

# Updated checklist of Norwegian Mycetophilidae (Diptera), with 92% DNA barcode reference coverage

JOSTEIN KJÆRANDSEN & GEIR E.E. SØLI

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Up to present 602 species and 65 genera of fungus gnats, family Mycetophilidae, are published from Norway. Extensive collecting supported by the Norwegian Biodiversity Information Centre (NBIC) over the eight last years, with special focus on insect fauna in northern Norway, has documented 240 additional species and 2 additional genera from Norway, of which 118 species are considered as new to science. Based on a thorough review of the species previously published from Norway, we have crossed out six species as misidentified. One new synonym is established: *Boletina conformis* Siebke, 1863 **syn. n.** = *Boletina plana* (Walker, 1856). Two species are restituted based on integrative studies including DNA barcodes. These are *Ectrepesthoneura bucera* Plassmann, 1980 **sp. restit.**, found to be a distinct species separate from *Ectrepesthoneura ovata* Ostroverkhova, 1977, and *Trichonta trifida* Lundstrom, 1909 **sp. restit.**, found to be a distinct species separate from *Trichonta vulcani* (Dziedzicki, 1889). The updated, validated A-checklist includes 821 species of which 703 (86%) refer to formally described species and 118 (14%) to potentially undescribed species, referred to by their interim names as used on BOLD and in our databases. All species are documented with specimens in the museum collections at either Tromsø University Museum (TMU, 781 species, 95%) and/or the Natural History Museum in Oslo (NHMO, 382 species, 47%). Another 14 published species are transferred to a B-checklist with currently unvalidated species, as we fail to recover voucher representatives. Supported by the Norwegian Barcode of Life (NorBOL) network, we have DNA barcoded as many species as possible contributing to the reference library on The Barcode of Life Project (BOLD). Hence, 756 (92%) of the validated Norwegian species are currently documented with DNA barcodes and assigned Barcode Index Numbers (BINs) on BOLD, including the majority of the species considered new to science based on morphology (103 species, 87% of the 118). The checklist, is kept in a short format giving the published species names or interim names as used on BOLD and in our databases, depository information, assigned BINs with indications of discordance, and finally their (2015) Red List status in Norway. An accompanying dataset containing recording details and distribution of all new records from Norway of described species, is published on GBIF and on Norway's Species Map Service (Artskart).

Key words: Diptera, Mycetophilidae, Checklist, Norway, DNA barcode library.

Jostein Kjærandsen, Tromsø University Museum, UiT – The Arctic University of Norway, P.O. box 6050 Langnes, NO-9037 Tromsø. E-mail: [jostein.kjarandsen@uit.no](mailto:jostein.kjarandsen@uit.no)

Geir E.E. Söli, Natural History Museum, University of Oslo, P.O. Box 1072 Blindern, NO-0318 Oslo, Norway. E-mail: [geir.solli@nhm.uio.no](mailto:geir.solli@nhm.uio.no)

## Introduction

Much have happened since Gammelmo & Söli (2006) presented the first complete checklist

of the family Mycetophilidae from Norway 14 years ago. The establishment of the Norwegian Biodiversity Information Centre (NBIC) and the Norwegian and the Swedish Taxonomy Initiatives

(NTI & STI) have paved way for substantial surveys on the insect fauna in the Nordic countries. Furthermore, Norway's and Finland's strong commitments to the International Barcode of Life project (iBOL), through the Norwegian Barcode of Life project (NorBOL) and the Finish Barcode of Life (FinBOL) have contributed to taxonomic upgrades and a better understanding of species and their delimitation, not at least within the family Mycetophilidae.

Johan Heinrich Spalckhauer Siebke was the first in Norway to list 54 species of Mycetophilidae as a part of his ground-braking and monumental work "*Enumeratio Insectorum Norwegicorum*" (Siebke 1877). In the next hundred years or so, only a few species were added through revisionary works of individual genera, i.e. *Allodia* Winnertz, 1864 by Hackman (1970), *Phronia* Winnertz, 1864 by Hackman (1971), *Trichonta* Winnertz, 1864 by Gagné (1981) and *Mycomya* Rondani, 1856 by Väisänen (1984). Then, in the 1990s, the interest for fungus gnats expanded considerably, and numerous new species were added to the Norwegian fauna: Kjærandsen (1993) 40 species from cave systems, Søli (1994) 133 species from Jostedal, West Norway. Then, Bjørn Økland in cooperation with Alexander I. Zaitzev, added 128 more new species (283 in all) after having studied the southern boreal fauna of fungus gnats in South-East Norway over several years (Zaitzev & Økland 1994, Økland 1996, Økland & Zaitzev 1997). Based on these sources and some other minor additions, Gammelmo & Søli (2006) assembled the first checklist containing 470 described species of Mycetophilidae from Norway.

