

# Journal of Melittology

Bee Biology, Ecology, Evolution, & Systematics

The latest buzz in bee biology

No. 44, pp. 1–8

17 December 2014

## Validation of some species- and genus-group names in *Melitta* (Hymenoptera: Melittidae)

Denis Michez<sup>1</sup>, Michael Kuhlmann<sup>2</sup>, & Simon Dellicour<sup>3</sup>

**Abstract.** Four recently proposed names in the genus *Melitta* Kirby (Melittidae: Melittinae) were left as nomenclaturally unavailable owing to minor conflicts with the recently established criteria for electronic publication. These oversights are here corrected, thereby validating the following new names: *Melitta* (*Afromelitta*) Michez & Kuhlmann, new subgenus; *Melitta* (*Afromelitta*) *richtersveldensis* Michez & Kuhlmann, new species; *Melitta* (*Plesiomelitta*) Michez & Kuhlmann, new subgenus; and *M. (Plesiomelitta) avontuurensis* Michez & Kuhlmann, new species.

---

### INTRODUCTION

Recently a series of new species and subgeneric names were established in the online supplemental materials to a paper investigating the phylogeny, historical biogeography, and floral associations in the genus *Melitta* Kirby (Dellicour *et al.*, 2014). The work was generally in accordance with the recently established guidelines for the proposal of new nomenclatural acts in electronic media (ICZN, 2012). Unfortunately, the newly established Article 8.5.3 was overlooked, leaving the names as proposed in Dellicour *et al.* (2014) effectively *nomina nuda*. Article 8.5.3 states that to be considered a validly published work, and thereby rendering available nomenclatural acts presented therein, it must, “be registered in the Official Register of Zoological Nomenclature (ZooBank) (see Article 78.2.4) and contain evidence in the work itself that such

---

<sup>1</sup> Laboratory of Zoology, Institute of Biosciences, University of Mons, Place du Parc 20, 7000 Mons, Belgium (denis.michez@umons.ac.be).

<sup>2</sup> Department of Life Sciences, The Natural History Museum, Cromwell Road, London SW7 5BD, United Kingdom (m.kuhlmann@nhm.ac.uk).

<sup>3</sup> Evolutionary Biology and Ecology, Université Libre de Bruxelles, Avenue F.D. Roosevelt 50, 1050 Brussels, Belgium (simon.dellicour@zoo.ox.ac.uk).

registration has occurred" (ICZN, 2012). Unfortunately, there appeared nowhere in Dellicour *et al.* (2014) documentation that registration had occurred and, indeed, no such registration was made. Moreover, Dellicour *et al.* (2014), in the online material proposing the subgenus *Plesiomelitta* failed to explicitly designate a type species as required by the ICZN (1999), further rendering the validity of the name problematic.

In order to rectify this minor oversight and make available the names that were intended to have been validated therein, we offer the following account to properly establish the species and subgeneric names, thereby meeting all of the required criteria for electronic publication. The new names therefore take this work as their official date of proposal in cases of nomenclatural priority. In order to avoid unnecessary cross-referencing with Dellicour *et al.* (2014), we have repeated the diagnoses and descriptions for ease of use. Figures for the species and characters discussed are provided in Dellicour *et al.* (2014), with some included here for reference (Figs. 1–11). Lastly, we append a list of global species of *Melitta* and their distribution updated from Michez *et al.* (2012) (*vide* Appendix).

## MATERIAL AND METHODS

Material discussed herein is deposited in the South African National Collection of Insects, Pretoria, South Africa and the Natural History Museum, London, United Kingdom. Morphological terminology and the general format for the descriptions follows that of our original account (Dellicour *et al.*, 2014).

## SYSTEMATICS

Genus *Melitta* Kirby

*Afromelitta* Michez & Kuhlmann, new subgenus

ZooBank: urn:lsid:zoobank.org:act:2A80315A-376F-40C9-B18C-A886D296FE39

TYPE SPECIES: *Melitta (Afromelitta) richtersveldensis* Michez & Kuhlmann, new species.

