waspweb.org) (van Noort 2023).

Material and methods

Photographs

An OPTIKA SZM-2 dissecting stereo microscope was used for observation and study. All photographs besides those of *Chauvinia ganota* Claridge sp. nov. and *Chauvinia nyanga* Rousse & van Noort, 2013 were taken with a Canon Eos 7D, lens Canon MP-E 65 mm f/2.8 1–5 × Macro and Canon Macro Lens EF 100 mm, using Zerene Stacker software ver. 1.04 for the stacking. Images were enhanced using Photoshop ver. 23.2.2.

Photographs of *Chauvinia ganota* sp. nov. and *Chauvinia nyanga* were taken with a Canon 1200D body, a Canon EF-S 60 mm macro lens for habitus images and a Venus Optics Laowa 25 mm Ulta-Macro lens for higher magnification images. Image stacking was performed with Helicon Focus 7.

All images included in this paper, as well as additional images and online interactive keys to species are available on WaspWeb (http://www.waspweb.org) (van Noort 2023).

Identification keys

Lucid pathway and Lucid matrix keys were developed using Lucid Builder ver. 4.0.23. Character matrices were generated and edited using Microsoft Excel; matrices were then used as input into Lucid matrix key production (Penev *et al.* 2009). The online interactive keys were produced using Lucid, meeting the requirements of publishing both static and dynamic interactive keys under an open access model (Penev *et al.* 2009). These keys were illustrated using high quality annotated images, highlighting diagnostic characters. Online identification keys are presented in two different formats on WaspWeb: traditional static dichotomous keys where a choice needs to be made at each key couplet to continue, which are also presented as an interactive Lucid pathway (dichotomous) key; and Lucid matrix keys where relevant states from multiple character features can be selected independently until identification is achieved. For more information concerning Lucid keys visit http://www.lucidcentral.org.

The LIF3 file for the online Lucid matrix key to all Afrotropical species of Phaeogenini is provided as a supplementary file (Supp. file 1). Lucid Interchange Format ver. 3 (LIF3) files are XML based files that store all the Lucid3 key data, allowing exchange of the key with other key developers such as Intkey (DELTA) or MX. The provision of this LIF3 data set allows future workers to edit the key and to add newly described taxa. The data file for the published key that is stored on the publisher's website and in e-archives has the rights of 'first publication' identified by its bibliographical data, location, and citation (Sharkey *et al.* 2009). The concept of publication, citation, preservation, and re-use of data files to interactive keys under the open access model is detailed in Penev *et al.* (2009, 2012).

Mapping

Distribution maps were produced using QGIS ver. 3.20 with cartographic boundary files produced by Natural Earth (http://www.naturalearthdata.com) and Map Library (http://www.maplibrary.org).

List of depositories

CAS = California Academy of Sciences, San Francisco, California, USA (Robert Zuparko)
DDPC = Davide Dal Pos private collection, Orlando, FL, USA
EMUS = Entomology Museum, Utah State University, Logan, Utah, USA (David Wahl)
FDG = Filippo Di Giovanni private collection, Siena, Italy
MRAC = Museum royal de l'Afrique centrale, Tervuren, Belgium (Eliane de Coninck)
MZPW = Polish Academy of Science, Museum and Institute of Zoology, Warsaw, Poland (Dawid Schimrosczyk)
NHMUK = The Natural History Museum, London, UK (Gavin Broad)
NHMD = Natural History Museum of Denmark, Copenhagen, Denmark (Lars Vilhelmsen)
SAMC = Iziko South African Museum, Cape Town, South Africa (Simon van Noort)
TUZ = Natural History Museum of Tartu University, Tartu, Estonia (Villu Soon)
ZMHB = Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (Franck Koch)
ZSM = Zoologische Staatssammlung München, Munich, Germany (Stefan Schmidt)

Data of examined material

Label information for the type specimens is reported verbatim, using the following conventions: / = different lines; // = different labels; italic = handwriting. For non-type specimens, names of collecting localities have been standardized.

Treatment of taxa

The overall morphological terminology follows the Hymenoptera Anatomy Ontology (HAO, Yoder *et al.* 2010) and Broad *et al.* (2018).

For each genus, a comparative diagnosis is compiled based on the relevant literature, namely Heinrich (1938) and Rousse *et al.* (2013).

For each species, type information, material examined, and relevant comments are provided. Type localities are reported as they appeared in the original publication with the addition of the country of origin. Moreover, a complete list of synonyms is listed below the valid species-level name, together with the original combination as well as subsequent combinations. Unavailable names are identified in square brackets (as in Sforzi & Sommaggio 2021). For each name, an exhaustive list of the known references is provided with indications of their contribution.

The distribution for Madagascar follows the official division, which recognizes 23 regions ("*faritra*") instead of the former six provinces (INSTAT 2010).

Results

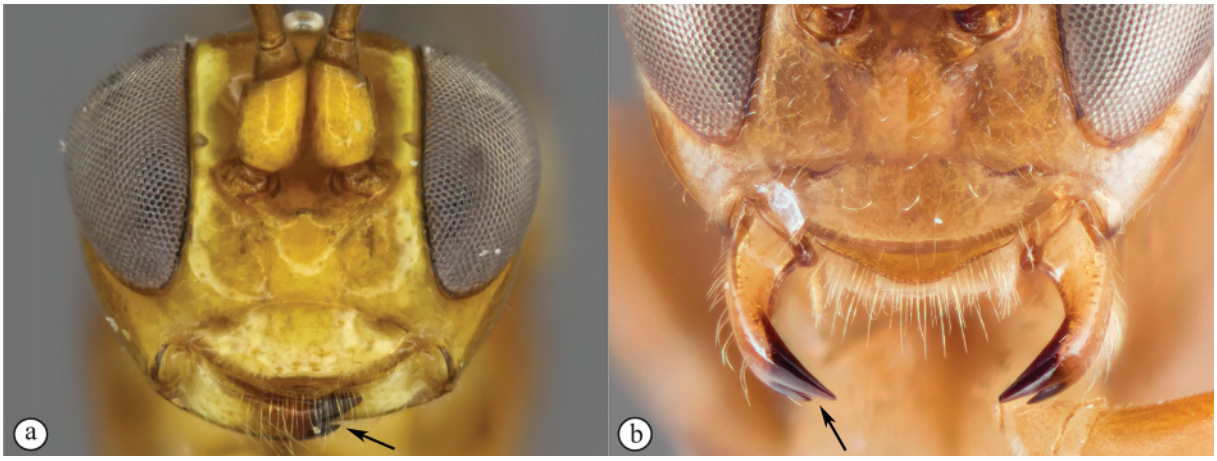
Key to the genera of Afrotropical Phaeogenini Förster, 1869

The key has been updated to include *Aethecerus* and *Centeterichneumon*, not considered in the previous key by Rousse *et al.* (2013). Even though *Nesostenodontus* belongs in the tribe Ichneumonini, the genus is also included here to facilitate the identification of the only species occurring in the Afrotropical region, *N. mkomazi* (Rousse & van Noort, 2013) comb. nov.

1. Clypeus irregularly emarginate, with a median notch (A); mandibles unidentate (B); genae strongly swollen (A, B, C); gastrocoeli obsolete (C); propodeum lacking distinct carinae (C)..... ..... ***Nesostenodontus*** Cushman, 1922 (Ichneumonini)

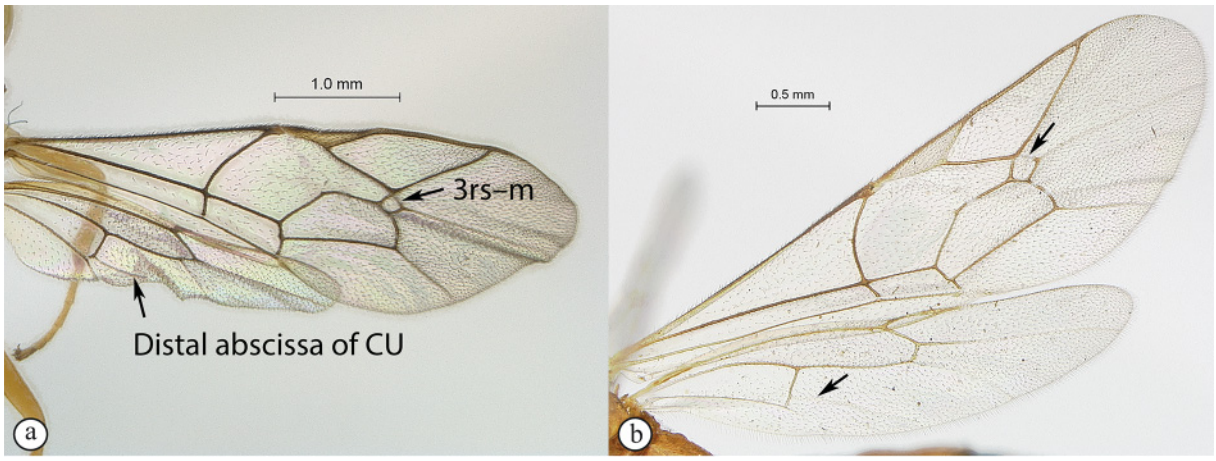
– Clypeus either lenticular (e.g., Figs 4B, 21B, 23B) or squared (a), never irregularly emarginated or with a median notch; mandibles either bidentate (b) or unidentate (Figs 11C, 14B); genae various, usually not as strongly inflated (e.g., Figs 6C, 19A, 25A); gastrocoeli and thyridia various, from obsolete (Fig. 14C) to distinctly present (c, Fig. 26B); propodeum with either distinct (c, Fig. 23C), partial (Fig. 6B) or indistinct carinae (Fig. 19B)..... 2 (Phaeogenini)

2. Mandibles unidentate, falcate (A, B)..... 3

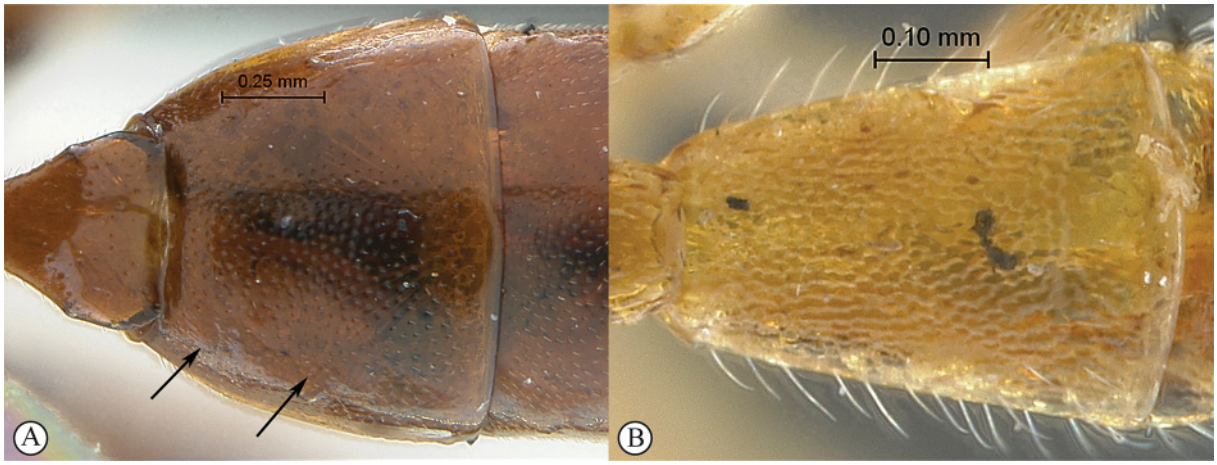


– Mandibles bidentate, shape various (a, b) 4

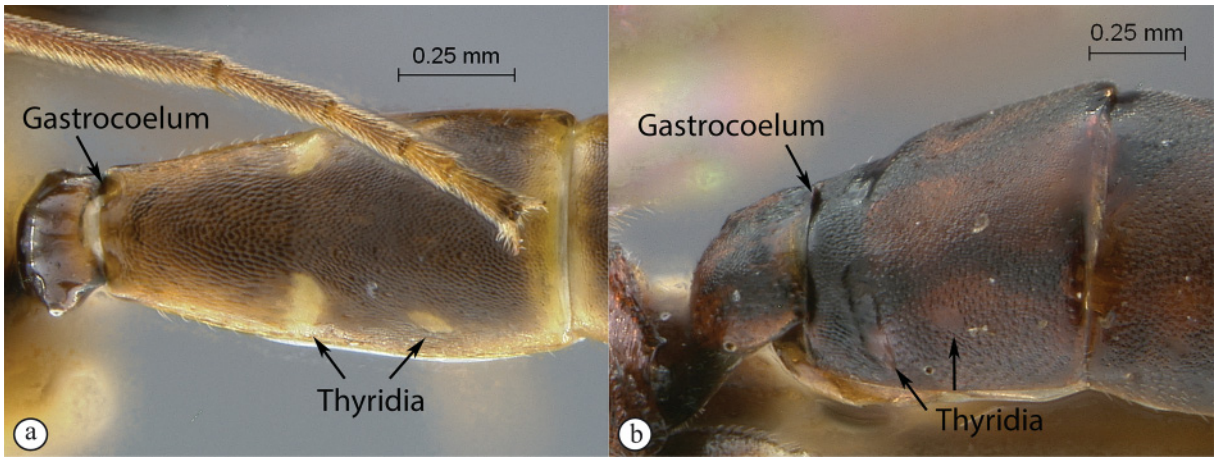
3. Areolet open, 3*rs-m* absent (A); hind wing with distal abscissa of *CU* absent (B)..... .....***Lusius*** Tosquinet, 1903



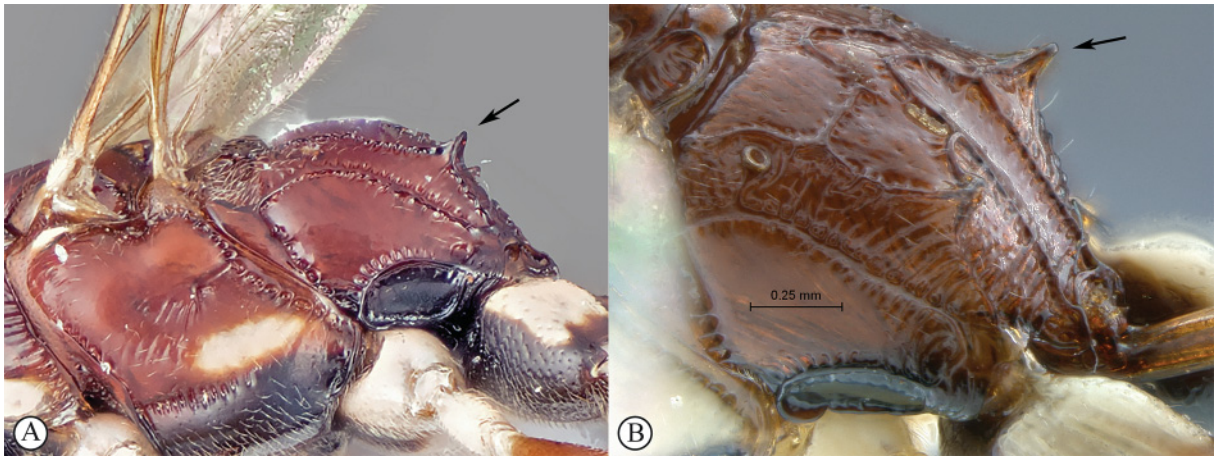
– Areolet closed, 3*rs-m* present (a), sometimes non-tubular (b); hind wing with distal abscissa of *CU* present (a), sometimes very faint (b)..... ***Heterischnus*** Wesmael, 1859



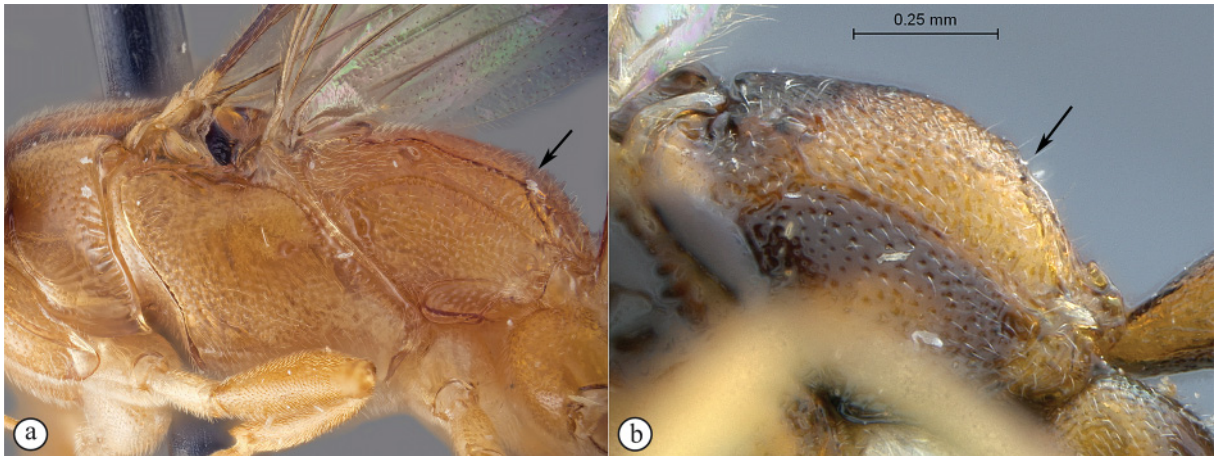
4. Metasomal tergite 2 with gastrocoeli and thyridia totally absent (A, B) 5



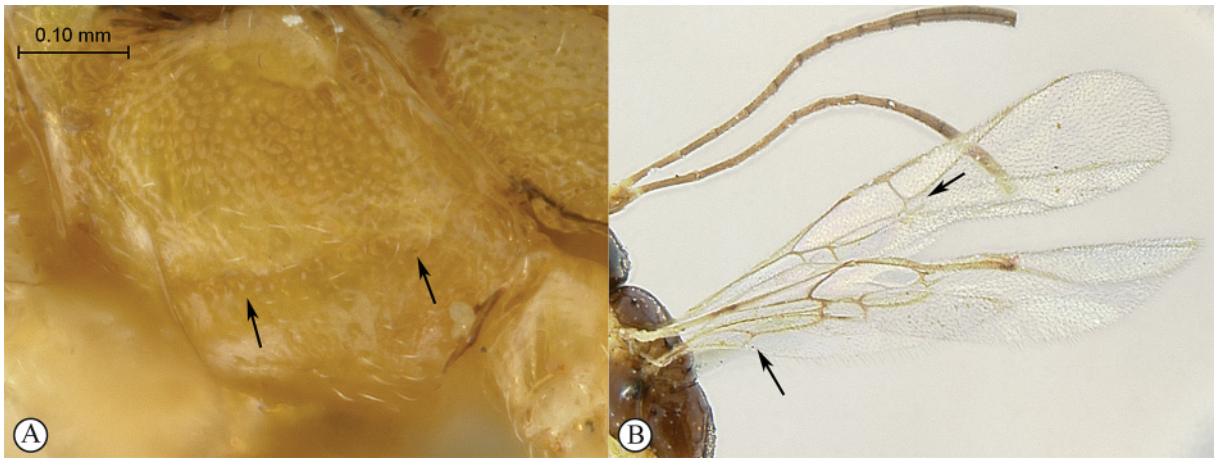
– Metasomal tergite 2 with gastrocoeli present, and thyridia differentiated (a, b) 8



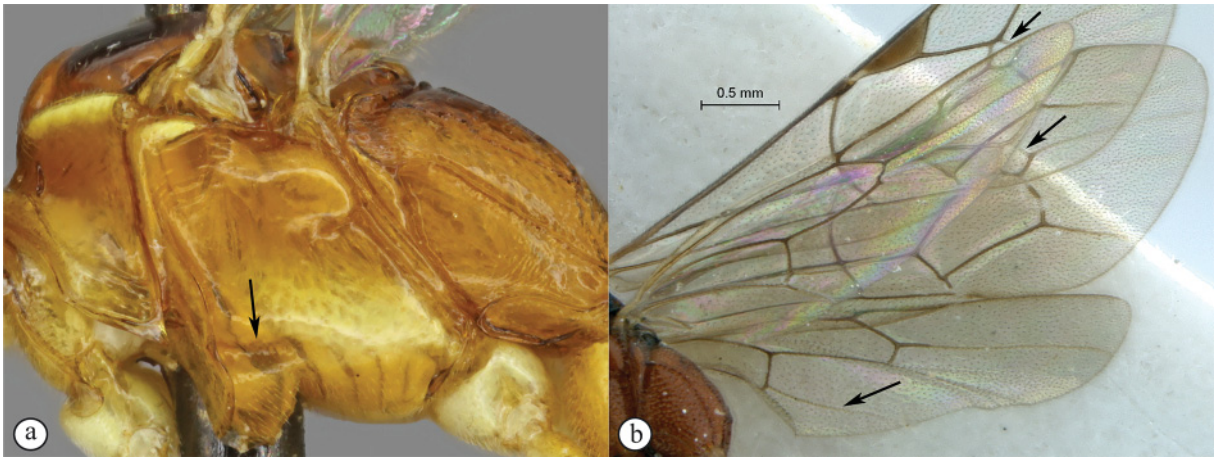
5. Propodeal apophyses strong, spine-like, at least as long as basally wide (A, B) .....
..... ***Hoplophaeogenes*** Heinrich, 1938



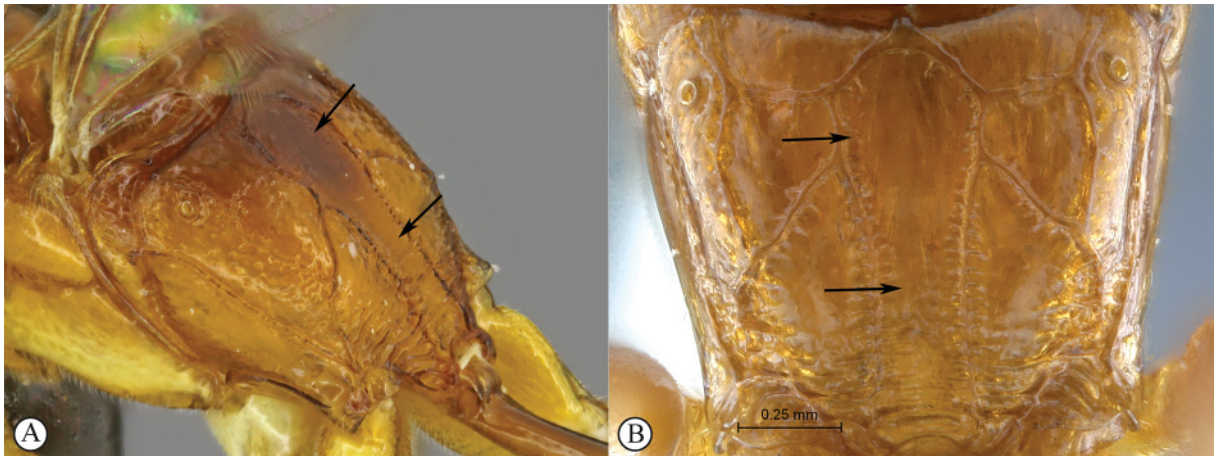
– Propodeum without spine-like apophyses, or apophyses hardly distinct (a, b)..... 6



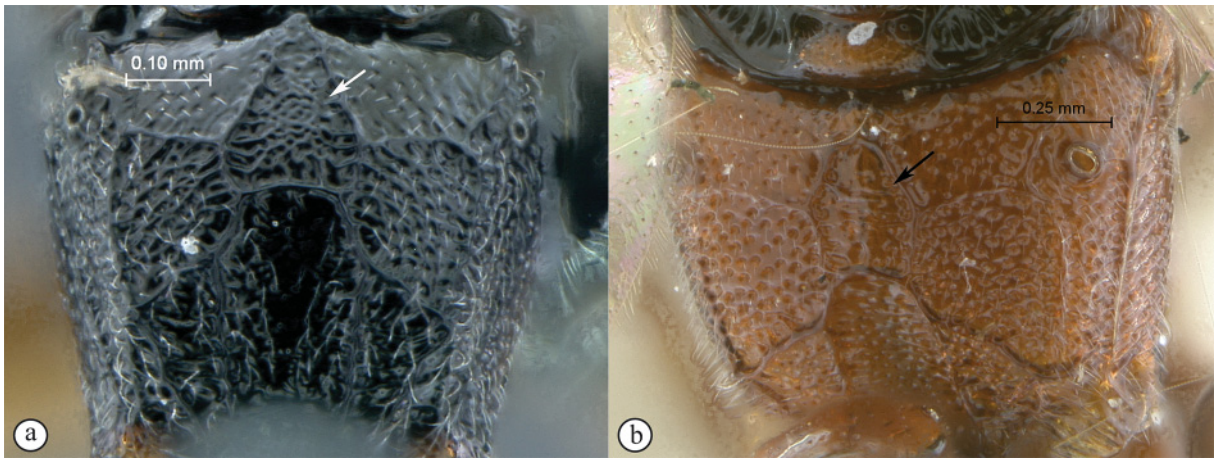
6. Sternaulus deep and long, reaching beyond mid-length of mesopleuron (A); areolet open, 3*rs-m* absent (B); hind wing with distal abscissa of *CU* absent (B) ..... ***Arearia*** Seyrig, 1952



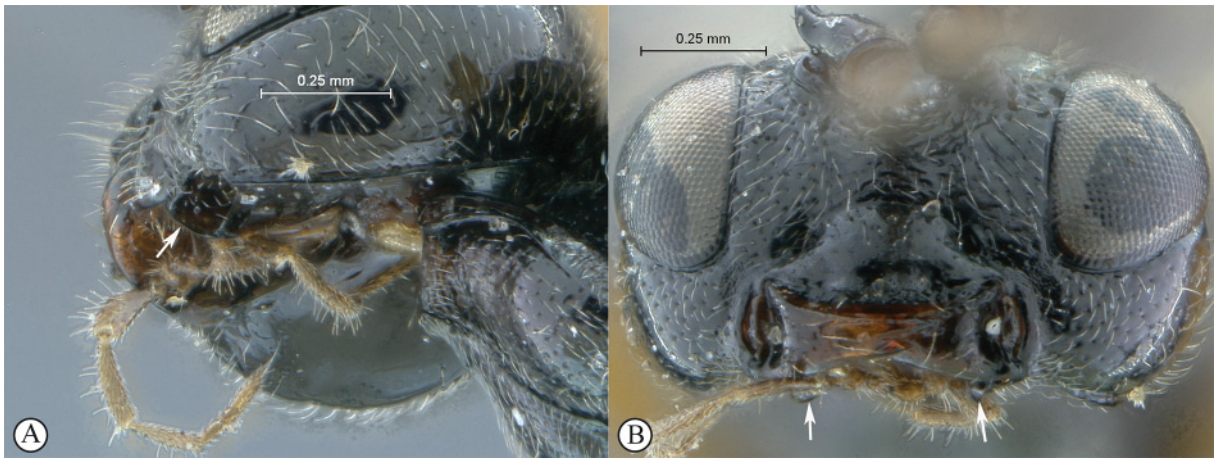
– Sternaulus absent or at least much weaker and shorter (a); areolet closed, 3*rs-m* present (b); hind wing with distal abscissa of *CU* present (b), sometimes non pigmented 7



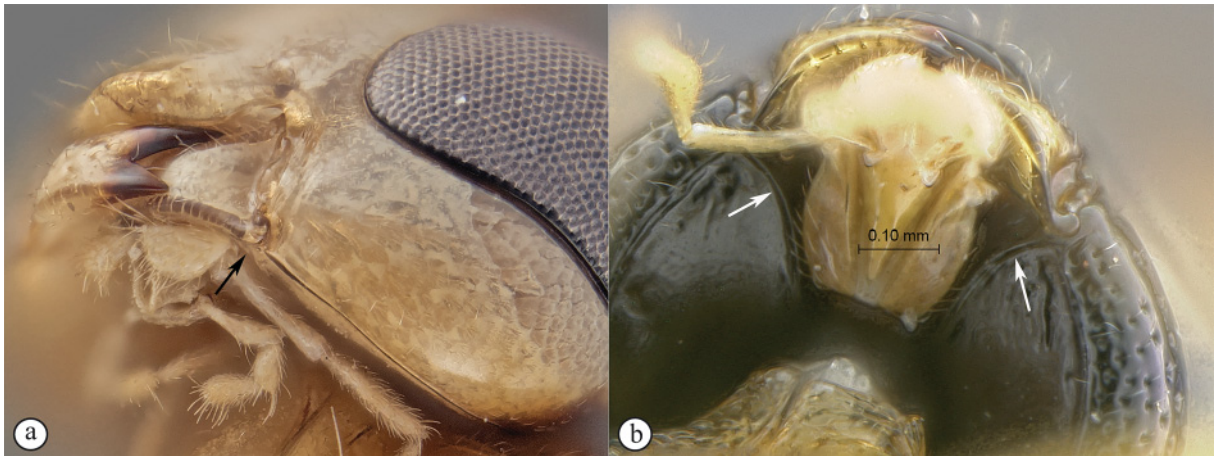
7. Propodeum smooth, unsculptured (at least anteriorly) with median areas fused into one single mid-longitudinal area (A, B) ..... ***Chauvinia*** Heinrich, 1938



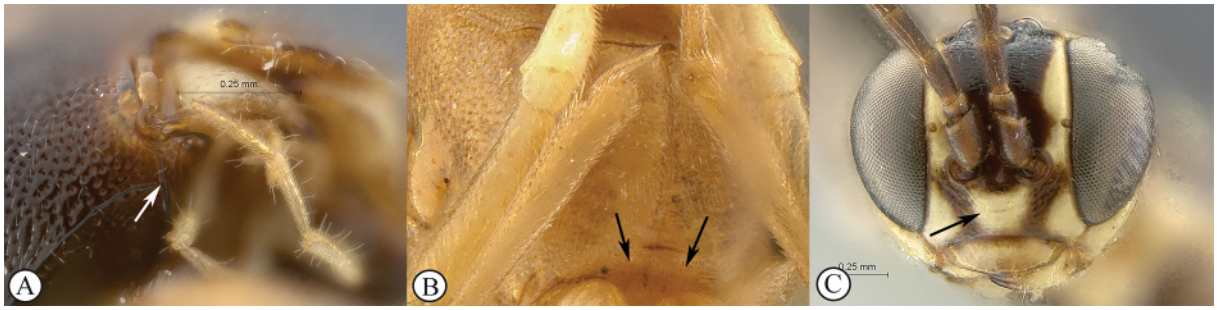
– Propodeum punctate, or coarsely sculptured with area superomedia delimited (a, b) .... ***Dicaelotus*** Wesmael, 1845



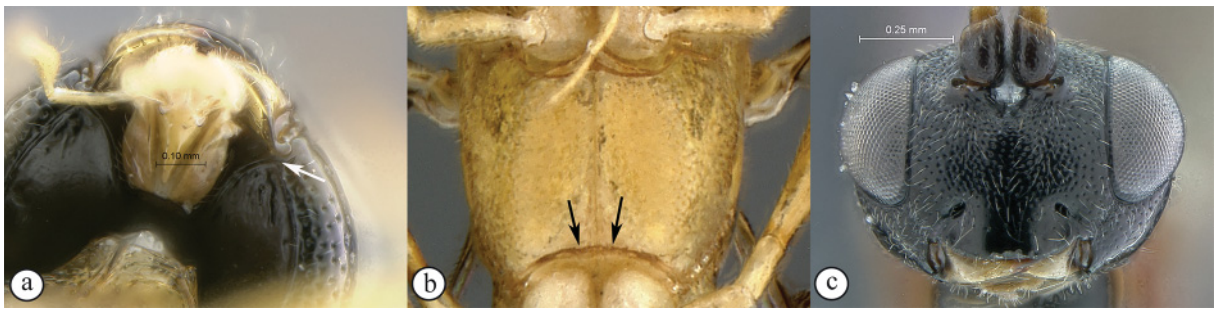
8. Hypostomal carina in female elevated into a flange and strongly curved or bent at its apex to join the ventral base of the mandible (A, B); in males, the ventral part of the genae strongly excavate ..... ***Aethecerus*** Wesmael, 1845 (only Afrotropical species: *A. foveolatus* Gregor, 1940)