After this first Norwegian checklist, a number of new species have been published: Kjærandsen & Jordal (2007) presented 314 species of Mycetophilidae from Møre og Romsdal county, including 48 species new to Norway, and later added one more species new to science, *P. tuomikoskii* Kjærandsen, 2009 (Kjærandsen 2009). The next two years, Søli & Kjærandsen (2008) added 50 more new species to Norway, and Søli, Rindal & Hansen (2009) another 15, mostly from SE Norway. Then, in a NBIC project, Søli & Rindal (2012) reported 240 species from Finnmark

county of which 12 were new to Norway. Some new species and records from Norway, have also been added by other authors: *Boletina palmata* Polevoi, 2013 by Polevoi (2013), *Boletina hyperborea* Salmela, 2016 by Salmela et al. (2016), and *Phronia elegantula* Hackman, 1970, *Phronia prolongata* Salmela, in Salmela & Kolsar, 2017 by Salmela & Kolsar (2017). Most recently, the new genus *Coelosynapha* Kjærandsen, Polevoi & Salmela, 2020 with the species *Coelosynapha loici* Kjærandsen, Polevoi & Salmela, 2020, was recorded from Reisa National Park (Kjærandsen et al. 2020). In sum, this has raised the number of described species of Mycetophilidae known from Norway from 470 to 602 before this update.

When Kjærandsen & Jordal (2007) reported a surprisingly rich fauna of fungus gnats of the superfamily Sciaroidea from Møre og Romsdal county, they suggested that more thorough investigations in northern Norway would reveal new and different distribution pattern for fungus gnats in Norway than those hitherto recognized. This speculation was based on findings from Sweden where the richest fauna of fungus gnats were documented in the northern parts of the country (see Kjærandsen et al. 2007). Substantial insect collecting surveys throughout northern Norway and on Svalbard, undertaken by the authors during the last decade, and supported by the Norwegian Biodiversity Information Centre through several projects, have indeed confirmed this assumption. The great majority of new species from Norway presented here, thus results from projects in Northern Norway, but a substantial part also from additional projects and collections made available to us from southern Norway (Table 1).

Today, an increasing number of online resources provide early release of species data not published elsewhere. These online records, represents a new type of biodiversity documentation, and have been termed "grey literature" (e.g. Lawrence et al. 2015). Examples of such grey literature include datasets published on GBIF (e.g. Kjærandsen & Jordal 2019), Norway's Species Map Service (Artskart), the Barcode of Life archive, BOLD, and online species facts sheets accompanying national red lists. On the internet, the checklist of fungus gnats of the families Bolitophilidae,

**Table 1.** Nine major sources for fresh materials of Mycetophilidae from Norway the last eight years.

No. NBIC project name or other sources	Principal investigators	Project grant no.	Period	Study area
1 NBIC: Svalbards tovinger/ Diptera of Svalbard	Geir Søli	70184222/54-11	2012-14	Svalbard
2 NBIC: North-eastern elements of the Norwegian fauna of fungus gnats	Jostein Kjærandsen	70184233/45-14	2015-17	Troms and Finnmark
3 NBIC: Fungus gnats in karst landscapes of Nordland – adding up the fauna of Northern Norway	Jostein Kjærandsen	70184238/27-17	2018-20	Nordland
4 NBIC: Insects from rich fens in Hedmark	Trond Andersen / Linn Katrine Hagenlund	70184235	2016-17	Innlandet (Hedmark)
5 NBIC: Water Mites and Midges in southern Norway (Water M&M)	Elisabeth Stur / Patrycja Dominiak	70184240/13-18	2019-21	Agder
6 Collecting program of insects in southwestern Norway by Stavanger Museum	Alf Tore Mjøs		2019-22	Agder, Rogaland and Vestland
7 Private insect collecting in southern Rogaland (Sokndal)	Jarl Birkeland		2019-20	Rogaland
8 Private insect collecting in Vestland	Jostein Kjærandsen		2015-20	Vestland
9 Private insect collecting in Nordland	Jostein Lorås		2018-20	Nordland

Diadocidiidae, Ditomyiidae, Keroplatidae and Mycetophilidae at the Vibrant-Scratchpad site “Fungus Gnats Online” (Kjærandsen 2016) constitute another “grey” source. The aim of the present checklist is, thus, to anchor in a single source all species of Mycetophilidae from Norway published in both “white” and “grey” literature. An accompanying dataset with details on records and distribution of all described species is published on GBIF (Kjærandsen 2020), and by way of the The Norwegian Biodiversity Information Centre (Artsdatabanken) made available through Norway’s Species Map Service (Artskart).

