

New records of Norwegian Psychodidae, with the first description of the female of *Trichosepedon balkanicum* (Krek, 1970) comb.nov.

GUNNAR MIKALSEN KVIFFE

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Trichosepedon balkanicum (Krek, 1970), *Psychoda itoco* Tokunaga & Komyo, 1955, *Panimerus integellus* (Jung, 1956), *Pneumia gracilis* (Eaton, 1893), *Pneumia fonticola* (Szabó, 1960) and *Clytocerus tetracorniculatus* Wagner, 1975 are recorded for the first time from Norway. A lectotype is designated for *Parabazarella neglecta* (Eaton, 1893), which is also confirmed as a Norwegian species. New distributional records are given for *Trichomyia urbica* Haliday in Curtis, 1834, *Sycorax silacea* Haliday in Curtis, 1834, *Psychoda alticola* Vaillant, 1973, *Psychoda brevicornis* Tonnoir, 1940, *Psychoda cutillela* Salmela, Kvifte & More, 2012, *Psychoda pusilla* Tonnoir, 1922, *Psychoda alternata* Say, 1824, *Psychoda lativentris* Berdén, 1952, *Parajungiella longicornis* (Tonnoir, 1919), *Berdeniella freyi* (Berdén, 1954), *Pericoma blandula* Eaton, 1893, *Pericoma nielseni* Kvifte, 2010, *Pneumia borealis* (Berdén, 1954), *Pneumia ussurica* (Wagner, 1994) and *Tonnoiriella nigricauda* (Tonnoir, 1919). Previous Norwegian records of *Parajungiella pseudolongicornis* (Wagner, 1975) are revised and shown to be misidentified *Parajungiella longicornis* (Tonnoir, 1919). The female of *Philosepedon balkanicum* Krek, 1970 is described for the first time based on a DNA barcode-associated female, revealing that it lacks one defining synapomorphy for *Philosepedon*; the subgenus *Trichosepedon* is therefore elevated to the status of full genus. The Norwegian Psychodidae fauna now comprises 49 species.

Key words: Diptera, Psychodidae, Trichosepedon, Norway.

Gunnar Mikalsen Kvifte, Department of Biological Sciences, Purdue University, 915 W State St., 47907 West Lafayette, IN, USA / Department of Entomology, University Museum of Bergen, University of Bergen, P.O. Box 7800, NO-5020 Bergen, Norway. E-mail: gkvifte@purdue.edu

Introduction

Moth flies (Diptera: Psychodidae) form a comparatively diverse family of small to minute gnats, easily recognized on their fuzzy appearance, erratic flight behaviour and often elaborate antennae and male genitalia. They occur worldwide including on Greenland and some Antarctic islands, but are at their most diverse in the tropics. The family is also widespread and common in temperate climates, however, and more than 500 species have been recorded from Europe.

Although new species are continuously being described (e.g. Wagner & Kvifte 2015, Omelková

& Ježek 2017, Morelli 2018), the European Psychodidae are reasonably well known from a taxonomic viewpoint. Their distributions, however, remain poorly known, and regional surveys of Psychodidae still routinely detect new distributional records (Salmela *et al.* 2014, Kvifte & Menzel 2016, Ciliberti *et al.* 2017). This is even the case for areas with comparatively high knowledge levels, such as Norway.

Norwegian moth flies were reviewed by Kvifte *et al.* (2011) and have been the subject of considerable study since then. Kvifte & Andersen (2012) surveyed the Psychodidae of Finnmark, including the first application of DNA barcoding

for study of moth fly faunistics, and Kvifte & Boumans (2014) added records of several further species. Norwegian specimens were also used in taxonomic and/or systematic studies by Salmela *et al.* (2012) and Kvifte (2014, 2018).

The present paper presents new national and regional distributional records of Psychodidae from Norway, principally material collected in 2016 and 2017 during surveys funded by the Norwegian Biodiversity Informatics Centre (Artsdatabanken) or the Norwegian Council for Biological Diversity (SABIMA). These surveys have resulted in seven species new to the Norwegian checklist, leaving the current number of Psychodidae species known from Norway at 49.