DIAGNOSIS: After Dellicour *et al.* (2014): The subgenus shares features with *Melitta s.str.* such as the large, dull, and declivitous basal area of the propodeum, the apical projection of the female metabasitarsus, and the elongate digitus of the male genitalia. *Afromelitta* also has the unique combination of an apically-pointed galea, with its outer surface matt and sculptured; the discs of the mesoscutum and mesoscutellum smooth and shiny between punctures; male flagellomeres slightly convex ventrally; the basal area of the propodeum rugose with basal carinae; the female pygidial plate with lateral grooves; male metasomal sternum VII with the blades swollen on the apicolateral structures; male metasomal sternum VIII with apical spines; the gonostylus as long as the gonocoxa and truncate apically.

ETYMOLOGY: The new subgeneric name is a combination of *afrum* (referring to Africa) and the generic name *Melitta*. The gender of the name is feminine.

*Melitta (Afromelitta) richtersveldensis* Michez & Kuhlmann, new species

ZooBank: urn:lsid:zoobank.org:act:36A5D557-0F98-4567-94A3-74E614EDE8D1

(Figs. 1–9)

DIAGNOSIS: As for the subgenus (*vide supra*).

DESCRIPTION: ♂: After Dellicour *et al.* (2014): Total body length 10.8 mm; head length 3 mm, width 3 mm; head black; antenna blackish; galea pointed apically, outer surface matt and sculptured; glossa shorter than labial palpus; malar area shorter than scape; clypeus densely punctate; first flagellomere shorter than second flagellomere; face with dense whitish setae, with fringe of black setae along compound eye; vertex with black setae. Mesosomal length 4.2 mm, width (between tegulae) 3.5 mm; black; disc of mesoscutum and mesoscutellum smooth and shiny between punctures; basal area of propodeum large, dull, rugose, with basal carinae, with black and yellowish setae intermixed; ventrally with whitish setae; legs black except tarsi brownish, without distinctive structures such as plates or spines; metabasitarsus narrower than metatibia; pilosity whitish to yellowish; forewing length 7.1 mm; wing membranes hyaline. Metasomal length 5.4 mm, width 3.4 mm; black; metasomal terga II–V with white, apical bands of setae (Figs. 8, 9); discs of terga I and II with erect, yellowish setae; discs of terga III–V with erect black setae; prepygidial fimbria brown; sternum VI with dense tufts of reddish setae apicomediaally (Fig. 1); discs of sterna I–VI with long yellowish setae; apicolateral structure of sternum VII with blade swollen, with long yellow setae, weakly incised medioapically (Fig. 2); sternum VIII with apical spines, apical plate circle shaped (Fig. 3); gonostylus as long as gonocoxa, truncate apically (Figs. 4, 5); digitus elongate, rounded apically.

♀: As described for the male except as noted: Total body length 11.4 mm; head length 3.2 mm, width 3.5 mm; head similar to male except antenna reddish ventrally, face with black and whitish setae intermixed. Mesosomal length 4.2 mm, width 3.6 mm; legs as in male except for typical gender differences (*e.g.*, scopa present on hind legs); fore and mid legs with brown setae on external surfaces (Fig. 6); scopal setae black; forewing length 7.5 mm. Metasomal length 6 mm, width 4.2 mm; pygidial plate with lateral grooves (Fig. 7).

HOLOTYPE: ♂, South Africa, 5km SE Lekkersing road side, 300m, on *Zygophyllum foetidum*, S29°03'28" E19°07'16", 24.ix.2009, leg. M. Kuhlmann. Deposited in the South African National Collection of Insects, Pretoria, South Africa.

PARATYPES: 4♂♂, 2♀♀, same data as holotype. Deposited in the Natural History Museum, London, United Kingdom.