## Materials and methods

The bulk of the new species presented here results from two projects aimed to study the insect fauna in northern Norway, and supported by the Norwegian Biodiversity Information Centre (NBIC) (see Table 1). A few additional new species resulted from revision of museum collections.

A great number of collecting methods, has been applied to get the best possible coverage of species of fungus gnats in Norway. Malaise traps dominated, followed by window traps. These two

trapping methods yield very different samples depending on the species tendency for heliotaxis and geotaxis, respectively (see Kjærandsen & Jordal 2007). SLAM traps, a smaller version of the Malaise trap, have also been extensively used, although usually resulting in rather low catches of fungus gnats. In open areas like mires and mountains, coloured pan traps have proved to be efficient. Light traps may yield good catches of certain species hardly caught by the other trapping methods, but have not been much used by us. Sweep netting, however, has been extensively used and usually give good representation of species in the area, although a few abundant species often dominate the catches. Collecting with use of aspirator in cave systems, both natural and man-made, in wintertime has given good catches of fungus gnats that overwinters as adults (see Kjærandsen 1993). Lastly, larvae have been collected from fruiting bodies of mushrooms or from decomposed wood and reared to adults for identification, or more recently, identified based on DNA barcoding.

After a superficial study, species were sorted out from huge samples stored in alcohol. For the most part, the specimens were chemically dried by use of hexamethyldisilazane (HMDS) (see e.g. Brown 1993), before they were pinned, or glued

to minutiens, and lodged in the entomological collections at either Tromsø University Museum, UiT – The Arctic University of Norway (TMU) or the Natural History Museum in Oslo, University of Oslo (NHMO). Older material are partly stored in 80 % ethanol. For certain species, specimens are kept in ethanol (mostly 95 %) in freezer at TMU as source for further genetic study.

If not readily identified on morphological features, the terminalia were detached, cleared in lactic acid and transferred to glycerine for inspection under light microscope. Afterwards, the terminalia were stored in glycerine in microvials and pinned together with the rest of the specimen. In specimens to be DNA barcoded, one leg, usually the fore leg with coxa, was detached, stored in 96 % ethanol and through NorBOL sent to the Canadian Centre for DNA barcoding, BIO (Guelph, Ontario, Canada), for DNA extraction and bi-directional Sanger sequencing.

The final step in the identification process, consists of carefully analyzing ID-trees resulting from the DNA barcoding and re-examine all cases where a mismatch appeared between our morphological determination and the automated BIN assignments. This stage may likely include additional preparation for further morphological studies.

## Results

### Magnitude and distribution of the examined species records

The present checklist is based on 22,608 geo-referenced and vouchered species records from all over Norway (Figure 1). They represent 835 species in 67 genera. Altogether, we regard the studied areas to be quite representative for the major bioclimatic zones of Norway, leaving only the alpine zone largely uncovered. When the records are broken down to 11 administrative counties, however, some more uneven efforts and species distributions emerge. Northern Norway is almost equally explored (45% of the total species records) as is Southern Norway, but has definitely the highest number of recorded species with 622