Material and Methods

Specimens were collected with hand nets, in Malaise traps and light traps, stored in 70–100% ethanol and for most specimens cleared in 10% KOH and subsequently mounted in euparal for detailed examination. Identifications follow Vaillant (1971–1983), Withers (1989), Krek (1999) and comparisons with the primary literature. Some specimens were identified in alcohol. DNA barcoding of selected specimens was carried out as described by Kvifte & Andersen (2012), mainly in cooperation with the Norwegian Barcode Of Life initiative but also to some degree with the German Barcode Of Life project; DNA barcodes and analyses will be presented elsewhere.

Classification follows Salmela *et al.* (2014) except when noted otherwise. The sequence of subfamilies of Psychodidae follows the topology of Curler & Moulton (2012), tribes in Psychodini are given according to Kvifte (2018). Species new to the Norwegian fauna are listed with an asterisk (*).

Morphological terminology is according to Kvifte & Wagner (2017) except the term "surstylus" is preferred over "epandrial clasper" following reasoning in Curler & Moulton (2012). All specimens are deposited in the Zoological collections of the University of Bergen, except some that are housed with NTNU

Vitenskapsmuseet, Trondheim (labelled as coll. NTNU in the text) and some that are housed with the Natural History Museum, London.

Results

Subfamily Sycoracinae

Sycorax silacea Haliday in Curtis, 1839

Material examined. HORDALAND: Bergen, Milde, Arboretet, Mørkevatnet, 60.251183°N, 5.2554517°E, 19.VI.2012, 1♂, leg. G.Kvifte. Bergen, Sanddalsbotnen, 60.342887°N, 5.387638°E, 5.VI.2017, 26♂♂7♀♀, leg. G.Kvifte. Bergen, Fantoft, Hundetjørna, 60.340525°N, 5.350002°E, 10.VI.2017, 3♂♂, leg. G.Kvifte. Lindås, Vollom, Bøkeskogen, 60.638125°N, 5.214220°E, 18.VI.2016, 1♀, leg. Bergen Insektklubb. Kvinherad, Varaldsøy, Barlinda, 60.1302917°N, 6.0046778°E, 10.VI.2016, 1♂1♀, G.Kvifte leg. SOGN OG FJORDANE: Luster, Ulveskogen, 61.447095°N, 7.46586°E, 24.VI.2017, 1♂, leg. G.Kvifte. TELEMARK: Seljord, Gullnesvegen, 59.4912°N, 8.61129°E, 28–30.VI.2017, 14 spec, leg. G.Kvifte.

Remarks. Prior to this study, the only published records of *S. silacea* from Norway were those given by Andersen (1992). Although red-listed in Finland (J. Salmela, pers.comm.), this species turns out to be quite numerous and widespread in at least Western Norway. This is probably due to a preference for warm winters, given that most of the localities reported here are coastal.

Subfamily Trichomyiinae

Trichomyia urbica Haliday in Curtis, 1839

Material examined. AKERSHUS: Frogn, Danmark, 59.694978°N, 10.722395°E, 17.V.21.VII.2004, 1♂, E. Rindahl & L. Aarvik leg. TELEMARK: Hjartdal, Teleros, 59.595696°N, 8.617237°E, 2.VII.2017, 1♀, leg. G.Kvifte. SOGN OG FJORDANE: Luster, Ulveskogen, 61.447095°N, 7.46586°E, 24.VI.2017, 1♀, leg. G.Kvifte.

Remarks. A rare species, listed as vulnerable

(VU) on the most recent Norwegian red-list. Of the new records presented here, two were associated with old-growth *Ulmus* trees which may provide clues for further searches for the species. All known *Trichomyia* larvae develop in rotting wood and many species particularly in Europe seem restricted to old-growth forests (e.g. Withers 1989, Beran et al. 2010, Omelková & Ježek 2012a, Morelli 2018).