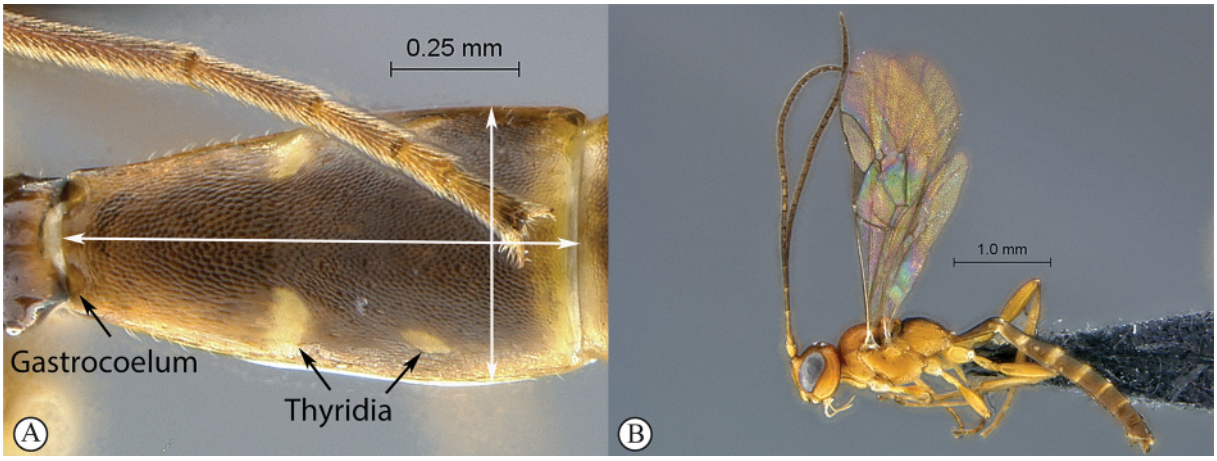
– Hypostomal carina in female normal, not elevated into a flange nor strongly curved or bent (a, b); in males, the ventral part of the genae not strongly excavate (Fig. 25C) 9



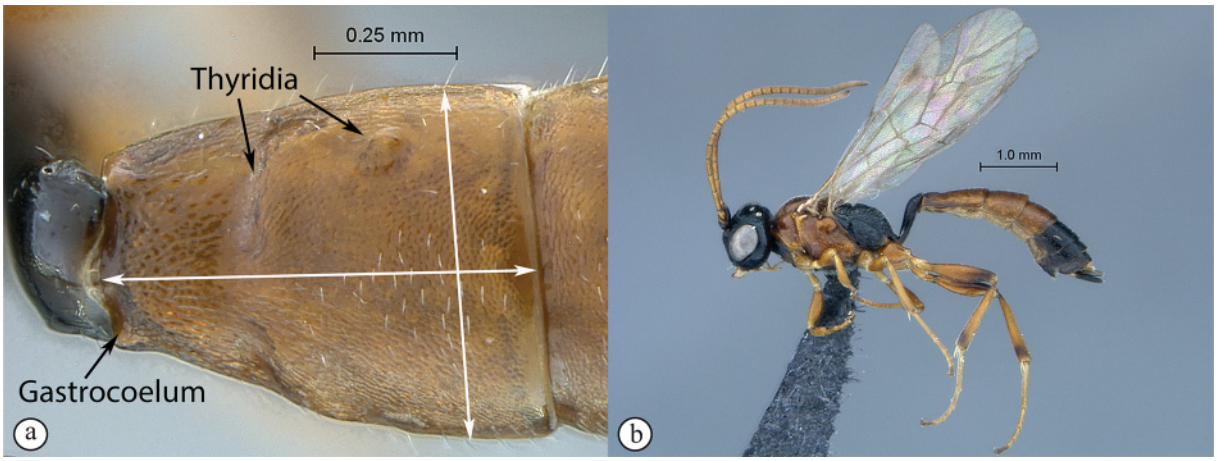
9. Hypostomal and occipital carinae joining distinctly above mandibular base (A); posterior transverse carina ventrally widely interrupted in front of mid coxae (B); face short and transverse with a strong mid-longitudinal bulge, laterally limited by grooves (C) ..... ***Tycherus*** Förster, 1869



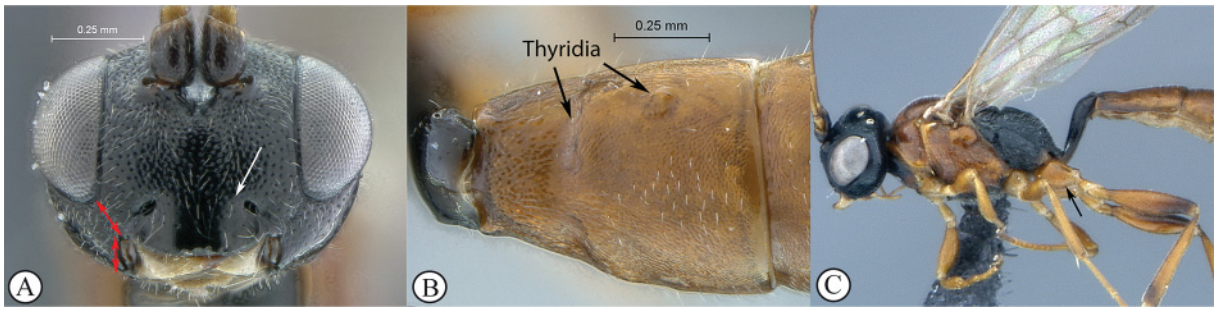
– Hypostomal and occipital carinae joining at mandibular base (a); posterior transverse carina complete (b); face quadrate without distinct mid-longitudinal bulge (c) 10



10. Metasomal tergite 2 elongate, more than 2× as long as apically wide (A); thyridia shallow and lighter than remainder of tergite (A); flagellum slender, longer than fore wing (B) .... ***Kibalus*** Rousse, van Noort & Diller, 2013



– Metasomal tergite 2 stout, less than 1.5× as long as apically wide (a); thyridia strongly marked and concolorous with remainder of tergite (a); flagellum shorter than or as long as fore wing (b) 11



11. Clypeus not distinctly separated from face (epistomal sulcus obsolete) (A); median field of face indistinct (A); malar space long, > 0.5× the base of mandible (A); thyridia strongly marked (B); hind coxa of female without a longitudinal carina/tooth on the ventral side (C) .... ***Diadromus*** Wesmael, 1845 (only Afrotropical species: *D. collaris* (Gravenhorst, 1829))

– Clypeus well separated from face (epistomal sulcus distinct) (a); median field of face distinct and protruding, delimited by carinae (a); malar space short, < 0.5 × the base of mandible (a); thyridia shallow (b); hind coxa of female with a longitudinal carina/tooth on the ventral side (c) .... ***Centeterichneumon*** Heinrich, 1938

Taxonomy

Class Insecta Linnaeus, 1758
Order Hymenoptera Linnaeus, 1758
Superfamily Ichneumonoidea Latreille, 1802
Family Ichneumonidae Latreille, 1802
Subfamily Ichneumoninae Latreille, 1802
Tribe Phaeogenini Förster,1869

Genus ***Arearia*** Seyrig, 1952

Arearia Seyrig, 1952: 17. Type species: *Arearia paradoxa* Seyrig, 1952, by original designation.

Diagnosis

One of the key features that separates *Arearia* from all the other Afrotropical Phaeogenini is the presence of a deeply impressed sternaulus, extending beyond the mid-length of the mesopleuron. Moreover, the genus can be further distinguished by the combination of the following characters: (1) gastrocoeli and thyridia absent; (2) mandible bidentate; (3) malar space with subocular sulcus present and distinct; (4) areolet open (3*rs*-*m* absent).

Remarks

Seyrig (1952: 17) placed *Arearia* within the subfamily Cryptinae (tribe Stilpnini) due to the very long, deeply impressed sternaulus. Later on, it was transferred to Ichneumoninae by Townes (1971: 233), after examination of the type. So far, the genus occurs only in the Afrotropical region with two species already described: *Arearia oxymoron* Rousse & van Noort, 2013, in South Africa, and *Arearia paradoxa* Seyrig, 1952, in Madagascar (Rousse *et al.* 2013; Yu *et al.* 2016).

Arearia oxymoron Rousse & van Noort, 2013
Fig. 1

Arearia oxymoron Rousse & van Noort in Rousse *et al*., 2013: 17–20 (original description, key).

Arearia oxymoron – Yu *et al*. 2016 (catalogue).

Diagnosis of female

The female of the species is hereby diagnosed for the first time bearing the same label data as one of the male paratypes reported in the original description. Compared to the male, no major differences are

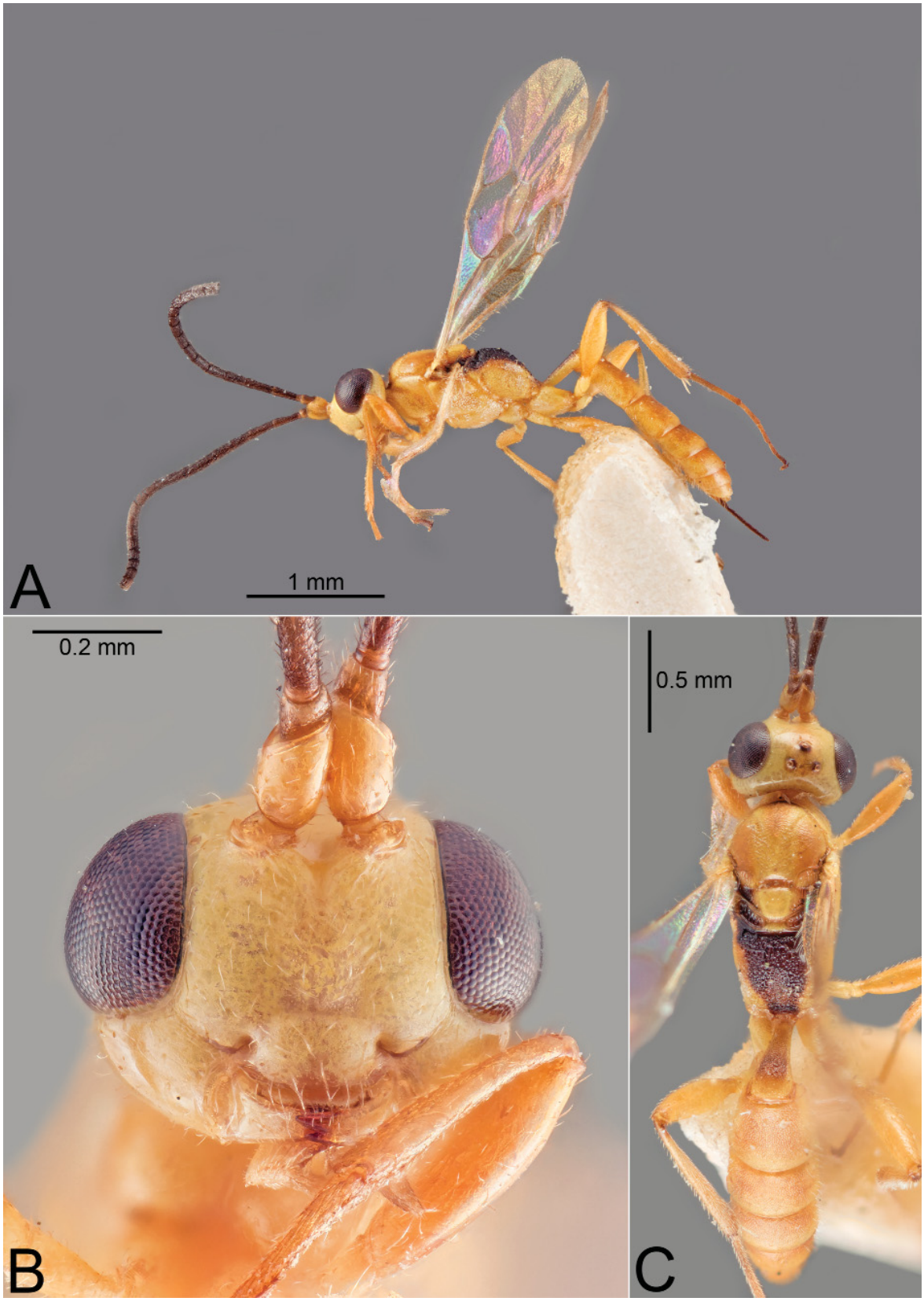


Fig. 1. *Arearia oxymoron* Rousse & van Noort, 2013, ♀ (NHMUK). **A**. Habitus, lateral view. **B**. Head, frontal view. **C**. Habitus, dorsal view.

reported. Body length is approximately 3.4 mm, fore wing length is 2.4 mm. The coloration is identical, with the exception of: (1) petiole dorsally brownish black (except for the postpetiole); (2) propodeum and axillae mostly black. Compared to the female of *Arearia paradoxa*, the ovipositor is strongly projecting, approximately 0.25–0.3 × as long as the length of the metasoma (0.1 × in *A. paradoxa*).

Original type series

Holotype: ♂, by original designation (NHMUK).
Paratypes: 4 ♂♂ (NHMUK).

Material examined

SOUTH AFRICA • 1 ♀; Orange F. State, Harrismith; Feb. 1927; Brit. Mus. 1927–117; R.E. Turner leg.; D. Dal Pos det.; NHMUK.

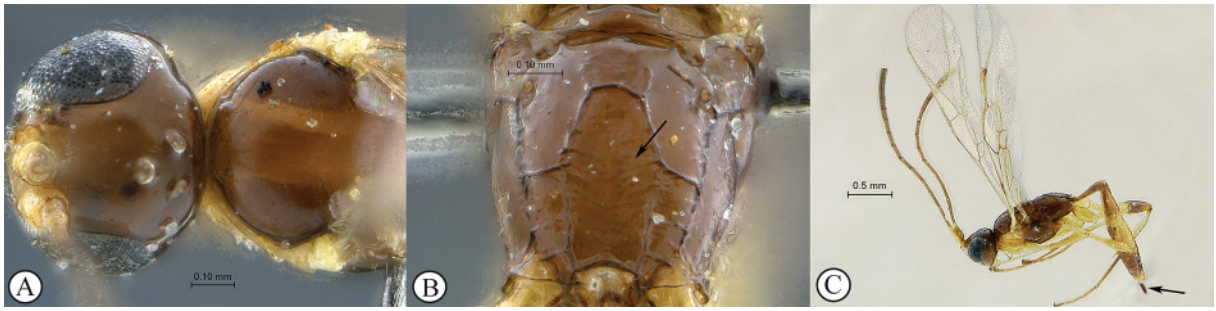
Type locality

South Africa: Cape Province, Somerset East.

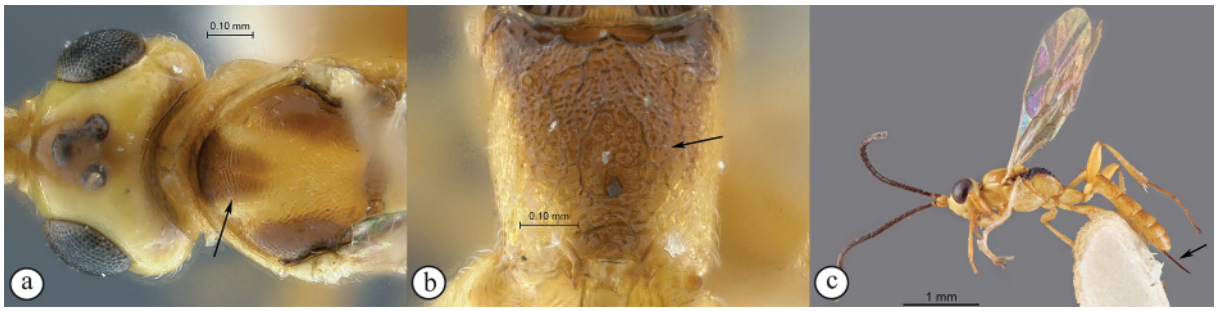
Distribution

South Africa (Rousse *et al.* 2013).

Key to the species of *Arearia* Seyrig, 1952 (from Rousse *et al*. 2013)



1. Mesoscutum and propodeum smooth (A); mesosoma mostly brown with pronotum yellow (A, C); propodeal carination developed, with area superomedia and petiolaris fused (B); ovipositor 0.1 × as long as metasoma (C); Madagascar ..... ***A. paradoxa*** Seyrig, 1952



– Mesoscutum transversely striate (a); mesosoma mostly yellow, dorsally black (a, c); propodeal carination indistinct, overall coarsely reticulate (b); ovipositor 0.25–0.3 × as long as metasoma (c); South Africa ..... ***A. oxymoron*** Rousse & van Noort, 2013

Genus ***Centeterichneumon*** Heinrich, 1938

Centeterichneumon Heinrich, 1938: 129. Type species: *Centeterichneumon denticoxatus* Heinrich, 1938, by original designation and monotypy.

Diagnosis

According to Heinrich (1938: 22) the genus *Centeterichneumon* is characterized by having "*Clypéus largement arrondi. Spiracules du propodéum ovales chez les grands exemplaires, ronds chez les petits. Hanches III avec une petite dent chez la* ♀ [= *Clypeus broadly rounded. Propodeum spiracles oval in large specimens, round in small ones. Coxae III with a small tooth in* ♀]." However, Heinrich's (1938) diagnosis is insufficient to separate *Centeterichneumon* from the other Afrotropical genera. We hereby attempt a more in-depth diagnosis of the genus. *Centeterichneumon* can be distinguished from all the other genera by the following combination of characters: (1) bidentate mandibles (that sets *Centeterichneumon* apart from *Lusius* and *Heterischnus*); (2) presence of distinct gastrocoeli, even though superficial (that allows the separation from *Arearia*, *Chauvinia*, *Dicaelotus*, and *Hoplophaeogenes*); (3) non-modified hypostomal carina, meeting occipital carina at the base of mandible (modified in *Aethecerus* and meeting occipital carina above mandibular base in *Tycherus*); (4) 2nd metasomal tergite roughly square (and not elongated as in *Kibalus*); (5) clypeus well-separated from face (epistomal sulcus present) (that allows a clear separation from *Diadromus*); (6) malar space less than 0.5 × as long as the mandible (different from *Diadromus*); (7) hind coxae of female with a ventral tooth or small carina.

Remarks

The genus *Centeterichneumon* was introduced by Heinrich (1938: 129) to accommodate only one species from Madagascar, *Centeterichneumon denticoxatus* Heinrich, 1938, later divided into two subspecies, the nominotypical one and *C. denticoxatus obscutatus* Heinrich, 1938.

Except for the original type series, no other records have been reported for the genus. Townes & Townes (1973) provided a catalogue to the species with no new information on the distribution, while Rousse *et al.* (2013) failed to include the taxon into their review of the Afrotropical Phaeogenini. The species hereby newly described represents the first record of the genus after its original conception and expands its distribution for the first time to mainland Africa (Figs 5A–B, 8A–B).

Centeterichneumon denticoxatus Heinrich, 1938
Figs 2–6

Centeterichneumon denticoxatus Heinrich, 1938: 130 (original description, key).
Centeterichneumon denticoxatus form *obscutatus* Heinrich, 1938: 130 (original description, key). Hereby synonymized under the nominate subspecies. **Syn. nov.**

Centeterichneumon denticoxatus denticoxatus – Townes & Townes 1973: 219 (catalogue, key). — Diller 1981: 101 (catalogue). — Yu & Horstmann 1997: 480 (catalogue). — Yu *et al*. 2012 (catalogue); 2016 (catalogue).
Centeterichneumon denticoxatus obscutatus – Townes & Townes 1973: 219 (catalogue, key). — Yu & Horstmann 1997: 480 (catalogue). — Yu *et al*. 2012 (catalogue); 2016 (catalogue).

Original type series

Syntypes: 11 ♀♀, 2 ♂♂ (*denticoxatus denticoxatus*) (MZPW); 2 ♀♀, 1 ♂ (*denticoxatus obscuratus*) (MZPW).

Heinrich (1938: 130) described the species *C. denticoxatus* based on 11 females and 2 males, all from "Rogez", Madagascar. On the same page, the author also introduced the name *obscutatus* declaring it "*forma vel subspec. nov.* [= *new form or subspecies*]" based on 2 females and 1 male from Ankaratra, and 1 female from "Kalambatitra" [= Kalambatritra]. Subsequent authors treated *obscutatus* as a subspecies of *denticoxatus* (Townes & Townes 1973; Yu & Horstmann 1997; Yu *et al.* 2012, 2016).

Despite the red holotype labels for both subspecies (Fig. 5C, F), no specimen was designated in the original description and, therefore, they cannot be referred to as holotypes (ICZN 1999: article 73.1). A more in-depth study of the MZPW collection will be required prior to the designation of any lectotypes; therefore, for the moment, the type specimens should be referred to as syntypes (ICZN 1999: article 73.2).

Type locality

Madagascar: Rogez (*denticoxatus denticoxatus*); Ankaratra, Kalambatritra, Ampandrandava (*denticoxatus obscutatus*).

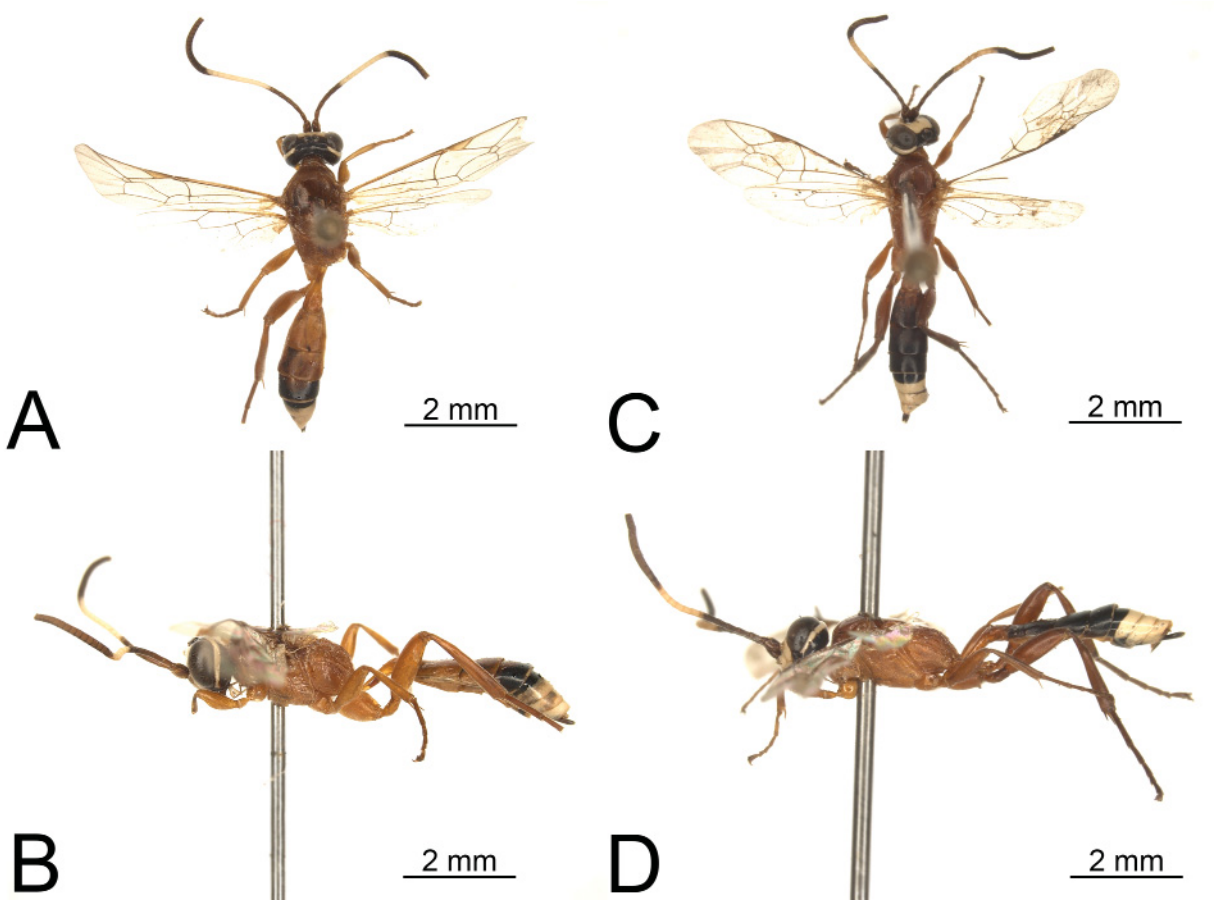


Fig. 2. *Centeterichneumon denticoxatus* Heinrich, 1938, subspecies (MZPW). **A–B**. *Centeterichneumon denticoxatus denticoxatus* Heinrich, 1938, syntype, ♀. **A**. Habitus, dorsal view. **B**. Habitus, lateral view. **C–D**. *Centeterichneumon denticoxatus obscuratus* Heinrich, 1938, syntype, ♀ (MZPW). **C**. Habitus, dorsal view. **D**. Habitus, lateral view.

Material examined

Syntype (*C. denticoxatus denticoxatus*)
MADAGASCAR • 1 ♀; "[Green label] Madagaskar,Rogez / 699m,I.-II.1931 / leg.A.Seryig // [White label] *Centerterich-* / *neumon* ♀ / *denticoxatus* / det. G. Heinrich *Hein.* // [White label] E.Diller 1977 / *studiert* // [Red label] Holotype / [White label] MIZ PAN / WARSZAWA / 6/1946 / 8"; MZPW (images examined).

Syntype (*C. denticoxatus obscutatus*)
MADAGASCAR • 1 ♀; "[Green label] *Kalambatritra* / *Madagascar* / *T33* / *leg.A.Seyrig* // [White label] *Centerterichneumon* / *denticoxatus* ♀ / *var. obscuratus* / det. G. Heinrich *Hein.* // [Red label] Holotype // [White label] MIZ PAN / WARSZAWA / 6/1946 / 15"; MZPW (images examined).

Distribution

MADAGASCAR: Androy, Atsinanana, Ihorombe and Vakinankaratra regions (Heinrich 1938) (Fig. 6A–B).

Remarks

Heinrich (1938: 130) differentiated the two subspecies based only on the different coloration of the metasoma. *Centeterichneumon denticoxatus denticoxatus* has the first three tergites completely reddish-brown, the 4th progressively infuscating with an apical narrow white band, the 5th anteriorly black and posteriorly white-banded, while the remaining tergites are completely white (Figs 2A–B, 4A).

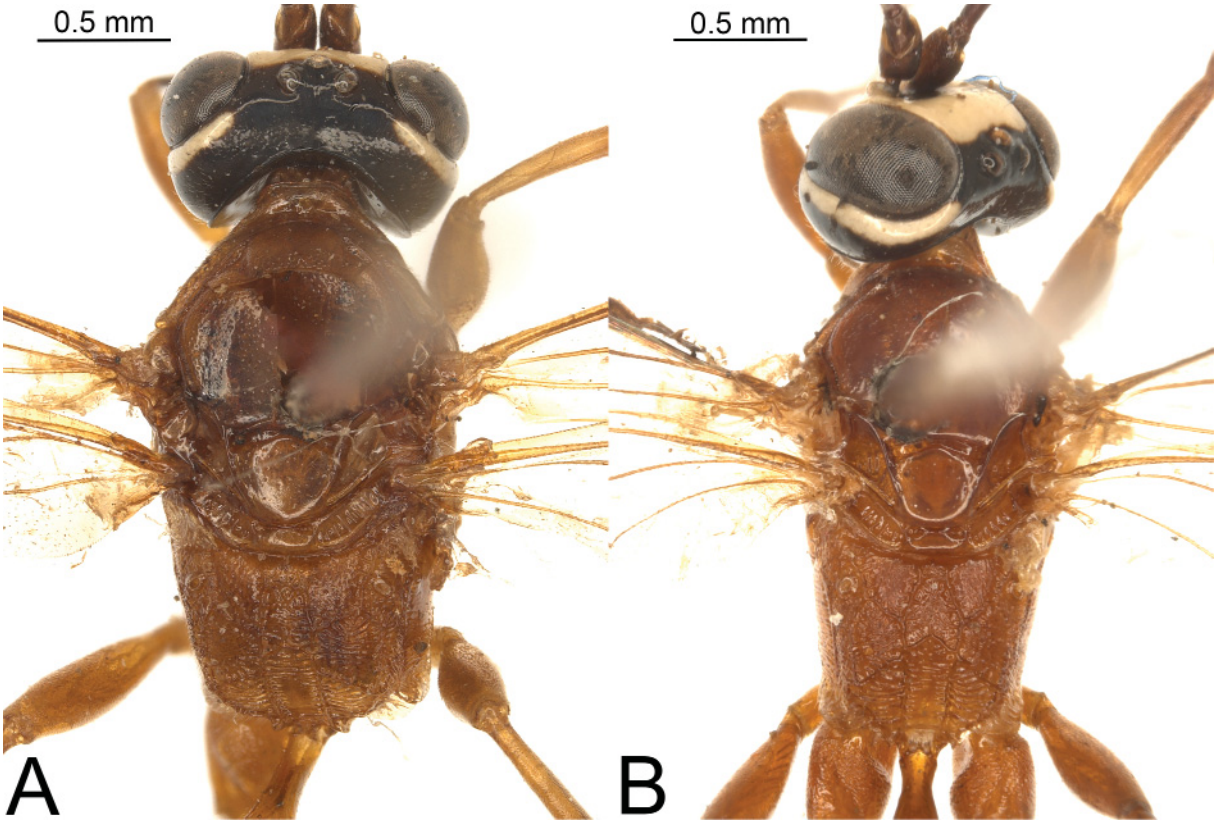


Fig. 3. Head and mesosoma, dorsal view. **A**. *Centeterichneumon denticoxatus denticoxatus* Heinrich, 1938, syntype, ♀ (MZPW). **B**. *Centeterichneumon denticoxatus obscuratus* Heinrich, 1938, syntype, ♀ (MZPW).