ETYMOLOGY: The specific epithet is based on the Richtersveld, a mountainous region in the northwest of South Africa.

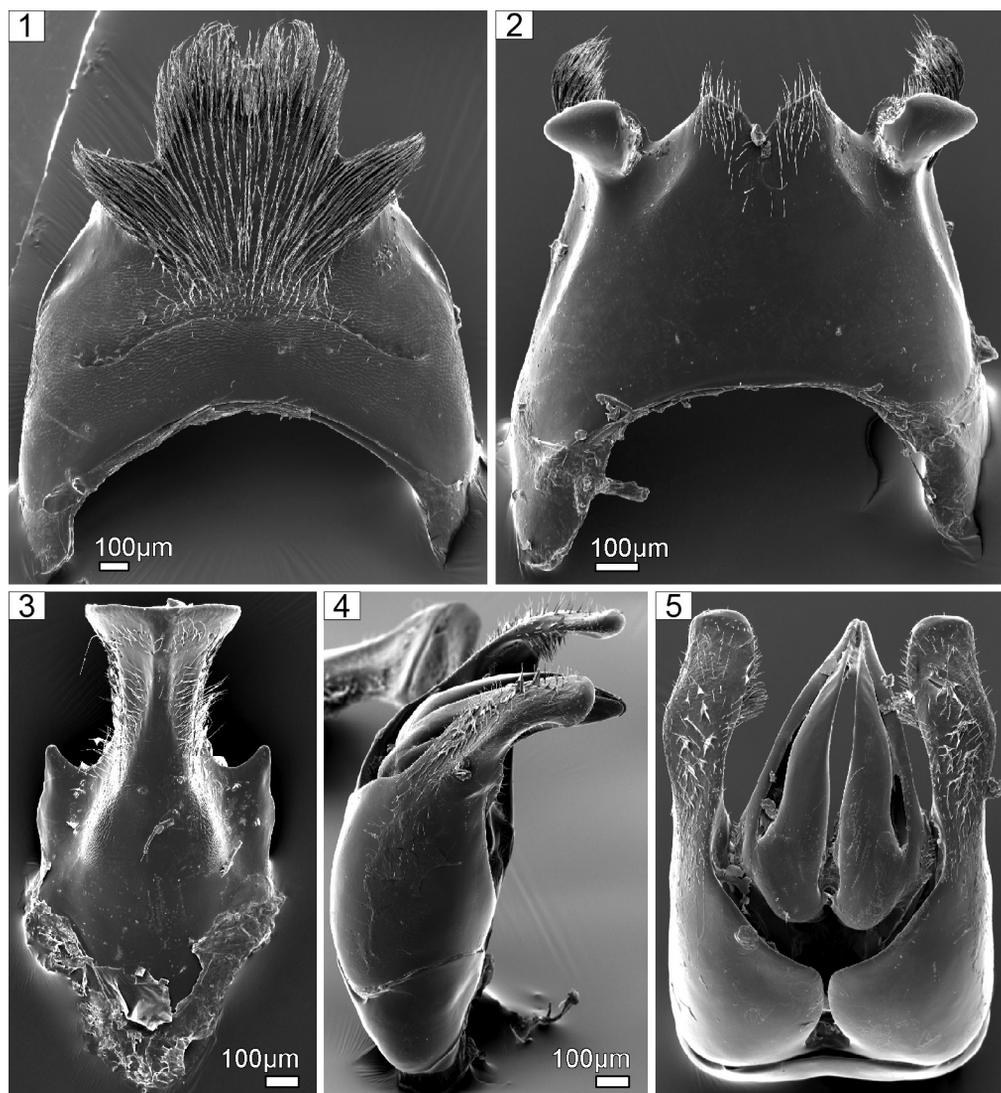
### *Plesiomelitta* Michez & Kuhlmann, new subgenus

ZooBank: urn:lsid:zoobank.org:act:EB06B889-B12D-41DA-A6D3-F547D2B5D068

TYPE SPECIES: *Melitta* (*Plesiomelitta*) *schultzei* Friese.