Subfamily Psychodinae

Tribe Psychodini

***Trichosepedon* Krek, 1999 stat.nov.**

Philosepedon (*Trichosepedon*) Krek, 1999 - Krek 1999, Omelková & Ježek 2012b

Type species. *Philosepedon balkanicus* Krek, 1970, by original designation of Krek (1999).

Other included species. *Trichosepedon atsc-hitaricum* Vaillant & Joost, 1983 **comb.nov.**, *T. clouense* (Ježek, 1994) **comb.nov.**, *T. mayeri* (Satchell, 1955) **comb.nov.**, *T. memnonium* (Quate, 1966) **comb.nov.**, *T. sakhalinum* (Wagner, 1994) **comb.nov.**

Diagnosis. Eyebridge separated by distance of less than one facet diameter (e.g. figure 1A). Antennae with 14 flagellomeres, all separated, ascoids Y-shaped. Wing (figure 1B) with both forks complete and membrane usually with macrotrichia. Male genitalia (figure 2A) symmetrical with aedeagus developed as elongate sclerite; parameres developed as parameral dorsal bridge (morphologically ventral) carrying sickle-shaped, symmetrical appendages; gonostyle with subapical setiform sensilla and longitudinal groove carrying row of stout setae. Male surstylus with two tenacula. Female genitalia with cerci well-developed, elongate (figure 2B).

Remarks. The females of *Philosepedon* Eaton, 1904 *s.str.* (sensu Omelková & Ježek 2012b) and *Eurygarka* Quate, 1959 share the synapomorphy of having the cerci reduced, hardly projecting behind apex of abdomen (Vaillant 1974, Curler & Moulton 2012). This is most likely an adaptation to them giving birth to first instar larvae rather than laying eggs. The evidence placing *Trichosepedon* within *Philosepedon* by Vaillant (1974) and Omelková &

Ježek (2012b) appears solely to be the presence of two tenacula on the male surstylus, however tenacula numbers by themselves are likely not to be very phylogenetically conserved (e.g. Cordeiro 2013). In the absence of clear apomorphies linking *Trichosepedon* to *Philosepedon s.str.* therefore suggests to me that *Trichosepedon* should be treated as a separate genus. Other taxa considered by Omelková & Ježek (2012b) to be subgenera of *Philosepedon* are *Philothreticus* Krek, 1999 and *Bahisepedon* Omelková & Ježek, 2012; the validity and status of these taxa are beyond the scope of this paper. However, as argued by Kvitte (2015), Cordeiro et al. (2015), Ježek & Le Pont (2016) and Kvitte et al. (2018) it is clear that much more taxonomic work is necessary to achieve an apomorphy-based, phylogenetically robust genus-level classification of world Psychodini.

In my list of included species I have been more conservative than Omelková & Ježek (2012b), leaving out *Psychoda distyla* Quate, 1957 due to an insufficiently detailed original description, and *Philosepedon monstrosus* Ježek & Mogi, 1955 and *Philosepedon torosum* Quate & Quate, 1967 due to apomorphic differences in their wing and surstylus (radial fork incomplete, tenacula inserted on distinct tubercles). For the latter two species, a new genus may be warranted, also including *Psychoda biretinacula* Wagner, 1978 from North Korea (see figures in Wagner 1978a).

The grammatical gender of *Trichosepedon* is neuter, following the gender of the stem *-sepedon* (Ježek 1999). The grammatical gender of *Philosepedon* is, however, masculine following the stem *Philos*.

*** *Trichosepedon balkanicus* (Krek, 1970)**

Philosepedon balkanicus Krek, 1970 — Krek 1970, Vaillant 1974, Omelková & Ježek 2012, Salmela et al. 2014.