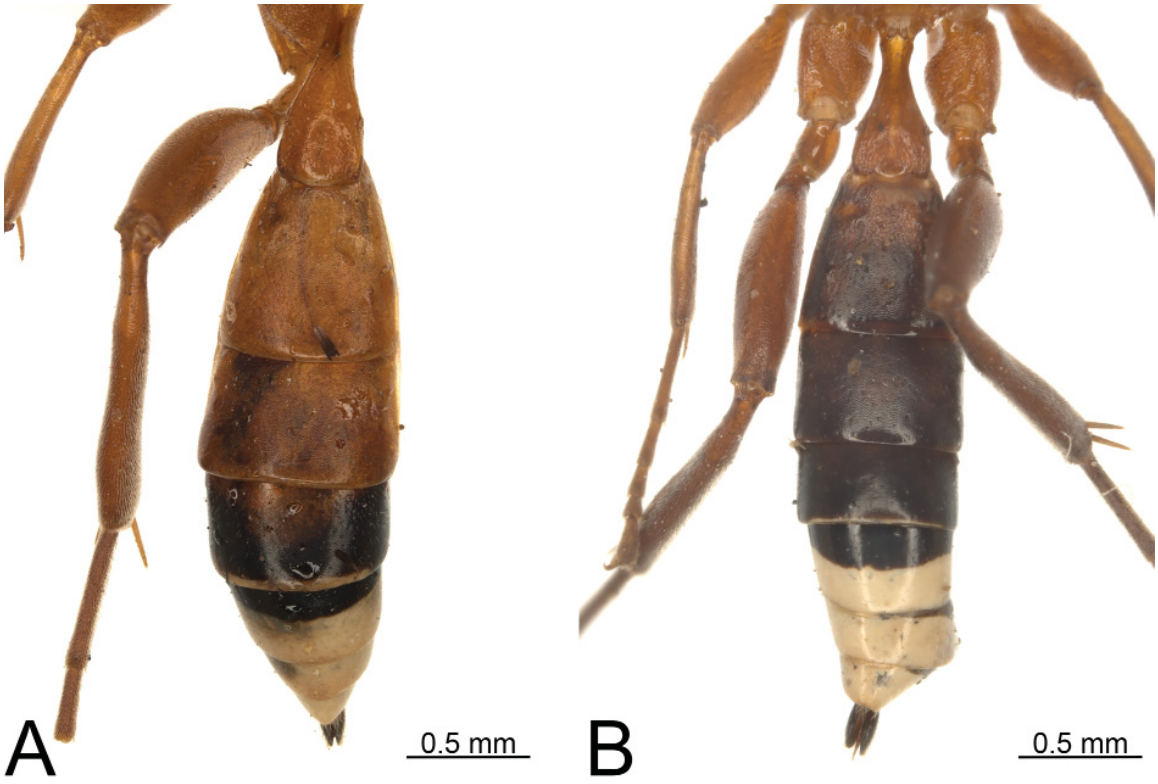


Fig. 4. Metasoma, dorsal view. **A**. *Centeterichneumon denticoxatus denticoxatus* Heinrich, 1938, syntype, ♀ (MZPW). **B**. *Centeterichneumon denticoxatus obscuratus* Heinrich, 1938, syntype, ♀ (MZPW).

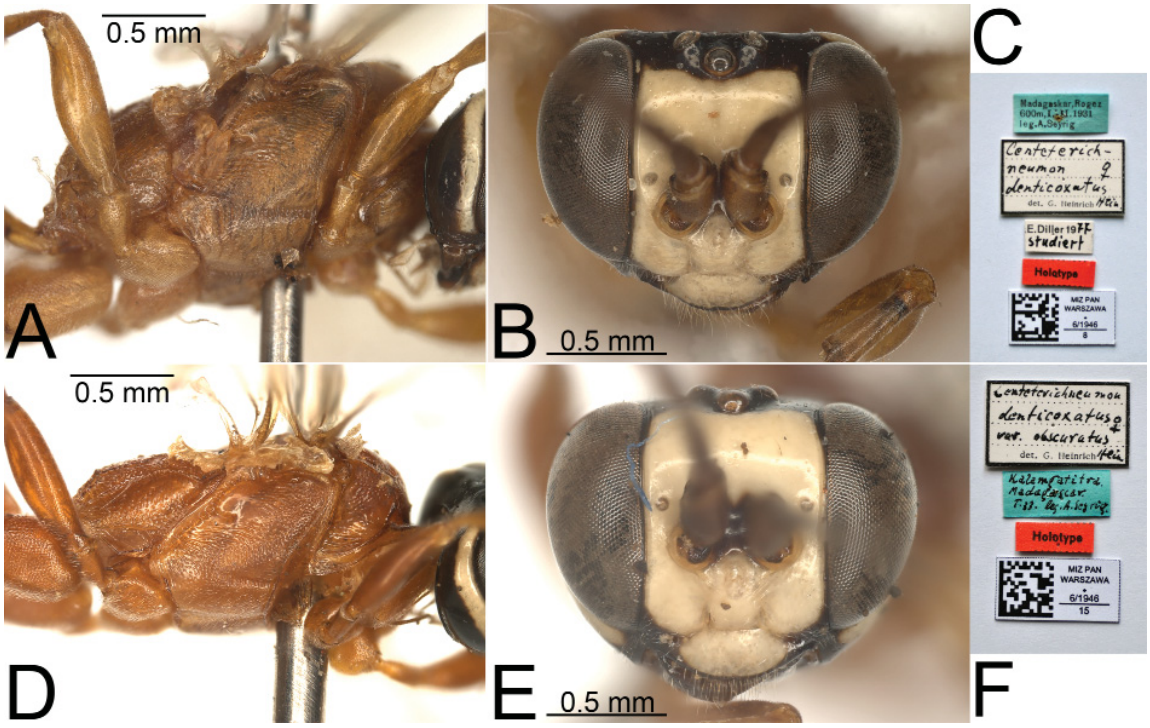


Fig. 5. *Centeterichneumon denticoxatus* Heinrich, 1938, subspecies (MZPW). **A–C**. *Centeterichneumon denticoxatus denticoxatus* Heinrich, 1938, syntype, ♀. **A**. Mesopleuron, lateral view. **B**. Head, frontal view. **C**. Labels. – **D–F**. *Centeterichneumon denticoxatus obscuratus* Heinrich, 1938, syntype, ♀. **D**. Mesopleuron, lateral view. **E**. Head, frontal view. **F**. Labels.

Centeterichneumon denticoxatus obscutatus has the 1st tergite and the anterior part of the 2nd reddish brown, the posterior part of the 2nd tergite infuscate and the 3rd and 4th tergites entirely black, the 5th anteriorly black and apically white, the 6th and 7th completely white (Figs 2C–D, 4B). We deemed these different characters as mere colour variation that does not allow an unequivocal differentiation of the two subspecies either based on consistent morphological traits or on clear distributional patterns. Moreover, also Heinrich (1938: 130) was unsure on the exact position of the two groups of specimens (see Type series) and, therefore, because of the above reasons, the two subspecies are hereby synonymized: *Centeterichneumon denticoxatus denticoxatus* Heinrich, 1938 = *Centeterichneumon denticoxatus obscutatus* Heinrich, 1938 syn. nov.

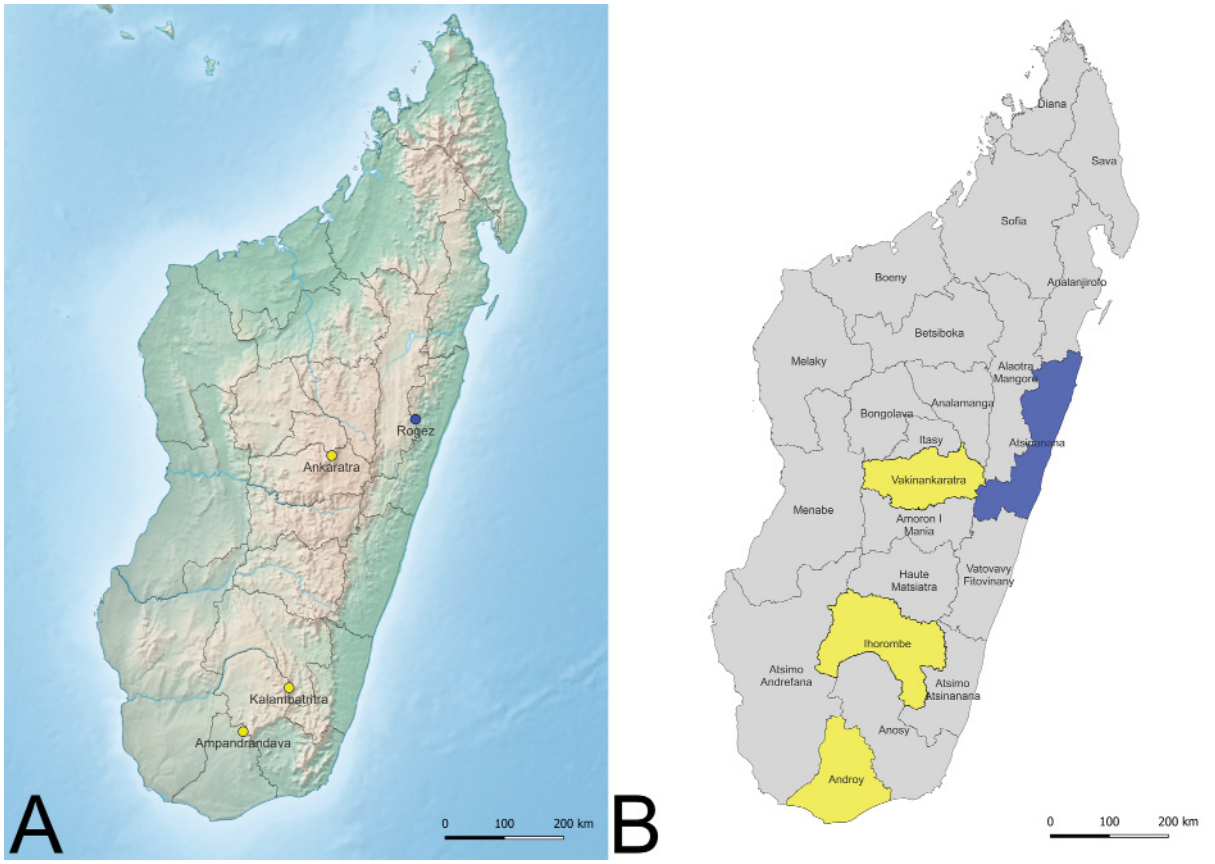


Fig. 6. Distribution of *Centeterichneumon denticoxatus* Heinrich, 1938, subspecies. **A**. Known occurrence records: *C. denticoxatus denticoxatus* (blue dot) and *C. denticoxatus obscutatus* (yellow dots). **B**. Regional distribution: *C. denticoxatus denticoxatus* (in blue) and *C. denticoxatus obscutatus* (in yellow).

Centeterichneumon nambi Dal Pos, Diller & Di Giovanni sp. nov.
urn:lsid:zoobank.org:act:AE3B3565-23DE-4F0B-B35F-23B7C50B2969
Figs 7–9

Differential diagnosis

Centeterichneumon nambi sp. nov. can easily be distinguished from the other known species, *C. denticoxatus*, by the following combination of characters: (1) area superomedia not separated from area basalis, thus forming a single long area (separated and heart-shaped in *C. denticoxatus*) (Fig. 7B); (2) mesoscutum flat in lateral view (convex in *C. denticoxatus*) (Fig. 7A, C); (3) clypeus and face pale yellow, frons orange-brown (clypeus, face and frons pale white in *C. denticoxatus*) (Fig. 8A); (4) metasoma entirely orange except for the 7th tergite, which is dorsally brown with a white apical margin (mostly black with white posterior bands on apical tergites in *C. denticoxatus*) (Fig. 7A); (5) 2nd and 3rd metasomal tergites densely but superficially punctate (shagreen with sparse punctuation in *C. denticoxatus*) (Fig. 7B).

Etymology

Named after the goddess Nambi, daughter of the sky god Gulu; she married Kintu, the first king of Uganda in the Baganda mythology (Lynch & Roberts 2010). Noun in apposition.

Type material

Holotype

UGANDA • ♀; "[White label] UGANDA – Kibale N. P. / Kanyawara Bio. Station / 00°33'54,4''N – 30°21'29,8''E / 28.III-04.IV.2010 / 1509 m – Malaise trap / S. Katusabe & Co. Leg."; ZSM.

Female, in very good condition, missing only the 2–5 tarsomeres and claws on the right hind leg.

Paratype

UGANDA • 1 ♀; same collection data as for holotype; DDPC 0000034 • 1 ♀; same collection data as for holotype; TUZ.

Description

Female (holotype)

Measurements. Body length: 8.1 mm; fore wing length: 5.4 mm.

Head (Figs 7C, 8A). Strongly transverse in dorsal and frontal view, overall shining; face distinctly transverse, more than 3.5 × as wide as medially high, densely punctate, medio-apically protruding in a very distinct blunt tubercule right below the antennal sockets, median field present and delimited by carinae on the ventral part of the face; clypeus well separated from the rest of the face (epistomal sulcus distinct); clypeus sparsely punctuate, shining and lenticular; malar space short, about 0.3 × basal width of mandible; mandible departing from the horizontal plane, slightly bending downward, with sparse setiferous punctures in the central area and on the ventral margin, teeth rather stout with the ventral tooth shorter (about 0.5 ×) than the upper tooth and slightly bent downward; antennal socket slightly projecting into a small flange, connected laterally to the internal orbit by means of a blunt, almost indistinct carina; frons and vertex almost completely smooth, with sparse and superficial punctuation, and with short and sparse hairs; ocellar triangle wider than high, slightly elevated; occipital carina distinct and complete, meeting hypostomal carina at the base of the mandible; temples slightly rounded in dorsal view; gena, in lateral view, medially strongly inflated, with indistinct punctures; antenna filiform, not tapering, flagellum with 28 flagellomeres, the 2nd flagellomere about 1.5 × as long as 1st, preapical flagellomeres slightly longer than wide.

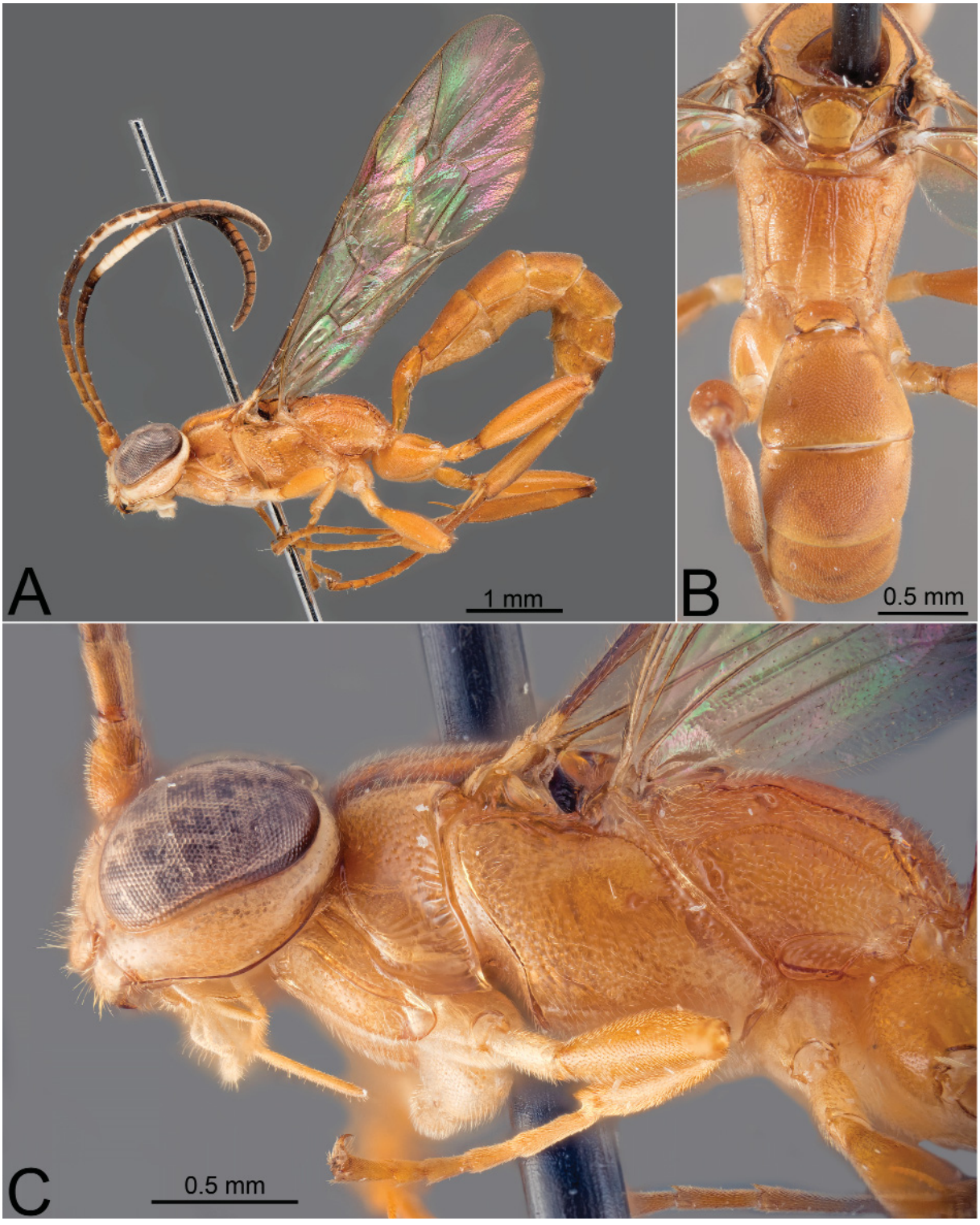


Fig. 7. *Centeterichneumon nambi* Dal Pos, Diller & Di Giovanni sp. nov. **A**. Habitus, lateral view, holotype, ♀ (ZSM). **B**. Propodeum and metasoma, dorsal view, holotype, ♀ (ZSM). **C**. Mesopleuron, lateral view, paratype, ♀ (DDPC).

Mesosoma (Fig. 7A–C). Dorsoventrally flattened, overall shining; pronotum irregularly striate on ventral margin, smooth centrally, and densely punctate dorsally, its ventral corner pointed; pronotal neck aciculate; pronotal collar centrally smooth and from densely to irregularly punctate on the side; epomia strong; propleuron finely punctate, with sparse hairs, projected into a blunt flange ventro-apically; mesoscutum finely and moderately punctate, notauli short and distinct only anteriorly; scutellum flat, with only a few, very superficial punctures, carinated only at the base; mesopleuron from densely punctate to puncto-striate, speculum smooth; epicnemial carina slightly raised between fore coxae, laterally ending at anterior edge of mesopleuron; sternaulus distinct on anterior third, crenulate; posterior transverse carina of mesosternum complete, slightly raised between mid coxae; metapleuron punctate anteriorly and punctate-rugose apically and ventrally, juxtacoxal carina strong; propodeum rather long in lateral view, not gently sloping; anterior transverse carina absent, with area basalis and area superomedia not separated and transversely striated, area externa and area dentipara not separated, punctate basally, and transversely striated apically; area petiolaris and area postero-externa transversely striated; area spiracularis moderately punctate; area lateralis transversely striated.

Legs (Figs 7A, 8B). All coxae densely punctate; hind coxa with a short ventral oblique carina. Hind femur about 3.8–3.9 × as long as medially high. Tarsal claws without pecten.

Wings (Fig. 7A). Fore wing with *3rs-m* present, areolet pentagonal; *1cu-a* opposite *M&RS*, *CU* between *1m-cu&M* and *2cu-a* about 1.8 × as long as *2cu-a*. Hind wing with distal abscissa of *CU* present, pigmented, *CU* about 1.9 × as long as *cu-a*.

Metasoma (Fig. 7A–B). First tergite sparsely punctate basally, apically (the postpetiole) shagreen; 2nd tergite superficially and densely punctate, gastrocoeli and thyridia superficial; 3rd tergite superficially and densely punctate; the rest of the tergites shagreen; ovipositor straight, slightly projecting.

Coloration (Figs 7A–C, 8A). Head with face, clypeus, mandibles (except the black apical teeth), orbits all around the eyes, and genae pale yellow; black are: mandibular teeth, ocellar triangle, vertex, and temples; central part of the frons and the lower part of the temples orange-brown. Antenna with scape and pedicel entirely orange; flagellum with the first three basal segments orange-brown, the 4th gradually infuscating, and the rest black with the exception of the brown ventral side of the apical segments (from

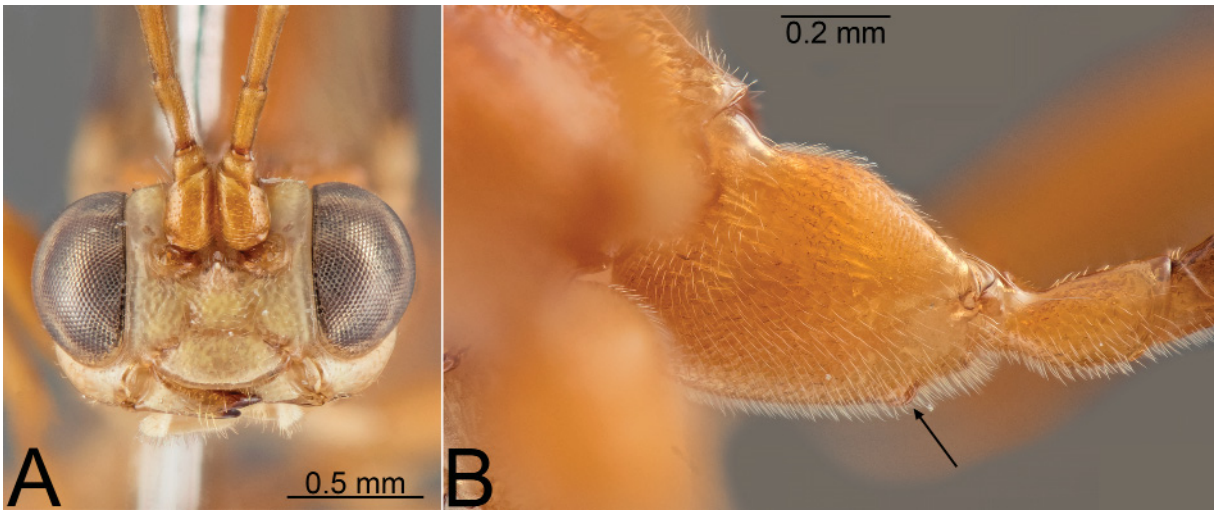


Fig. 8. *Centeterichneumon nambi* Dal Pos, Diller & Di Giovanni sp. nov. **A**. Head, frontal view, holotype, ♀ (ZSM). **B**. Coxa, lateral view, paratype, ♀ (DDPC); black arrow indicates the short ventral oblique carina.

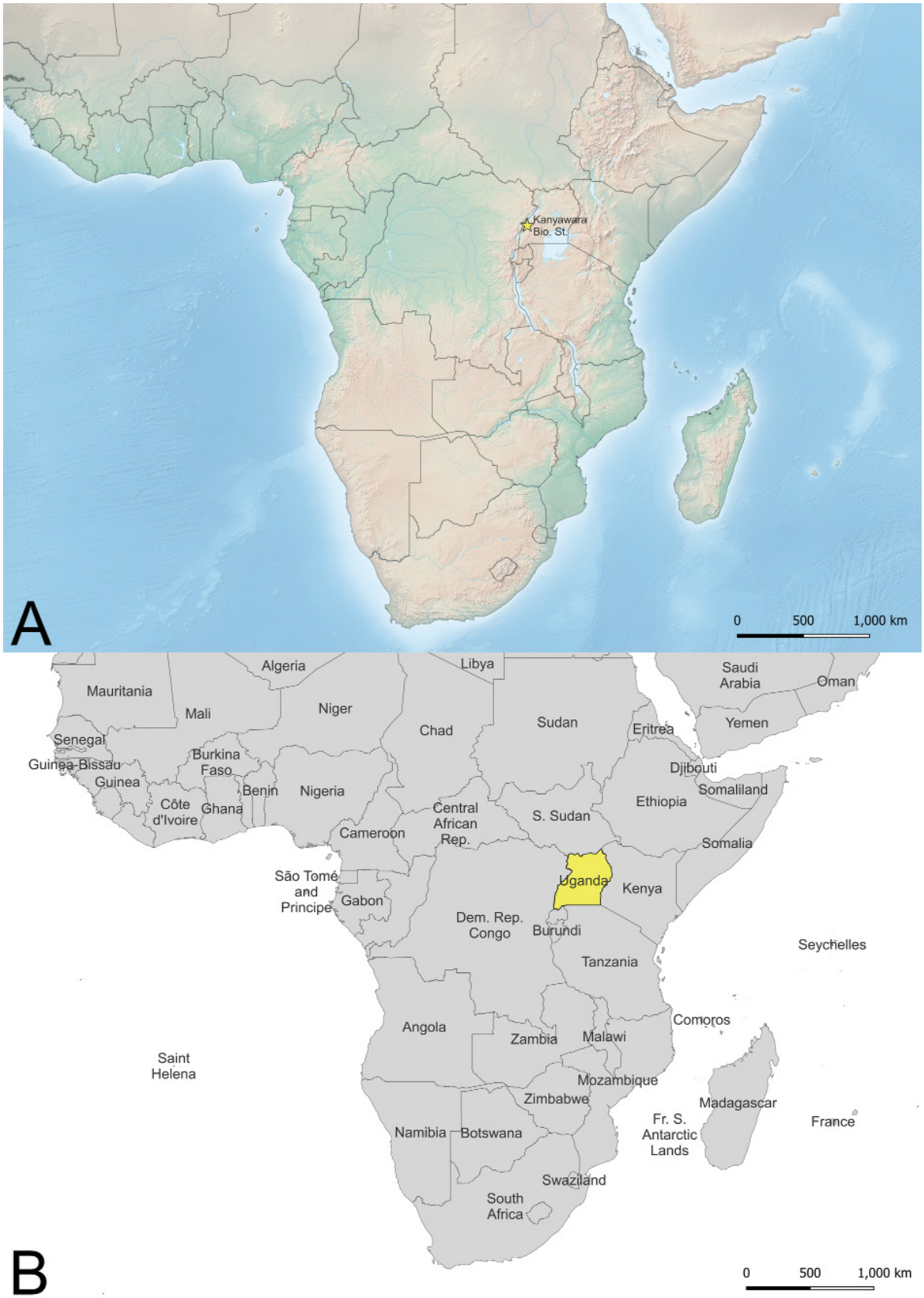


Fig. 9. Distribution of *Centeterichneumon nambi* Dal Pos, Diller & Di Giovanni sp. nov. **A**. Type locality. **B**. Country record.

the 12th/13th flagellomeres); white annulus present only on the dorsal side of the flagellum, from the 8th to 14th/15th flagellomeres. Mesosoma entirely orange-yellow with preaxilla black and tegulae pale yellow, the overall ventral side is pale yellow while the dorsal sclerites are mostly orange. All legs are orange yellow, with fore and mid coxae and fore and mid trochanters pale yellow; basal part of hind femur, hind tibia, and hind tarsus infuscate. Wing entirely hyaline. Metasoma entirely orange, except for the 7th tergite, which is dorsally brown with a white apical margin; ovipositor sheath deeply infuscate.

Variation (based on the two paratypes). White annulus on the flagellum starting from the 7th flagellar segment in one paratype; mesoscutal suprahumeral sulcus black in both paratypes.

Male

Unknown.

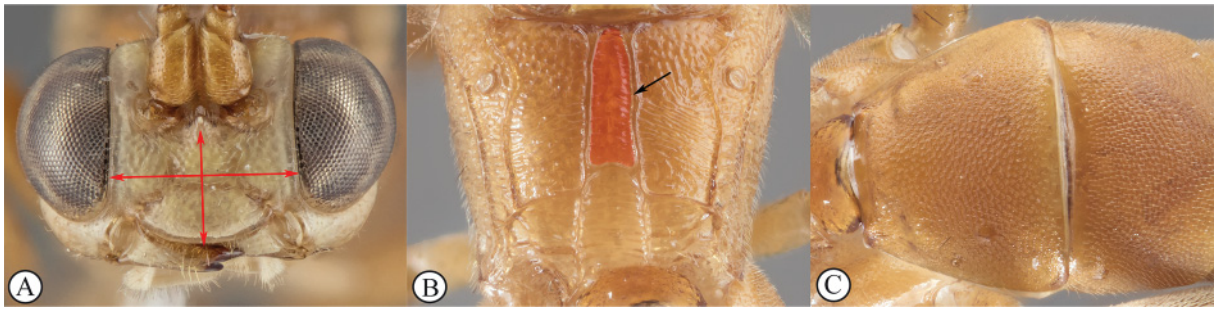
Host

Unknown.

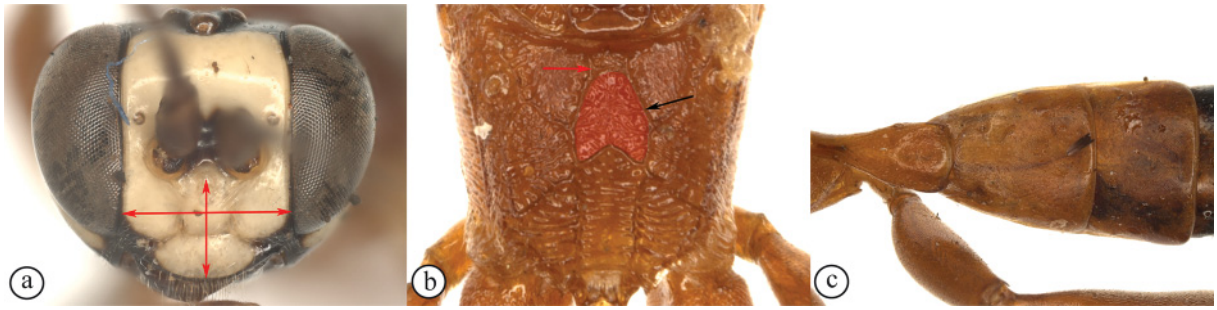
Distribution

Uganda (Fig. 9A–B).

Key to the species of *Centerichneumon* Heinrich, 1938



1. Head strongly transverse, face about 3.7 × as wide as medially high (width measured as the maximum distance of the inner orbits, height measured in the center from the edge of the clypeus to the level of the antennal sockets) (A); area superomedial not clearly separated from area basalis, forming an elongated continuous area (shaded area) (B); area externa and area dentipara not separate (anterior transverse carina not distinct) (B); mesoscutum flat in lateral view (Fig. 7A, C); clypeus and face pale yellow (A), frons orange-brown (Fig. 8A); metasoma entirely orange, except for the 7th tergite which is dorsally brown with a white apical margin (Fig. 7B); 2nd and 3rd tergites densely but superficially punctate (C) ..... ***C. nambi*** Dal Pos, Diller & Di Giovanni sp. nov.



– Head not strongly transverse, face about 3.0 × as wide as medially high (a); area superomedia inverted heart-shaped (shaded area), weakly separated from area basalis (red arrow), and not

forming an elongated continuous area (b); area externa and area dentipara distinctly separated (anterior transverse carina clearly present) (b); mesoscutum convex in lateral view (Figs 2B, D, 5A, D); clypeus, face and frons pale white (a); metasoma with white posterior band on apical tergites (Figs 2A–D, 4A–B); 2nd tergite shagreen with sparse punctures posteriorly, 3rd tergite shagreen (c) . ..... ***C. denticoxatus*** Henrich, 1938

Chauvinia Heinrich, 1938

Chauvinia Heinrich, 1938: 123. Type species *Chauvinia pelecinoides* Heinrich, 1938, by original designation.

Chauviniella Heinrich, 1938: 125. Type species *Chauviniella nitida* Heinrich, 1938, by original designation.

Diagnosis

Chauvinia can easily be distinguished from the other Afrotropical Phaeogenini genera by the following combination of characters: (1) bidentate mandibles (unidentate in *Lusius* and *Heterischnus*); (2) thyridia and gastrocoeli indistinct (clearly present in *Aethecerus*, *Centeterichneumon*, *Diadromus*, *Kibalus*, and *Tycherus*); (3) propodeal apophyses absent (present in *Hoplophaeogenes*); (4) notauli indistinct (deep in *Arearia*); (5) propodeum smooth, with area superomedia not separated from area basalis and area petiolaris, forming a single mid-longitudinal area (area superomedia clearly distinct in *Dicaelotus*). The genus can further be distinguished by: clypeus strongly transverse, its ventral margin sharp and more or less regularly rounded; flagellum of female enlarged from middle; temples moderately swollen behind eyes; occipital and hypostomal carinae joining above mandibular base; epomia present, moderately marked; notauli indistinct; propodeum elongate, in profile slightly and regularly rounded to uniformly sloping backwards in a single plane; posterior transverse carina interrupted in front of mid coxae; fore wing with areolet pentagonal, closed; hind wing with distal abscissa of *CU* present, unpigmented; tarsal claws simple; metasoma of female elongate to strongly elongate, ventral margins of apical tergites overlapping, hiding sternites; metasoma of male not so unusually modified; ovipositor sheath wide, barely extending beyond metasomal apex (Heinrich 1938; Rousse *et al.* 2013).

