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# Psocid News

## The Psocidologists' Newsletter

No. 17 (Feb 28, 2015)



Field trip in Mexico (June 2014: *Trichadenotecnum* project)

(From left to right: Jose Arturo Casasola Gonzalez, Alfonso Neri García Aldrete, Kazunori Yoshizawa, Naoki Ogawa)

### ADDITIONS AND CORRECTIONS (PART 14) TO LIENHARD & SMITHERS, 2002: "PSOCOPTERA (INSECTA) – WORLD CATALOGUE AND BIBLIOGRAPHY"

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#### 1. Introduction

This is the 14th part of a series of "Additions and Corrections to the World Catalogue and Bibliography" (Lienhard & Smithers, 2002) published in "Psocid News". Parts 1-13 were published in Psocid News no. 4-16 (see below); a **Synthesis of Parts 1-10** is available online at the Geneva Museum's homepage:

[http://www.ville-ge.ch/mhng/psocoptera/divers/synthesis\\_add\\_1\\_10.pdf](http://www.ville-ge.ch/mhng/psocoptera/divers/synthesis_add_1_10.pdf)

Please send me regularly copies of your papers on Psocoptera, and please inform me about errors that you find in Lienhard & Smithers (2002). If papers which came to your notice are not treated in the "Additions", please send me the bibliographical references by e-mail. In the "Additions to the Bibliography", references to the papers which I have not yet seen are marked with "(Not seen)" or "(Only abstract seen)". Please send me a copy or PDF of these papers if you feel concerned. Only papers which I have seen are analysed for the "Additions to the Catalogue", or those where the matter they deal with is clearly indicated in the title or in the abstract.

In general these "Additions" present the information in the style of the catalogue (Lienhard & Smithers, 2002), according to the criteria mentioned there (pp. ix-xli) and using the same abbreviations (see pp. xl-xli). Families (and higher categories, if mentioned) are listed according to Table 1 of Lienhard & Smithers (2002), except for changes published since. For each family, newly published changes concerning supra-generic taxa are mentioned at the beginning of the family treatment. For genus-group names and species-group names already listed by Lienhard & Smithers (2002) only the author is cited here. For new names the complete reference (author, year, page) is given in their first entry, where new genus-group names are marked with two asterisks (\*\*) and new species-group names with one asterisk (\*). For a name not listed by Lienhard & Smithers (2002), but cited in a preceding part of the "Additions", author and year are always mentioned. Genera are listed alphabetically within each family. Species are listed alphabetically within each genus. Species names are cited in the combination used by Lienhard & Smithers (2002), if not an explicit change of combination (or a new synonymy) has been published since.

The "Corrections" refer to the pages of Lienhard & Smithers (2002) and the changes proposed here are usually underlined.

No nomenclatural act is published in the "Additions to the Catalogue" because articles in "Psocid News" are not considered as published works under the rules of ICZN (see Editorial: Disclaimer). Sometimes recommendations to future revisers are given concerning nomenclatural acts which eventually should be published. Only some mandatory changes are made in the "Additions to the Catalogue" (e. g. adaptation of species name ending to the grammatical gender of the genus name).

## 2. List of countries mentioned in the "Additions and Corrections to the World Catalogue" (Parts 1-14)

Country checklists of Psocoptera species extracted from Lienhard & Smithers (2002) are available online at: <http://www.ville-ge.ch/mhng/psocoptera/page/ps-coun.htm>

All additional species records are mentioned in the "Additions and Corrections to the World Catalogue" and all countries mentioned in Parts 1 to 14 of these Additions are listed below, arranged according to the main geographical regions defined for the Catalogue (**I-X**), with a separate heading for fossils (**A**), mainly from amber. This list is provided to facilitate computer searching for distributional references in the online version of the different parts which can be found at <http://hdl.handle.net/2115/35519> or in the **Synthesis of Parts 1-10** available at:

[http://www.ville-ge.ch/mhng/psocoptera/divers/synthesis\\_add\\_1\\_10.pdf](http://www.ville-ge.ch/mhng/psocoptera/divers/synthesis_add_1_10.pdf)

- Part 1 – Psocid News, no. 4 (2003): 2-24 (= Lienhard, 2003a)
- Part 2 – Psocid News, no. 5 (2003): 2-37 (= Lienhard, 2003b)
- Part 3 – Psocid News, no. 6 (2004): 1-23 (= Lienhard, 2004a)
- Part 4 – Psocid News, no. 7 (2005): 1-16 (= Lienhard, 2005a)
- Part 5 – Psocid News, no. 8 (2006): 1-18 (= Lienhard, 2006a)
- Part 6 – Psocid News, no. 9 (2007): 1-17 (= Lienhard, 2007a)
- Part 7 – Psocid News, no. 10 (2008): 1-18 (= Lienhard, 2008a)
- Part 8 – Psocid News, no. 11 (2009): 2-16 (= Lienhard, 2009a)
- Part 9 – Psocid News, no. 12 (2010): 1-18 (= Lienhard, 2010)
- Part 10 – Psocid News, no. 13 (2011): 1-18 (= Lienhard, 2011a)
- Parts 1-10 – see URL above** (= Lienhard, 2011c)
- Part 11 – Psocid News, no. 14 (2012): 1-13 (= Lienhard, 2012a)
- Part 12 – Psocid News, no. 15 (2013): 1-21 (= Lienhard, 2013)
- Part 13 – Psocid News, no. 16 (2014): 1-20 (= Lienhard, 2014)
- Part 14 – Psocid News, no. 17 (2015) (= present issue)

**(I)** Albania (Part 14), Austria (Parts 1, 3, 4, 5, 6, 8, 9), Bahrain (Part 8), Belgium (Parts 3, 6, 8, 10), Bosnia-Herzegovina (Part 14), Bulgaria (Parts 8, 14), Croatia (Parts 6, 7, 11, 12), Cyprus (Part 11), Czech Republic (Parts 1, 4, 5, 6, 7, 8, 10, 11, 13, 14), Denmark (Parts 10, 12), Egypt (Part 6), Europe (Parts 10, 11, 12), Finland (Parts 1, 7, 10, 11, 12, 13), France (Parts 1, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14), Germany (Parts 1, 3, 4, 5, 7, 8, 10, 11, 12, 14), Great Britain (Parts 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14), Greece (Parts 5, 6, 11, 14), Hungary (Parts 1, 3, 10), Iceland (Part 10), Iran (Parts 6, 8), Ireland (Parts 6, 9, 13), Israel (Parts 4, 6, 8, 11), Italy (Parts 1, 3, 5, 6, 7, 8, 9, 10), Kosovo (Part 14), Lebanon (Parts 6, 7, 9, 10, 11, 13, 14), Lithuania (Part 8), Luxembourg (Parts 1, 3, 7, 8, 10, 13), Macedonia (Part 14), Montenegro (Part 14), Morocco (Part 10), Netherlands (Parts 4, 7, 9, 11, 14), Norway (Parts 4, 10, 13), Oman (Part 8), Poland (Part 13), Portugal (Parts 6, 7), Romania (Parts 10, 14), Russia (Parts 6, 8, 10, 12, 13, 14), Saudi Arabia (Part 8), Serbia (Part 14), Slovakia (Parts 1, 11, 13), Spain (Parts 1, 5, 7, 8, 9, 11, 12, 13), Sweden (Part 8, 10), Switzerland (Parts 1, 3, 4, 6, 7, 8, 11, 12), Turkey (Part 5, 10), UAE (Parts 8, 9), Ukraine (Part 6), Yemen (Parts 4, 8)

**(II)** Ascension Island (Part 11), Azores (Parts 5, 11), Canary Islands (Parts 1, 4, 5, 10, 11), Cape Verde Islands (Parts 5, 11), Gough Island (Parts 5, 6), Madeira (Parts 5, 8), Saint Helena (Parts 5, 11), Selvagens Islands (Parts 1, 8)