Material examined. VESTFOLD: Re, Revedal, Våle, 8–12.IX.2002, 4♂♂, leg. E. Rindahl. AUST-AGDER: Vegårshei, Lauvøya, 58.790366°N, 8.847246°E, 22.VII.2012, 1♂, leg. I. Kvitte. HEDMARK: Rendalen, Sekserbua NØ, 61.5561°N, 11.1686°E, 23.VI–11.VII.2016, 1♂, leg. Rikmyrsprosjektet. Åmot, Kildesaga, 61.1788°N, 11.4022°E, 23.VI–11.VII.2016, 1♂ 1♀, leg. Rikmyrsprosjektet

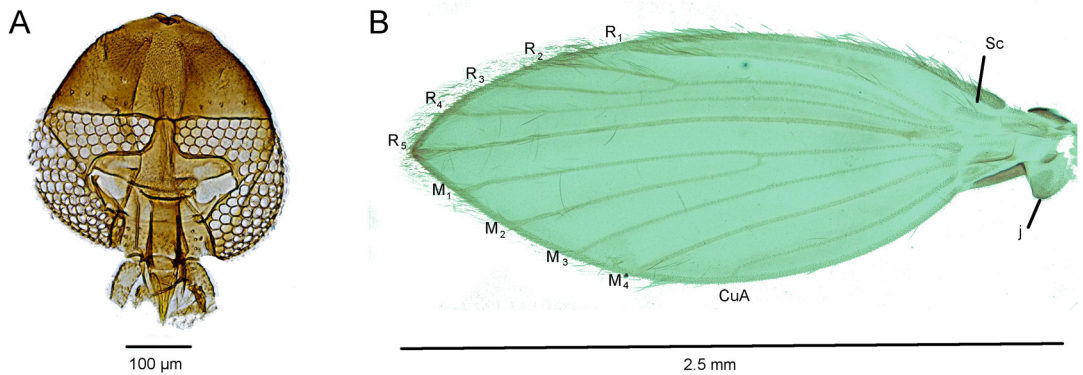


FIGURE 1. *Trichosepedon balkanicum* (Krek, 1970) female from Hedmark: Rendalen, Kildesaga. **A.** Head in frontal view, antennae and palps lacking. **B.** Wing. Abbreviations: CuA: Cubital-anal vein, j: jugum, M₁–M₄: Medial veins, R₁–R₅: radial veins, Sc: Subcosta.