DIAGNOSIS: After Dellicour *et al.* (2014): *Plesiomelitta* shares features with the subgenera *Melitta s.str.* and *Afromelitta* (*vide supra*) such as the apical projection on the female metabasitarsus and the elongate digitus of the male genitalia. The subgenus exhibits a unique combination of the following traits: galea apically pointed, outer surface matt and sculptured; disc of mesoscutum and mesoscutellum smooth and shiny between punctures; basal area of propodeum shiny; female pygidial plate flat; male metasomal sternum VII with long, blade-shaped apicolateral structures; male metasomal sternum VIII with apical spine; gonostylus shorter than gonocoxa and apically truncate.

ETYMOLOGY: The new genus-group name is a combination of *plesios* (meaning, "near") and the generic name *Melitta*. The gender of the name is feminine.



**Figures 1–5.** Male terminalia of *Melitta (Afromelitta) richtersveldensis*, new subgenus and species. 1. Ventral view of metasomal sternum VI. 2. Ventral view of sternum VII. 3. Ventral view of sternum VIII. 4. Lateral view of genital capsule. 5. Dorsal view of genital capsule. Reproduced with permission from Dellicour *et al.* (2014).

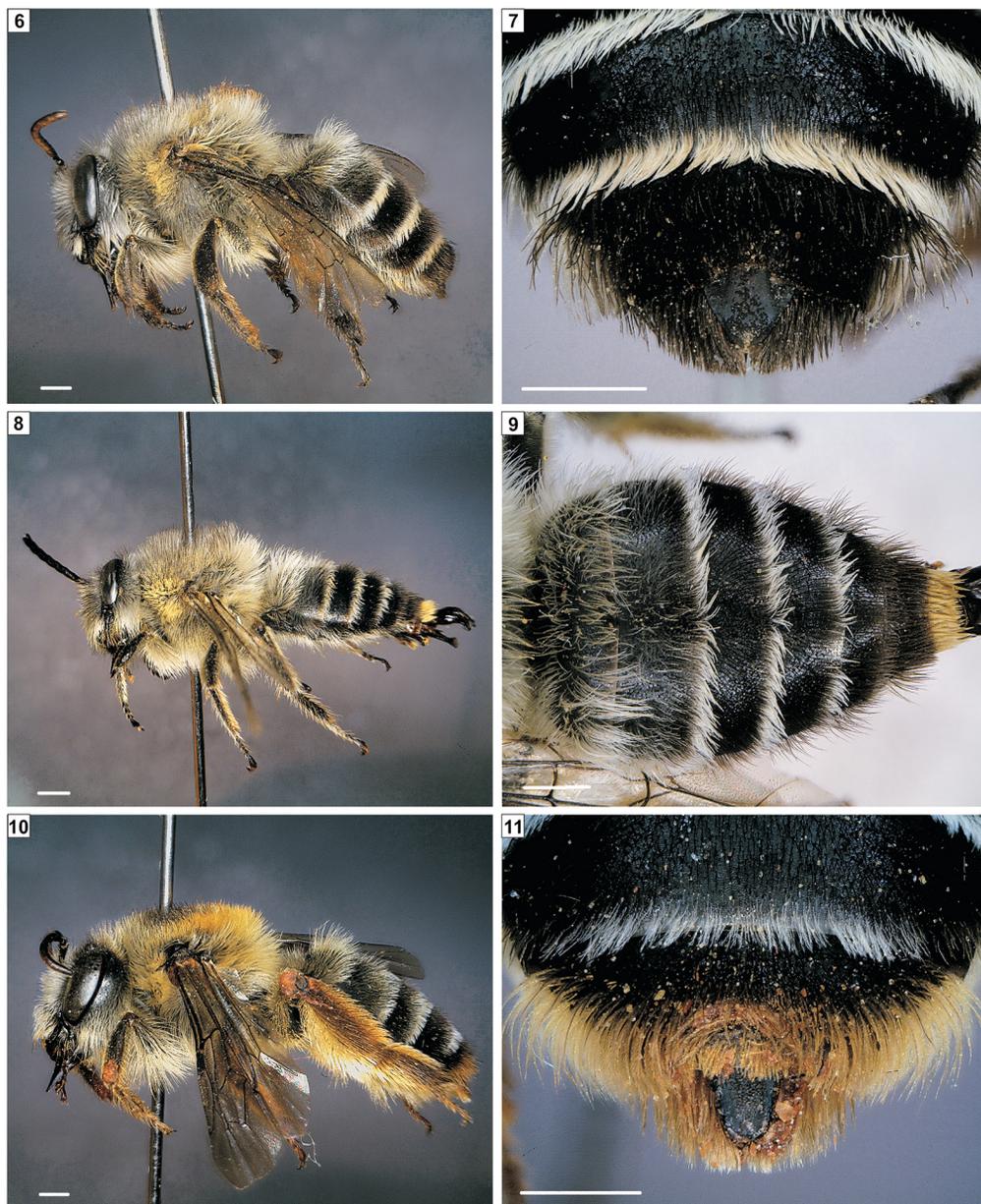
**INCLUDED SPECIES:** In addition to the type species, *Plesiomelitta* also includes *M. barbara* Eardley and *M. avontuurensis* n. sp.