**(III)** Bahamas (Part 13), Canada (Parts 4, 6, 7, 8, 13), North America (Parts 11, 12), USA (Parts 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14)

**(IV)** Belize (Parts 1, 4, 6, 8, 9, 10), Costa Rica (Parts 1, 6, 8), Cuba (Parts 6, 11), Dominica (Parts 5, 6, 11), Dominican Republic (Parts 4, 6, 7, 8, 12, 13, 14), Guatemala (Parts 1, 4, 7, 8, 11), Haiti (Parts 1, 4), Hispaniola (Part 10), Honduras (Part 8), Jamaica (Parts 7, 8, 9), Mexico (Parts 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14), Middle America (Part 11), Nicaragua (Parts 1, 3, 4, 6, 7, 8, 13), Panama (Parts 4, 6, 8), Puerto Rico (Parts 1, 7, 10, 13), Trinidad (Part 1)

**(V)** Argentina (Parts 3, 4, 8, 9, 14), Bolivia (Parts 1, 5, 9, 10), Brazil (Parts 1, 4, 5, 6, 7, 8, 9, 10, 11,

12, 13, 14), Chile (Parts 1, 4, 6, 8), Colombia (Parts 1, 10, 11, 12, 13, 14), Ecuador (Parts 1, 6, 8, 13), Paraguay (Parts 13, 14), Peru (Parts 1, 5, 6, 8, 9, 10, 11, 12, 13, 14), Suriname (Part 10), Venezuela (Parts 1, 4, 6, 7, 8, 10)

(VI) Ghana (Part 4), Guinea (Part 1), Kenya (Part 4), Madagascar (Part 5), Malawi (Part 3), Namibia (Parts 1, 6, 7, 8, 10), South Africa (Parts 3, 6, 7, 8, 11), Tanzania (Parts 3, 4), Uganda (Part 6)

(VIII) Brunei (Parts 5, 6), China (Parts 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14), Hong Kong (Part 5), India (Parts 3, 5, 6, 7, 11), Indonesia (Parts 1, 3, 5, 6, 10), Japan (Parts 1, 4, 6, 7, 8, 9, 10, 12), Kazakhstan (Part 13), Kuril Islands (Part 4), Kyrgyzstan (Part 5), Laos (Parts 5, 6), Malaysia (Parts 1, 5, 6, 8, 10, 14), Myanmar (Parts 6, 8, 13, 14), Nepal (Part 7), New Guinea (Parts 3, 5, 8), Pakistan (Part 14), Philippines (Parts 3, 5, 6, 14), Russia (Parts 1, 10, 11), SE-Asia (Part 7), Singapore (Parts 5, 14), Sri Lanka (Parts 4, 6), Taiwan (Parts 1, 6, 7, 8, 13), Thailand (Parts 1, 4, 5, 6, 9, 11), USSR (Parts 4, 9), Vietnam (Parts 4, 5, 6, 8, 13, 14)

(IX) Australia (Parts 1, 4, 5, 6, 7, 8, 10, 12, 13, 14), Lord Howe Island (Parts 4, 7), New Zealand (Parts 1, 4, 13), Subantarctic islands (Part 13), Tasmania (Part 9)

(X) Easter Island (Part 13), Fiji (Part 8), Galapagos (Parts 5, 12), Hawaii (Parts 8, 13, 14), New Caledonia (Part 12)

(A) Amber and Copal (or other fossils) (Parts 1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14)

### 3. Additions to the Catalogue

#### Psocodea

Footitt & Adler, 2009 (p. 3): 10598 species of Psocodea known (5574 spp. of Psocoptera and 5024 spp. of Phthiraptera). Zhang Zhi-Qiang, 2013: 10868 species of Psocodea known (5732 spp. of Psocoptera and 5136 spp. of Phthiraptera). Misof *et al.*, 2014 (phylogenomics; Psocodea sister-group of Holometabola). Wei Dan-Dan *et al.*, 2014 (mitochondrial genome diversity and phylogeny of Psocodea).

#### Psocoptera

Yoshizawa, 2003d (short outline on systematics and biology of Psocoptera). Turienzo & Di Iorio, 2007: some undetermined psocids mentioned in birds' nests from Argentina (V). Footitt & Adler, 2009 (p. 3): 5574 species of Psocoptera known world-wide. Olejarski & Rybacki, 2011 (pest in stored rapeseed). Devetak *et al.*, 2013 (gregarines as parasites). Jervis, 2013: facsimile of oldest known scientific illustration of a psocid (same figure as published by Neri, 2005; this figure shows probably a young nymph of Psocomorpha). Perez & Barrion-Dupo, 2013: leaf-litter, Philippines (VIII). Thapa *et al.*, 2013 (predation by pseudoscorpions). Whitfield & Purcell, 2013 (key to families). Zhang Zhi-Qiang, 2013: 5732 species of Psocoptera known world-wide. Cameron, 2014: mitochondrial genomics. Dennis, 2014 (predation by Asilidae). Lienhard, 2014 (additions to the World Catalogue and Bibliography, Part 13). Loomis & Cameron, 2014: ecology, deciduous forests, USA (III). Sarria *et al.*, 2014a, 2014b: diversity, ecology, Colombia (V). Wolf *et al.*, 2014 (Psocoptera in feedstuffs for small mammals). Yoshizawa, 2014 (Newsletter).

**Psocoptera** fam., gen. n., spec. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012: 256.

#### Archaeatropidae

**Proprioglaris axioperi erga**\* Azar, Nel & Perrichot, 2014: 11. France (I), Late Cretaceous Vendean amber (A).

#### Lepidopsocidae

**Echmepteryx** spec. Brazil (V): Silva Neto *et al.*, 2014a.

**Echmepteryx falco** (Badonnel). Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

**Echmepteryx hageni** (Packard). USA (III): Shreve & Johnson, 2014 (population genetics, parthenogenesis).

**Echmepteryx madagascariensis** (Kolbe). Colombia (V): Sarria *et al.*, 2014a, 2014b.

**Lepidopsocus pretiosus** (Banks). Colombia (V): Sarria *et al.*, 2014a, 2014b.

**Lepolepis** spec. Colombia (V): Sarria *et al.*, 2014a, 2014b.

**Nepticulomima hoesemanni** (Enderlein). Colombia (V): Sarria *et al.*, 2014a, 2014b.

**Proentomum personatum** Badonnel. Colombia (V): Sarria *et al.*, 2014a, 2014b.

**Pteroxanium** spec. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.

**Thylacella cubana** (Banks). Fig.: Lopez, 2015 (habitus photograph).

## Trogiidae

- Cerobasis* spec. Morph.: Friedemann *et al.*, 2014 (attachment structures; p. 178: tarsi erroneously considered as 2-segmented in adult *Cerobasis*).
- Lepinotus* spec. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.
- Lepinotus patruelis* Pearman. Netherlands (I): Gielis *et al.*, 2014 (in bird nest boxes). Biol.: Yoshizawa *et al.*, 2014b (sexual biology, comparison with *Neotroglia* spp.).
- Lepinotus reticulatus* Enderlein. Biol.: Nayak *et al.*, 2014 (life history). Ecol.: Athanassiou *et al.*, 2014b (*Liposcelis bostrychophila* outcompetes *Lepinotus reticulatus* in stored products).