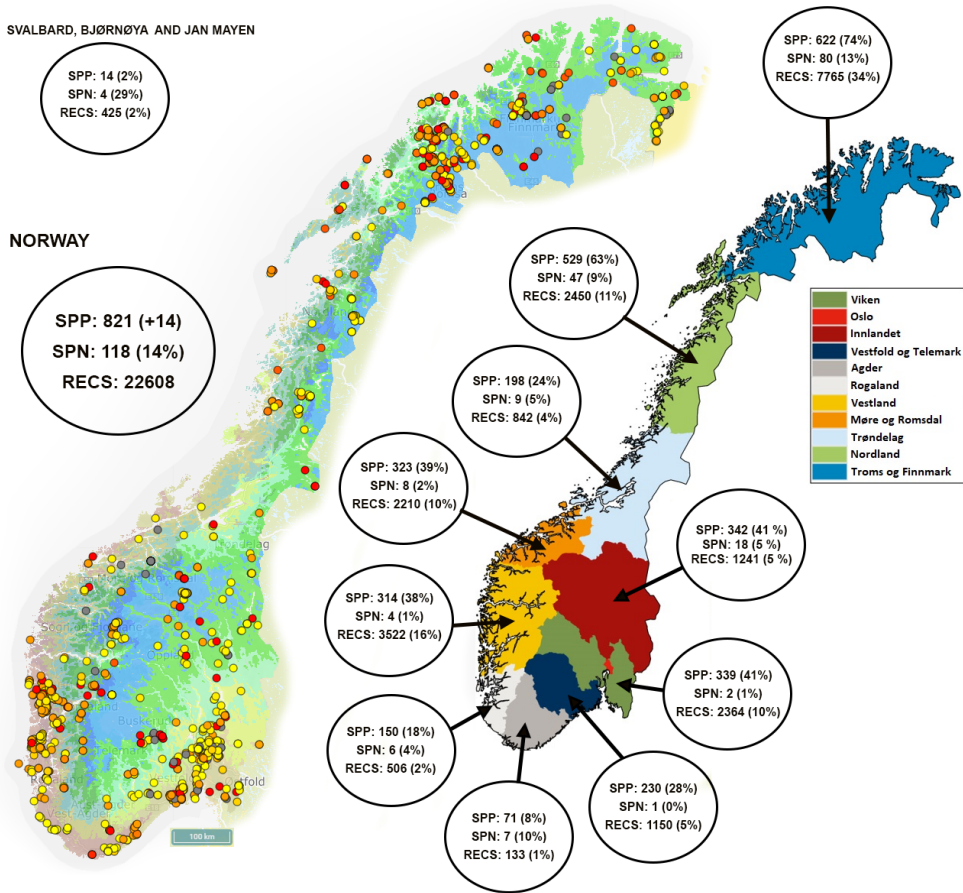
species (74%) in Troms and Finnmark and 529 species (63%) in Nordland. Northern Norway also by far, has the highest number of species assumed to be new to science, 80 in Troms and Finnmark and 47 in Nordland. Trøndelag and the southernmost parts of Norway, on the other hand, represent the least well-studied areas, with Agder and Rogaland having the lowest number of both records and species. The rest of western Norway, Innlandet and Viken (including Oslo) is fairly well and evenly researched, and among them only Innlandet shows potential for a high number of new species to science. Finally, from the arctic offshore islands Svalbard, Bjørnøya and Jan Mayen only 14 species have been registered, yet 4 of the species from Svalbard are considered new to science.

### DNA barcoding

In all 4897 samples of Mycetophilidae from Norway (including 360 public records not submitted by us), have been submitted to DNA barcoding on BOLD. Of these samples, 4414 or 90 % have resulted in sequences assigned to 772 different BINs, i.e. clusters that are likely to represent different species. Since we have submitted material, and have access to sequences from other Nordic countries, in all 813 different BINs are assigned to 756 of the species recorded from Norway. Of the 756 species with assigned BINs, 650 (86 %) have a perfect match between our identification based on morphology and a single BIN. Another 68 (9 %) of the species have multiple BINs, of which 57 species share two BINs each, 9 species share 3 BINs each, one species shares 5 BINs, and one species shares 7 different BINs. Finally, 39 (5 %) of the species have BINs shared with other species from Norway: 16 BINs are shared between two species, one BIN is shared among three species, and one BIN is shared among four species.

### Species assumed to be new to science

No less than 118 species belonging to 23 different genera of Mycetophilidae recorded from Norway are currently recognized as potential new species



**FIGURE 1.** The map to the left displays bioclimatic zones and, by coloured dots, geo-coordinates representing 22.608 records of Mycetophilidae in Norway. (Since records of the 14 unvalidated species are published on Norway’s Species Map Service, they are included in the statistics here.) Yellow dots denote the highest coordinate precision while red denote the lowest precision. A high precision, in general refers to more recent records. The five major bioclimatic zones are boreonemoral (pale red), southern boreal (yellow), middle boreal (pale green), northern boreal (dark green) and alpine (blue). On the map to the right, the 22.608 species records are apportioned on the administrative counties in Norway (Oslo and Viken are merged). Abbreviations: **SPP** = number of species recorded and its proportion of the 835 species; **SPN** = number of species assumed to be new to science and its proportion of the total number of species recorded in that county; **RECS** = total number of species records for a given county and its proportion of all the 22.608 records (Bioclimatic zones and geo-coordinates from Norway’s Species Map Service).