***Melitta (Plesiomelitta) avontuurensis* Michez & Kuhlmann, new species**

ZooBank: urn:lsid:zoobank.org:act:69FF4EF0-1B32-47C7-B137-ACDAFE279652

(Figs. 10, 11)

**DIAGNOSIS:** The new species is morphologically close to *M. schultzei*. It shares with that species several features, such as a short malar area, but with the glossa as long as the labial palpus, and the fully orange scopa.



**Figures 6–11.** Photographs of *Melitta (Afromelitta) richtersveldensis*, new subgenus and species, and *M. (Plesiomelitta) avontuurensis*, new subgenus and species. **6.** Female of *M. (A.) richtersveldensis* in profile. **7.** Detail of female metasomal apex and pygidial plate of *M. (A.) richtersveldensis*. **8.** Male of *M. (A.) richtersveldensis* in profile. **9.** Dorsal view of male metasoma of *M. (A.) richtersveldensis*, with genitalia extended. **10.** Female of *M. (P.) avontuurensis* in profile. **11.** Dorsal view of female metasomal apex of *M. (P.) avontuurensis*. Reproduced with permission from Dellicour *et al.* (2014).

**DESCRIPTION:** ♀: After Dellicour *et al.* (2014): Total body length 11.4 mm; head length 3.4 mm, width 3.9 mm; head black except antenna reddish; galea apically pointed, outer surface matt and sculptured; malar area shorter than scape; clypeus smooth and shiny, with sparse punctation; face with whitish setae and narrow, lateral fringe

of black setae along compound eye; vertex with brownish setae. Mesosomal length 4.0 mm, width 3.1 mm; integument black; mesoscutum sparsely punctate, smooth and shiny between punctures, disc with black setae, laterally with yellowish setae (Fig. 10); basal area of propodeum shiny; ventral surfaces of mesosoma with whitish setae; femora black, with whitish setae; tibiae and tarsi reddish; metabasitarsus apically with hook-like projection; metatibial scopa orange; forewing length 9.2 mm; wing membranes lightly infuscate. Metasomal length 6.2 mm, width 4.5 mm; integument black and shiny; metasomal terga II–V with interrupted apical band of white setae (Fig. 11); disc of tergum I with erect, white setae; discs of terga II–V with black setae; prepygidial fimbria reddish (Fig. 11); pygidial plate flat (Fig. 11); sterna with long, yellowish setae.

♂: Unknown.