## Psyllipsocidae

- Dorypteryx domestica* (Smithers). Germany (I): Büchs, 1988 (dom.); Blick & Dorow, 2014a, 2014b. Romania (I): Pricop, 2014 (diagnosis, distribution). Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.
- Libanopsyllipsocus* Azar & Nel, 2011. See Pachytroctidae.
- Libanopsyllipsocus alexanderasnitsyni* Azar & Nel, 2011. Lebanon (I): Lower Cretaceous amber (A). See Pachytroctidae.
- Psyllipsocus angustipennis*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 239. Brazil (V).
- Psyllipsocus clunioventralis*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 225. Brazil (V).
- Psyllipsocus didymus*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 229. Brazil (V).
- Psyllipsocus falcifer*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 216. Brazil (V).
- Psyllipsocus fuscistigma*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 233. Brazil (V).
- Psyllipsocus marconii*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 220. Brazil (V).
- Psyllipsocus proximus*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 242. Brazil (V).
- Psyllipsocus punctulatus*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 236 (male). Brazil (V).
- Psyllipsocus* cf. *punctulatus* Lienhard, 2014. Lienhard & Ferreira, 2014: 238 (female). Brazil (V).
- Psyllipsocus radiopictus*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 234. Brazil (V).
- Psyllipsocus ramburii* Selys-Longchamps. Netherlands (I): Gielis *et al.*, 2014 (in bird nest boxes).
- Psyllipsocus spinifer*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 212. Brazil (V).
- Psyllipsocus subtilis*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 229. Brazil (V).
- Psyllipsocus thaidis*\* Lienhard, 2014; *in*: Lienhard & Ferreira, 2014: 223. Brazil (V).
- Psyllipsocus yucatan* Gurney. Brazil (V): Silva Neto *et al.*, 2014a.

## Prionoglarididae

- Neotroglia* Lienhard, 2010. Femal penis (gynosome), story of its discovery and its impact for evolutionary studies: Yoshizawa *et al.*, 2014d; Yoshizawa, 2015.
- Neotroglia aurora* Lienhard, 2010. Copulation (female penis): Yoshizawa *et al.*, 2014b; Yoshizawa, 2015.
- Neotroglia brasiliensis* Lienhard, 2010. Copulation (female penis): Yoshizawa *et al.*, 2014b.
- Neotroglia curvata* Lienhard & Ferreira, 2013a. Copulation (female penis): Yoshizawa *et al.*, 2014b; Yoshizawa, 2015.
- Neotroglia truncata* Lienhard, 2010. Copulation (female penis): Yoshizawa *et al.*, 2014b.

## Amphientometae

- Scocompus*\*\* Azar, Nel & Perrichot, 2014: 12. Gender: M. Type species: *Scocompus atelisuus* Azar, Nel & Perrichot. Incertae sedis within Amphientometae, i.e. not assigned to a family.
- Scocompus atelisuus*\* Azar, Nel & Perrichot, 2014: 12. France (I), Late Cretaceous Vendean amber (A).

## Compsocidae

- Compsocus elegans* Banks. Colombia (V): Sarria *et al.*, 2014a, 2014b.

## Troctopsocidae

- Family diagnosis and key to genera: Mockford & Garcia Aldrete, 2014: 160.
- Troctopsocoides*\*\* Mockford & Garcia Aldrete, 2014: 160. Gender: M. Type species: *Troctopsocoides erwini* Mockford & Garcia Aldrete.
- Troctopsocoides erwini*\* Mockford & Garcia Aldrete, 2014: 160. Peru (V).
- Troctopsocoides gracilis*\* Mockford & Garcia Aldrete, 2014: 163. Amber (A) from the Dominican Republic (IV).

## Amphientomidae

- Key to genera: Taylor, 2013: 250.

Amphientomidae gen. spec. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.  
***Lithoseopsis*** Mockford. Description, list of species: Taylor, 2013.  
***Lithoseopsis*** spec. Fig.: Lopez, 2015 (habitus photograph).  
***Lithoseopsis humphreysi*** (New). Description of male: Taylor, 2013: 246 (**from** *Seopsis*) (the unavailable name *Newseopsides smithersi* is used on pages 247, 248 and 250); Australia (IX).  
***Lithoseopsis incisa*** (Smithers). Taylor, 2013: 245 (**from** *Seopsis*).  
*Newseopsides smithersi*. These unavailable names are inadvertently used by Taylor (2013: pp. 247, 248, 250) for *Lithoseopsis humphreysi* (New).  
***Seopsocus*** spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

### Liposcelididae

Liposcelididae gen. spec. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.  
***Belaphotroctes*** spec. Colombia (V): Sarria *et al.*, 2014a, 2014b.  
***Embidopsocus*** spec. Morph.: Friedemann *et al.*, 2014 (attachment structures); Wipfler & Pass, 2014 (antennal heart).  
***Liposcelis*** spec. Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a. Colombia (V): Sarria *et al.*, 2014a. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012. Morph.: Friedemann *et al.*, 2014 (attachment structures).  
***Liposcelis badia*** Wang Zi-Ying, Wang Jin-Jun & Lienhard, 2006. Biol.: Nayak *et al.*, 2014 (life history).  
***Liposcelis bostrychophila*** Badonnel. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012. Biol.: Nayak *et al.*, 2014 (life history). Ecol.: Throne & Flinn, 2013 (temperature preference); Athanassiou *et al.*, 2014b (*L. bostrychophila* outcompetes other stored-product psocid species tested). Genet.: Chen Shi-Chun *et al.*, 2014a, 2014b (mitochondrial genome); Misof *et al.*, 2014 (de novo transcriptome, see Table S1). Morph.: Kucerova *et al.*, 2014 (SEM micrographs). Pest: Athanassiou *et al.*, 2014a (control); Diaz-Montano *et al.*, 2014 (brewer's yeast best attractant for *L. bostrychophila*); Liu Xin Chao *et al.*, 2014 (control); Wang Ke-Xia *et al.*, 2014 (in medicinal herbs).  
***Liposcelis brunnea*** Motschulsky. Biol.: Nayak *et al.*, 2014 (life history). Morph.: Kucerova *et al.*, 2014 (SEM micrographs).  
***Liposcelis corrodens*** (Heymons). Morph.: Kucerova *et al.*, 2014 (SEM micrographs).  
***Liposcelis decolor*** (Pearman). Ecol.: Athanassiou *et al.*, 2014b (*L. bostrychophila* outcompetes *L. decolor* in stored products). Biol.: Nayak *et al.*, 2014 (life history). Genet.: Chen Shi-Chun *et al.*, 2014a, 2014b (mitochondrial genome). Morph.: Kucerova *et al.*, 2014 (SEM micrographs).  
***Liposcelis entomophila*** (Enderlein). Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012. Biol.: Nayak *et al.*, 2014 (life history). Ecol.: Throne & Flinn, 2013 (temperature preference). Genet.: Chen Shi-Chun *et al.*, 2014b (mitochondrial genome). Morph.: Kucerova *et al.*, 2014 (SEM micrographs). Pest: Athanassiou *et al.*, 2014a (control).  
***Liposcelis paeta*** Pearman. Pakistan (VIII): Wakil & Yasin, 2013 (in stored wheat); Kucerova *et al.*, 2014 (morphology, SEM micrographs, variation of surface sculpture, phylogeny of geographic strains). Biol.: Nayak *et al.*, 2014 (life history). Ecol.: Throne & Flinn, 2013 (temperature preference); Athanassiou *et al.*, 2014b (*L. bostrychophila* outcompetes *L. paeta* in stored products). Genet.: Chen Shi-Chun *et al.*, 2014b (mitochondrial genome). Pest: Athanassiou *et al.*, 2014a (control).  
***Liposcelis pearmani*** Lienhard. Biol.: Nayak *et al.*, 2014 (life history).  
***Liposcelis pubescens*** Broadhead. Morph.: Kucerova *et al.*, 2014 (SEM micrographs).  
***Liposcelis rufa*** Broadhead. Biol.: Nayak *et al.*, 2014 (life history).  
***Liposcelis silvarum*** (Kolbe). Morph.: Kucerova *et al.*, 2014 (SEM micrographs).  
***Liposcelis tricolor*** Badonnel. Biol.: Nayak *et al.*, 2014 (life history). Morph.: Kucerova *et al.*, 2014 (SEM micrographs).  
***Liposcelis yunnaniensis*** Li Fasheng & Li Zhihong. Biol.: Nayak *et al.*, 2014 (life history).