Remarks

The genus *Chauvinia* occurs only in the Afrotropical region with 4 species, one of which is newly described here: *C. ganota* Claridge sp. nov., *C. nitida* Heinrich, 1938, *C. nyanga* Rousse & van Noort, 2013, *C. pelecinoides* Heinrich, 1938.

Claridge (2021a), commenting on the biology of *Jethsura* Cameron, 1902, noticed that the needle-like terebra is similar to that of other amblypygous species and is enclosed within the 7th metasomal tergite. These observations led the author to suggest that its morphology could potentially be indicative of a larva oviposition behaviour. This could also be the case for *Chauvinia,* since it has a similar sclerite organization, but a better understanding of the entire ovipositor morphology and its functionality are required to fully associate a certain structure to a given host association. In fact, in many Atrophini (Ichneumonidae, Banchinae) the enlarged hypopygium is associated with big muscles that run from the first or second valvifers to the lateral part of the abdominal sternum (DDP, personal obs.), suggesting a potentially higher maneuverability of the terebra associated with the type of substrate, while in other groups (e.g., Platygastroidea), the mechanism can be even more complex, involving a telescoping conjunctiva (Talamas *et al.* 2017). Because for the majority of Ichneumonidae with a short terebra the ovipositor morphology is almost completely unstudied, any conclusion at this stage can only be considered a speculation.

Chauvinia ganota Claridge sp. nov.
urn:lsid:zoobank.org:act:E12B92E3-4C41-4E8E-9F21-96E087EE9F8E
Figs 10–11, 12A–B, 13A, 14

Differential diagnosis

Chauvinia ganota sp. nov. can be distinguished from the other species of *Chauvinia* by the following combination of characters: (1) second tergite approximately 3 × as long as apically wide (approximately 2 × in *C. nitida* and *C. nyanga*) (Fig. 10C); (2) female predominantly brownish-orange, with dorsal margin of pronotum predominantly yellowish-white (female predominantly black in *C. nyanga*, dorsal margin of pronotum orange to yellowish-orange and concolorous in *C. nitida* and *C. pelecinoides*) (Figs 10B, 11A); (3) female antenna with incomplete yellowish-white annulus from 9th to the 11th flagellomeres (annulus starting at the 7th/8th flagellomeres in *C. nitida* and *C. pelecinoides*) (Fig. 10B); (4) male overall lighter in colour than males of *C. nyanga* and with mesopleuron predominantly yellowish-white (mesopleuron predominantly black in *C. nyanga*) (Fig. 13A); (5) male face with less distinct and less impressed punctures (more distinct and deeply impressed in *C. nyanga*) (Fig. 12A).

Etymology

From the Greek '*ganotos*' meaning 'polished' or 'brightened' as this species is overall lighter in colour compared to the species to which it is most similar, *Chauvinia nyanga* Rousse & van Noort, 2013.

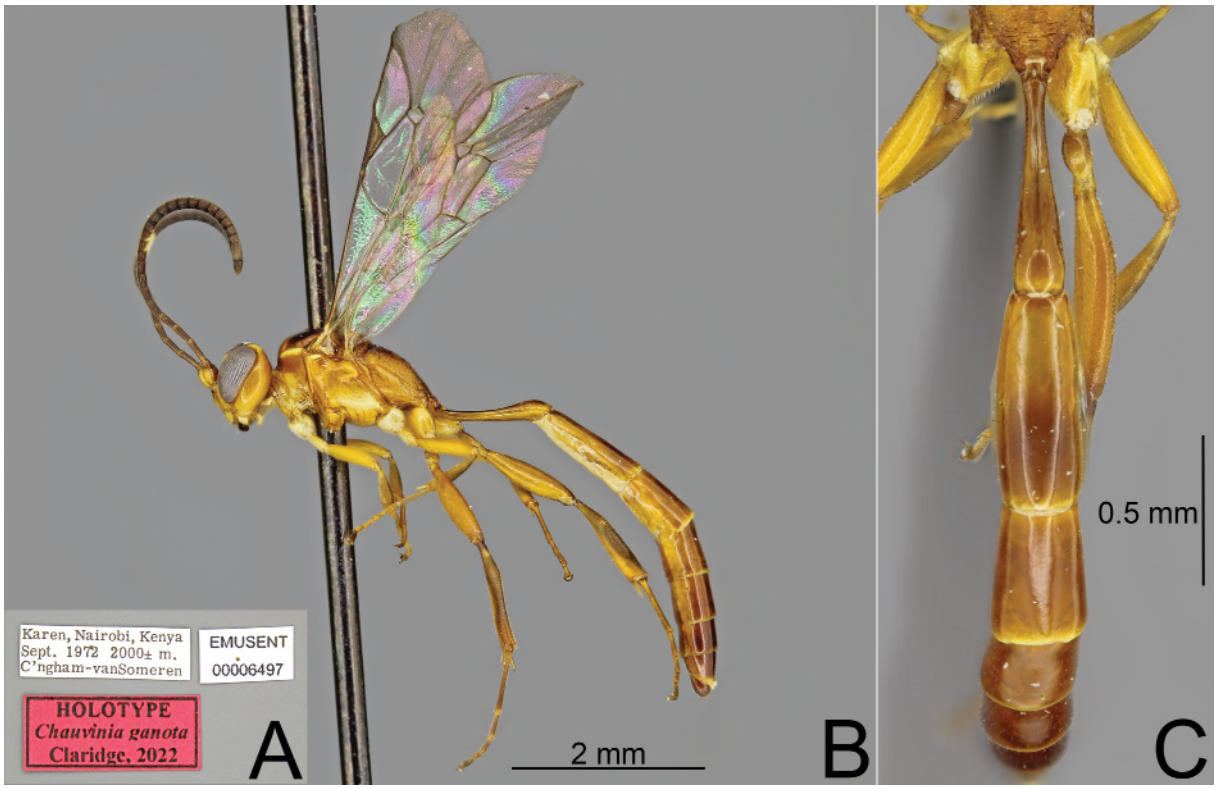


Fig. 10. *Chauvinia ganota* Claridge sp. nov., holotype, ♀ (EMUS). **A**. Labels. **B**. Habitus, lateral view. **C**. Metasoma, dorsal view.

Type material

Holotype

KENYA • ♀ "[Offwhite label] Karen, Nairobi, Kenya / Sept. 1972 2000± m./ C'ngham-vanSomeren"; EMUS ENT00006497.

Female, in very good condition.

Paratypes

KENYA • 1 ♀, 5 ♂♂; same collection data as for holotype; Aug. 1972; B. Claridge des.; EMUS; • 16 ♀♀, 11 ♂♂; same collection data as for holotype; Sep. 1972; EMUS • 4 ♀♀, 10 ♂♂; same collection data as for holotype; Oct. 1972; EMUS • 1 ♀, 10 ♂♂; same collection data as for holotype; Nov. 1972; EMUS • 1 ♀, 5 ♂♂; same collection data as for holotype; Dec. 1972; EMUS • 1 ♀; same collection data as for holotype; Mar. 1973; EMUS • 2 ♂♂; same collection data as for holotype; Sep. 1971; 6000 ft a.s.l.; EMUS • 1 ♂; near Nairobi; Jan. to Mar. 1972; 6000 ft a.s.l.; C. van Someren leg.; B. Claridge des.; EMUS.

Description

Female

Measurements. Body length: 7.5 mm; fore wing length: 4.3 mm.

Head (Figs 11A, 12A). Subquadrate in frontal view (slightly higher than wide), overall shining; face transverse, more than 3 × as wide as medially high, very finely, sparsely punctate with punctation denser laterally, medio-apically protruding in a very distinct blunt tubercule immediately ventral to antennal sockets, median field present, weakly convex, and delimited by indistinct carinae on the ventral part of the face; antennal socket slightly projecting into a small flange; dorsal tentorial arm pit distant from antennal sockets by less than 2 × the diameter of the pit; frons and vertex almost completely smooth, with extremely sparse and superficial punctuation; ocellar triangle indistinct; occipital carina distinct and complete, meeting hypostomal carina before the base of the mandible; temples slightly rounded in dorsal view; gena, in lateral view, weakly inflated and nearly impunctate except for a few scattered, fine, superficial punctures; clypeus moderately convex, shining, and nearly impunctate except for a few scattered, fine, superficial punctures, particularly near ventral and dorsal margins; malar space short, about 0.6 × basal width of mandible; mandible with sparse setiferous punctures in the central area, teeth rather stout with the ventral tooth shorter (about 0.7 ×) than the upper tooth; antenna subclavate with apical flagellomeres short and wide; flagellum with 23 flagellomeres, the 2nd flagellomere about 0.8 × length of 1st, preapical flagellomeres slightly wider than long.

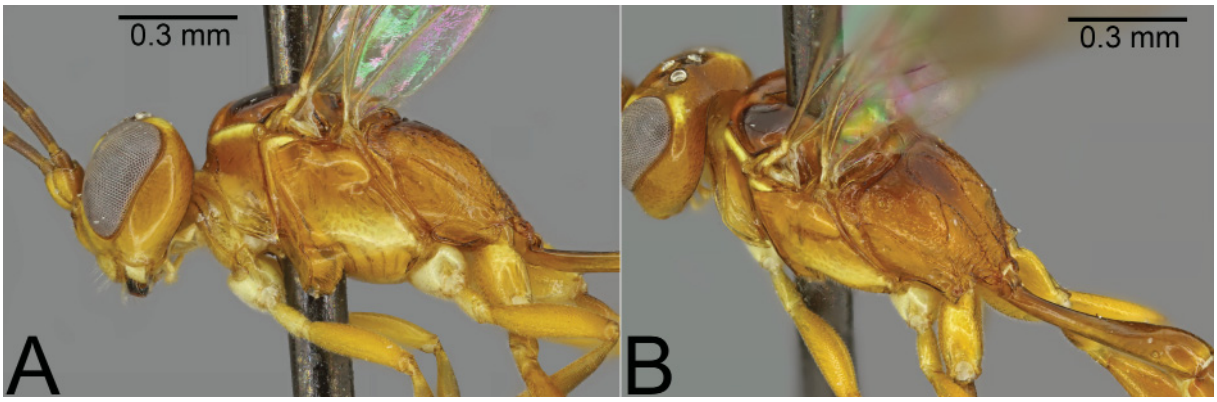


Fig. 11. *Chauvinia ganota* Claridge sp. nov., holotype, ♀ (EMUS). **A**. Mesopleuron, lateral view. **B**. Mesosoma, dorso-lateral view.

Mesosoma (Fig. 11A–B). Overall shining; pronotum smooth and impunctate; epomia small but well-developed; propleuron finely punctate, with sparse hairs, projected into a blunt flange ventro-apically; mesoscutum smooth and impunctate except for a few scattered, fine, superficial punctures, notauli obsolete; scutellum flat and impunctate, carinated only at the base; mesopleuron smooth and impunctate except for a few scattered, fine, superficial punctures, speculum smooth; epicnemial carina slightly raised between fore coxae, laterally ending at anterior edge of mesopleuron; sternaulus distinct on anterior fourth; posterior transverse carina of mesosternum widely obsolete in front of mid coxae; metapleuron smooth and impunctate, juxtacoxal carina strong; propodeum long in lateral view, gently sloping posteriorly; propodeal carinae well-developed except for the posterior transverse carinae obsolete between median longitudinal carinae and subobsolete between median and lateral longitudinal carinae; propodeum overall smooth and sparsely punctate laterally, medially with confluent area consisting of area petiolaris, and area superomedia transversely rugulose, becoming coarser and denser posteriorly.

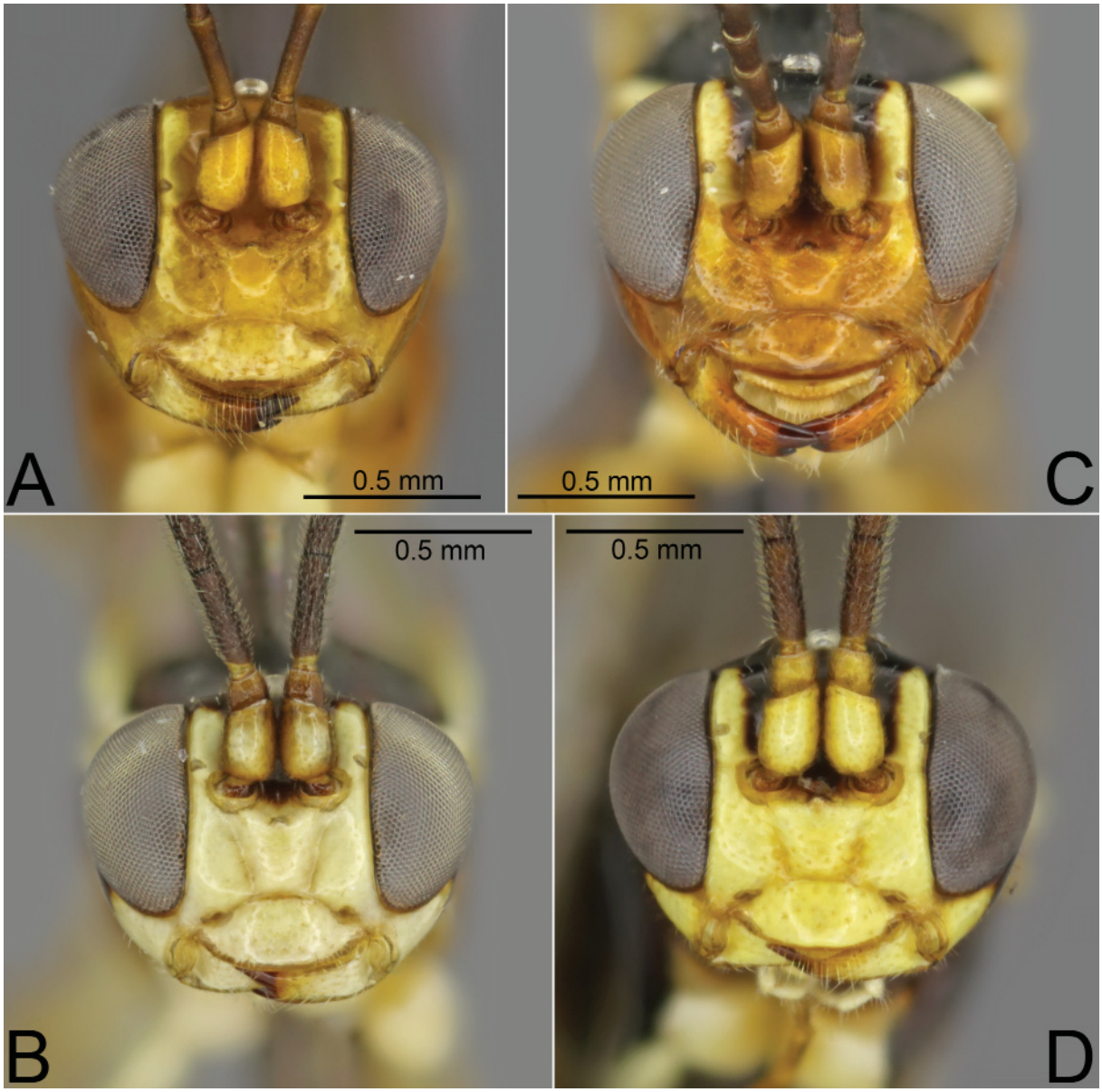


Fig. 12. Head, frontal view. **A–B**. *Chauvinia ganota* Claridge sp. nov. **A**. ♀, holotype (EMUS). **B**. ♂, paratype (EMUS). – **C–D**. *Chauvinia nyanga* Rousse & van Noort, 2013. **C**. ♀ (EMUS). **D**. ♂ (EMUS).

Legs (Fig. 10B). All coxae finely, densely punctate; hind coxa without tooth-like projection or carina. Hind femur about 3.1–3.2 × as long as medially high. Tarsal claws without pecten.

Wings (Fig. 10B). Fore wing with *3rs-m* present, areolet pentagonal; *1cu-a* opposite *M&RS*, *CU* between *1m-cu&M* and *2cu-a* about 2.7 × as long as *2cu-a*. Hind wing with distal abscissa of *CU* absent.

Metasoma (Fig. 10C). Tergites smooth and impuctate; gastrocoeli and thyridia obsolete; 2nd tergite approximately 3 × as long as apically wide; ovipositor straight, slightly projecting.

Coloration (Figs 10B, 12A). Head with face, clypeus, mandibles (except for black mandibular apex) pale yellow; inner eye orbit and postero-dorsal section of eye orbit yellow; remainder of head light brownish-orange ventrally and brownish-orange dorsally. Antenna with scape brownish-yellow ventrally, becoming dark orange-brown dorsally; pedicel brown; flagellum dark brown, becoming darker apically, except for 9th to 11th flagellomeres yellowish-white medio-dorsally. Mesosoma with pronotum light brownish-orange except for posterior 0.7 of dorsal margin yellowish-white; prosternum brownish-yellow; mesonotum brown medially and dark brown laterally and medially at anterior margin; scutellum orange-brown; mesopleuron light brownish-orange except for longitudinal yellowish-white area immediately dorsal to sternaulus; propodeum brownish-orange except for anteriorly dark brownish. Fore and mid legs with coxae, trochanters and trochantelli yellowish-white; femora light brownish-orange; tibiae light brownish-orange ventrally and dark orange-brown dorsally; tarsi dark orange-brown except for 4th–5th tarsomeres dark brown. Hind leg with coxa light brownish-orange ventrally and brown dorsally; tarsus dark brown except for 1st–3rd tarsomeres orange-brown basally. Metasoma brownish-orange with anterior and posterior areas of 1st–4th tergites lighter and 6th–7th tergites dark orange-brown; ovipositor sheath dark reddish-brown.

Variation (based on the 24 paratypes). Posterior transverse carina between median longitudinal carinae varying from obsolete (20 specimens) to subobsolete (1 specimen) such that area superomedia partially distinct; incomplete white banding on flagellum ranging from 8th/9th to 10th/11th flagellomeres.

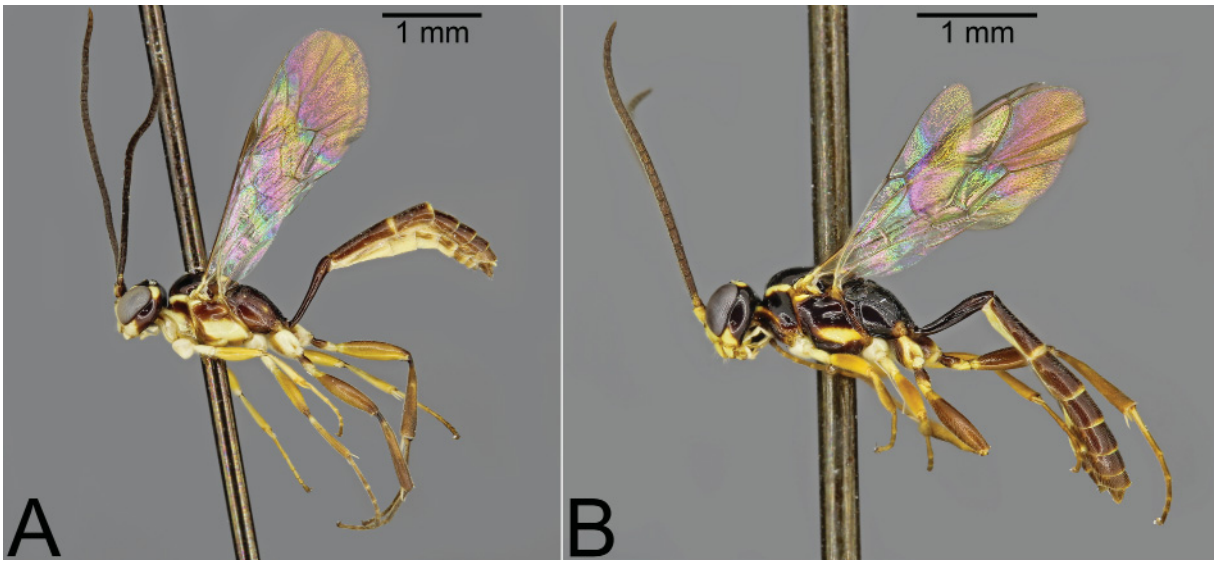


Fig. 13. Habitus, lateral view, ♂. **A**. *Chauvinia ganota* Claridge sp. nov., paratype (EMUS). **B**. *Chauvinia nyanga* Rousse & van Noort, 2013 (EMUS).

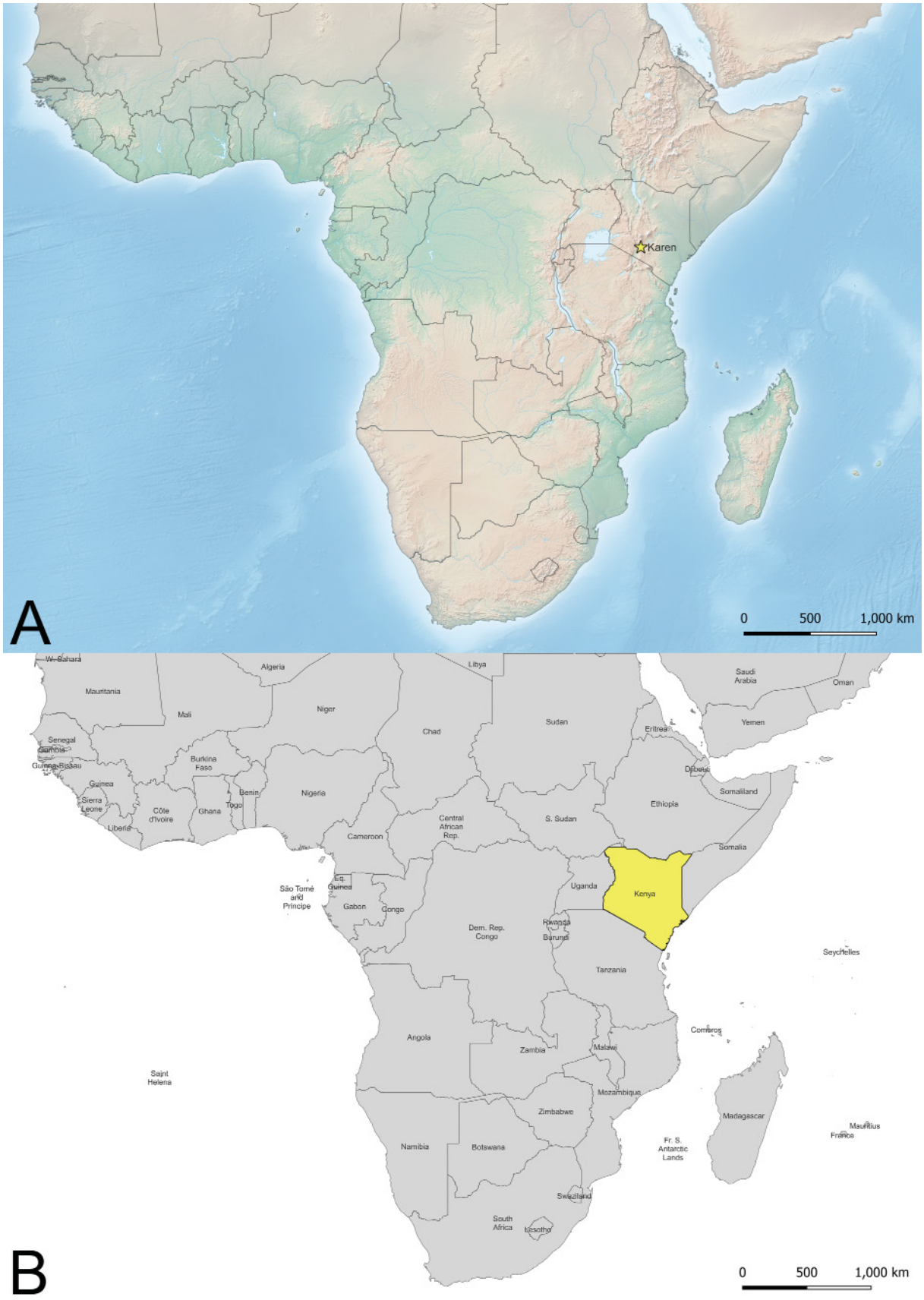


Fig. 14. Distribution of *Chauvinia ganota* Claridge sp. nov. **A**. Type locality. **B**. Country record.

Male (Figs 12B, 13B)

As in female, except for: head transverse, slightly wider than high; face finely, sparsely punctate; 2nd–7th tergites densely, finely punctate with punctae becoming progressively finer and sparser at posterior tergites; metasoma shorter than in female. Coloration: head with face, clypeus, mandibles (except for black mandibular apex), ventral 0.3 of gena, inner eye orbits, postero-dorsal section of eye orbit yellowish-white, remainder of head varying from brown to black. Antenna with scape yellowish-white ventrally and remainder dark brown; scape and flagellum dark brown. Mesosoma with pronotum varying from brown to dark brown except for entirety of ventral margin and 0.7–0.8 of dorsal margin yellowish-white; prosternum yellowish-white; mesonotum varying from entirely black to black with irregular brown submedial longitudinal areas; scutellum predominantly yellowish-white with variable light to dark brown area medially; mesopleuron with large yellowish-white area approximately spanning area ventral to speculum and dorsal to sternaulus except for small light to dark brown area at anterior margin along sternaulus, remainder varying from brownish-orange to dark brown, propodeum usually entirely dark brown to black, occasionally lighter and with small yellowish to yellowish-white mark immediately lateral to propodeal apophyses. Fore and mid legs with coxae, trochanters and trochantelli yellowish-white; tarsi light yellowish-brown except for 5th tarsomere dark brown. Hind leg with coxa having large yellowish to dark brown spot on basal and ventral area, remainder yellowish-white; trochanter dark brown except yellowish-white apex; trochantellus yellowish-white; femur brown to dark brown except for basal 0.2 light brownish dorsally; tibia brown to dark brown dorsally and brown ventrally except for basal 0.2 dark brown to black; tarsus dark brown except 1st tarsomere lighter ventrally. Metasoma with 1st tergite dark brown; 2nd–7th tergites brown to dark brown with extreme apical margins yellowish-white.

Host

Unknown.

Distribution

Kenya (Fig. 14A–B).

Chauvinia nitida (Heinrich, 1938)
Figs 15–16

Chauviniella nitida Heinrich, 1938: 125 (original description, key).

Chauvinia nitida – Townes & Townes 1973: 221 (catalogue). — Yu & Horstmann 1997: 481 (catalogue). — Yu *et al.* 2012 (catalogue); 2016 (catalogue). — Rousse *et al*. 2013: 21 (diagnosis, key, images).

Original type series

Syntypes: ♀♀, ♂♂, (precise number unknown) (MZPW).

Heinrich (1938: 125) described the species based on "*Nombreux exemplaires* [= numerous specimens]" without clearly designating one of them as the name-bearing type. Initially, Rousse *et al.* (2013: 21) correctly referred to the types as "syntypes", without designating a lectotype. However, the same authors refer to the specimen depicted in figs 5–6 of their work (Rousse *et al.* 2013: 22–23) as the "holotype". The employment of the term "holotype" does not constitute a valid lectotype designation (ICZN 1999: article 74.5, 74.7). Moreover, one of the specimens belonging to the type series bears a red label that reads verbatim: "*aes* Lectotypus *Sawoniewicz '77*" (Rousse *et al.* 2013: 23, fig. 6f). Unfortunately, there is no record of a published work clearly designating a lectotype for this species, and therefore the label does not constitute a valid lectotype designation (ICZN 1999: article 74.5). A more in-depth study of the

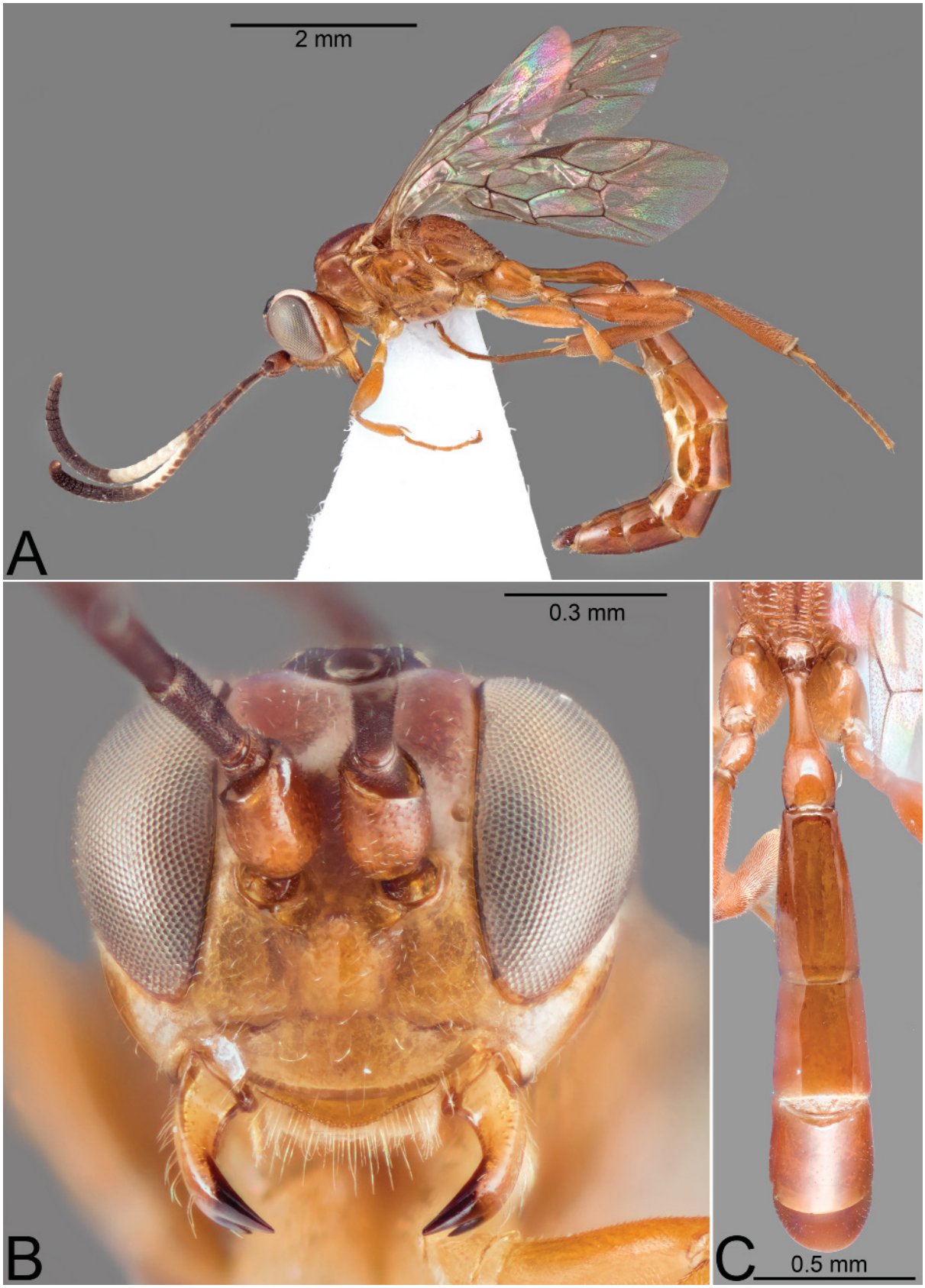


Fig. 15. *Chauvinia nitida* (Heinrich, 1938) (CAS). **A**. Habitus, lateral view. **B**. Head, frontal view. **C**. Metasoma, dorsal view.

MZPW collection will be required prior to the designation of a lectotype; therefore, for the moment, the type specimens should be referred to as syntypes (ICZN 1999: article 73.2).

