



<http://dx.doi.org/10.11646/zootaxa.4012.2.1>

<http://zoobank.org/urn:lsid:zoobank.org:pub:F8A186B9-EE1C-43CC-AB9C-F8CCB1A03794>

## A review of the genera *Cleigastra* Macquart, *Gonarcticus* Becker, *Gonatherus* Rondani, *Hexamitocera* Becker, *Nanna* Strobl, *Orthacheta* Becker and *Spathephilus* Becker (Diptera, Scathophagidae) of Russia

A.L. OZEROV<sup>1,3</sup> & M.G. KRIVOSHEINA<sup>2</sup>

<sup>1</sup>Zoological Museum, Lomonosov Moscow State University, Bol'shaya Nikitskaya 6, Moscow 125009, Russia.

E-mail: [ozеров2455@rambler.ru](mailto:ozеров2455@rambler.ru)

<sup>2</sup>A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences, 119071 Moscow, Russia.

E-mail: [dipteramarina@rambler.ru](mailto:dipteramarina@rambler.ru)

<sup>3</sup>Corresponding author. E-mail: [ozеров2455@rambler.ru](mailto:ozеров2455@rambler.ru)

### Table of contents

Abstract	202
Introduction	202
Material and methods	203
Taxonomic results	204
<i>Cleigastra</i> Macquart, 1835	204
<i>Cleigastra apicalis</i> (Meigen, 1826)	206
<i>Cleigastra sundukovi</i> Ozerov, 2013	210
Key to the species of <i>Cleigastra</i> of Russia	210
<i>Gonarcticus</i> Becker, 1894	210
<i>Gonarcticus abdominalis</i> (Zetterstedt, 1846)	212
<i>Gonarcticus antennatus</i> (Zetterstedt, 1838)	212
<i>Gonarcticus arcticus</i> (Becker, 1907)	212
Key to the species of <i>Gonarcticus</i> of Russia	215
<i>Gonatherus</i> Rondani, 1856	215
<i>Gonatherus planiceps</i> (Fallén, 1826)	216
<i>Hexamitocera</i> Becker, 1894	216
<i>Hexamitocera loxocerata</i> (Fallén, 1826)	219
<i>Nanna</i> Strobl, 1894	219
<i>Nanna amurensis</i> Ozerov, 2010	221
<i>Nanna armillata</i> (Zetterstedt, 1846)	221
<i>Nanna articulata</i> (Becker, 1894)	224
<i>Nanna bispinosa</i> (Malloch, 1920)	224
<i>Nanna brevifrons</i> (Zetterstedt, 1838)	224
<i>Nanna cryophila</i> sp. nov.	228
<i>Nanna flavipes</i> (Fallén, 1819)	230
<i>Nanna inermis</i> (Becker, 1894)	231
<i>Nanna katmaiensis</i> (Malloch, 1920)	235
<i>Nanna leucostoma</i> (Zetterstedt, 1846)	237
<i>Nanna loewi</i> (Becker, 1894)	237
<i>Nanna longicornis</i> (von Roser, 1840)	240
<i>Nanna obscuripes</i> (Becker, 1915)	240
<i>Nanna puberula</i> (Becker, 1894)	240
<i>Nanna rossolimoae</i> Ozerov, 2010	244
<i>Nanna tibiella</i> (Zetterstedt, 1838)	244
Key to the species of <i>Nanna</i> of Russia	248
<i>Orthacheta</i> Becker, 1894	249
<i>Orthacheta cornuta</i> (Loew, 1863)	250
<i>Orthacheta pilosa</i> (Zetterstedt, 1838)	250
Key to the species of <i>Orthacheta</i> of Russia	252

<i>Spathephilus</i> Becker, 1894 .....	252
<i>Spathephilus nigriventris</i> (Loew, 1864) .....	255
Acknowledgements .....	255
References .....	255

## Abstract

Flies of the genera *Cleigastra* Macquart, 1835, *Gonarcticus* Becker, 1894, *Gonatherus* Rondani, 1856, *Hexamitocera* Becker, 1894, *Nanna* Strobl, 1894, *Orthacheta* Becker, 1894 and *Spathephilus* Becker, 1894 (all Scathophagidae) of the fauna of Russia are reviewed. Key to genera, generic descriptions and keys for determination of species are given, and data on geographical distribution are summarized. One species, *Nanna cryophila* sp. nov., is described as new to science. One new synonymy is proposed: *Nanna kamtschatkense* (Hendel, 1930) = *Nanna tibiella* (Zetterstedt, 1838). *Orthacheta cornuta* (Loew, 1863) is recorded from Europe for the first time. *Gonarcticus arcticus* (Becker, 1907) is newly recorded from the Palaearctic Region and Russia. Additionally, *Nanna flavipes* (Fallén, 1819) is newly recorded from China, and *Spathephilus nigriventris* (Loew, 1864) is newly recorded from Kazakhstan.