### Pachytroctidae

Checklist of species: Azar *et al.*, 2015: 338.  
 Libaneuphorinae Azar, Huang Diying, Cai Chenyang & Nel, 2015: 337. Type genus: *Libaneuphoris* Azar, Huang Diying, Cai Chenyang & Nel.  
***Atapinella*\*\*** Azar, Huang Diying, Cai Chenyang & Nel, 2015: 343. Gender: F. Type species: *Atapinella garroustei* Azar, Huang Diying, Cai Chenyang & Nel. Genus assigned to subfamily Tapinellinae.  
***Atapinella garroustei*\*** Azar, Huang Diying, Cai Chenyang & Nel, 2015: 343. Myanmar (VIII): Cretaceous amber (A).  
***Burmipachytrocta*\*\*** Azar, Huang Diying, Cai Chenyang & Nel, 2015: 340. Gender: F. Type species: *Burmipachytrocta singularis* Azar, Huang Diying, Cai Chenyang & Nel. Genus assigned to subfamily

Tapinellinae.

*Burmipachyrocta singularis*\* Azar, Huang Diying, Cai Chenyang & Nel, 2015: 340. Myanmar (VIII): Cretaceous amber (A).

*Libaneuphoris*\*\* Azar, Huang Diying, Cai Chenyang & Nel, 2015: 338. Gender: M (explicitly indicated by the authors). Type species: *Libaneuphoris jantopi* Azar, Huang Diying, Cai Chenyang & Nel. Genus assigned to the new subfamily Libaneuphorinae.

*Libaneuphoris jantopi*\* Azar, Huang Diying, Cai Chenyang & Nel, 2015: 339. Lebanon (I): Lower Cretaceous amber (A).

*Libanopsyllipsocus* Azar & Nel, 2011. This genus is considered as belonging to Psyllipsocidae by Azar *et al.* (2015: 346) without discussing the arguments presented by Mockford *et al.* (2013: 16) in favour of an assignment to Pachytrictidae.

*Libanopsyllipsocus alexanderasnitsyni* Azar & Nel, 2011. Lebanon (I): Lower Cretaceous amber (A). This species is considered as belonging to Psyllipsocidae by Azar *et al.* (2015: 346) without discussing the arguments presented by Mockford *et al.* (2013: 16) in favour of an assignment to Pachytrictidae.

*Tapinella* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

### **Psocomorpha**

Yoshizawa & Johnson, 2014: Phylogeny, new higher-level classification proposed. Six infraorders recognized: Archipsocetae, Caeciliusetae, Homilopsocidea (redefined), Philotarsetae (new infraorder), Epipsocetae, Psocetae.

*Awightipsocus*\*\* Azar, 2014: 312. Gender: M. Type species not designated. Incertae sedis within Psocomorpha (not assigned to an infraorder or family).

*Awightipsocus jarzembowskii*\* Azar, 2014: 312. Limestone fossil from Late Eocene (A), Great Britain (I).

*Awightipsocus megaloi*\* Azar, 2014: 314. Limestone fossil from Late Eocene (A), Great Britain (I).

*Awightipsocus minimus*\* Azar, 2014: 314. Limestone fossil from Late Eocene (A), Great Britain (I).

*Wightimicropsocus*\*\* Azar, 2014: 315. Gender: M. Type species: *Wightimicropsocus inexpectatus* Azar (by monotypy). Incertae sedis, probably within Psocomorpha (not assigned to an infraorder or family).

*Wightimicropsocus inexpectatus*\* Azar, 2014: 315. Limestone fossil from Late Eocene (A), Great Britain (I).

*Wightipsocus*\*\* Azar, 2014: 307. Gender: M. Type species: *Psocus acourti* Cockerell, 1921. Incertae sedis within Psocomorpha (not assigned to an infraorder or family).

*Wightipsocus acourti* (Cockerell, 1921). Redescription: Azar, 2014: 307 (**from** *Psocus*). Limestone fossil from Late Eocene (A), Great Britain (I).

*Wightipsocus intasi*\* Azar, 2014: 309. Limestone fossil from Late Eocene (A), Great Britain (I).

*Wightipsocus rossi*\* Azar, 2014: 311. Limestone fossil from Late Eocene (A), Great Britain (I).

### **Archipsocetae**

Yoshizawa & Johnson, 2014: Phylogeny, infraorder status confirmed.

### **Archipsocidae**

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

*Archipsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Pararchipsocus* spec. Colombia (V): Sarria *et al.*, 2014a, 2014b.

### **Caeciliusetae**

Yoshizawa *et al.*, 2014a: Molecular systematics, new family-level classification and key to families. Six families are recognized (see also Yoshizawa & Johnson, 2014): Amphipsocidae, Stenopsocidae, Dasydemellidae, Asiopsocidae, Paracaeciliidae, Caeciliusidae (including *Calocaecilius* Mockford).

Yoshizawa & Johnson, 2014: Phylogeny, infraorder status confirmed.

### **Amphipsocidae**

Yoshizawa *et al.*, 2014a: Molecular systematics, family definition revised (*Calocaecilius* Mockford assigned to Caeciliusidae and Dasydemellinae reinstated as a family of its own).

Yoshizawa & Johnson, 2014: Phylogeny, revised family definition confirmed.

Calocaeciliinae. See Caeciliusidae; not longer valid as a taxon of the family-group: Yoshizawa *et al.*, 2014a.

Dasydemellinae. See Dasydemellidae, reinstated as a valid family: Yoshizawa *et al.*, 2014a.

*Calocaecilius* Mockford. Genus assigned to Caeciliusidae: Yoshizawa *et al.*, 2014a.

### **Stenopsocidae**

Yoshizawa *et al.*, 2014a: Molecular systematics, family status confirmed.

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

*Graphopsocus cruciatus* (Linnaeus). Albania, Kosovo, Montenegro (I): Sziraki, 2013. Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a, 2014b. Great Britain (I): Alexander, 2013b. Colombia (V): Sarria *et al.*, 2014a, 2014b. Paraguay (V): Garcia Aldrete, 2014a.

*Graphopsocus mexicanus* Enderlein. Brazil (V): Silva Neto *et al.*, 2014a. Fig.: Lopez, 2015 (habitus photograph).

*Stenopsocus immaculatus* (Stephens). Albania, Bulgaria, Macedonia, Serbia (I): Sziraki, 2013. Germany (I): Blick & Dorow, 2014a, 2014b.

*Stenopsocus lachlani* Kolbe. Bosnia-Herzegovina, Bulgaria (I): Sziraki, 2013. Czech Republic (I): Gol & Holusa, 2011 (ecol.).

*Stenopsocus stigmaticus* (Imhoff & Labram). Germany (I): Blick & Dorow, 2014a, 2014b. Montenegro (I): Sziraki, 2013.

### **Dasydemellidae**

Yoshizawa *et al.*, 2014a: Molecular systematics, family reinstated according to Mockford (1993a) and Lienhard & Smithers (2002).

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

### **Asiopsocidae**

Yoshizawa *et al.*, 2014a: Molecular systematics, family status confirmed.

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

*Notiopsocus* spec. Colombia (V): Sarria *et al.*, 2014a, 2014b.

### **Paracaeciliidae**

Yoshizawa *et al.*, 2014a: Molecular systematics, new family status for Paracaeciliinae (subfamily of Caeciliusidae).

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

*Enderleinella obsoleta* (Stephens). Czech Republic (I): Gol & Holusa, 2011 (ecol.). Great Britain (I): Alexander, 2013b.

*Xanthocaecilius* spec. Brazil (V): Silva Neto *et al.*, 2014a.