Type locality

Madagascar: Rogez and Ampandrandava.

Material examined

MADAGASCAR • 2 ♀♀; Antsiranana prov., Sakalava Beach; 12°15′46″ S, 49°23′51″ E; 10 m a.s.l.; 22–27 Apr. 2001; M. Irwin and R. Harin'Hala leg.; dwarf littoral forest; CASELOT: 0050135; D. Dal Pos det.; CAS ENT8437555 to ENT8437556 • 1 ♀; same collection data as for preceding; DDPC 0000033.

Distribution

MADAGASCAR: Androy and Atsinanana regions (Heinrich 1938), Diana region (**new record**) (Fig. 16A–B).

Remarks

The three specimens examined here represent the first record of the species since the original description, as well as an expansion of its range to the Diana region (Fig. 16A–B).

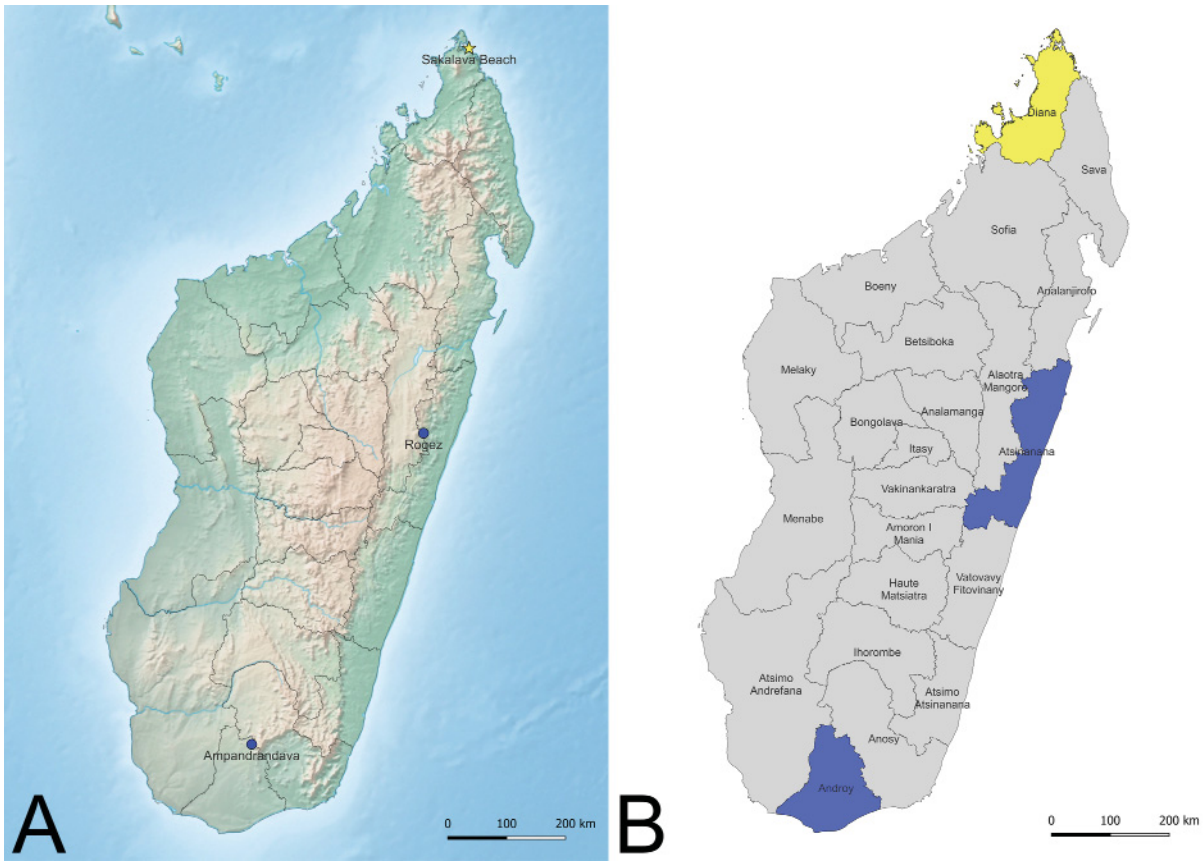


Fig. 16. Distribution of *Chauvinia nitida* (Heinrich, 1938). **A**. Previous (blue dots) and new occurrence records (yellow star). **B**. Previous (blue) and new (yellow) regional records.

Chauvinia nyanga Rousse & van Noort, 2013
Figs 12C–D, 13B, 17–18

Chauvinia nyanga Rousse & van Noort in Rousse *et al*., 2013: 21–26 (original description, key).

Chauvinia nyanga – Yu *et al*. 2016 (catalogue).

Original type series

Holotype: ♀, by original designation (ZMHB).
Paratypes: 1 ♂ (ZMHB); 1 ♀ (MRAC); 1 ♂ (NHMUK).

Type locality

Zimbabwe: Nyanga National Park.

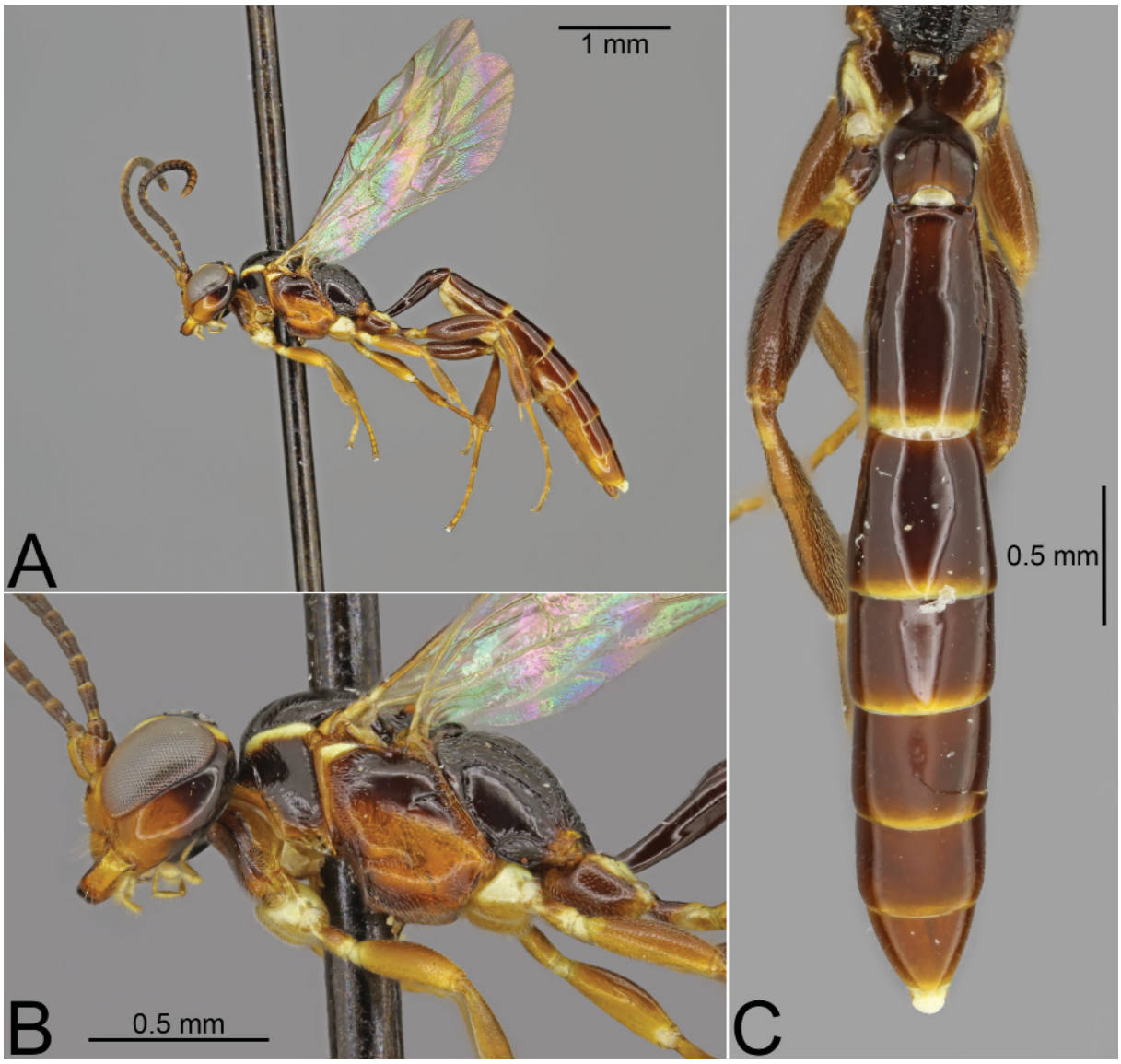


Fig. 17. *Chauvinia nyanga* Rousse & van Noort, 2013, ♀ (EMUS). **A**. Habitus, lateral view. **B**. Head and mesosoma, lateral view. **C**. Metasoma, dorsal view.

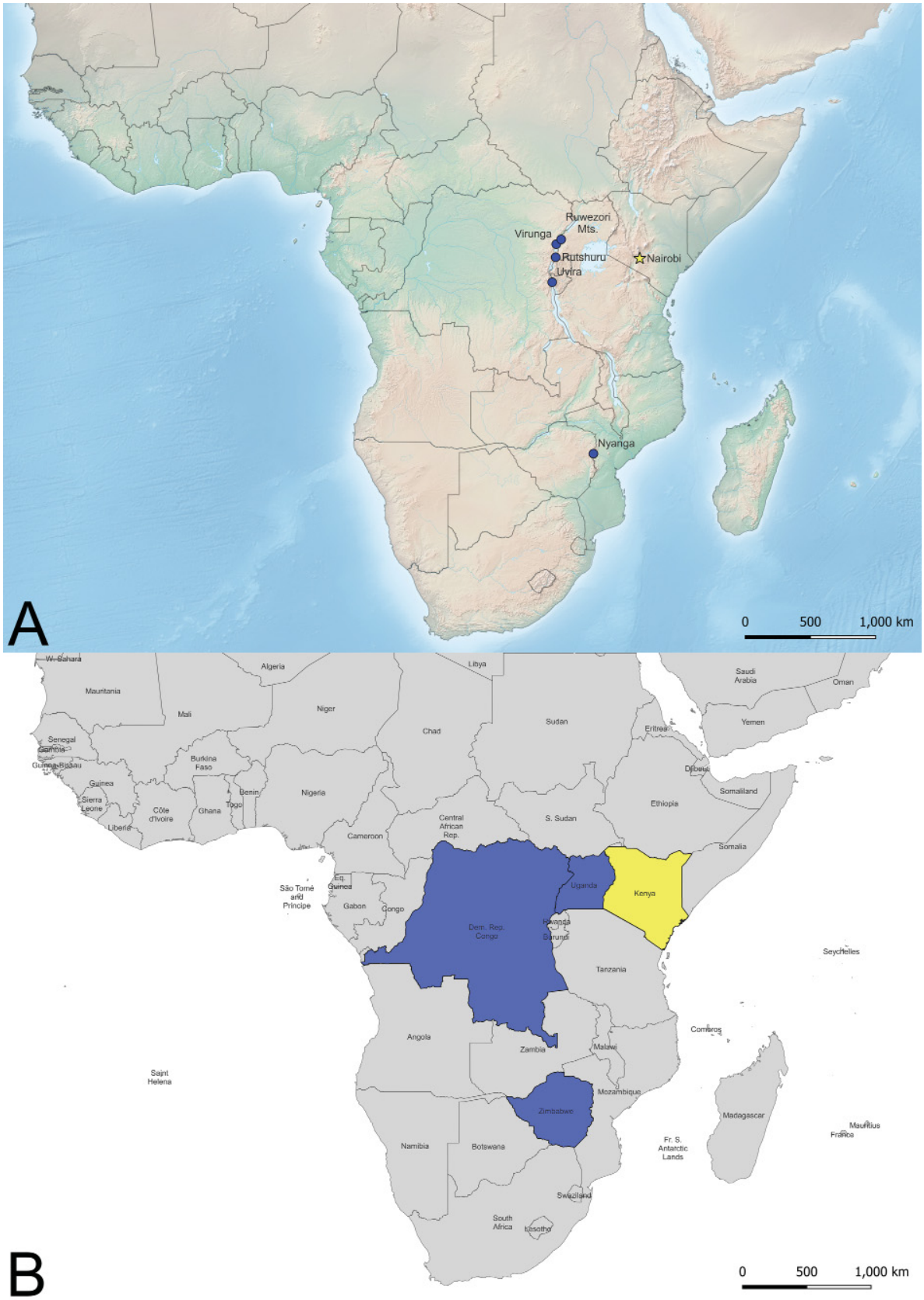


Fig. 18. Distribution of *Chauvinia nyanga* Rousse & van Noort, 2013. **A**. Previous (blue dots) and new occurrence records (yellow star). **B**. Previous (blue) and new (yellow) country records.

Material examined

KENYA • 3 ♀♀; Karen, Nairobi; 6000 ft a.s.l.; Sep. 1971; B. Claridge det.; EMUS • 3 ♀♀; same collection data as for preceding; 2000 m a.s.l.; Oct. 1971; EMUS • 1 ♀, 5 ♂♂; same collection data as for preceding; May–Jun. 1972; EMUS • 1 ♀, 3 ♂♂; same label data as for preceding; Jan.–Mar. 1972; EMUS • 1 ♂; same label data as for preceding; Aug. 1972; EMUS • 4 ♀♀, 4 ♂♂; same label data as for preceding; 2000 m a.s.l.; Sep. 1972; EMUS • 2 ♀♀, 13 ♂♂; same label data as for preceding; Oct. 1972; EMUS • 2 ♀♀, 8 ♂♂; same label data as for preceding; Nov. 1972; EMUS • 2 ♀♀, 15 ♂♂; same label data as for preceding; Dec. 1972; EMUS.

Distribution

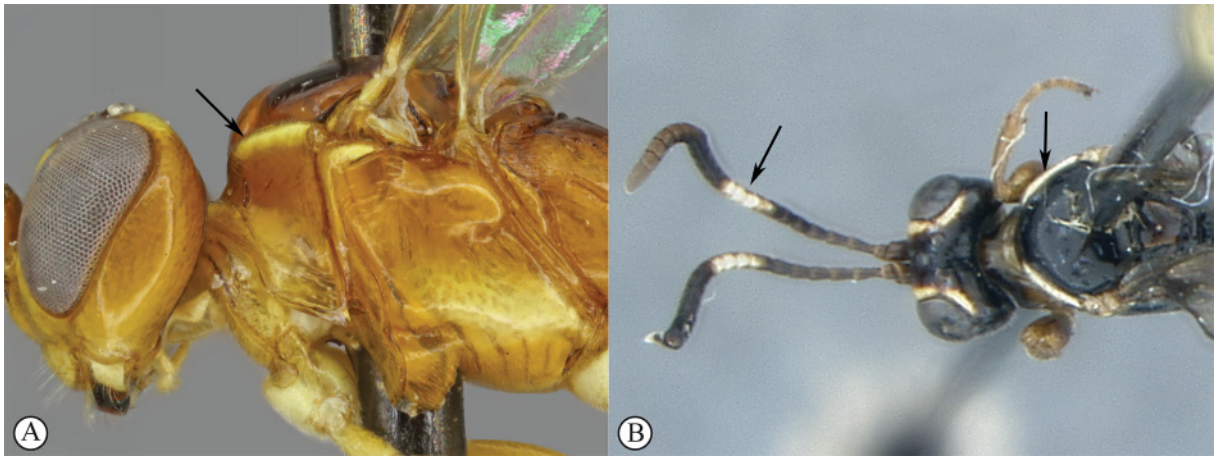
Democratic Republic of Congo; Uganda; Zimbabwe (Rousse *et al*. 2013); Kenya (**new record**) (Fig. 18A–B).

Remarks

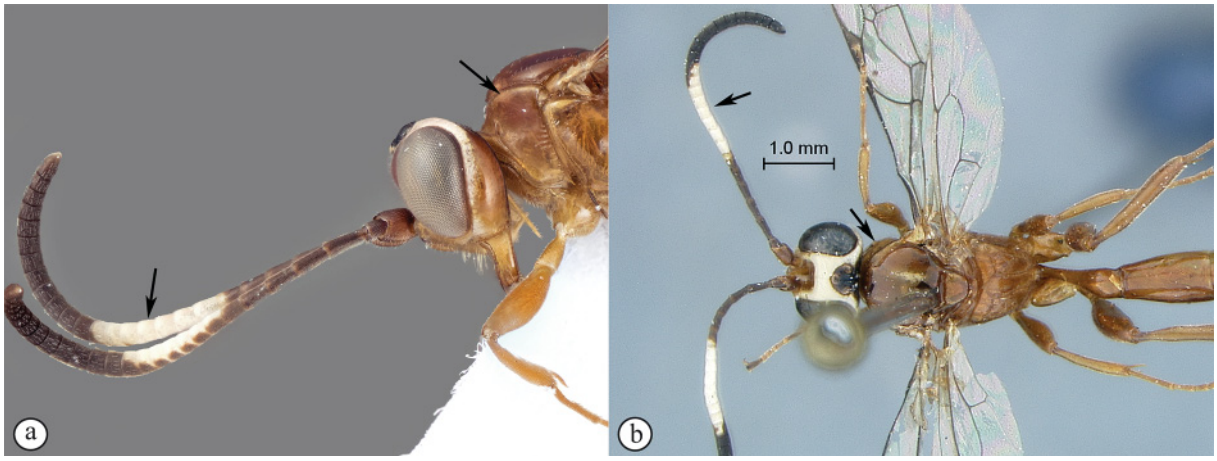
In the original description, Rousse *et al.* (2013: 23) reported that the mesosoma is mostly black, with "*a longitudinal stripe on mesopleuron sometimes lightening to pale yellow*" (see Rousse *et al*. 2013: fig. 8e). However, the female specimens from Kenya here examined display a larger yellow area reaching the middle of the mesopleuron and extending to the mesosternum, at least partially (Fig. 17A–B).

The 67 specimens recorded from Kenya represent the first record for the country (Fig. 18A–B).

Key to the species of *Chauvinia* Heinrich, 1938 (updated from Rousse *et al*. 2013)



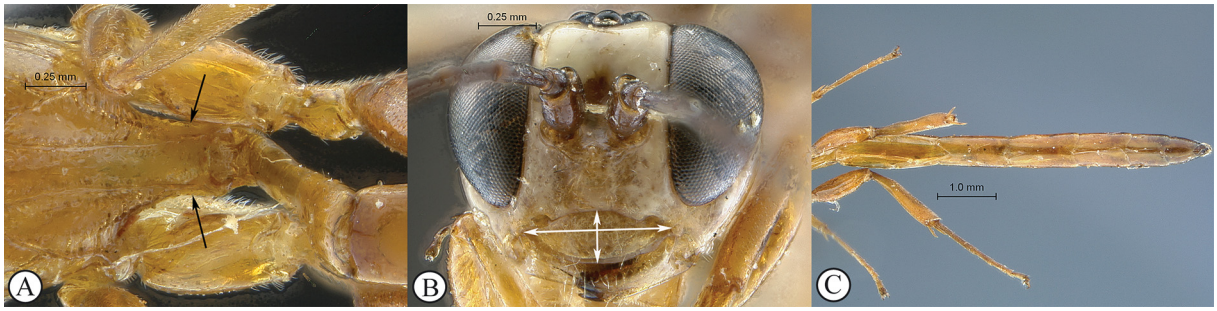
1. Dorsal margin of pronotum predominantly yellowish-white (A, B); female antenna with annulus spanning 2 flagellomeres (B); tropical Africa..... 2



– Dorsal margin of pronotum orangish-brown, concolorous with the rest of pronotum (a, b); female antennae with annulus on 6 flagellomeres (a, b); Madagascar..... 3

2. Female predominantly black to dark brown (A); 2nd tergite of metasoma shorter, 2 × as long as wide (B); male generally darker in colour (predominantly black to dark brown) with a more restricted yellowish-white to yellow longitudinal area on the mesopleuron (Fig. 13B); mesopleuron finely, sparsely punctate (C) ..... ***C. nyanga*** Rousse & van Noort, 2013

– Female predominantly brownish-orange (a); 2nd tergites of metasoma longer, 3 × as long as wide (b); male generally lighter in colour (predominantly light to dark brown) with a more extensive yellowish-white area on the mesopleuron (Fig. 13A); mesopleuron impunctate except for a few scattered, nearly indistinct punctures (c) ..... ***C. ganota*** Claridge sp. nov.



3. Apex of propodeum elongated between hind coxae, reaching half their length (A); clypeus strongly transverse, less than 3 × as wide as long (B); metasoma of female strongly elongated, longer than hind leg, with ventral margins of 3rd and following tergites overlapping (C)..... .....***C. pelecinoides*** Heinrich, 1938

– Apex of propodeum hardly elongated between hind coxae (a); clypeus extremely transverse, more than 3 × as wide as long (b); metasoma of female shorter than or as long as hind leg, with ventral margins of 4th and following tergites overlapping (c)..... ***C. nitida*** Heinrich, 1938

Genus ***Heterischnus*** Wesmael, 1859

Heterischnus Wesmael, 1859: 83. Type species: *Ichneumon pulex* Müller, 1776, by monotypy.
[*Aethiopischnus*] Heinrich, 1936: 244. Nomen nudum.
Aethiopischnus Heinrich, 1938: 127. Type species: *Aethiopischnus olsoufieffi* Heinrich, 1938, by original designation. Synonymized by Townes & Townes (1951: 278) under *Rhexidermus* Förster, 1869.
Ischnopsidea Viereck, 1914: 77. Type species: *Ischnus thoracicus* Gravenhorst, 1829, by original designation. Synonymized by Townes (1944: 305) under *Rhexidermus* Förster, 1869.
Posocentrus Provancher, 1875: 272. Type species: *Posocentrus huardi* Provancher, 1875, by monotypy. Synonymized by Townes (1944: 305) under *Rhexidermus* Förster, 1869.
Rhexidermus Förster, 1869: 192. Type species: *Rhexidermus japonicus* Ashmead, 1906, by subsequent monotypy by Ashmead (1906: 171). Synonymized by Perkins (1959: 77).

Diagnosis

The unidentate and falcate mandibles set *Heterischnus* Wesmael, 1859 apart from all the other Afrotropical genera of Phaeogenini, except for *Lusius*, from which it can be distinguished by the presence of vein *3rs-m* (areolet closed) in the fore wing and the abscissa of *CU* in the hind wing. Additionally, the genus can be separated from other genera by the following combination of characters: (1) clypeus separated from face by clupeal suture; (2) basal flagellar segments slender and long; (3) vertex long and slightly convex behind ocelli; (4) hypostomal carina joining occipital carina distinctly at or above mandibular base; (5) epicnemial carina strongly raised ventrally and flexed over the base of the fore coxae; (6) notauli distinct anteriorly, deep and long; (7) tarsal claws simple; (8) gastrocoeli nearly indistinct to deep, thyridia wide;

(9) ovipositor extending relatively strongly beyond apex of metasoma (Perkins 1959; Selfa & Diller 1994; Rousse *et al.* 2013; Claridge 2021b) .

Remarks

Heterischnus Wesmael, 1859 occurs in the Afrotropical, Nearctic, and Palearctic regions (Yu *et al.* 2016; Claridge 2021b). Previous to this contribution, 5 species were recorded in the Afrotropic (Rousse *et al.* 2013; Yu *et al.* 2016), but, with *H. mkomazi* Rousse & van Noort, 2013 being herein transferred to the genus *Nesostenodontus* (see below for the complete analyses), the current number of Afrotropical species is 4, namely: *H. africanus* (Heinrich, 1936), *H. karusi* Schönitzer, 1999, *H. mfongosi* Rousse & van Noort, 2013 and *H. olsoufieffi* (Heinrich, 1938). As a result of the transfer, the genus is no longer recorded for Senegal (Table 1).

Remarks

Despite being currently a synonym of *Heterischnus*, *Aethiopischnus* requires a focused commentary to resolve some nomenclatural issues. *Aethiopischnus* firstly appeared in Heinrich (1936: 244) without being accompanied by any formal description. The genus name served only to accommodate the description of a new species, *Aethiopischnus africanus*. Later on, Heinrich (1938: 127) introduced the name *Aethiopischnus* again as "*gen. nov.*" providing this time an adequate description and designating *Aethiopischnus olsoufieffi* as the type species. Townes & Townes (1973: 221) acknowledged the two names (*Aethiopischnus* Heinrich, 1936 and *Aethiopischnus* Heinrich, 1938) and placed them as a synonym of *Heterischnus*. Yu & Horstmann (1997: 489) deemed *Aethiopischnus* Heinrich, 1936 an unavailable name without providing any discussion for their action. According to ICZN (1999: article 13.1.1), to be available a name proposed after 1930 needs to be accompanied "*by a description or definition that states in words characters that are purported to differentiate the taxon.*". Because of the lack of a proper description, the genus name *Aethiopischnus* Heinrich, 1936 is deemed a nomen nudum, and therefore unavailable. *Aethiopischnus* Heinrich, 1938 is the available name (even though invalid) in accordance with Yu & Horstmann (1997: 489).

Heterischnus mfongosi Rousse & van Noort, 2013
Figs 19–21

Heterischnus mfongosi Rousse & van Noort, 2013: 47–51 (original description, key).

Heterischnus mfongosi – Yu *et al*. 2016 (catalogue).

Original type series

Holotype: ♀, by original designation (SAMC).
Paratypes: 1 ♀ (ZMHB); 2 ♀♀ (NHMUK).

Type locality

South Africa: Mfongosi.

Material examined

KENYA • 1 ♀; Meru Park, Upper Imenti Forest; Jun. 1967; H. Gonget leg.; D. Dal Pos det.; NHMD.

TANZANIA • 1 ♀; SW of Mt. Rungwe; 1900 m a.s.l.; 20 Aug. 1980; M. Stoltza and N. Scharff leg.; D. Dal Pos det.; NHMD.

ZIMBABWE • 1 ♀; Salisbury, Chishawasha; Jan. 1981; A. Watsham leg.; D. Dal Pos det.; NHMUK • 1 ♂; same collection data as for preceding; May 1981; D. Dal Pos det.; NHMUK.

Distribution

Kenya (**new record**); South Africa (Rousse *et al.* 2013); Tanzania (**new record**); Zimbabwe (Rousse *et al.* 2013) (Fig. 21A–B).

Diagnosis (male)

For the first time, a male specimen of the species is hereby diagnosed, bearing the same label data as one of the female paratypes reported in the original description. Compared to the female, no major differences are reported. Body length is approximately 7.0–7.5 mm, fore wing length is 4.2 mm. The coloration is identical, with the exception of: (1) absence of white annuli in the antennae, and (2) a slightly lighter coloration of the anterior part of 6th tergite (Fig. 19B).

Fig. 19. *Heterischnus mfongosi* Rousse & van Noort, 2013 (NHMUK). **A**. ♀, habitus, lateral view. **B**. ♂, habitus, lateral view.

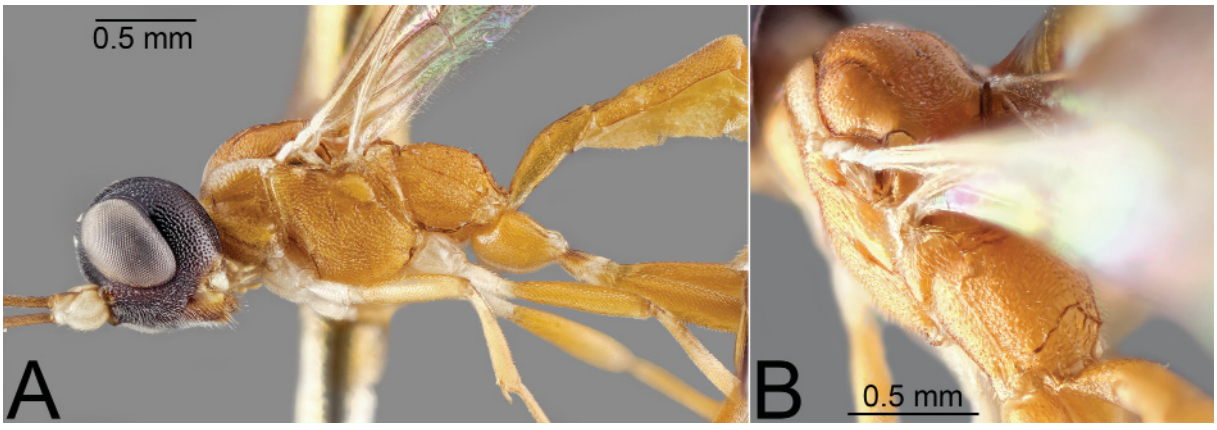


Fig. 20. *Heterischnus mfongosi* Rousse & van Noort, 2013, ♀ (NHMUK). **A**. Head and mesosoma, lateral view. **B**. Propodeum, dorso-lateral view.

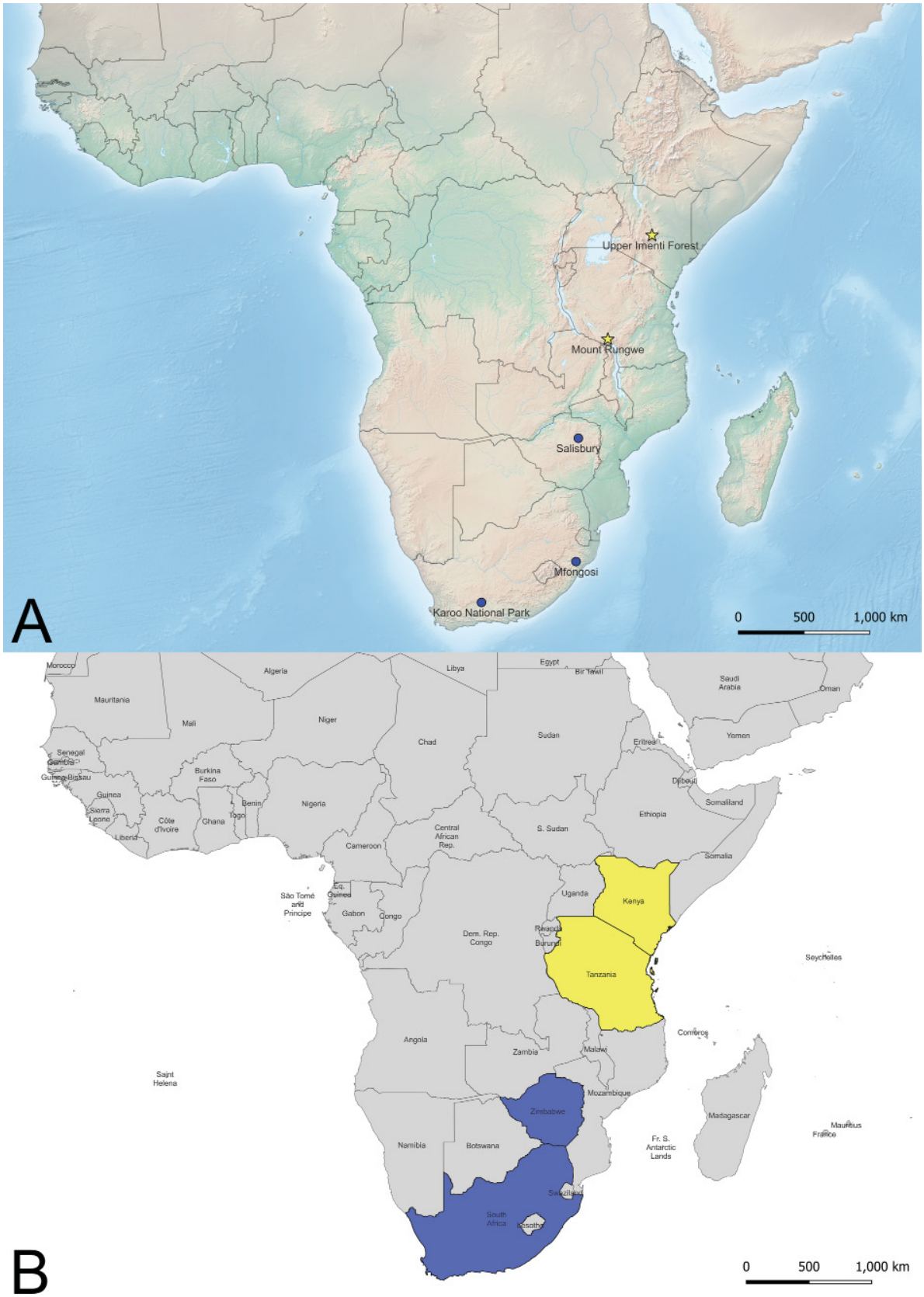


Fig. 21. Distribution of *Heterischnus mfongosi* Rousse & van Noort, 2013. **A**. Previous (blue dots) and new records (yellow stars). **B**. Previous (blue) and new (yellow) country records.