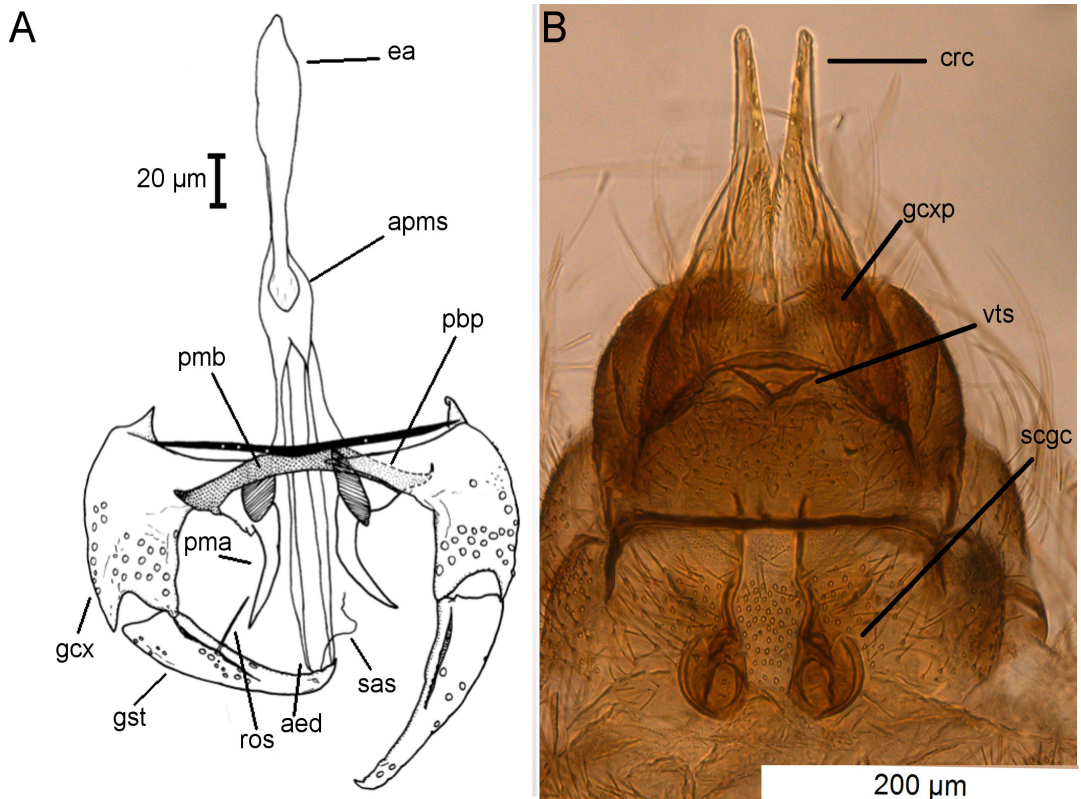


FIGURE 2. **A.** Male genitalia of *Trichosepedon balkanicum* (Krek, 1970) from Aust-Agder: Vegårshei, Lauvøya. Abbreviations: aed: aedeagus, apms: aedeagal-parameral sheath, ea: ejaculatory apodeme, gcx: gonocoxite, gst: gonostyle, pbp: parabasal process of gonocoxite, pma: parameral appendage, pmb: parameral bridge, ros: row of spines, sas: subapical setiform sensilla. **B.** Genitalia of *Trichosepedon balkanicum* (Krek, 1970) female from Hedmark: Rendalen, Kildesaga. Abbreviations: crc: cerci, gcxp: gonocoxal plate, scgc: sclerotized genital chambers, vts: v-shaped transverse sclerite.

Description of the female (n=1)

Head (figure 1A) round. Eyebridge uncontracted, of four rows of facets; separated by a distance equal to 1.5 facet diameters; interocular suture U-shaped, double. Postocular setae in single, sparse row. Setae alveoli of frons not reaching level of eyebridge. Palp with four segments, fourth segment fully sclerotized.

Wing (figure 1B) 2.5 mm long, pointed ovoid, brownish tinted with hyaline area surrounding R_1 , membrane with macrotrichia. Sc rectangular, not reaching R_1 , R_5 and M_4 with sclerotized outlines. M_{1+2} with triangular expansion basally, medial fork with short basal spur. CuA terminating distad of medial fork.

Terminalia (figure 2B) with gonocoxal plate bilobed, lacking median digit. Cerci present, longer than width of terminalia. Inner genitalia with two sclerotized chambers, duct with one margin sclerotized, two comma-shaped, partially sclerotized structures and a V-shaped transverse sclerite present near gonopore.

Remarks. First records from Norway. The species has previously been recorded from Bosnia-Herzegovina, Germany, the Czech Republic, Slovakia and Finland.

The surstylus of the herein examined male specimens, as well as comparative material examined from Austria, Germany, Finland and Slovakia appears more curved and elongate than in the illustrations by Vaillant (1974) and Krek (1999). To assess whether this is a taxonomically relevant character, examination of type material or new material from the type locality in the Balkans is necessary.

The female of *T. balkanicum* is here described for the first time based on a female associated using DNA barcodes. The COI sequences of the male and female specimens are identical, and the hairy wing membrane and Y-shaped ascoids suggest the association to be correct as well. In BOLD, both specimens cluster in the BIN BOLD:ACR0042, which also comprises seven other specimens from Norway and Germany.

***Psychoda alternata* Say, 1824**

Material examined. HEDMARK: Rendalen, Sekserbua NØ, 61.5561 N 11.1686°E, 4–17.

VIII.2016, 1♀, leg. Rikmyrsprosjektet (Malaise trap).

***Psychoda alticola* Vaillant, 1973**

Material examined. HEDMARK: Engerdal, Åsen, 61.8859°N, 11.7828°E, 23.VI–11.VII.2016, 1♂, leg. Rikmyrsprosjektet (Malaise trap). Tolga, Bjørvollen N, 62.387°N, 11,1189°E, 2–17. IX.2016, 1♂, leg. Rikmyrsprosjektet (Malaise trap).