### **Caeciliusidae**

Yoshizawa *et al.*, 2014a: Molecular systematics, family definition revised (*Calocaecilius* Mockford assigned to Caeciliusidae and Paracaeciliinae considered as a family of its own).

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

Paracaeciliinae. See Paracaeciliidae, considered as a family of its own: Yoshizawa *et al.*, 2014a.

*Caecilius* spec. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012. Morph.: Wipfler & Pass, 2014 (antennal heart).

*Caecilius fuscopterus* (Latreille). Germany (I): Blick & Dorow, 2014a, 2014b.

*Calocaecilius* Mockford. Genus transferred from Amphipsocidae to Caeciliusidae: Yoshizawa *et al.*, 2014a.

*Enderleinella* Badonnel. See Paracaeciliidae.

*Valenzuela* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Valenzuela burmeisteri* (Brauer). Bulgaria, Montenegro (I): Sziraki, 2013. Czech Republic (I): Gol & Holusa, 2011 (ecol.). Germany (I): Büchs, 1988 (ecol.).

*Valenzuela despaxi* (Badonnel). Bulgaria (I): Sziraki, 2013. Czech Republic (I): Gol & Holusa, 2011 (ecol.).

*Valenzuela flavidus* (Stephens). Albania, Bulgaria, Montenegro (I): Sziraki, 2013. Czech Republic (I): Gol & Holusa, 2011 (ecol.). Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a, 2014b. Morph.: Friedemann *et al.*, 2014 (attachment structures).

*Valenzuela gynapterus* (Tetens). Serbia (I): Sziraki, 2013.

*Valenzuela piceus* (Kolbe). Albania (I): Sziraki, 2013.

*Xanthocaecilius* Mockford. See Paracaeciliidae.

### **Homilopsocidea**

Yoshizawa & Johnson, 2014: Phylogeny, infraorder definition revised, only five families retained (other families transferred to new infraorder Philotarsetae): Peripsocidae, Ectopsocidae, Elipsocidae, Lachesillidae, Mesopsocidae.



## Peripsocidae

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

*Kaestneriella* spec. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Kaestneriella ecuatoriana* Garcia Aldrete. Colombia (V): Sarria *et al.*, 2014a.

*Peripsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Peripsocus alboguttatus* (Dalman). Bulgaria (I): Sziraki, 2013.

*Peripsocus didymus* Roesler. Germany (I): Blick & Dorow, 2014a, 2014b. Great Britain (I): Alexander, 2013b.

*Peripsocus fici* Smithers. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.

*Peripsocus parvulus* Kolbe. Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a, 2014b.

*Peripsocus phaeopterus* (Stephens). Bulgaria, Greece (I): Sziraki, 2013. Germany (I): Blick & Dorow, 2014a, 2014b.

*Peripsocus subfasciatus* (Rambur). Bulgaria (I): Sziraki, 2013. Germany (I): Blick & Dorow, 2014a, 2014b.

## Ectopsocidae

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

Distribution of Neotropical and Caribbean species of Ectopsocidae (checklist): Saenz Manchola *et al.*, 2014: 539.

Ectopsocidae gen. spec. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.

*Ectopsocopsis cryptomeriae* (Enderlein). Colombia (V): Saenz Manchola *et al.*, 2014. Paraguay (V): Garcia Aldrete, 2014a.

*Ectopsocus* spec. Colombia (V): Sarria *et al.*, 2014a, 2014b. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.

*Ectopsocus andinus*\* Saenz Manchola, Gonzalez Obando & Garcia Aldrete, 2014: 525. Colombia (V). Fig.: Lopez, 2015 (habitus photograph).

*Ectopsocus briggsi* McLachlan. Germany (I): Blick & Dorow, 2014a, 2014b. Serbia (I): Sziraki, 2013. Colombia (V): Saenz Manchola *et al.*, 2014. Genet.: Misof *et al.*, 2014 (de novo transcriptome, see Table S1).

*Ectopsocus californicus* (Banks). Colombia (V): Saenz Manchola *et al.*, 2014.

*Ectopsocus columbianus* Badonnel. Colombia (V): Saenz Manchola *et al.*, 2014.

*Ectopsocus* cf. *erosus* (Enderlein). Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.

*Ectopsocus gorgonaensis*\* Saenz Manchola, Gonzalez Obando & Garcia Aldrete, 2014: 528. Colombia (V).

*Ectopsocus maindroni* Badonnel. Colombia (V): Saenz Manchola *et al.*, 2014.

*Ectopsocus meridionalis* Ribaga. Albania (I): Sziraki, 2013. Germany (I): Blick & Dorow, 2014a, 2014b. Colombia (V): Saenz Manchola *et al.*, 2014.

*Ectopsocus pilosus* Badonnel. Colombia (V): Saenz Manchola *et al.*, 2014.

*Ectopsocus richardsi* (Pearman). Colombia (V): Saenz Manchola *et al.*, 2014.

*Ectopsocus thornтони* Garcia Aldrete. Description of male: Saenz Manchola *et al.*, 2014: 536. Colombia (V).

*Ectopsocus titschacki* Jentsch. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Saenz Manchola *et al.*, 2014.

*Ectopsocus valvilobatus*\* Saenz Manchola, Gonzalez Obando & Garcia Aldrete, 2014: 528. Colombia (V).

*Ectopsocus vilhenai* Badonnel. Colombia (V): Saenz Manchola *et al.*, 2014.

*Ectopsocus vilhenaioides*\* Saenz Manchola, Gonzalez Obando & Garcia Aldrete, 2014: 532. Colombia (V).

## Elipsocidae

Yoshizawa & Johnson, 2014: Phylogeny, tentatively maintained as valid family, monophyly not supported.

*Elipsocus abdominalis* Reuter. Germany (I): Blick & Dorow, 2014a, 2014b. Greece (I): Sziraki, 2013.

*Elipsocus annulatus* Roesler. Greece (I): Sziraki, 2013.

*Elipsocus hyalinus* (Stephens). Great Britain (I): Alexander, 2013b.

*Elipsocus moebiusi* Tetens. Albania, Macedonia (I): Sziraki, 2013.

*Elipsocus pumilis* (Hagen). Germany (I): Blick & Dorow, 2014a, 2014b.

*Hemineura dispar* Tetens. Bulgaria (I): Sziraki, 2013.

*Pseudopsocus fusciceps* (Reuter). Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a, 2014b.

*Pseudopsocus rostocki* Kolbe. Germany (I): Blick & Dorow, 2014a, 2014b.

## Lachesillidae

Yoshizawa & Johnson, 2014: Phylogeny, tentatively maintained as valid family, monophyly not supported.

*Acantholachesilla*\*\* Garcia Aldrete, Saenz Manchola & Gonzalez Obando, 2014: 568. Gender: F. Type species: *Acantholachesilla saltoensis* Garcia Aldrete, Saenz Manchola & Gonzalez Obando. Genus

assigned to Eolachesillinae: Graphocaeciliini; relationships to the genera *Dagualachesilla* and *Dagualachesilloides* discussed.

*Acantholachesilla saltoensis*\* Garcia Aldrete, Saenz Manchola & Gonzalez Obando, 2014: 568. Colombia (V).

*Dagualachesilla anchicayaensis* Garcia Aldrete, Gonzalez Obando & Carrejo, 2013a. Fig.: Lopez, 2015 (habitus photograph).

*Dagualachesilla queremalensis* Garcia Aldrete, Gonzalez Obando & Carrejo, 2013a. Fig.: Lopez, 2015 (forewing photograph).

*Graphocaecilius* spec. Brazil (V): Silva Neto *et al.*, 2014a.

*Hemicaecilius nicolasi* Garcia Aldrete, Gonzalez Obando & Carrejo, 2012. Fig.: Lopez, 2015 (habitus photograph).

*Lachesilla* Westwood. Diagnosis of *palmera* species group, with list of species included: Garcia Aldrete, 2014a: 738.