HOLOTYPE: ♀, South Africa, 12km NW Nieuwoudtville, Farm Avontuur, dolerite hill, 830m, S31°16'02" E19°04'05", 03.ix.2009, leg. M. Kuhlmann. Deposited in the South African National Collection of Insects, Pretoria, South Africa.

PARATYPE: 1♀, same data as holotype. Deposited in the Natural History Museum, London, United Kingdom.

ADDITIONAL MATERIAL: 3♀♀, South Africa, CP, Clanwilliam District, Biedouw Valley, S32.08° E19.14°, 05–07.ix.1987, leg. C.D. Eardley. Deposited in the South African National Collection of Insects, Pretoria, South Africa.

ETYMOLOGY: The specific epithet is based on the type locality, the farm Avontuur northwest of Nieuwoudtville, South Africa.

#### ACKNOWLEDGEMENTS

M.K. is much indebted to Onno Huyser, manager of the Table Mountain Fund, and Noel Oettle, managing director of Avontuur Sustainable Agriculture, for giving him access to the farm Avontuur and their permission to study the bees on the property. The Northern Cape Nature Conservation Service is gratefully acknowledged for granting permission to collect bees.

#### REFERENCES

- Dellicour, S., T. Lecocq, M. Kuhlmann, P. Mardulyn, & D. Michez. 2014. Molecular phylogeny, biogeography, and host plant shifts in the bee genus *Melitta* (Hymenoptera: Anthophila). *Molecular Phylogenetics and Evolution* 70: 412–419.
- ICZN [International Commission on Zoological Nomenclature]. 1999. *International Code of Zoological Nomenclature* [4<sup>th</sup> Edition]. International Trust for Zoological Nomenclature; London, UK; xxix+306 pp.
- ICZN [International Commission on Zoological Nomenclature]. 2012. Amendment of Articles 8, 9, 10, 21 and 78 of the International Code of Zoological Nomenclature to expand and refine methods of publication. *Bulletin of Zoological Nomenclature* 69(3): 161–169.
- Michez, D., M. Kuhlmann, S.P. Ivanov, & V.G. Radchenko. 2012. Description of four new species in the bee genus *Melitta* Kirby, 1802 (Hymenoptera: Melittidae). *Zootaxa* 3337: 57–67.

ZooBank: urn:lsid:zoobank.org:pub:6CAE4955-7496-4349-ACA1-665DC502C315

## APPENDIX

Checklist and Hierarchical Classification of *Melitta* Kirby

Below is an updated checklist of the species of *Melitta* arranged alphabetically by subgenera as recognized herein. In addition, brief summaries of their distribution are provided.

Taxon	Distribution
<b>Genus <i>Melitta</i> Kirby</b>	
Subgenus <i>Melitta</i> s.str.	
<i>M. aegyptiaca</i> (Radoszkowski)	North Africa
<i>M. albida</i> Cockerell	Southern Africa
<i>M. americana</i> Smith	North America
<i>M. arrogans</i> Smith	Southern Africa
<i>M. bicollaris</i> Warncke	Turkey
<i>M. budashkini</i> Radchenko & Ivanov	Crimea
<i>M. budensis</i> (Mocsáry)	Western Palearctic
<i>M. californica</i> Viereck	California
<i>M. cameroni</i> (Cockerell)	Himalayas
<i>M. changmuensis</i> Wu	China
<i>M. danae</i> Eardley	Southern Africa
<i>M. dimidiata</i> Morawitz	Western Palearctic
<i>M. eickworti</i> Snelling & Stage	North America
<i>M. engeli</i> Michez	Kyrgyzstan
<i>M. ezoana</i> Yasumatsu & Hirashima	Eastern Palearctic
<i>M. fulvescenta</i> Wu	Himalayas
<i>M. guichardi</i> Michez	Ethiopia
<i>M. haemorrhoidalis</i> (Fabricius)	Europe
<i>M. harrietae</i> (Bingham)	Himalayas
<i>M. heilungkiangensis</i> Wu	China
<i>M. hispanica</i> Friese	Spain
<i>M. iberica</i> Warncke	Spain
<i>M. japonica</i> Yasumatsu & Hirashima	Japan & Russian Far East
<i>M. kastiliensis</i> Warncke	Spain
<i>M. katherinae</i> Eardley	Kenya
<i>M. latronis</i> Cockerell	Eastern Siberia
<i>M. leporina</i> (Panzer)	Palearctic
<i>M. magnifica</i> Michez	Mongolia
<i>M. maura</i> (Pérez)	North Africa
<i>M. melanura</i> (Nylander)	Palearctic
<i>M. melittoides</i> (Viereck)	North America