***Psychoda brevicornis* Tonnoir, 1940**

Material examined. SØR-TRØNDELAG: Melhus, Gammelve naturreservat, 63.2171°N, 10.3076°E, 22.V–5.VI.2014, 1♂, leg. E. Stur, coll. NTNU (Malaise trap).

Remarks. Second record from Norway.

***Psychoda cultella* Salmela, Kvifte & More, 2012**

Material examined. HEDMARK: Rendalen, Sekserbua NØ, 61.5561°N, 11.1686°E, 9–23. VI.2016, 1♂, leg. Rikmyrsprosjektet (Malaise trap). Åmot, Kildesaga, 61.1788°N, 11.4022°E, 23.VI–11.VII.2016, 1♂, leg. Rikmyrsprosjektet (Malaise trap).

*** *Psychoda itoco* Tokunaga & Komyo, 1955**

Material examined. HEDMARK: Rendalen, Sekserbua NØ, 61.5561°N, 11.1686°E, 9–23. VI.2016, 1♂, leg. Rikmyrsprosjektet (Malaise trap).

Remarks. First records from Norway. The species was recorded from Japan and has since been recorded from the Czech Republic and Finland (Ježek 2003, Salmela *et al.* 2007).

***Psychoda lativentris* Berdén, 1952**

Material examined. ROGALAND: Klepp, Revtingen, 58.759 N 5.49871°E, 18.IX.2016, 3♀♀, leg. A.T. Mjøs (Light trap). HEDMARK: Rendalen, Sekserbua NØ, 61.5561 N 11.1686°E, 17.VIII–2.IX.2016, 1♀, leg. Rikmyrsprosjektet (Malaise trap). SØR-TRØNDELAG: Trondheim, Jonsvatn near Flaten, 63.3973°N, 10.5545°E, 14–28.VIII.2014, 2♂♂, leg. E. Stur, coll. NTNU (Malaise trap).

Remarks. Although Kvifte & Andersen (2012) reported approximately equal frequencies

of males and females in *P. lativentris* from Finnmark, all specimens identified from Southern Norway are females. Biased sex ratios were also observed by Ježek (1977) and Quate (1955). This has been argued to indicate that *P. lativentris* is parthenogenetic throughout most of its distributional area, and Vaillant (1973) described *P. limicola* Vaillant, 1973 for North American populations of the sexual form. DNA barcoded specimens of Southern Norwegian specimens fall in the BIN BOLD:ABA0879, which also comprises specimens from Germany and Bulgaria; Northern Norwegian specimens fall in two BINs, BOLD:ABA0879 and in the very similar BOLD:ACE4614. I have collected North American specimens tentatively identified as *P. lativentris* and these will be sequenced in the near future.

Psychoda pusilla Tonnoir, 1922

Material examined. SØR-TRØNDELAG: Trondheim, Jonsvatn near Flaten, 63.3973°N, 10.5545°E, 14–28.VIII.2014, leg. E. Stur, coll. NTNU (Malaise trap).

Remarks. Second record from Norway.

Psychoda sigma Kincaid, 1899

Material examined. HEDMARK: Stor-Elvdal, Nabbtjern, 61.3784°N, 11.1917°E, 16–29. IX.2016, 1♂1♀, leg. Rikmyrsprosjektet (Malaise trap).

Tribe Pericomaini

The traditional tribe-level taxa Paramormiini and Pericomaini have been questioned in several recent phylogenetic studies. Espíndola *et al.* (2012) resolved a paraphyletic Paramormiini with respect to Pericomaini, and Kvifte (2018) showed the opposite pattern and therefore chose to treat both taxa as a single taxon, Pericomaini *s.l.* For the sake of convenience, I here treat the traditional Paramormiini and Pericomaini as subtribes, **stat. nov.**, although since neither of these groupings are defined by unique synapomorphies this is unlikely to reflect their phylogenetic affinities.