*Lachesilla* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Lachesilla cesarcardonai* Garcia Aldrete, Gonzalez Obando & Saldaña, 2013. Fig.: Lopez, 2015 (habitus photograph).

*Lachesilla cladoclasters*\* Garcia Aldrete & Silva Neto, 2014: 7 (assigned to *riegeli* group). Brazil (V).

*Lachesilla cuala* Garcia Aldrete. Paraguay (V): Garcia Aldrete, 2014a.

*Lachesilla diamantina* Garcia Aldrete & Silva Neto, 2013. Brazil (V): Silva Neto *et al.*, 2014a.

*Lachesilla lapadoce* Garcia Aldrete & Silva Neto, 2013. Brazil (V): Silva Neto *et al.*, 2014a. Paraguay (V): Garcia Aldrete, 2014a.

*Lachesilla lugoi*\* Garcia Aldrete, 2014a: 737 (belonging to *pedicularia* species group). Paraguay (V).

*Lachesilla mattogrossensis* Garcia Aldrete. Paraguay (V): Garcia Aldrete, 2014a.

*Lachesilla nilopecanhensis*\* Garcia Aldrete & Silva Neto, 2014: 9 (assigned to *forcepeta* group). Brazil (V).

*Lachesilla pedicularia* (Linnaeus). Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a, 2014b.

*Lachesilla pereirorum* Garcia Aldrete, 2004d. Paraguay (V): Garcia Aldrete, 2014a.

*Lachesilla rugosa* Garcia Aldrete. Paraguay (V): Garcia Aldrete, 2014a.

*Lachesilla tanaidana* Roesler. Russia (I): Golub & Golub, 2013.

*Lachesilla tectorum* Badonnel. Paraguay (V): Garcia Aldrete, 2014a.

*Lachesilla yucateca* Mockford, 2002a. Description of male: Mockford & Young, 2014: 126. USA: Texas (III).

*Lachesilla zuninoi*\* Garcia Aldrete, 2014b: 95 (assigned to *corona* group). Mexico (IV).

*Lachesilla zuninoides*\* Garcia Aldrete, 2014b: 96 (assigned to *corona* group). Mexico (IV).

## Mesopsocidae

Yoshizawa & Johnson, 2014: Phylogeny, tentatively maintained as valid family, monophyly not supported.

*Cyrtopsocus nasutus* (Enderlein). Greece (I): Sziraki, 2013.

*Mesopsocoides*\*\* Azar, Nel & Perrichot, 2014: 12. Gender: M. Type species: *Mesopsocoides dupei* Azar, Nel & Perrichot.

*Mesopsocoides dupei*\* Azar, Nel & Perrichot, 2014: 13. France (I), Late Cretaceous Vendean amber (A).

*Mesopsocus duboscqui* Badonnel. Albania, Greece (I): Sziraki, 2013.

*Mesopsocus laticeps* (Kolbe). Germany (I): Blick & Dorow, 2014a, 2014b.

*Mesopsocus unipunctatus* (Müller). Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a, 2014b. Greece (I): Sziraki, 2013.

## Philotarsetae

Yoshizawa & Johnson, 2014: Phylogeny, new infraorder established, containing three families: Philotarsidae, Trichopsocidae, Pseudocaeciliidae.

## Philotarsidae

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

Philotarsidae gen. spec. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.

*Aaroniella* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Philotarsus parviceps* Roesler. Czech Republic (I): Gol & Holusa, 2011 (ecol.).

*Philotarsus picicornis* (Fabricius). Bulgaria, Greece (I): Sziraki, 2013. Czech Republic (I): Gol & Holusa, 2011 (ecol.). Germany (I): Blick & Dorow, 2014a, 2014b.

### **Trichopsocidae**

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

### **Calopsocidae** (see Pseudocaeciliidae)

Yoshizawa & Johnson, 2014: Phylogeny, family synonymized with Pseudocaeciliidae.

*Calopsocus* Hagen. See Pseudocaeciliidae.

### **Pseudocaeciliidae**

Yoshizawa & Johnson, 2014: Phylogeny, family definition revised (Calopsocidae considered as a new synonym of Pseudocaeciliidae and Bryopsocidae as a new synonym of Zelandopsocinae).

Zelandopsocinae. Yoshizawa & Johnson, 2014: Bryopsocidae considered as a new synonym of Zelandopsocinae.

*Calopsocus infelix* (Hagen). China, Vietnam (VIII): Liang Feiyang *et al.*, 2013b (description).

*Cladioneura foliata* Smithers. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.

*Heterocaecilius* spec. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Pseudocaecilius citricola* (Ashmead). Colombia (V): Sarria *et al.*, 2014a, 2014b. Paraguay (V): Garcia Aldrete, 2014a.

*Scytosocus* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

### **Bryopsocidae** (see Pseudocaeciliidae)

Yoshizawa & Johnson, 2014: Phylogeny, family synonymized with Zelandopsocinae (subfamily of Pseudocaeciliidae).

### **Epipsocetae**

Yoshizawa & Johnson, 2014: Phylogeny, infraorder status confirmed. Four families recognized: Dolabellopsocidae, Cladiopsocidae, Ptiloneuridae, Epipsocidae.

### **Dolabellopsocidae**

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

*Dolabellopsocus* Eertmoed. Distribution of species and key to the neotropical species: Calderon Martinez *et al.*, 2014.

*Dolabellopsocus* spec. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Dolabellopsocus calima*\* Calderon Martinez, Gonzalez Obando & Garcia Aldrete, 2014: 13. Colombia (V).

*Dolabellopsocus lobatus* Mockford. Colombia (V): Calderon Martinez *et al.*, 2014.

*Dolabellopsocus roseusoides*\* Calderon Martinez, Gonzalez Obando & Garcia Aldrete, 2014: 13. Colombia (V).

*Dolabellopsocus similis* Mockford. Colombia (V): Calderon Martinez *et al.*, 2014.

*Dolabellopsocus yundiguai*\* Calderon Martinez, Gonzalez Obando & Garcia Aldrete, 2014: 18. Colombia (V).

*Isthmopsocus* Eertmoed. Distribution of species and key to the neotropical species: Calderon Martinez *et al.*, 2014.

*Isthmopsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a.

*Isthmopsocus barbatusoides*\* Calderon Martinez, Gonzalez Obando & Garcia Aldrete, 2014: 18. Colombia (V).

*Isthmopsocus foliatus*\* Calderon Martinez, Gonzalez Obando & Garcia Aldrete, 2014: 22. Colombia (V).

### **Cladiopsocidae**

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed (including *Spurostigma* Eertmoed).

*Cladiopsocus* Roesler. Distribution of species and key to the neotropical species: Calderon Martinez *et al.*, 2014.

*Cladiopsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Cladiopsocus arboricola*\* Calderon Martinez, Gonzalez Obando & Garcia Aldrete, 2014: 3. Colombia (V).

*Cladiopsocus bidentatus*\* Calderon Martinez, Gonzalez Obando & Garcia Aldrete, 2014: 6. Colombia (V).

*Cladiopsocus multimaculatus* Eertmoed. Colombia (V): Calderon Martinez *et al.*, 2014.

*Cladiopsocus nebulosus*\* Calderon Martinez, Gonzalez Obando & Garcia Aldrete, 2014: 6. Colombia (V).  
Fig.: Lopez, 2015 (habitus photograph).

*Cladiopsocus pacificus*\* Calderon Martinez, Gonzalez Obando & Garcia Aldrete, 2014: 9. Colombia (V).

*Spurostigma caatinga* Silva Neto & Garcia Aldrete, 2012. Brazil (V): Silva Neto *et al.*, 2014a.

### **Spurostigmatidae** (see Cladiopsocidae)

Yoshizawa & Johnson, 2014: Phylogeny, reinstated family (see Casasola Gonzalez, 2006a) not recognized (see Lienhard & Smithers, 2002).