**Key words:** Diptera, dung flies, new records, new species, Russia, review, Scathophagidae

## Introduction

The Scathophagidae are a small family of calyptrate Diptera distributed mainly in the Northern Hemisphere. The world fauna currently comprises 419 species in 57 genera (Pape *et al.* 2011) distributed throughout the world, except for the Australasian and Oceanian regions. The majority of species in the Afrotropical, Oriental and Neotropical Regions are known from high elevations.

The fauna of Russia includes 172 species in 35–38 genera (Gorodkov 1986; Šifner 2008; Ozerov 2008, 2009, 2010a, 2010b, 2010c, 2010d, 2010e, 2012, 2013, 2014; Ozerov & Krivosheina 2011, 2012a, 2012b, 2012c, 2013, 2014a, 2014b). Revisions or reviews of the genera are available for several small genera only: *Delina* Robineau-Desvoidy, 1830 and *Neochirosia* Malloch, 1917 (Ozerov 2010b), *Parallelomma* Strobl, 1894 (Ozerov 2010c), *Spaziphora* Rondani, 1856 (Ozerov 2012), *Mixocordylura* Hendel, 1909 (Ozerov & Krivosheina 2012a), *Pleurochaetella* Vockeroth, 1965 (Ozerov & Krivosheina 2012c) and *Paracosmetopus* Hackman, 1956 (Ozerov & Krivosheina 2014a). Faunistic reviews of some districts of Russia were published for the Volga Region (Ovchinnikov 2004), Karelia (Humala & Polevoi 2009) and Russian Far East (Ozerov & Krivosheina 2014b).

The family Scathophagidae is not currently divided into subfamilies, although this question is under discussion (Jong 2000; Šifner 2003, 2008). The present article concerns the genera with more than one setae on the katepisternum (with 2 or 3 setae), which can be distinguished using the following key:

- |    |  |                                   |
|----|--|-----------------------------------|
| 1. | Proepisternum bare, without hairs at middle and on anterior part .....   | 2                                 |
| -  | Proepisternum covered with hairs at middle or on anterior part (Fig. 2) .....  | 6                                 |
| 2. | Postpedicel short, not more than 2 times as long as pedicel .....  | 3                                 |
| -  | Postpedicel approximately 3 times as long as pedicel .....   | 4                                 |
| 3. | Three strong katepisternal setae present .....   | <i>Neochirosia</i> Malloch        |
| -  | Two strong katepisternal setae present .....   | <i>Delina</i> Robineau-Desvoidy   |
| 4. | Frons strongly produced. Vibrissae weakly developed (Fig. 3). Proboscis short and wide, palpus longer than proboscis. Postsutural intra-alar setae absent .....    | <i>Hexamitocera</i> Becker        |
| -  | Frons weakly produced. Vibrissae well developed (e.g., Figs 12, 45). Proboscis long, palpus shorter than proboscis. Two postsutural intra-alar setae present ..... | 5                                 |
| 5. | Vein R <sub>1</sub> bare (Fig. 11) .....   | <i>Nanna</i> Becker (part)        |
| -  | Vein R <sub>1</sub> setulose on apical third of dorsal surface (Figs 9, 10) .....  | <i>Cleigastra</i> Macquart (part) |
| 6. | Scutellum with apical scutellar setae absent (Fig. 6) or short and thin (Fig. 7) .....   | 7                                 |
| -  | Scutellum with strong apical scutellar setae (Fig. 8) .....  | 9                                 |
| 7. | Vein R <sub>1</sub> bare .....   | 8                                 |
| -  | Vein R <sub>1</sub> setulose on apical third of dorsal surface (Figs 9, 10) .....  | <i>Cleigastra</i> Macquart (part) |
| 8. | Scutellum with apical scutellar setulae present (Fig. 7). Postpedicel with upper apical corner pointed (Fig. 5) .....  | <i>Nanna</i> Becker (part)        |
| -  | Scutellum with apical scutellar setulae absent (Fig. 6). Postpedicel with upper apical corner more or less rounded (Fig. 4) .....                                  | <i>Spathephilus</i> Becker        |