* Subtribe "Paramormiina"

Panimerus integellus (Jung, 1956)

Material examined. AKERSHUS: Ullensaker, Hersjøen-Tangen, 60.2264°N, 11.1558°E, 12.VI.2017, 1♂, leg. G. Kvifte. HEDMARK: Ringsaker, Brumunddal, Pond N of Ånnerudvegen, 60.9016°N, 10.9301°E, 29.VI.2014, 1♂, leg. Ø. Håland.

Remarks. First records from Norway. Previously recorded from Bosnia-Herzegovina, the Czech Republic, Germany, Finland, Poland, Russia and Slovakia (Jung 1956, Vaillant 1972, Ježek 2003, Omelková & Ježek 2012a, Salmela *et al.* 2014, Oboňa & Ježek 2014).

Parajungiella longicornis (Tonnoir, 1919)

Material examined. AKERSHUS: Ullensaker, Hersjøen-Tangen, 60.2264°N, 11.1558°E, 12.VI.2017, 1♂, leg. G. Kvifte. HEDMARK: Ringsaker, Brumunddal, Pond N of Ånnerudvegen, 60.9016°N, 10.9301°E, 29.VI.2014, 1♂, leg. Ø. Håland.

Remarks. *Parajungiella longicornis* (Tonnoir, 1919) was identified from Norway for the first time by Kvifte *et al.* (2011); later, Kvifte & Boumans (2014) added *P. pseudolongicornis*. DNA barcoding has revealed that all Norwegian *Parajungiella* specimens belong to the same DNA barcode cluster, however, and upon reexamination they have all been identified as belonging to the same species, here listed as *Parajungiella longicornis* (Tonnoir, 1919) pending a revision of the species complex.

Subtribe "Pericomaina"

Berdeniella freyi (Berdén, 1954)

Material examined. HEDMARK: Rendalen, Sekserbua NØ, 61.5561°N, 11.1686°E, 23.VI.2016, 1♂, Rikmyrsprosjektet leg. OPP-LAND: Jevnaker, Prestegårdselva/Brennaelva, 60.257995°N, 10.439606°E, 29.V.2017, 3♂♂, leg. G. Kvifte.

Parabazarella neglecta (Eaton, 1893)

Comparative material examined. *Pericoma neglecta*. Lectotype male (here designated).

[United Kingdom:] "Somerset: Blackford near Wincanton. 3.VIII.[18]92". 1 paralectotype female with lectotype (here designated). 1 male 3 females paralectotypes Somerset: Higher Shepton (here designated). All coll. NHM. United Kingdom: Devon: Axmouth. 24.IX.1901. 1♂. A.E. Eaton leg. and det., coll. NHM

Material examined. SOGN OG FJORDANE: Borgund, Maristuen. 15.VII.1902. 1♂. A.E. Eaton leg. and det. HEDMARK: Engerdal, Åsen, 61.8859°N, 11.7828°E, 23.VI.2016, 1♂, Rikmyrsprosjektet leg. Ringsaker, Brumunddal, Rørvika gard, 60.8498°N, 10.9582°E, 22.VIII.2015, 1♂, Ø. Håland leg. OPPLAND: Dovre, Rondane Nasjonalpark, Skranglehaugen (P5), 61.9835°N, 9.80384°E, 30.VI.2008, 2♂♂, T. Hoffstad leg, coll. NTNU (Malaise trap). Rondane Nasjonalpark, Skranglehaugen (P1), 69.9819°N, 9.80545°E, 23.VI.2008, 1♂1♀, E. Stur leg, coll. NTNU (Malaise trap)

Remarks. First recorded from Norway by Andersen & Håland (1995). This record was misidentified as an undescribed species by Kvifte *et al.* (2011) due to incomplete understanding of the variation in the species and the different appearance of structural details in the genitalia in different orientations. Comparison of a series of Norwegian specimens from several localities in Sogn og Fjordane, Oppland and Hedmark with the type series in the Natural History Museum, London, confirms *Parabazarella neglecta* as a Norwegian species.

Pericoma blandula Eaton, 1893

Material examined. HORDALAND: Kvinnerad, Knarrevika, 60.1032°N, 6.0225°E, 10.VI.2016, 5♂♂, G.M.Kvifte leg. Same but 11.VI.2016, 1♂.