Remarks

In the original description, Rousse *et al.* (2013: 51) reported that the propodeum of the species is "*without carination*" and that the metasomal tergites are testaceous "*with median black maculae.*" However, the specimens examined by one of us (DDP) from Zimbabwe and matching the paratype locality, clearly showed the presence of a complete and well-defined posterior transverse carina (Fig. 20A–B), and no presence of black maculae on the metasoma. Based on the examination of the holotype, it seems clear that the reported black maculae are only an artifact due to the poor state of preservation of the specimen. When muscles and body fat tissue break up, the external coloration of the tergites becomes darker, creating the illusion of maculae. Similar situations are not rare in preserved specimens, and this has been briefly discussed for *Genaemirum filipazzii* Dal Pos & Rousse, 2018 (Dal Pos & Rousse 2018). Based on the specimens examined here, the coloration is orangish-yellow for the entire metasoma, with only the apical tergites (6th and 7th) infuscated (Fig. 19A).

Before this contribution, the species was known only from the type series and recorded only from southern Africa. The additional examined material included here extends the distributional range of the species to East Africa (Fig. 21A–B).

Heterischnus olsoufieffi (Heinrich, 1938)
Figs 22–23

[*Aethiopischnus olsoufieffi*] Heinrich, 1936: 244. Nomen nudum.
Aethiopischnus olsoufieffi Heinrich, 1938: 128 (original description, key).

Heterischnus olsoufieffi – Yu & Horstmann 1997: 489 (catalogue). — Yu *et al*. 2012 (catalogue); 2016 (catalogue). — Rousse *et al*. 2013: 54 (diagnosis, key, images).
Heterischnus olsoufieffi – Townes & Townes 1973: 221 (catalogue). — Diller & Schönitzer 1999: 295 (key).

Original type series

Syntypes: 2 ♀♀, 3 ♂♂; MZPW.

Heinrich (1938: 128) described the species based on 5 specimens from different locations in Madagascar without designating any of them as the name-bearing type. Rousse *et al.* (2013: 54), referring to the type series, employed the terms "holotype" and "paratype". This latter usage of the terms is incorrect. Holotypes are designated in the original description or are implied when only one specimen is described (ICZN 1999: 73.1). In this case, Heinrich (1938: 128) mentioned more than one specimen in the type series and did not choose any of them as holotype. Moreover, the employment of the term "holotypus" does not constitute a valid lectotype designation either (ICZN 1999: article 74.5). A more in-depth study of the MZPW collection will be required prior to the designation of a lectotype; therefore, for the moment, the specimens of the original type series should be referred to as syntypes (ICZN 1999: article 73.2).

Type locality

Madagascar: Ankaratra, Fianarantsoa, Perinet & Tsinjoarivo.

Material examined

MADAGASCAR • 1 ♀; Province Fianarantsoa, Miandritsara Forest, 40 km S of Ambositra; 20°47.56′ S, 47°10.54′ E; 825 m a.s.l.; 27 Dec. 2005–5 Jan. 2006; M. Irwin and R. Harin'Hala leg.; in low altitude rainforest; MA-29-61; Malaise trap; CASLOT 0050173; D. Dal Pos det.; CAS ENT8437500 • 1 ♂;

same collection data as for preceding; 27 Feb.–8 Mar. 2006; MA-29-46; CASELOT# 0050174; D. Dal Pos det.; CAS ENT8437594 • 1 ♀; Province Fianarantsoa, Parc National Ranomafana; 21°15.05′ S, 47°24.43′ E; 1130 m a.s.l.; 27 Nov.–2 Dec. 2006; M. Irwin and R. Harin'Hala leg.; radio tower at forest edge; D. Dal Pos det.; DDPC 0000032.

Distribution

MADAGASCAR: Alaotra-Mangoro; Haute Matsiatra; Vakinankaratra regions (Heinrich 1938); Amoron'i Mania region (**new record**); Vatovavy-Fitovinany region (**new record**) (Fig. 23A–B).

Remarks

In the description of *Aethiopischnus africanus*, Heinrich (1936: 244) introduced the name "Ae. Olsoufieffi *Hein*." without providing any other detail. *Aethiopischnus olsoufieffi* reappeared later on in Heinrich (1938: 127), but this time it was accompanied by a formal description and was designated as the type species of the genus *Aethiopischnus*. Townes & Townes (1973: 221) and Diller & Schönitzer (1999: 295) reported "Heinrich, 1938" as the authorship of the species, while Yu & Horstmann (1997: 489) and Rousse *et al.* (2013: 54) retained "Heinrich, 1936".

When Heinrich (1936: 244) introduced *olsoufieffi*, he did by comparing it with *A. africanus*. However, according to ICZN (1999: article 13.1. 1 & 13.1.2) a new name after 1930 must be accompanied "*by a description or definition that states in words characters that are purported to differentiate the taxon*" or "*by a bibliographic reference to such a published statement.*". Basically, if the original statements allow the construction of a conclusion that can be used as a description or differential diagnosis, then the name should be considered available. However, from Heinrich's (1936: 244) comparison, it is impossible to differentiate *olsoufieffi* from *africanus*. The statement "*Dem* Ae. Olsoufieffi *Heinr. nahestehend, aber von dunklerer, unbestimmterer Grundfarbe, Fühlergeissel ohne weisse Zeichnung. Schläfen relativ schmaler. Wengen und Schläfen dichter punktiert. Thyridien kaum noch angedeutet* [= *Close to the species* Ae. Olsoufieffi *Heinr., but of darker, more indistinct ground colour, antennal flagella without white markings. Temples relatively narrower. Cheeks and temples more densely punctured. Thryridia hardly indicated*]" is too vague and does not allow a clear separation between the two species. Before Heinrich (1936), also *africanus* (the species with which *olsoufieffi* was compared) was not known and the comparison could not be anchored to a previous species hypothesis. Therefore, *Aethiopischnus olsoufieffi* Heinrich, 1936 is hereby deemed a nomen nudum (unavailable) and the available name is *Aethiopischnus olsoufieffi* Heinrich, 1938.

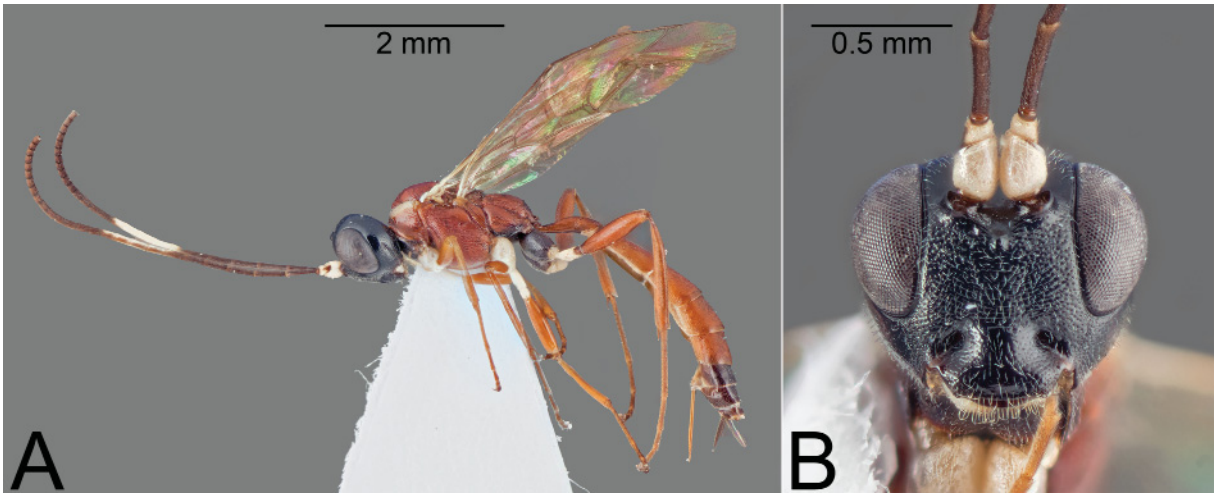


Fig. 22. *Heterischnus olsoufieffi* (Heinrich, 1938), ♀ (CAS). **A**. Habitus, lateral view. **B**. Head, frontal view.

The circumstances that led Heinrich (1936) to introduce the name *olsoufieffi* are probably due to a publication issue. Reading the introduction, it seems clear that Heirnich's (1938) monograph was meant to be published before Heinrich's (1936) work, but a contingent situation delayed the publication of the Malagasy work.

The three additional CAS specimens represent the first record of the species since the original description, as well as an expansion of its distributional range to the Amoron'i Mania and Vatovavy-Fitovinany regions (Fig. 23A–B).

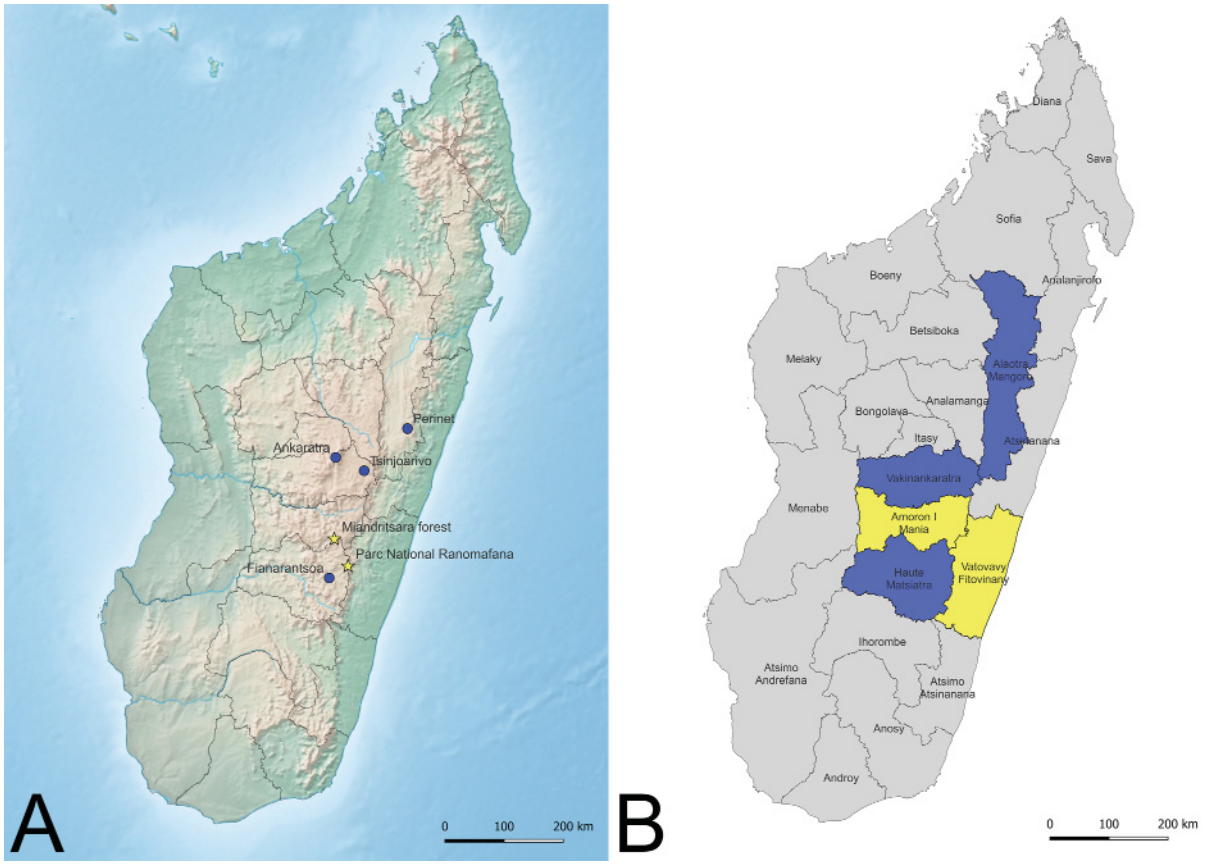
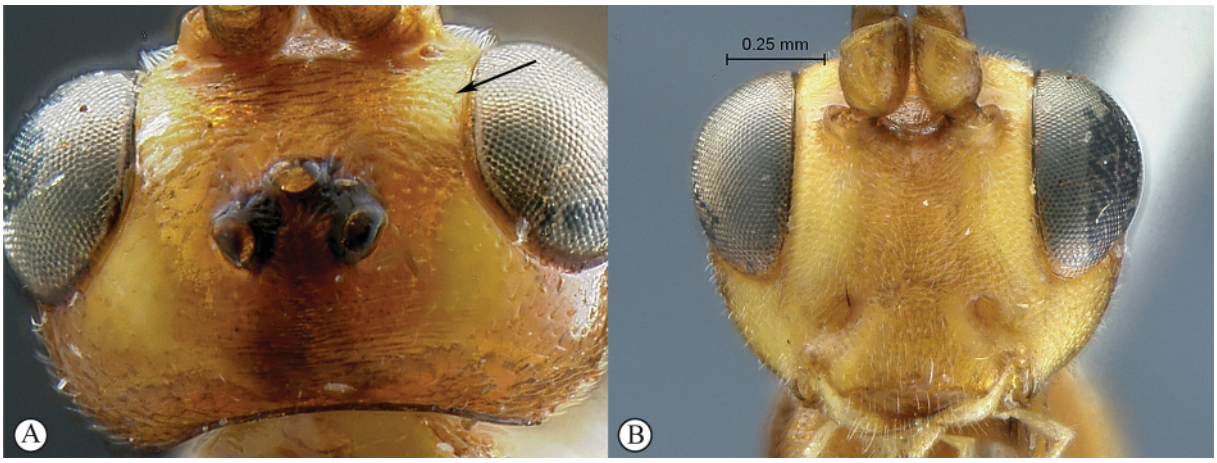
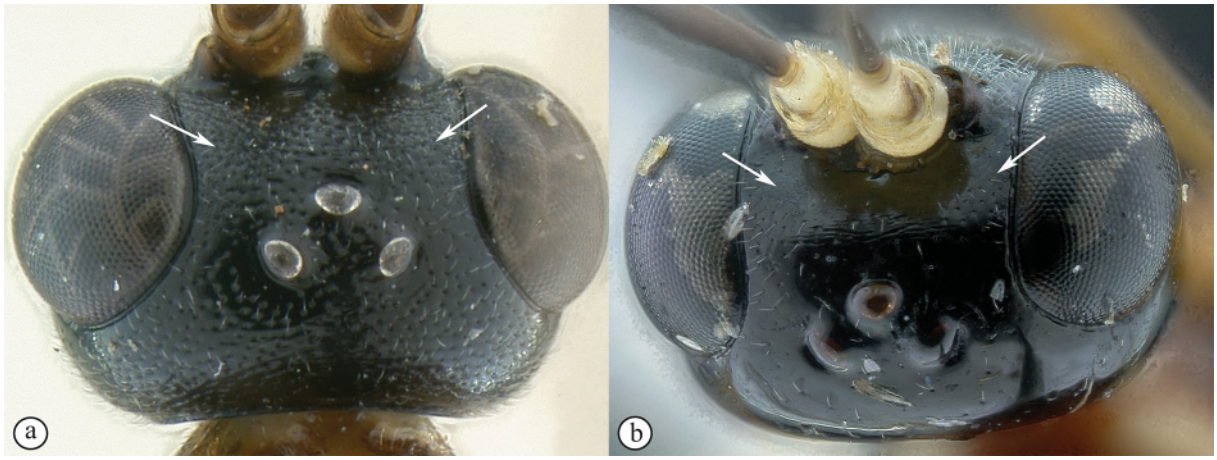


Fig. 23. Distribution of *Heterischnus olsoufieffi* (Heinrich, 1938). **A**. Previous (blue dots) and new records (yellow stars). **B**. Previous (blue) and new (yellow) regional records.

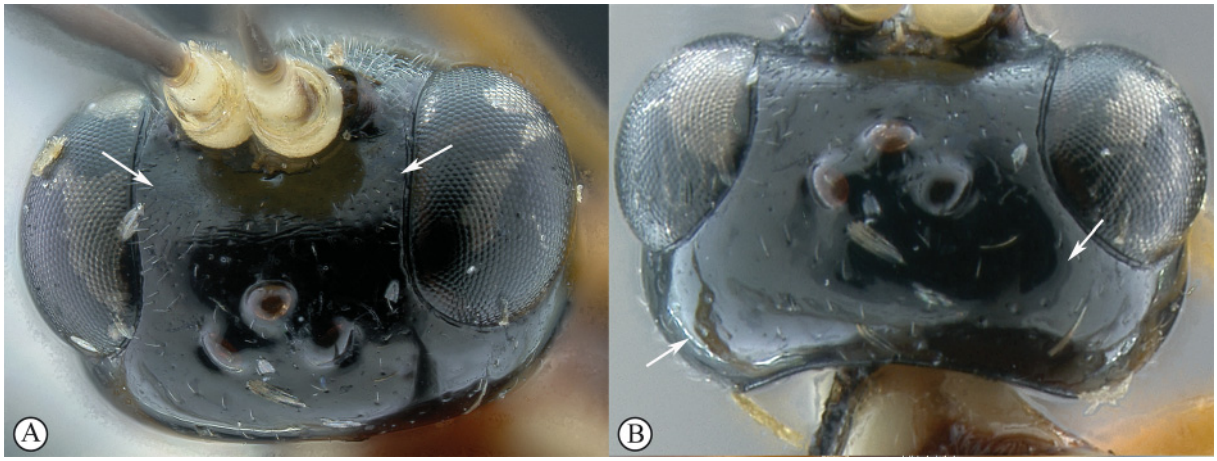
Key to the Afrotropical species of *Heterischnus* Heinrich, 1938 (modified from Rousse *et al*. 2013)



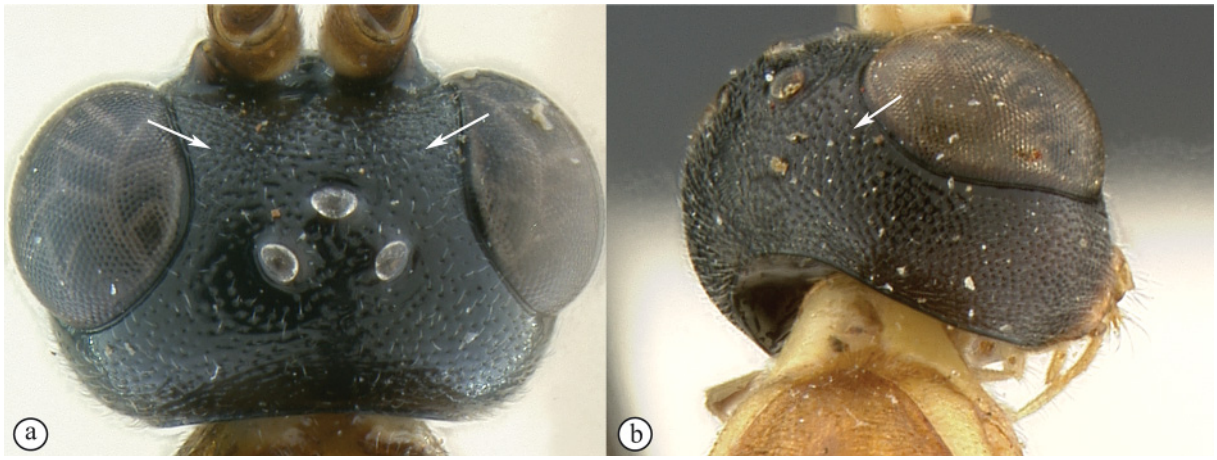
1. Frons transversely striate (A); head yellowish-orange (B)..... ***H. krausi*** Schönitzer, 1999



– Frons not transversely striate, either punctate (a), or almost entirely polished (b); head black (a, b). 2



2. Frons polished with fine isolated punctures (A); occiput polished (B) .... ***H. olsoufieffi*** (Heinrich, 1938)



– Frons punctate (a); occiput punctate (b) 3

3. Mesosoma uniformly orange (A, B); white median ring on flagellum present in females (B), absent in males ..... ***H. mfongosi*** Rousse & van Noort, 2013

– Mesosoma multi-colored, black, yellowish and testaceous (a, b); white median ring on flagellum absent in both sexes (b) ..... ***H. africanus*** (Heinrich, 1936)

Hoplophaeogenes Heinrich, 1938

Hoplophaeogenes Heinrich, 1938: 125. Type species: *Hoplophaeogenes amoenus* Heinrich, 1938, by original designation.

Diagnosis

Hoplophaeogenes can easily be distinguished from the other Afrotropical genera of Phaeogenini by the following combination of characters: (1) bidentate mandibles (unidentate in *Lusius* and *Heterischnus*); (2) thyridia and gastrocoeli indistinct (clearly present in *Aethecerus*, *Centeterichneumon*, *Diadromus*, *Kibalus*, and *Tycherus*); (3) propodeal apophyses present (absent in *Aethecerus*, *Arearia*, *Chauvinia*, and *Dicaelotus*). The genus can further be distinguished by: upper tooth of mandible much longer than lower tooth; clypeus distinctly separated from face, its ventral margin acute and irregularly convex; hypostomal and occipital carinae joining distinctly above mandibular base; flagellum of female enlarged from middle on; pronotum somewhat enlarged ventrally, epomia weak; sternaulus deeply impressed, crenulate, reaching mid-length of mesopleuron; notauli indistinct; posterior transverse carina interrupted in front of mid coxae; fore wing with areolet pentagonal, closed; hind wing with distal abscissa of *CU* present, unpigmented; tarsal claws simple; propodeum fully carinate (Heinrich 1938; Rousse *et al*. 2013).

Remarks

The genus *Hoplophaeogenes* is restricted to Madagascar, and prior to this contribution, no new specimens were known. Only two species have been described so far: *H. amoenus* Heinrich, 1938 and *H. curticornis* Heinrich, 1938.

Hoplophaeogenes curticornis Heinrich, 1938
Figs 24–25

Hoplophaeogenes curticornis Heinrich, 1938: 127 (original description, key).

Hoplophaeogenes curticornis – Townes & Townes 1973: 220 (catalogue). — Yu & Horstmann 1997: 490 (catalogue). — Yu *et al*. 2012 (catalogue); 2016 (catalogue). — Rousse *et al*. 2013: 59 (diagnosis, key, images).

Original type series

Syntypes: 2 ♀♀ (MZPW).

Heinrich (1938: 127) described the species based on two females (one from "*Montagne d'Ambre*" and the other from "*Diégo-Suarez*") without clearly designating any of them as the name-bearing type. Initially, Rousse *et al.* (2013: 59) correctly referred to the types as "syntypes", without designating a lectotype. However, the same authors (Rousse *et al.* 2013: 60–61, figs 33–34) referred to the specimens as the "holotype". The use of the term "holotype" does not constitute a valid lectotype designation (ICZN 1999: article 74.5, 74.7). A more in-depth study of the MZPW collection will be required prior to designating a lectotype; therefore, for the moment, the type specimens should be referred to as syntypes (ICZN 1999: article 73.2).

Type locality

Madagascar: Montagne d'Ambre & Diégo-Suarez.

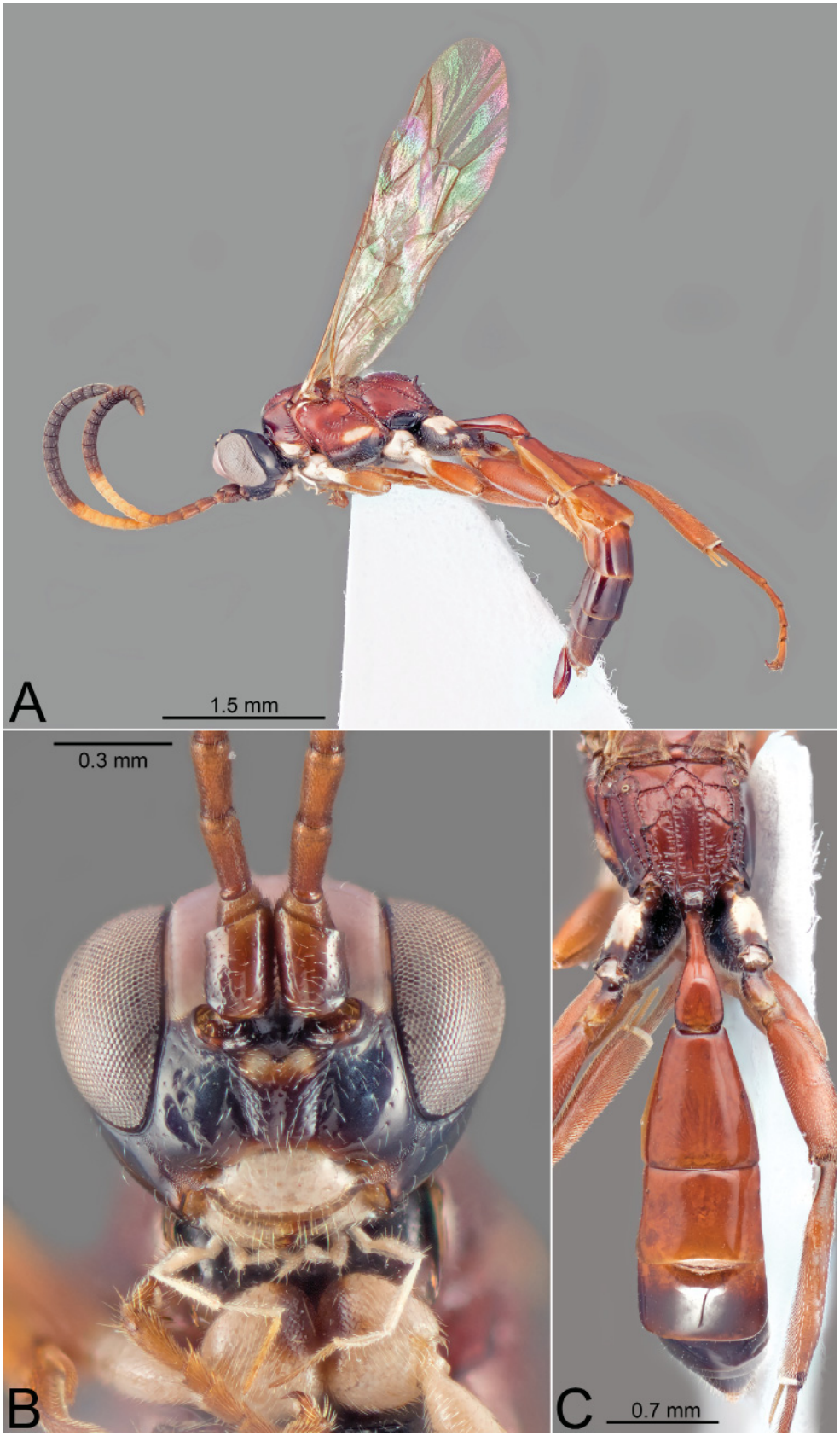


Fig. 24. *Hoplophaeogenes curticornis* Heinrich, 1938, ♀ (CAS). **A**. Habitus, lateral view. **B**. Head, frontal view. **C**. Metasoma, dorsal view.

Material examined

MADAGASCAR • 1 ♀; Antananarivo prov., 46 km NE of Ankazobe, Ambohitantely; 18°11.88′ S, 47°16.89′ E; 700 m a.s.l.; 7–22 Dec. 2004; M. Irwin and R. Harin'Hala leg.; in sclerophyll forest; Malaise trap; MA-29-56; CASELOT#0050216; D. Dal Pos det.; CAS ENT8437522.

Distribution

MADAGASCAR: Analamanga region (**new record**); Diana region (Heinrich 1938) (Fig. 24A–B).

Remarks

The only two specimens known are those belonging to the type series, from the Diana region (Northern Madagascar). The specimen here recorded represents the first record of the species for the Analamanga region and, more importantly, for the central part of Madagascar (Fig. 25A–B).