## Appendix. Continued.

Taxon	Distribution
Subgenus <i>Melitta</i> s.str., continued	
<i>M. mongolica</i> Wu	China
<i>M. montana</i> Wu	China
<i>M. murciana</i> Warncke	Spain
<i>M. nigrabdominalis</i> Wu	China
<i>M. nigricans</i> Alfken	Europe
<i>M. piersbakeri</i> Engel	Afghanistan
<i>M. rasmonti</i> Michez	Turkey
<i>M. schmiedeknechti</i> Friese	North Africa
<i>M. seitzii</i> Alfken	Spain
<i>M. sibirica</i> (Morawitz)	Eastern Palearctic
<i>M. singularis</i> Michez	Turkey
<i>M. tomentosa</i> Friese	Istria
<i>M. tricincta</i> Kirby	Europe
<i>M. udmurtica</i> Sitdikov	Western Palearctic
<i>M. whiteheadi</i> Eardley	Southern Africa
Subgenus <i>Afromelitta</i> n. subgen.	
<i>M. richtersveldensis</i> n. sp.	South Africa
Subgenus <i>Plesiometlitta</i> n. subgen.	
<i>M. avontuurensis</i> n. sp.	South Africa
<i>M. barbarae</i> Eardley	Southern Africa
<i>M. schultzei</i> Friese	Southern Africa









# Journal of JM Melittology

A Journal of Bee Biology, Ecology, Evolution, & Systematics

---

The *Journal of Melittology* is an international, open access journal that seeks to rapidly disseminate the results of research conducted on bees (Apoidea: Anthophila) in their broadest sense. Our mission is to promote the understanding and conservation of wild and managed bees and to facilitate communication and collaboration among researchers and the public worldwide. The *Journal* covers all aspects of bee research including but not limited to: anatomy, behavioral ecology, biodiversity, biogeography, chemical ecology, comparative morphology, conservation, cultural aspects, cytogenetics, ecology, ethnobiology, history, identification (keys), invasion ecology, management, melittopalynology, molecular ecology, neurobiology, occurrence data, paleontology, parasitism, phenology, phylogeny, physiology, pollination biology, sociobiology, systematics, and taxonomy.

The *Journal of Melittology* was established at the University of Kansas through the efforts of Michael S. Engel, Victor H. Gonzalez, Ismael A. Hinojosa-Díaz, and Charles D. Michener in 2013 and each article is published as its own number, with issues appearing online as soon as they are ready. Papers are composed using Microsoft Word® and Adobe InDesign® in Lawrence, Kansas, USA.

---

**Editor-in-Chief**

Michael S. Engel  
*University of Kansas*

**Assistant Editors**

Victor H. Gonzalez  
*University of Kansas*

Charles D. Michener  
*University of Kansas*

Ismael A. Hinojosa-Díaz  
*Universidad Nacional Autónoma de México*

*Journal of Melittology* is registered in ZooBank ([www.zoobank.org](http://www.zoobank.org)), and archived at the University of Kansas and in Portico ([www.portico.org](http://www.portico.org)).

<http://journals.ku.edu/melittology>  
ISSN 2325-4467