Pericoma nielseni Kvifte, 2010

Material examined. HEDMARK: Åmot, Kildesaga, 61.1788°N, 11.4022°E, 23.VI–11.VII.2016, 1♂, Rikmyrsprosjektet leg. (Malaise trap)

Remarks. Contrary to what I have stated earlier (Kvifte & Boumans 2014), *Pericoma blandula* Eaton, 1893 is not a cryptic species in Norway – the specimens recorded as *Pericoma*

blandula Eaton, 1893 from Finnmark have been reexamined and found to belong to *Pericoma nielseni* Kvifte, 2010. This identification is also supported by DNA barcodes (Kvifte, unpubl.).

Pneumia borealis (Berdén, 1954)

Material examined. HEDMARK: Os, Røst Nord, 62.531°N, 11.1515°E, 30.VII.2016, 1♂1♀, leg. G. Kvifte.

* *Pneumia gracilis* (Eaton, 1893)

Material examined. AKERSHUS: Ullensaker, Hersjøen-Tangen, 60.2264°N, 11.1558°E, 26.V.2017, 2♂♂, leg. G. Kvifte. Same, but 12.VI.2017, 1♂, leg. G. Kvifte.

Remarks. First records from Norway. Due to confusion with *Pneumia palustris* (Meigen, 1818), the distributional limits of this species have been unclear (see e.g. discussion in Withers 1989). The identification of the presently recorded specimens follow characters outlined in Vaillant (1979), which are supported by DNA barcodes of both species (Kvifte, unpubl.)

* *Pneumia fonticola* (Szabó, 1960)

Material examined. AKERSHUS: Ullensaker, Hersjøen-Tangen, 60.2264°N, 11.1558°E, 26.V.2017, 2♂♂, leg. G. Kvifte.

Remarks. First records from Norway. Previously recorded from France, Hungary, Italy and Slovakia (Salamanna & Sara 1979, Vaillant 1979, Oboňa & Ježek 2014).

Pneumia ussurica (Wagner, 1994)

Material examined. HEDMARK: Stor-Elvdal, Nabbtjern, 61.3784°N, 11.1917°E, 23.VI–11.VII.2016, 1♂, leg. Rikmyrsprosjektet.

Remarks. The first records of this species from Norway was from Finnmark by Kvifte & Andersen (2012), this is the second specimen from Norway and the first from Southern Norway. This species appears to be a specialist on boreal rich fens (Salmela 2008).

Pericomaini insertae sedis

Clytocyberus ocellaris (Meigen, 1818)

Material examined. HEDMARK: Engerdal,

Ulvåkjølen-Sundsetra, 61.8366°N, 11.7913°E, 28.IV–15.V.2016, 1♂, leg. Rikmyrsprosjektet (Malaise trap). Rendalen, Sekserbua NØ, 61.5561°N, 11.1686°E, 9–23.VI.2016, 1♂, leg. Rikmyrsprosjektet (Malaise trap). Åmot, Kildesaga, 61.1788°N, 11.4022°E, 23.VI–11.VII.2016, 1♂, leg. Rikmyrsprosjektet (Malaise trap).

* *Clytocerus tetracorniculatus* Wagner, 1978

Material examined. HEDMARK: Åmot, Kildesaga, 61.1788°N, 11.4022°E, 9–23.VI.2016, 1♂1♀, leg. Rikmyrsprosjektet.

Remarks. First record from Norway. Previously recorded from the Czech Republic, Estonia, Finland, Germany and Slovakia (Wagner 1978b, Salmela & Piirainen 2005, Ježek & Omelková 2007, Salmela *et al.* 2014, Oboňa & Ježek 2014).

Tonnoiriella nigricauda (Tonnoir, 1919)

Material examined. HEDMARK: Stange, Brynitjern, 60.7166°N, 11.2762°E, 20.VIII.2015, 1♂1♀, leg. Ø. Håland

Remarks. Second record from Norway.

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