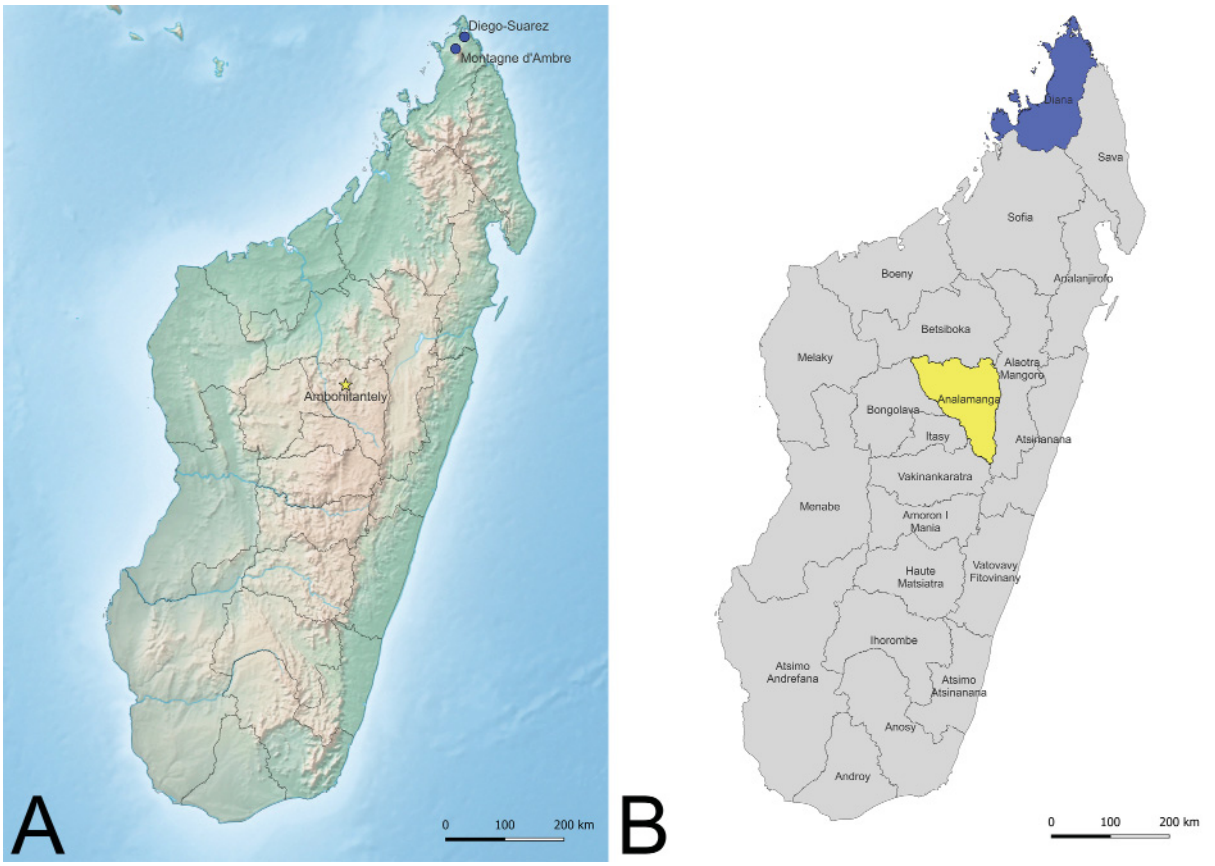
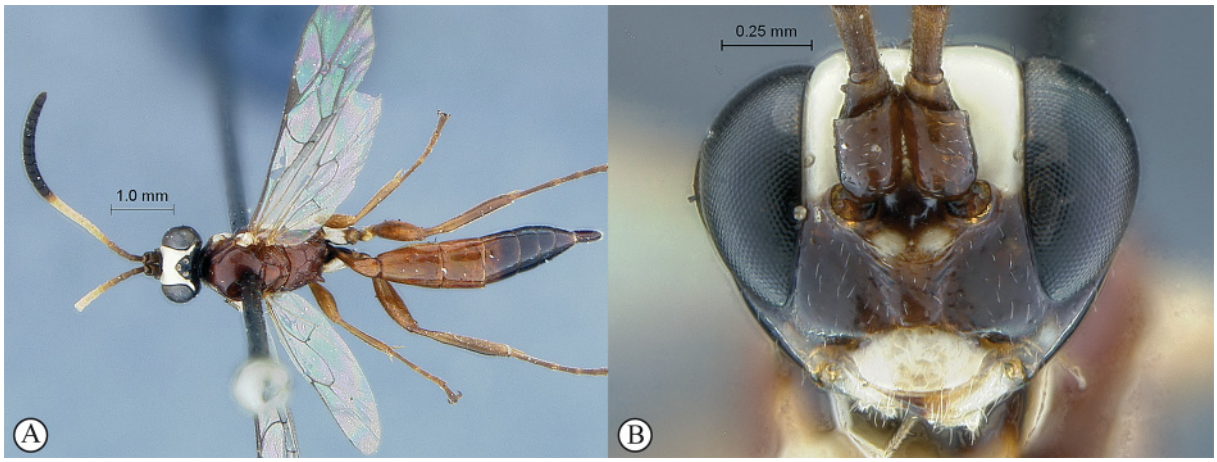
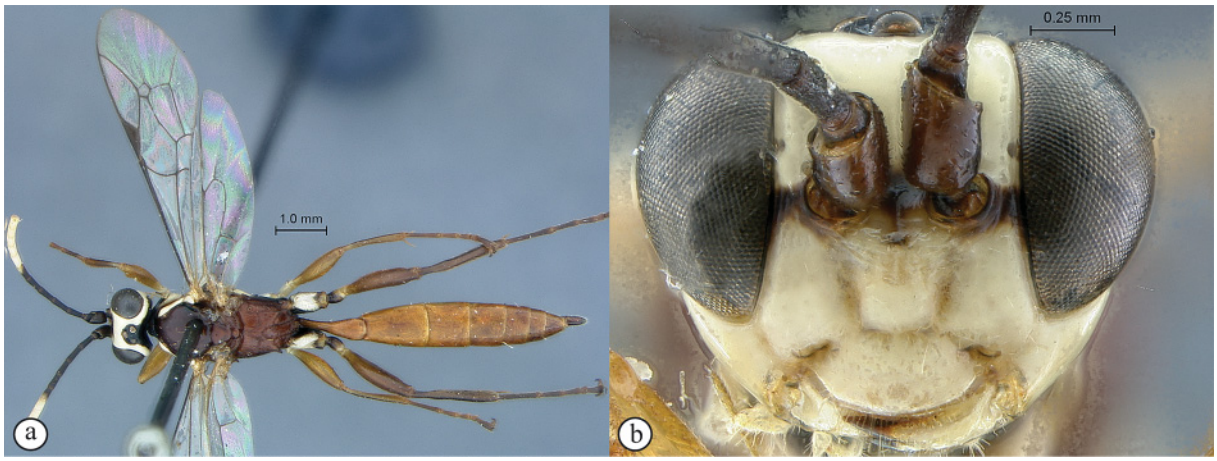


Fig. 25. Distribution of *Hoplophaeogenes curticornis* Heinrich, 1938. **A**. Previous (blue dots) and new records (yellow star). **B**. Previous (blue) and new (yellow) regional records.

Key to the species of *Hoplophaeogenes* Heinrich, 1938 (updated from Rousse *et al*. 2013)



1. Antenna short, with less than 25 flagellomeres (A); head mostly dark brown to black with mandibles, clypeus and frons pale yellow (B) ..... ***H. curticornis*** Heinrich, 1938



– Antenna longer, with more than 25 flagellomeres (a); head mostly pale yellow with occiput and vertex black (b) ..... ***H. amoenus*** Heinrich, 1938

Genus ***Kibalus*** Rousse, van Noort & Diller, 2013

Kibalus Rousse, van Noort & Diller in Rousse *et al*., 2013: 59. Type species: *Kibalus toro* Rousse, van Noort & Diller 2013, by original designation.

Diagnosis

Kibalus can easily be distinguished from the other Afrotropical genera of Phaeogenini by the following combination of characters: (1) bidentate mandibles (unidentate in *Lusius* and *Heterischnus*); (2) gastrocoeli present and long (absent in *Arearia*, *Chauvinia*, *Dicaelotus*, and *Hoplophaeogenes*); (3) occipital and hypostomal carina joining at mandibular base (modified in *Aethecerus* and *Tycherus*); (4) 2nd metasomal tergite more than 2 × as long as apically wide (almost square in *Centeterichneumon* and *Diadromus*). The genus can further be distinguished by: hemispherical head, coarsely sculptured; upper tooth of mandible much longer than lower tooth; mesoscutum steeply elevated above pronotum; propodeum elongate, regularly rounded without differentiated horizontal anterior part in profile view; propodeal carination weak, more or less complete; fore wing with areolet closed; hind wing with distal abscissa *CU* absent; ovipositor very shortly projecting beyond metasomal apex (Rousse *et al.* 2013).

According to Rousse *et al.* (2013), the genus is also characterized by a complete and strong postpectal carina. However, in the new species described below, *Kibalus nonnaritae* Dal Pos & Di Giovanni sp. nov., the postpectal carina is absent in front of the mid coxa.

Remarks

The genus *Kibalus* has only been recorded from the Afrotropical region, and specifically only from Uganda. Three species are known, one of which is described below: *K. mubfs* Rousse & van Noort, 2013, *K. nonnaritae* Dal Pos & Di Giovanni sp. nov., and *K. toro* Rousse, van Noort, & Diller, 2013.

Kibalus nonnaritae Dal Pos & Di Giovanni sp. nov.
urn:lsid:zoobank.org:act:B7988E5E-69FA-492B-A814-B6D257A00F60
Figs 26–28

Differential diagnosis

Kibalus nonnaritae Dal Pos & Di Giovanni sp. nov. can easily be distinguished from the other species of the genus by two peculiar characters: the very elongated labial palpus, which reaches and surpasses the fore coxae, and the absence of a postpectal carina ventrally, which is unusual for *Kibalus* (Fig. 26C). Using Rousse *et al.*'s (2013) key, it keys out to *Kibalus mubfs* Rousse & van Noort, 2013, but it is differentiated from it by the following characters: (1) face completely white, with frons, ocellar triangle, and vertex black (Figs 26B, 27A); (2) mesoscutum with two black lateral longitudinal carina (Fig. 26B); (3) propodeum mostly brownish-black (Fig. 26B); (4) mesopleuron and metapleuron completely smooth (Fig. 26C); (5) frons, ocellar triangle, and vertex smooth and shining (Fig. 26B); (6) 1st flagellomeres 2 × as long as the 2nd (Fig. 26A, 27A); (7) antenna with white annulus (Fig. 26A).

Etymology

The species is dedicated to the first author's grandmother, Rita Zanin, and the specific epithet is the combination of two terms: '*nonna*' (Italian word for 'grandmother') and '*ritae*' (female noun in the genitive case formed from a modern person name (ICZN 1999: article 31.1.2)). For her constant and indefatigable support to her family over the entire span of her life and for the tacit understanding of DDP during the many summers he spent in grandma's backyard, looking for small creatures. Without that initial support, this new species could not have been described.

Type material

Holotype
UGANDA • ♂; "[White label] UGANDA – Kibale N. P. / Kanyawara Bio. Station / 00°33'54,4''N – 30°21'29,8''E / 18-25.IV.2010 / 1509 m – Malaise trap / S. Katusabe & Co. Leg."; TUZ.

Female, in perfect condition, micropinned.

Description

Male (holotype)
Measurements. Body length: 7.7 mm; fore wing length: 5.6 mm.

Head (Figs 26B, 27A). Overall shining; face subquadrate, as wide as medially high, smooth and almost impunctate, medio-apically protruding in a very distinct blunt tubercule right below the antennal sockets, clear delimitation between clypeus and face absent; frons and vertex almost completely smooth, impunctate; ocellar triangle equilateral and not elevated; ocular-ocellar distance about 1.3 × ocellus diameter, inter-ocellar distance 1 × ocellus diameter; occipital carina distinct and complete, meeting hypostomal carina at base of mandible; temples slightly inflated in dorsal view; gena, in lateral view,

Fig. 26. *Kibalus nonnaritae* Dal Pos & Di Giovanni sp. nov., holotype, ♂ (TUZ). **A**. Habitus, lateral view. **B**. Head and mesosoma, dorsal view. **C**. Mesosoma, lateral view.

medially strongly inflated, smooth; clypeus smooth, shining with straight apical margin; malar space short, about 0.5 × basal width of mandible; mandible robust, with sparse setiferous punctures in the central area, teeth rather stout and widely separated with the ventral tooth shorter (about 0.8 ×) than the upper tooth; maxillary palpi long, reaching fore coxae, 5th segment about 1.5 × as long as 4th; antenna filiform, not tapering, flagellum with 28 flagellomeres, the 1st flagellomere about 1.4 × as long as the 2nd, preapical flagellomeres distinctly longer than wide.

Mesosoma (Fig. 26A–C). Overall shining; pronotum smooth, shining and impunctate; epomia absent; propleuron smooth, shining and almost impunctate, projected into a blunt, rounded flange ventro-apically; mesoscutum subquadrate, smooth, finely and sparsely punctate, notauli short and distinct only anteriorly; scutellum slightly elevated over metascutellum, almost impunctate, carinated throughout; mesopleuron shining all over, smooth on the upper ⅔ and sparsely and finely punctate ventrally, speculum smooth, epicnemial carina laterally ending at anterior edge of mesopleuron; sternaulus distinct on ⅔ of the length; posterior transverse carina of mesosternum incomplete, absent in front of mid coxae and slighty raised

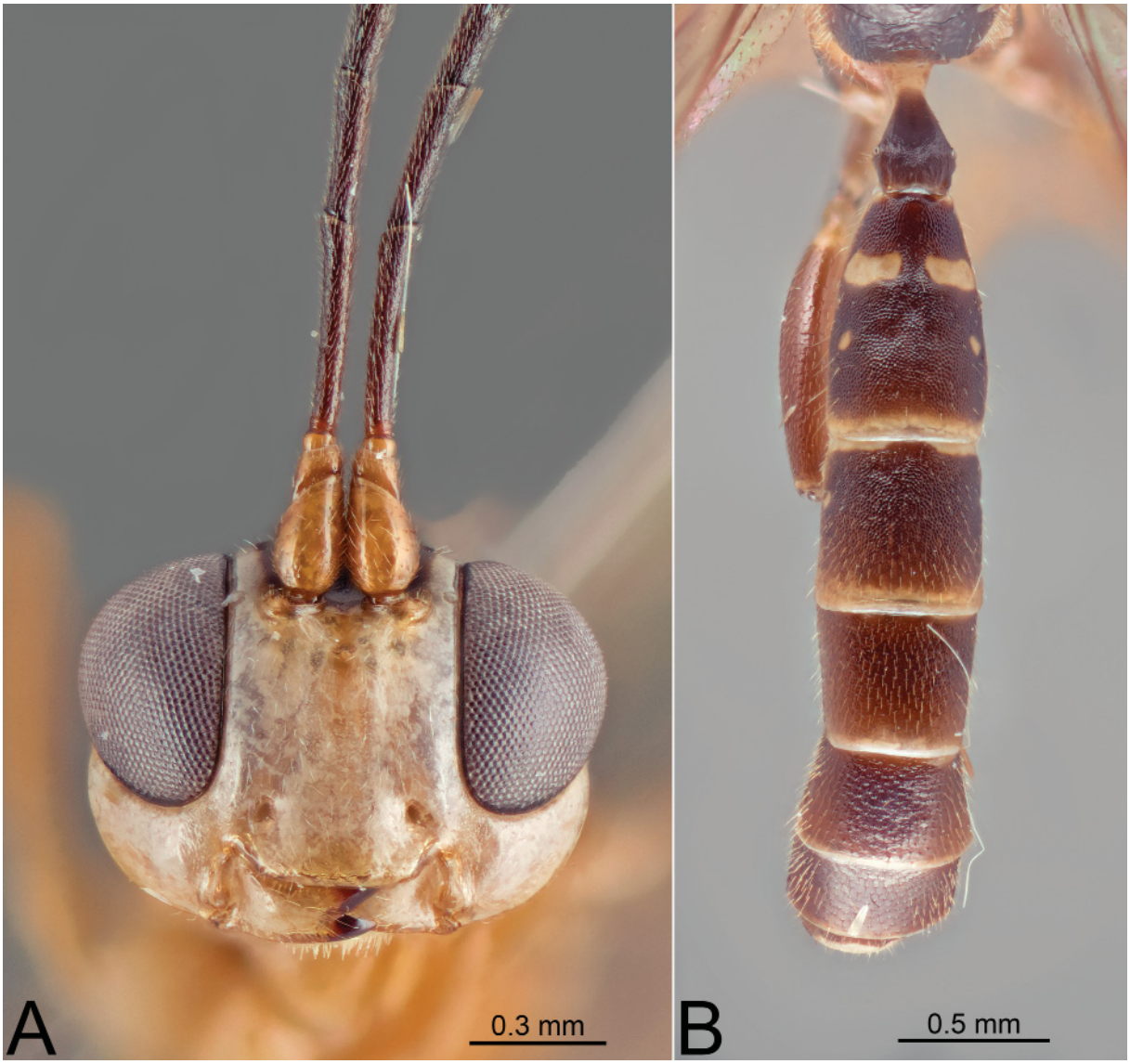


Fig. 27. *Kibalus nonnaritae* Dal Pos & Di Giovanni sp. nov., holotype, ♂ (TUZ). **A**. Head, frontal view. **B**. Metasoma, dorsal view.

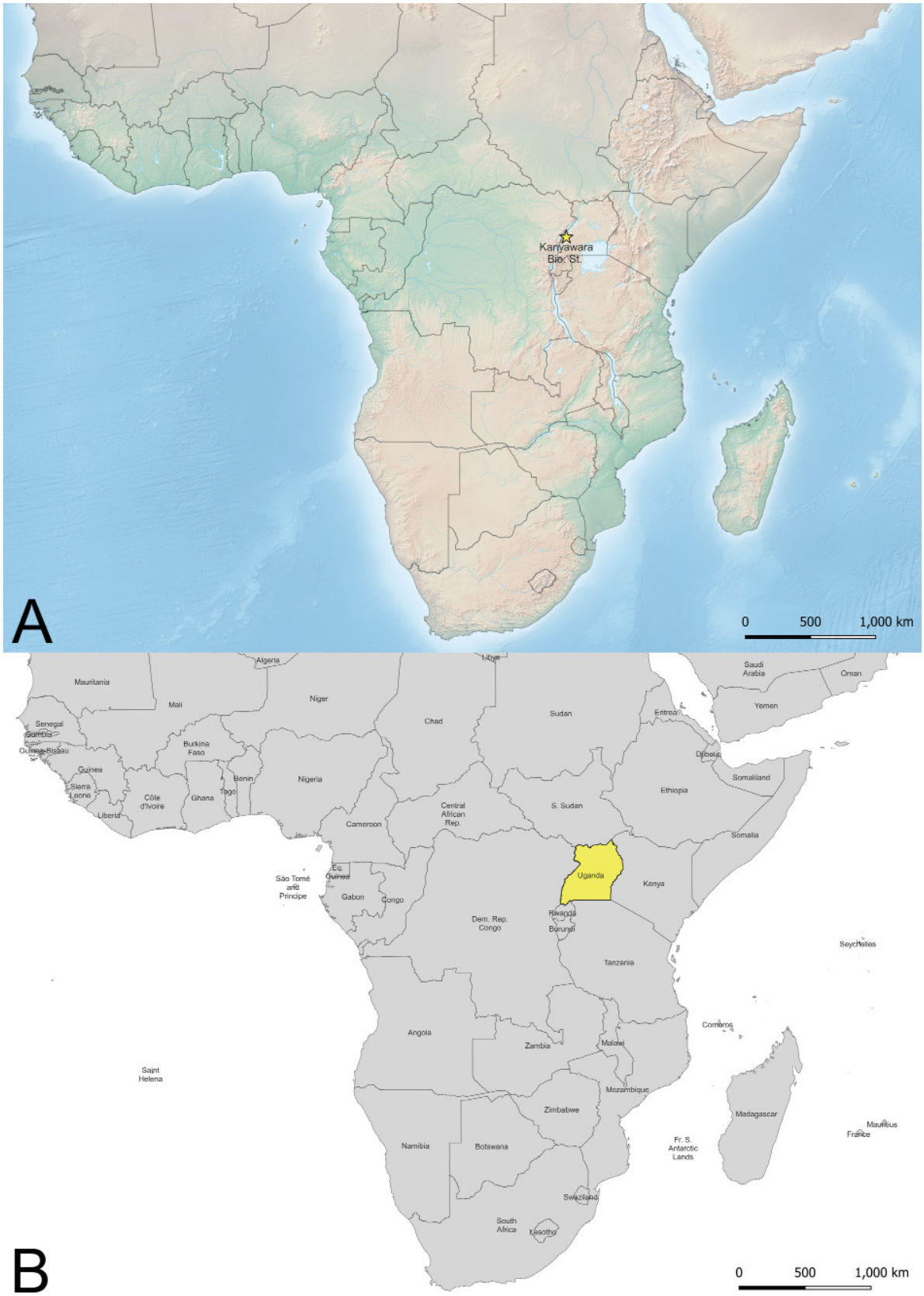


Fig. 28. Distribution of *Kibalus nonnaritae* Dal Pos & Di Giovanni sp. nov. **A**. Type locality. **B**. Country record.

between mid coxae; metapleuron smooth, shining and impunctate, juxtacoxal carina strong; propodeum short in lateral view, sloping gently with almost no horizontal part; anterior transverse carina present with area basalis and area superomedia separated and shagreen, area externa and area dentipara separated and shagreen; area spiracularis and area lateralis shagreen and shining.

Legs (Fig. 26A). All coxae smooth, hairy and impunctate; hind coxa without scopa. Hind femur about 3.3–3.6 × as long as medially high. Tarsal claws without pecten.

Wings (Fig. 26A). Fore wing with *3rs-m* present, areolet pentagonal and large; *1cu-a* opposite *M&RS*, *CU* between *1m-cu&M* and *2cu-a* about 0.7 × as long as *2cu-a*. Hind wing with distal abscissa of *CU* present, pigmented, *CU* about 3 × as long as *cu-a*.

Metasoma (Fig. 27B). First tergite shagreen throughout; 2nd tergite superficially and densely punctate, gastrocoeli indistinct; thyridia transverse, space between them smaller than one of them; 3rd tergite superficially and densely punctate; the rest of the tergites shagreen; dorsal basal part of gonoforceps smooth and shining, hairy shagreen apically.

Coloration (Figs 26–27). Head with face, clypeus, mandibles (except the black apical teeth), orbits all around the eyes (except for a spot on vertex), and genae pale yellow; black are: mandibular teeth, ocellar triangle, frons, vertex, and temples. Antenna with scape and pedicel reddish-brown; flagellum black with white annulus present only on the dorsal side, from the 9th to 13th/14th flagellomeres. Mesosoma yellow, with base and lateral lobes of mesoscutum, metanotal trough, and propodeum (except area petiolaris) infuscated; tegulae pale yellow; the overall ventral side is pale yellow while the dorsal sclerites are mostly orange. Legs overall yellowish-brown, with fore and mid coxae, fore and mid trochanter, and basal portion of fore and mid tibia pale yellow; hind coxae bicolored, pale yellow in the basal half and reddish brown in the apical half; hind leg overall more infuscated than the fore and mid legs. Wing entirely hyaline. Metasoma entirely brownish-black, except for the white basal portion of the 1st tergite, the white apical bands on 2nd and 3rd tergites, the white gastrocoeli and thyridia, and the white central spot on the 7th tergite; gonoforceps brownish-black with a white apex, penis valvae also pale yellow.

Female

Unknown.

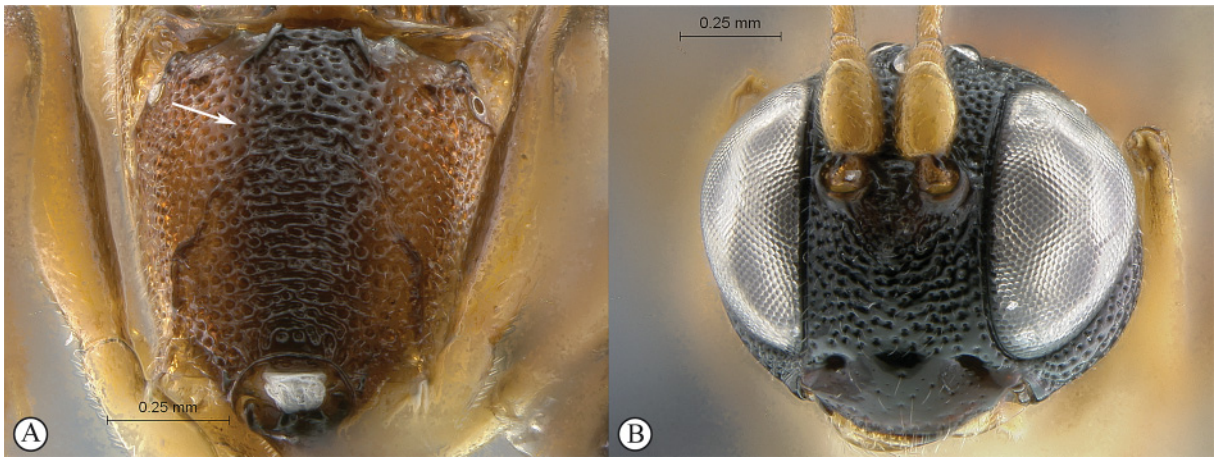
Host

Unknown.

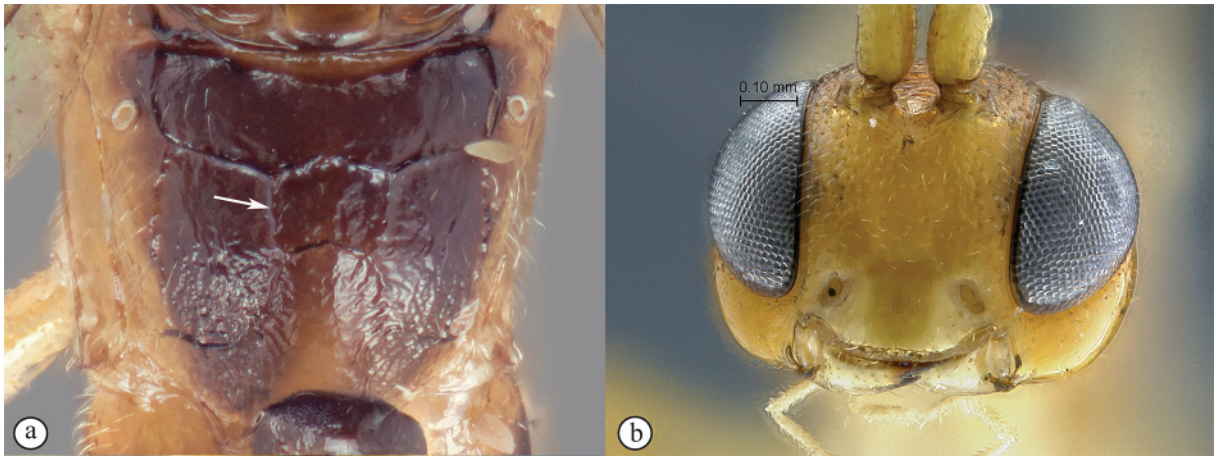
Distribution

Uganda (Fig. 28A–B).

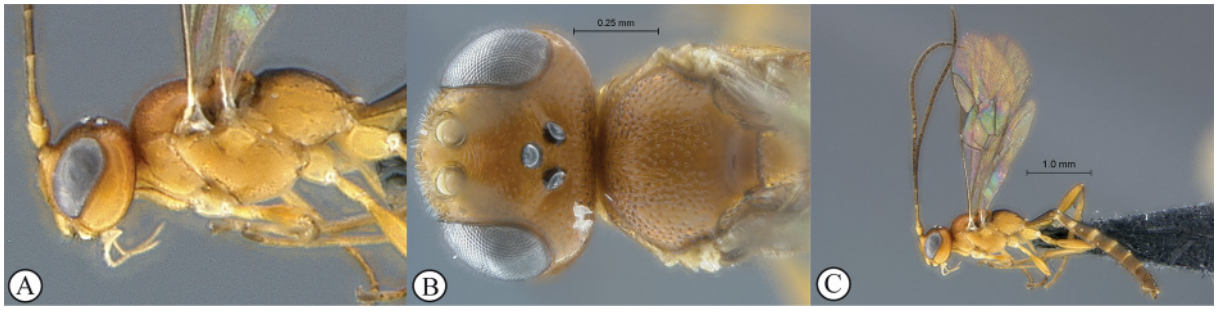
Key to the species of *Kibalus* Rousse, van Noort & Diller, 2013 (updated from Rousse *et al*. 2013)



1. Propodeum without any longitudinal carina, no area defined, punctate rugulose (A); head mostly black (B) ..... ***K. toro*** Rousse, van Noort, & Diller, 2013



– Propodeum with longitudinal carina present, area superomedia complete, weakly rugose (a); head mostly yellowish-orange or white (b)..... 2



2. Labial palpus short, not reaching fore coxa (A); mesopleuron and metapleuron densely punctate (A); frons, ocellar triangle, and vertex distinctly punctate (B); first flagellomeres as long as the second (A); head and mesosoma entirely orangish-yellow (A, B); antennae without white annulus (C)..... ..... ***K. mubfs*** Rousse & van Noort, 2013

– Labial palpus elongated, reaching past fore coxa (a); mesopleuron and metapleuron completely smooth (a); frons, ocellar triangle, and vertex smooth (b); first flagellomeres 2× as long as the second (c); head mostly white with frons, ocellar triangle, and vertex black (a, b, c); mesosoma and propodeum with black markings (a, c); antennae with white annulus (c) ..... ***K. nonnaritae*** Dal Pos & Di Giovanni sp. nov.

Lusius Tosquinet, 1903

Lusius Tosquinet, 1903: 384. Type species: *Lusius macilentus* Tosquinet, 1903, by monotypy.
Mesochorischnus Heinrich, 1938: 128. Type species: *Mesochorischnus tenuissimus* Heinrich, 1938, by original designation and monotypy. Synonymized by Townes & Townes (1966: 217).

Diagnosis

The unidentate and falcate mandibles set *Lusius* Tosquinet, 1903 apart from all the other genera of Phaeogenini, except for *Heterischnus* Wesmael, 1859, from which it can be distinguished by the absence of vein *3rs-m* (areolet open) in the fore wing and abscissa of *CU* in the hind wing. Additionally, the genus can be separated from other genera by the following combination of characters: (1) head hemispherical; (2) basal flagellar segments slender and long; (3) vertex long and slightly convex behind ocelli; (4) occipital and hypostomal carinae joining at mandibular base; (5) notaulus complete, ending posteriorly in a median depression; (6) gastrocoeli long with thyridia faint; (7) ovipositor extending beyond apex of metasoma; (8) male genitalia with gonoforceps reduced to rod-like processes (Baltazar 1964; Diller 2006; Rousse *et al.* 2013).

Remarks

The genus has a tropical distribution, and it occurs in the Afrotropical, Indomalayan and Neotropical regions. In Africa, *Lusius* is represented only by two species: *L. flummox* Rousse & van Noort, 2013, and *L. tenuissimus* Heinrich, 1938 (Table 1).

Lusius tenuissimus (Heinrich, 1938)
Figs 29–31

Mesochorischnus tenuissimus Heinrich, 1938: 129 (original description, key).

Lusius tenuissimus – Townes & Townes 1973: 221 (catalogue, new combination). — Yu & Horstmann 1997: 491 (catalogue). — Laurenne *et al.* 2006: 469 (new record). — Quicke *et al.* 2009: 1405 (distribution). — Yu *et al.* 2012 (catalogue); 2016 (catalogue). — Rousse *et al* 2013: 71 (key, new records).

Original type series

Syntypes: multiple females and males, unknown number (MZPW).

Heinrich (1938: 129) described the species based on multiple specimens, males and females, without clearly declaring the number of specimens nor designating any of them as the name-bearing type. Initially, Rousse *et al.* (2013: 72–73, figs 42–43) incorrectly referred to the type as holotype. The employment of the term "holotype" does not constitute a valid lectotype designation (ICZN 1999: article 74.5, 74.7). A more in-depth study of the MZPW collection will be required prior to the designation of a lectotype; therefore, for the moment, the type specimens should be referred to as syntypes (ICZN 1999: article 73.2).

Type localities

Madagascar: Ampandrandava, Anivorano, Rogez, Tananrive, Tamatave.
Kenya: Mombasa.

Material examined

UGANDA • 1 ♀; Kibale NP, Kanyawara Bio Station; 00°33′54.4″ N, 30°21′29.8″ E; 1509 m a.s.l.; 20 Jun. 2010; S. Katusabe and Co. leg.; Malaise trap; F. Di Giovanni det.; FDG.

ZIMBABWE • 1 ♀; Salisbury [= Harare], Chishawasha; Mar. 1981; A. Watsham leg.; D. Dal Pos det.; NHMUK • 1 ♀; same collection data as for preceding; Apr. 1981; D. Dal Pos det.; NHMUK.

Distribution

Democratic Republic of Congo (Rousse *et al.* 2013); Kenya (Heinrich 1938; Rousse *et al.* 2013); Madagascar (Heinrich 1938); Malawi (Rousse *et al.* 2013); Nigeria (Rousse *et al.* 2013); South Africa (Rousse *et al.* 2013); Tanzania (Laurenne *et al.* 2006); Uganda (**new record**); Zimbabwe (Rousse *et al.* 2013) (Figs 30–31).

Remarks

Yu *et al.* (2016) mentioned Quicke *et al.* (2009) as the first authors to report *Lusius tenuissimus* for Tanzania. This is incorrect. The first to report the species were Laurenne *et al*. (2006) in their list in appendix 1.