*Spurostigma* Eertmoed. See Cladiopsocidae.

### **Ptiloneuridae**

Yoshizawa & Johnson, 2014: Phylogeny, tentatively maintained as valid family, potentially embedded within Cladiopsocidae.

*Euplocania* spec. Brazil (V): Silva Neto *et al.*, 2014a. Fig.: Lopez, 2015 (habitus photograph).

*Loneura* spec. Brazil (V): Silva Neto *et al.*, 2014a. Fig.: Lopez, 2015 (habitus photograph).

*Loneura gorgonaensis* Garcia Aldrete, Gonzalez & Sarria, 2011. Colombia (V): Sarria *et al.*, 2014a.

*Loneura insularis* Garcia Aldrete, Gonzalez & Sarria, 2011. Colombia (V): Sarria *et al.*, 2014a.

*Loneura monticola* Garcia Aldrete, Gonzalez & Sarria, 2011. Colombia (V): Sarria *et al.*, 2014a.

*Triplocania* spec. Brazil (V): Silva Neto *et al.*, 2014a. Fig.: Lopez, 2015 (habitus photograph).

*Triplocania ariasi* New. Brazil (V): Silva Neto *et al.*, 2014a.

*Triplocania lamasi*\* Silva Neto, Rafael & Garcia Aldrete, 2014: 79. Brazil, Colombia (V).

*Triplocania mariateresae*\* Silva Neto, Rafael & Garcia Aldrete, 2014: 79. Brazil (V).

*Triplocania newi*\* Silva Neto, Rafael & Garcia Aldrete, 2014: 81. Brazil (V).

*Triplocania plaumanni*\* Silva Neto, Rafael & Garcia Aldrete, 2014: 84. Brazil (V).

### **Epipsocidae**

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed, Neurostigmatidae treated as a junior synonym (as proposed by Casasola Gonzalez, 2006a, 2006b).

*Bertkauia lucifuga* (Rambur). Germany (I): Blick & Dorow, 2014a, 2014b.

*Epipsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a.

*Goja* spec. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Mesepipsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Neurostigma* spec. Brazil (V): Silva Neto *et al.*, 2014a.

### **Psocetae**

Yoshizawa & Johnson, 2014: Phylogeny, infraorder status confirmed. Four families recognized: Psilopsocidae, Hemipsocidae, Myopsocidae, Psocidae.

### **Psilopsocidae**

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

### **Hemipsocidae**

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

*Hemipsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a.

*Hemipsocus africanus* Enderlein. Colombia (V): Sarria *et al.*, 2014a, 2014b.

### **Myopsocidae**

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

*Lichenomima* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Myopsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b. Fig.: Lopez, 2015 (habitus photograph).

### **Psocidae**

Yoshizawa & Johnson, 2014: Phylogeny, family status confirmed.

*Amphigerontia* spec. Brazil (V): Silva Neto *et al.*, 2014a.

*Amphigerontia contaminata* (Stephens). Albania, Greece, Macedonia (I): Sziraki, 2013.

*Barrowia insularis* Smithers. Australia (Barrow Island) (IX): Gunawardene *et al.*, 2012.

*Blaste* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Blaste conspurcata* (Rambur). Albania (I): Sziraki, 2013.

*Blaste quadrimaculata* (Latreille). Albania, Greece (I): Sziraki, 2013.

*Blastopsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

*Cerastipsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a.

*Cervopsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a.

*Dictyopsocus* spec. Brazil (V): Silva Neto *et al.*, 2014a (misspelled *Dyctiopsocus*).

***Elaphopsocoides*\*\*** Roman Palacios, Garcia Aldrete & Gonzalez Obando, 2014: 94. Gender: M. Type species: *Elaphopsocoides colombiensis* Roman Palacios, Garcia Aldrete & Gonzalez Obando. Assigned to subfamily Amphigerontiinae.

***Elaphopsocoides colombiensis*\*** Roman Palacios, Garcia Aldrete & Gonzalez Obando, 2014: 94. Colombia (V). Fig.: Lopez, 2015 (habitus photograph).

***Elaphopsocoides lahonduraensis*\*** Roman Palacios, Garcia Aldrete & Gonzalez Obando, 2014: 97. Colombia (V).

***Elaphopsocus*** spec. Brazil (V): Silva Neto *et al.*, 2014a.

***Eremopsocus*** spec. Brazil (V): Silva Neto *et al.*, 2014a.

***Eremopsocus nigripes*** Mockford. Brazil (V): Silva Neto *et al.*, 2014a.

***Hyalopsocus contrarius*** (Reuter). Greece (I): Sziraki, 2013.

***Indiopsocus*** spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

***Loensia fasciata*** (Fabricius). Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a, 2014b.

***Loensia variegata*** (Latreille). Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a, 2014b. Greece (I): Sziraki, 2013.

***Metylophorus*** spec. Brazil (V): Silva Neto *et al.*, 2014a.

***Metylophorus nebulosus*** (Stephens). Germany (I): Blick & Dorow, 2014a, 2014b. Macedonia (I): Sziraki, 2013.

***Neopsocus rhenanus*** Kolbe. Albania, Bulgaria, Montenegro (I): Sziraki, 2013.

***Oreopsocus montanus*** (Kolbe). Greece (I): Sziraki, 2013.

***Psocidus*** spec. Brazil (V): Silva Neto *et al.*, 2014a.

***Psococerastis*** spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

***Psococerastis gibbosa*** (Sulzer). Albania (I): Sziraki, 2013. Germany (I): Blick & Dorow, 2014a, 2014b.

***Ptycta*** Enderlein. Phylogeny and biogeography of Hawaiian species (X): Bess *et al.*, 2014.

***Ptycta*** spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b.

***Steleops*** spec. Brazil (V): Silva Neto *et al.*, 2014a. Fig.: Lopez, 2015 (habitus photograph).

***Steleops albertoneto*** Gonzalez, Garcia Aldrete & Carrejo, 2011b. Brazil (V): Silva Neto *et al.*, 2014a.

***Symbiopsocus*** Li Fasheng. Checklist of species, key to Chinese species: Liu Luxi *et al.*, 2014.

***Symbiopsocus yangminus*\*** Liu Luxi, Li Fasheng & Liu Zhiqi 2014: 290. China (VIII).

***Thyrsopsocus*** spec. Colombia (V): Sarria *et al.*, 2014a, 2014b.

***Trichadenotecnum*** Enderlein. Keys to species groups and to species from Peninsular Malaysia and Singapore, definition of a new species group (*krucilense* group): Yoshizawa *et al.*, 2014c.

***Trichadenotecnum*** spec. Brazil (V): Silva Neto *et al.*, 2014a. Colombia (V): Sarria *et al.*, 2014a, 2014b. Malaysia (VIII): Yoshizawa *et al.*, 2014c: 484 (fig.) (assigned to *spiniserrulum* group).

***Trichadenotecnum adika*** Endang, Thornton & New, 2002. Singapore (VIII): Yoshizawa *et al.*, 2014c (assigned to *spiniserrulum* group).

***Trichadenotecnum anomalum*\*** Yoshizawa & Lienhard, 2014; *in*: Yoshizawa *et al.*, 2014c: 492 (assigned to *majus* group). Singapore (VIII).

***Trichadenotecnum cinnamomum*** Endang & New, 2005. Description of female: Yoshizawa *et al.*, 2014c: 472 (assigned to *corniculum* group). Malaysia (VIII). NOTE: The female assigned to this species by Endang & New (2005: 36) is considered as misidentified.

***Trichadenotecnum circularoides*** Badonnel. Singapore (VIII): Yoshizawa *et al.*, 2014c (assigned to *circularoides* group).

***Trichadenotecnum cornutum*** Endang & New, 2005. Malaysia (VIII): Yoshizawa *et al.*, 2014c: (assigned to *majus* group).