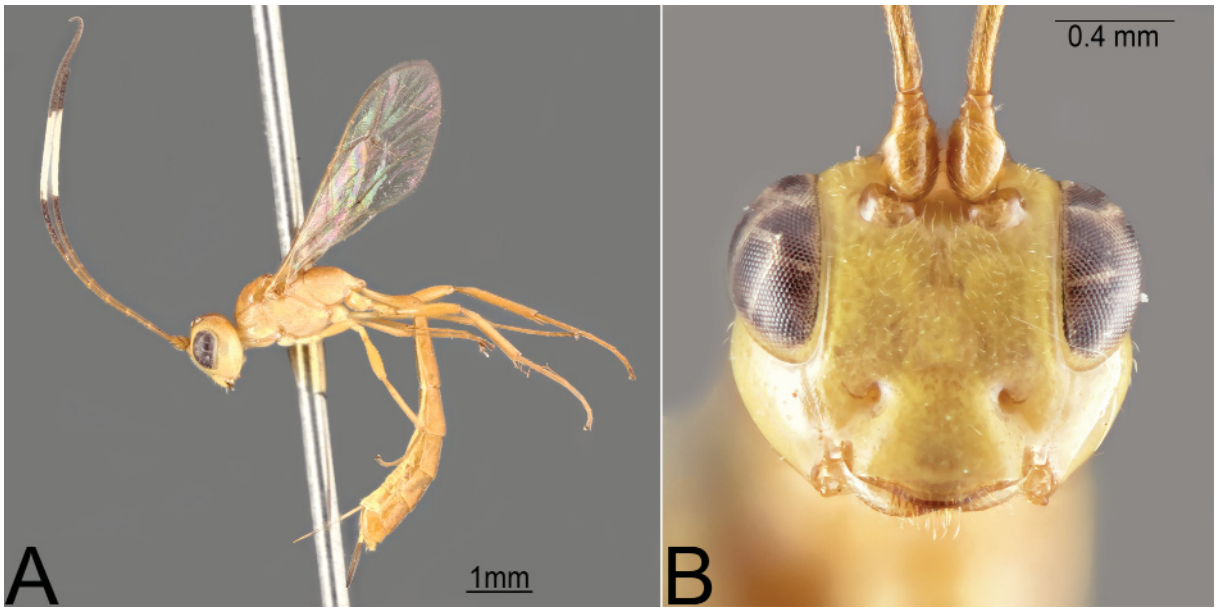


Fig. 29. *Lusius tenuissimus* (Heinrich, 1938), ♀ (NHMUK). **A**. Habitus, lateral view. **B**. Head, frontal view.

Heinrich (1938: 129) stated that the species is "*Largement répandu, mais rare [= widely distributed, but rare]*". This statement seems to be largely true as *Lusius tenuissimus* is probably the most widely spread species of Phaeogenini across Africa. It cannot be considered "rare" as Heinrich (1938) stated, but surely it is not largely abundant. The number of specimens per country from Rousse *et al.* (2013) and this current contribution seem to corroborate that. Also, the specimen from Uganda represents the first record for the country (Figs 30–31).

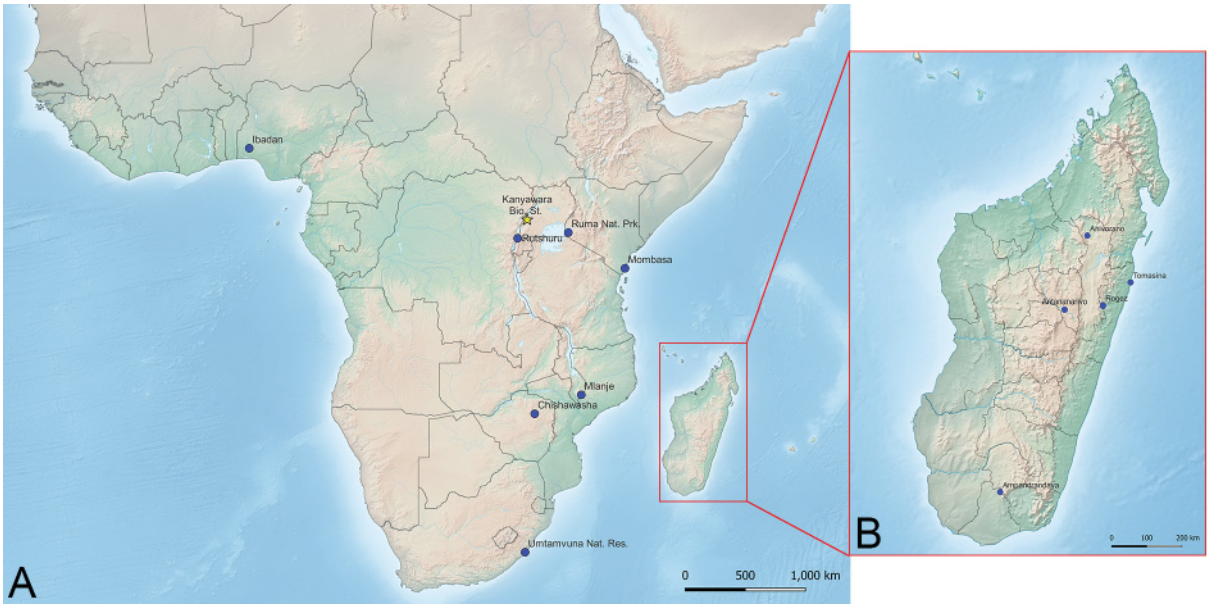


Fig. 30. Distribution of *Lusius tenuissimus* (Heinrich, 1938). **A–B**. Previous (blue dots) and new records (yellow star). **A**. Mainland Africa. **B**. Madagascar.

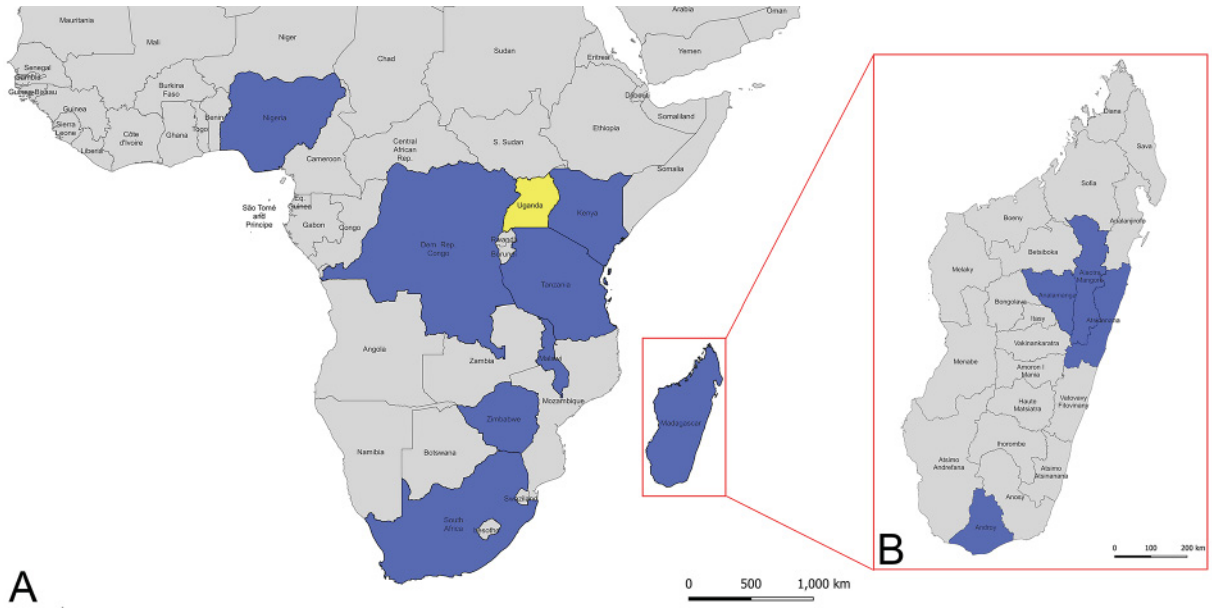
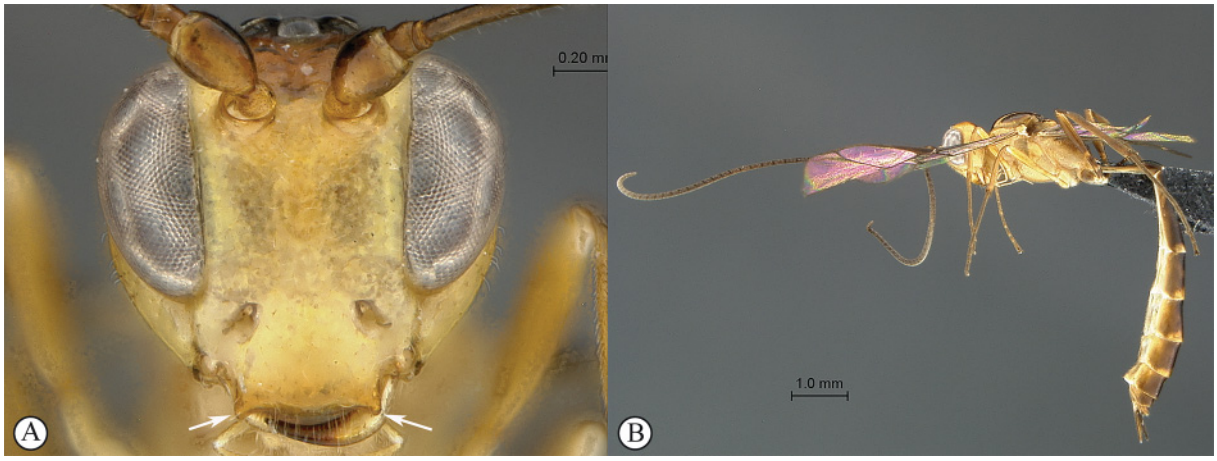


Fig. 31. Distribution of *Lusius tenuissimus* (Heinrich, 1938). **A–B**. Previous (blue) and new (yellow) records. **A**. Country records for mainland Africa. **B**. Regional records for Madagascar.

Key to the Afrotropical species of *Lusius* Tosquinet, 1903 (updated from Rousse *et al*. 2013)



1. Clypeus as wide as high, strongly pointed apico-laterally (A); flagellum entirely testaceous (male unknown) (B).....***L. flummox*** Rousse & van Noort, 2013

– Clypeus wider, about one and a half times wider than high, weakly pointed apico-laterally (a); flagellum tri-coloured in both sexes: basally testaceous, medially white and apically black (b)..... .....***L. tenuissimus*** (Heinrich, 1938)

Tribe Ichneumonini Latreille, 1802

Genus ***Nesostenodentus*** Cushman, 1922

Nesostenodontus Cushman, 1922: 554. Type species: *Nesostenodontus bakeri* Cushman, 1922, by original designation and monotypy.

Remarks

Cushman (1922: 554) described the genus *Nesostenodontus* to accommodate only one species, *N. bakeri* Cushman, 1922, based on the following combination of characters: (1) unidentate mandible; (2) swollen genae and head almost cubic; (3) strongly dentate clypeus; (4) propodeum almost devoid of carinae, without long spines; (5) scutellum not bordered by carina; gastrocoeli and thyridia indistinct. Later on, Heinrich (1934: 129) added a new species to the count, *N. celebensis* Heinrich, 1934, whereas Cushman (1937: 284), while describing *N. formosanus* Cushman, 1937, identified some variation within the genus: the very elongated malar space, the convex clypeus, and the distinct anterior and posterior

propodeal carinae. A close examination of the holotype of *Heterishcnus mkomazi* Rousse & van Noort, 2013 revealed that the species shares many features with the genus *Nesostenodontus*. Therefore, we transfer *mkomazi* to the genus *Nesostenodontus*. Below, we provide reasons for this new combination together with a new diagnosis of the species.

Before this contribution, the genus was recorded only from the Indomalayan region. This new combination marks the first record for the Afrotropical region.

Nesostenodontus mkomazi (Rousse & van Noort, 2013) comb. nov.
Figs 32–34

Heterischnus mkomazi Rousse & van Noort, 2013: 51 (original description, key).

Heterischnus mkomazi – Yu *et al*. 2016 (catalogue).

Original type series

Holotype: ♂, by original designation (SAMC)
Paratype: 1 ♂ (MNHN)

Type locality

Tanzania: Mkomazi Game Reserve.

Material examined

Holotype

TANZANIA • ♂; "[White label] TAZANIA, Mkomazi / Game Reserve / Kisima Plot, / 16 April-2 May 1996 // [White label] 4 06.06'S 3805.58'E / S. van Noort / Malaise trap, *Acacia/* / *Commiphora* bushland // [White label] SAM-HYM- / P016166 // [Red label] HOLOTYPE ♂ / *Heterischnus mkomazi* / Rousse & van Noort, 2013 // [Yellow label] IMAGED / WaspWeb / SAMC 2012 // [Second Yellow label] IMAGED / WaspWeb / LAS 4.9 / SAMC 2022"; SAMC.

Distribution

Senegal (Rousse *et al.* 2013); Tanzania (Rousse *et al.* 2013).

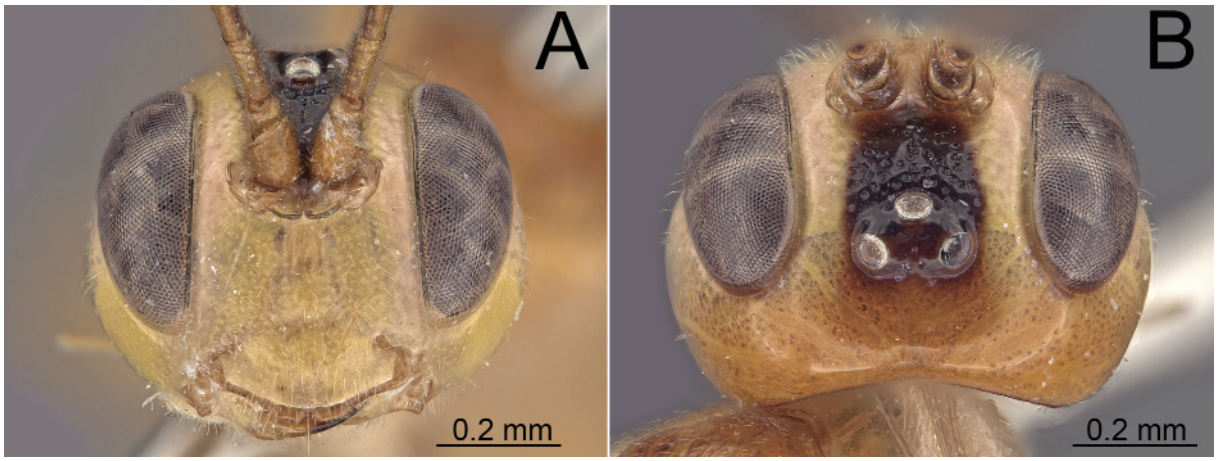


Fig. 32. *Nesostenodontus mkomazi* Rousse & van Noort, 2013 comb. nov., holotype, ♂ (SAMC). **A**. Head, frontal view. **B**. Head, dorsal view.

Remarks

The species *mkomazi* was originally placed in *Heterischnus* by Rousse *et al*. (2013), based on two male specimens, one from Tanzania (holotype) and the other from Senegal (paratype). However, despite its original generic placement, *mkomazi* differs from previous (Perkins 1959; Selfa & Diller 1994) and recent (Claridge 2021b) diagnoses of *Heterischnus* in the following morphological features: gena grossly swollen (not swollen in *Heterischnus*) (Fig. 33); scutellum nearly flat (convex and distinctly elevated above post-scutellum in *Heterischnus*) (Fig. 33B); propodeum posteriorly sloping and without distinct dorsal and posterior faces (propodeum with distinct faces in *Heterischnus*) (Fig. 34A); propodeal spiracle oval-shaped (circular and small in *Heterischnus*) (Fig. 34A); and gastrocoeli and thyridia obsolete (well distinct in *Heterischnus*) (Fig. 34B).

The above features are instead shared with the genus *Nesostenodontus* Cushman, 1922, from which it slightly differs by the ventral margin of the clypeus, which is irregularly emarginate in *mkomazi* as opposed to strongly dentate in *bakeri* (the type species) (Cushman 1922: 554) (Fig. 32A). However, this difference can be regarded as a simple variation within the genus. Moreover, three other unidentified Afrotropical specimens were located at EMUS, belonging to the genus *Nesostenondontus*. However, their species identity remains, at the moment, doubtful. Therefore, because of the above shared features of *H. mkomazi* with *Nesostenodontus*, and based on an examination of the new material, we feel confident in proposing a new combination for *mkomazi*: *Nesostenodontus mkomazi* (Rousse & van Noort, 2013) comb. nov.

Nesostenodontus was previously known only from three described species in the Indo-Malaysian region (Cushman 1922, 1937; Heinrich 1934; Gupta 1988), but it is herewith also recorded for the first time from the Afrotropical region, specifically in Tanzania and Senegal (*N. mkomazi*) (Rousse *et al.* 2013), and Sierra Leone and South Africa (undescribed species at EMUS). Because of this generic transfer, the genus *Heterischnus* is no longer recorded for Senegal (Table 1).

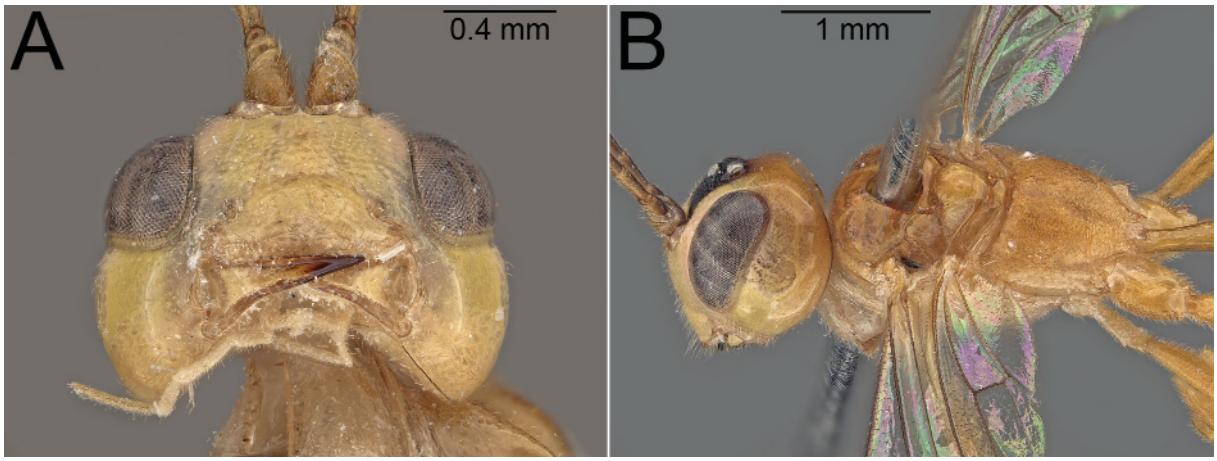


Fig. 33. *Nesostenodontus mkomazi* Rousse & van Noort, 2013 comb. nov., holotype, ♂ (SAMC). **A**. Head, ventral view. **B**. Head and mesosoma, dorso-lateral view.

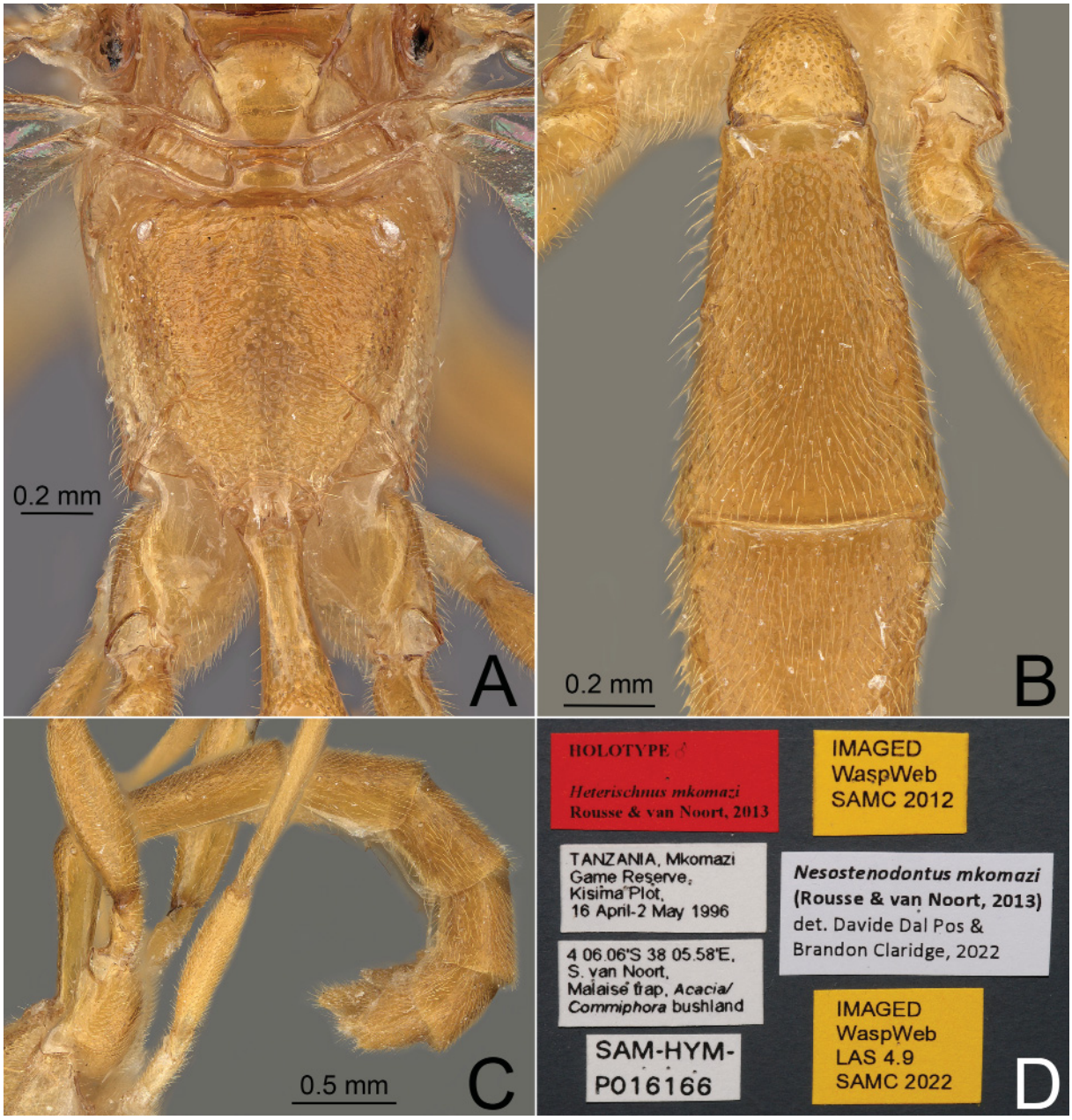


Fig. 34. *Nesostenodontus mkomazi* Rousse & van Noort, 2013 comb. nov., holotype, ♂ (SAMC). **A**. Propodeum, dorsal view. **B**. Metasoma, dorsal view. **C**. Metasoma, lateral view. **D**. Labels.

Discussion

Despite the comprehensive revision by Rousse *et al.* (2013), the tribe Phaeogenini in the Afrotropical region is still severely understudied, with most countries without a single record for the tribe, and others with less than 2 (Fig. 35; Table 1). Madagascar, Uganda, and South Africa are best represented but these countries still only have a maximum of 7, 8 and 11 species, respectively (Fig. 35; Table 1). Most of the species are recorded from the eastern part of the continent (see Table 1), a trend reflected across the entire subfamily Ichneumoninae (e.g., Rousse *et al.* 2016; Dal Pos & Rousse 2018), and also across the family Ichneumonidae on the whole (e.g., Di Giovanni & Varga 2021). This 'biogeographic bias' is most likely not the result of a natural distribution of the taxon, but rather an artifact caused by mainly the combination of three factors: (1) a shortage of taxonomists, which is a problem affecting the entire entomological community (e.g., Engel *et al.* 2021; Zamani *et al.* 2022a), but particularly exacerbated in Ichneumonidae (e.g., Riedel *et al.* 2021); (2) a lack of modern and comprehensive taxonomic treatment (the most recent contribution to the Afrotropical Ichneumoninae fauna is Riedel & Dal Pos 2019); and (3) the reduced availability of specimens from the west of the continent due to different historical and contemporary reasons. Collaborative efforts among the ichneumonoid researchers and a thorough study of other collections, as well as partnerships with local African institutions, will be required to fill these gaps.

From our results, it is self-evident that also the nomenclatural aspect needs substantial improvement. Many types of Ichneumoninae require examination and careful study in order to improve the taxonomic stability of the family (e.g., syntype/lectotype problems). These problems should not come as a surprise. Broad (2021) discovered several issues in a single collection (Morley's) focusing only on a small

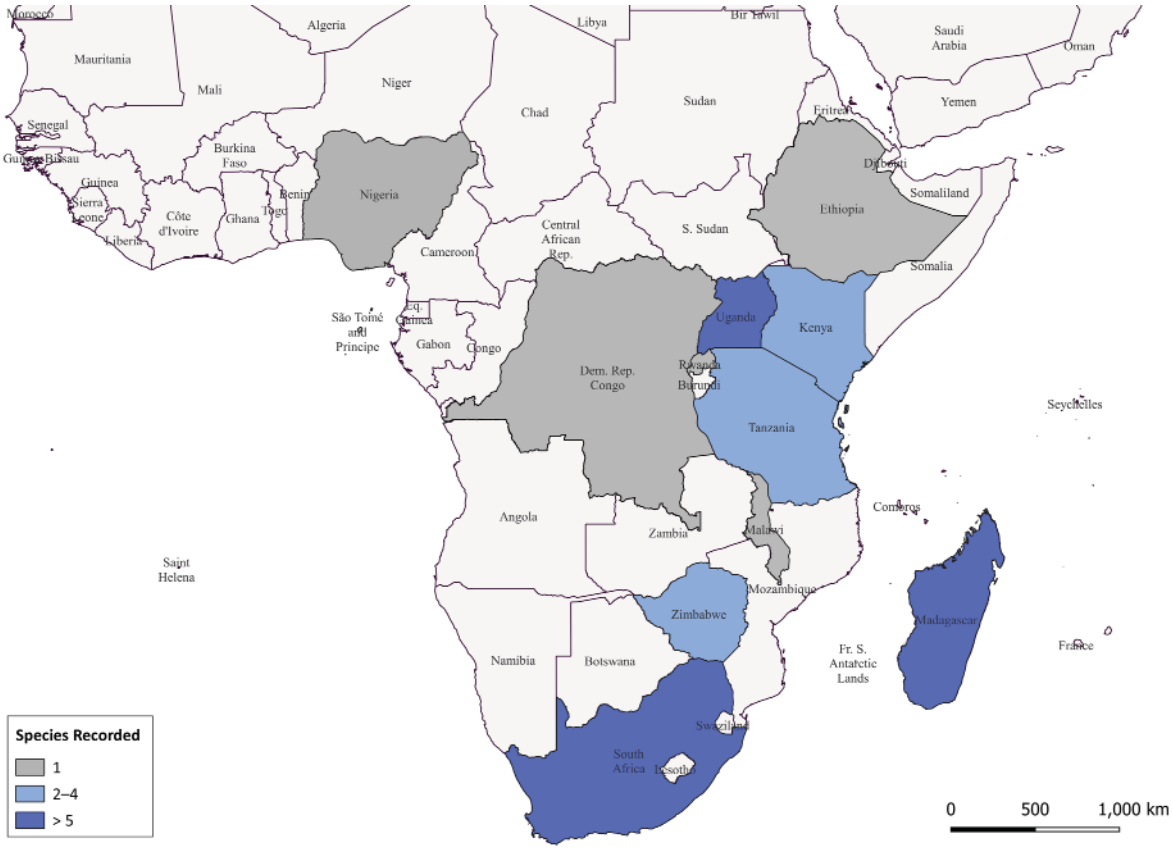


Fig. 35. Number of known species of Phaeogenini Förster, 1869 per country.

Table 1 (continued on next page). Checklist and distribution of Phaeogenini Förster, 1869 in the Afrotropical region. * = identifies new species and/or records.

Species	Known distribution
Arearia Seyrig, 1952	
A. oxymoron Rousse & van Noort, 2013	South Africa
A. paradoxa Seyrig, 1952	Madagascar Anosi
Aethecerus Wesmael, 1845	
A. foveolatus Gregor, 1940	São Tomé & Príncipe (doubtful, Rousse *el al.* 2013)
Centeterichneumon Heinrich, 1938	
C. denticoxatus Heinrich, 1938	Madagascar Androy Atsinanana Ihorombe Vakinankaratra
C. nambi Dal Pos, Diller & Di Giovanni sp. nov.*	Uganda
Chauvinia Heinrich, 1938	
C. nitida (Heinrich, 1938)	Madagascar Androy Antsinanana Diana*
C. ganota Claridge sp. nov.*	Kenya
C. nyanga Rousse & van Noort, 2013	Democratic Republic of the Congo Kenya* Uganda Zimbabwe
Diadromus Wesmael, 1845	
D. collaris (Gravenhorst, 1829)	South Africa
Dicaelotus Wesmael, 1845	
D. asantesana Rousse & van Noort, 2013	South Africa
D. cariniscutis (Cameron, 1906)	South Africa
D. hoerikwaggoensis Rousse & van Noort, 2013	South Africa
D. tablemountainensis Rousse & van Noort, 2013	South Africa
Heterischnus Wesmael, 1859	
H. africanus (Heinrich, 1936)	Ethiopia Kenya South Africa Tanzania Uganda
H. krausi Schönitzer, 1999	Kenya Rwanda
H. mfongosi Rousse & van Noort, 2013	Kenya* South Africa Tanzania* Zimbabwe

Table 1 (continued). Checklist and distribution of Phaeogenini Förster, 1869 in the Afrotropical region. * = identifies new species and/or records.

Species	Known distribution
H. olsoufieffi (Heinrich, 1938)	Madagascar Alaotra-Mangoro Amoron'i Mania* Haute Matsiatra Vakinankaratra Vatovavy-Fitovinany*
Hoplophaeogenes Heinrich, 1938	
H. amoenus Heinrich, 1938	Madagascar Analamanga Diana
H. curticornis Heinrich, 1938	Madagascar Analamanga* Diana
Kibalus Rousse, van Noort & Diller, 2013	
K. mubfs Rousse, van Noort & Diller, 2013	Uganda
K. nonnaritae Dal Pos & Di Giovanni sp. nov.*	Uganda
K. toro Rousse, van Noort & Diller, 2013	Uganda
Lusius Tosquinet, 1903	
L. flummox Rousse & van Noort, 2013	Nigeria Uganda
L. tenuissimus (Heinrich, 1938)	Democratic Republic of the Congo Kenya Madagascar Alaotra-Mangoro Analamanga Androy Atsinanana Malawi Nigeria South Africa Tanzania Uganda* Zimbabwe
Tycherus Förster, 1869	
T. amatola Rousse & van Noort, 2013	South Africa
T. nardousberg Rousse & van Noort, 2013	South Africa

selection of taxa across Ichneumonoidea. The curation of existing names (and not just the description of new species) is a fundamental practice in the compilation of meaningful taxonomic work and, as pointed out by Zamani *et al.* (2022a, 2022b), is one of the goals of taxonomy. This is especially true in Ichneumonidae, given their huge number of species (and therefore names), and the recent discontinuity of resources, such as Taxapad (Yu *et al.* 2016), which can potentially negatively affect even more the already poor status of knowledge of this family.

Hopefully, this paper will serve the community, providing tools for the future advancement of knowledge of the tribe, and, more broadly, of the entire subfamily. To paraphrase what Heinrich stated at the opening

of his series on Nearctic Ichneumoninae: "*So all* [*we*] *can do is open the gates. Behind them lies a wide-open field still waiting for further research. Scores of years will be necessary to complete it*" (Heinrich 1961: 12).

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Supplementary files

Supp. file 1. Lucid Interchange Format version 3 (LIF3) of the WaspWeb online Lucid matrix identification key to the Afrotropical species of Phaeogenini (Ichneumonidae, Hymenoptera). The LIF3 file is an XML-based file that stores all the Lucid3 key data, allowing exchange of the key with other key developers. 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.
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Supp. file 2. Occurrence data in CSV for the Phaeogenini in this contribution.
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