***Trichadenotecnum endangae*\*** Yoshizawa & Lienhard, 2014; *in*: Yoshizawa *et al.*, 2014c: 481 (assigned to *spiniserrulum* group). Malaysia (VIII).

***Trichadenotecnum germanicum*** Roesler. Germany (I): Büchs, 1988 (erroneously called *T. sexpunctatum* on p. 272; ecol.).

***Trichadenotecnum gombakense*** New & Lee. Malaysia (VIII): Yoshizawa *et al.*, 2014 (assigned to *spiniserrulum* group).

***Trichadenotecnum hammani*** Endang, Thornton & New, 2002. Malaysia (VIII): Yoshizawa *et al.*, 2014c (assigned to *spiniserrulum* group).

***Trichadenotecnum imrum*** New & Thornton. Description of female: Yoshizawa *et al.*, 2014c: 474 (assigned to *corniculum* group). Singapore (VIII).

***Trichadenotecnum kerinciense*** Endang & New, 2005. Description of male: Yoshizawa *et al.*, 2014c: 496 (assigned to *majus* group). Malaysia (VIII).

***Trichadenotecnum kojimai*\*** Yoshizawa & Lienhard, 2014; *in*: Yoshizawa *et al.*, 2014c: 478 (assigned to *spiniserrulum* group). Malaysia (VIII).

- Trichadenotecnum krucilense* Endang, Thornton & New, 2002. Malaysia (VIII): Yoshizawa *et al.*, 2014c (assigned to *krucilense* group).
- Trichadenotecnum majus* (Kolbe). Germany (I): Blick & Dorow, 2014a, 2014b.
- Trichadenotecnum malayense* New. Malaysia (VIII): Yoshizawa *et al.*, 2014 (assigned to *spiniserrulum* group).
- Trichadenotecnum marginatum* New & Thornton. Generic assignment questionable (appears to be close to *Cryptopsocus cynostigmus* Li Fasheng, 2002): Yoshizawa *et al.*, 2014c.
- Trichadenotecnum pardus* Badonnel. Singapore (VIII): Yoshizawa *et al.*, 2014c (assigned to *spiniserrulum* group).  
*Trichadenotecnum pardidum* Thornton: New, 1975e: 258.  
 [Not *Trichadenotecnum pardidum* Thornton, 1961: 16].
- Trichadenotecnum rachimi* Endang & Thornton. Singapore (VIII): Yoshizawa *et al.*, 2014c (assigned to *majus* group).  
*Trichadenotecnum arciforme* Thornton: New & Lee, 1992a: 155.  
 [Not *Trichadenotecnum arciforme* Thornton, 1961: 11].  
 [Not *Trichadenotecnum arciforme* Thornton: Thornton, 1984b: 157].
- Trichadenotecnum santosai* Endang & Thornton. Malaysia (VIII): Yoshizawa *et al.*, 2014c (assigned to *majus* group).
- Trichadenotecnum sexpunctatum* (Linnaeus). Albania (I): Sziraki, 2013. Germany (I): Büchs, 1988 (ecol.); Blick & Dorow, 2014a, 2014b. Great Britain (I): Alexander, 2013b.
- Trichadenotecnum sibolangitense* Endang & New, 2005. Description of female: Yoshizawa *et al.*, 2014c: 487 (assigned to *majus* group). Malaysia, Singapore (VIII).
- Trichadenotecnum soenarti* Endang, Thornton & New, 2002. Malaysia (VIII): Yoshizawa *et al.*, 2014c (assigned to *majus* group).
- Trichadenotecnum yatai*\* Yoshizawa & Lienhard, 2014; *in*: Yoshizawa *et al.*, 2014c: 476 (assigned to *spiniserrulum* group). Malaysia (VIII).

#### 4. Additions to the Bibliography

NOTE: Complete bibliographical references to publications cited in the present paper, which are not listed here, can be found in the World Bibliography (Lienhard & Smithers, 2002: 493-664) or in Parts 1 to 13 of the "Additions"; see also **Synthesis of Parts 1-10**: [http://www.ville-ge.ch/mhng/psocoptera/divers/synthesis\\_add\\_1\\_10.pdf](http://www.ville-ge.ch/mhng/psocoptera/divers/synthesis_add_1_10.pdf)

Remarks: Papers with two authors are listed in alphabetical order of second authors after the chronological list of papers with the first author as unique author. Papers with more than two authors (i. e. "first author *et al.*"-papers) are listed chronologically after the two-author papers. References to papers published in the same year are distinguished by suffix-letters added to the publication year. No cross-references to co-authors or editors are given.

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## 5. Corrections to Lienhard & Smithers, 2002

Remark: These "Corrections" refer to the pages of Lienhard & Smithers (2002).

044: *Psocathropos pilipennis* (Enderlein). Add: Diagnostic characters: Mockford, 1993a: 51.

573: Replace the reference "Leach, W. 1815" by the following more complete reference: Leach, W. E. 1815. Entomology (pp. 57-172). In: Brewster, D. (ed.). The Edinburgh Encyclopaedia. Volume 9. *Edinburgh, William Blackwood*. (Psoc.: p. 139).

## PSOCOPTERA IN THE PUBLIC

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Psocoptera are our close friends but, unfortunately, they are a group of insects rather neglected by taxonomists and evolutionary biologists. Two papers published in 2014 may change the situation dramatically, putting the Psocoptera on the front line (at least for a moment) of insect systematics and evolutionary research.

The one was published in May by Yoshizawa, Lienhard and two colleagues from Brazil (Rodrigo Ferreira) and Japan (Yoshitaka Kamimura) in the journal *Current Biology* (Yoshizawa *et al.*, 2014b: see Addition to Bibliography above). In this paper, we reported, for the first time, the acting condition of the gynosome (female copulatory organ, or female penis, present in *Neotrogla* and first reported by Lienhard, Do Carmo & Ferreira, 2010). Because the presence of an intromittent organ in the female changes our general idea about sex, the paper attracted enormous public interest. Altmetric scores the paper as the 14th most attractive scientific paper published in 2014 (see <http://www.altmetric.com/top100/2014/>: As of Feb 12th, the Score increases to 1795, ranking it 77th among over 3M papers so far evaluated by Altmetric). The gynosome was also selected as one of the oddest genital organs in the animal kingdom (e.g., see <http://www.mareonline.nl/archive/2014/05/08/evolutie-tussen-de-benen>). See also Yoshizawa *et al.* (2014d) and Yoshizawa (2015) for the detailed story about its discovery and evolutionary significance.

The other paper was published in November by an international team, the 1KITE consortium (<http://1kite.org>), in the journal *Science* (Misof *et al.*, 2014). The paper reports the most comprehensive insect phylogeny available to date, based on ca. 1500 genes sequenced from over 100 species covering all insect orders. This paper also attracted great public interest (Altmetric Score 678 as of Feb 12th: ranked 552nd). In the resulting tree, Psocodea (= 'Psocoptera' + Phthiraptera) were placed to the sister of Holometabola, which means Psocoptera may be a key taxon in uncovering the origin and evolution of the holometabolous insects. However, placement of Psocodea is rather unstable, receiving 100% support value only under a specific data and model set. Personally, I still believe that the Paraneoptera are monophyletic because many independent morphological characters support it. The Paraneoptera subproject of the 1KITE project and the NSF's AToL Hemipteroid Insect Phylogeny project (with Kevin Johnson as a project leader) collaborate in their efforts for resolving the problems of the hemipteroid phylogeny and monophyly of Paraneoptera.

## EDITORIAL

"Psocid News" publishes any kinds of topics (formal or informal) that may be interesting for psocidologists, but articles containing official nomenclatural acts (e.g. descriptions of new taxa, proposals of new combinations or new synonyms) will not be accepted for publication by the editor (see below).

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**Next issue.** About Feb. 2016. Please let me have all contributions by Jan. 31 2016.

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