to science. Numerous of these new species, have been recognized for some time among fungus gnat researchers, predominantly on morphological characters or DNA-barcoding results. Some of them may eventually, turn out to represent species already described from North America or misinterpretations of European species. If so, DNA barcodes will be of paramount importance to trace back a link between their interim name presented

here and their actual name. Noteworthy, we do not consider a species as new, based on DNA barcodes and their BIN assignments alone. Had we done so, using the BIN system as proxies for species, another 85 potential new species, could be added to the checklist. Consequently, designation of new species must involve thorough examinations of both morphological and molecular characters. It is further important to state that the process of

selecting species that we aim to describe as new to science is dynamic, and by no means conclusive nor completed at this stage. For some difficult species groups we currently have still not carried out the necessary comparative studies to decide on their status. For others we have concluded that the BIN segregation appears to be misleading and will argue to merge two or several BINs into one operative species. In the end, we anticipate to end up somewhere between 100 and 150 species new to science.

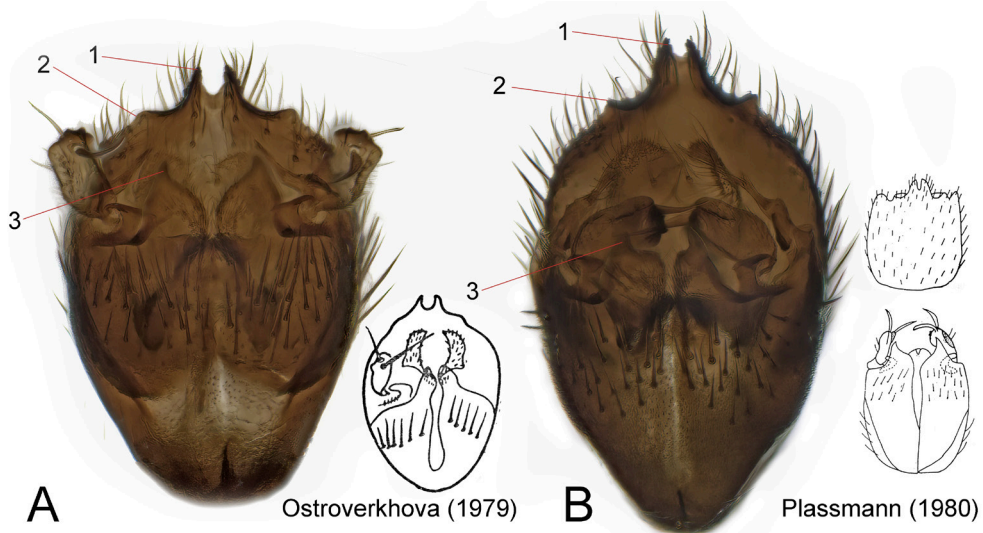
### Synonyms revived as good species

Two species are restituted based on integrative studies including DNA barcodes and their BINs:

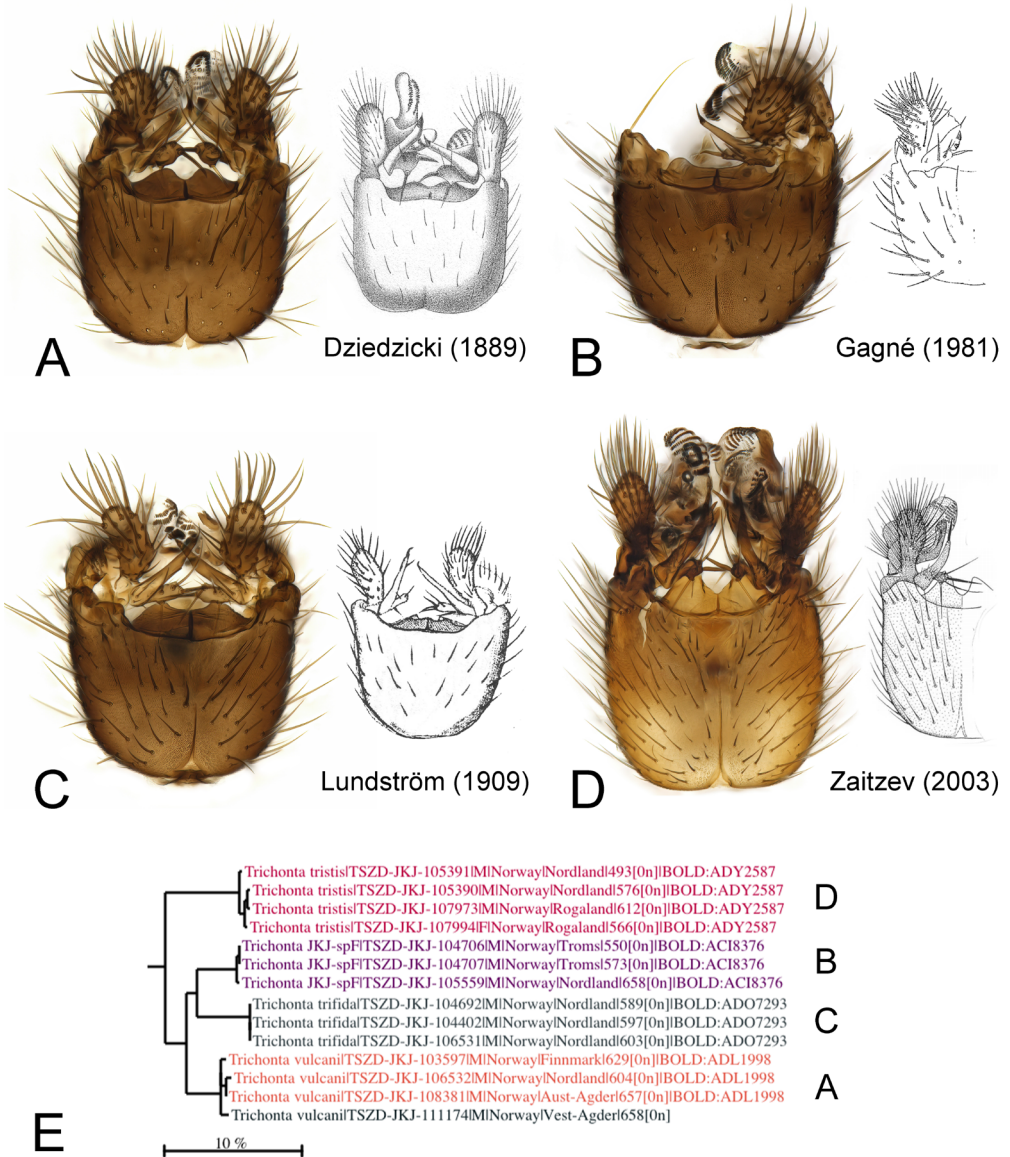
The two species *Ectrepesthoneura bucera* Plassmann, 1980 **sp. restit.**, and *Ectrepesthoneura ovata* Ostroverkhova, 1977 were originally synonymized by Kjærandsen et al. (2007). DNA barcoding results, however, justify to treat them as distinct species, although the morphological differences are small (Figure 2). *E. ovata* in BIN BOLD:ACY1765 is characterized by (1)

wider and more sessile apical split of tegite 9, (2) blunt apicolateral corner of tegite 9, and (3) subtriangular ventromedial projections of the gonocoxite, whereas its “twin”, *E. bucera* in BIN BOLD:ADY3228, has (1) narrower and more projected apical split of tegite 9, (2) sharp apicolateral corner of tegite 9, and (3) subquadrangular ventromedial projections of the gonocoxite. The mean distance between the two BINs is 2.41% (p-distance).

Within *Trichonta* Winnertz, 1864 DNA-barcoding has revealed a challenging complex of species near *Trichonta vulcani* (Dziedzicki, 1889). The Norwegian sequences of these species are clearly segregated into four clusters (Figure 3). As far as we know, four species are involved: *T. vulcani* (BIN BOLD:ADL1998), *Trichonta* JKJ-spF (BIN BOLD:ACI8376), *T. trifida* Lundstrom, 1909 (BIN BOLD:ADO7293), and *T. tristis* (Strobl, 1898) (BIN BOLD:ADY2587). The terminalia of the four species differs in several details, but in particular, the outline of the sclerotized, ventromedial margin of the gonocoxite segregates them in accordance with



**FIGURE 2.** The two species (A) *Ectrepesthoneura ovata* Ostroverkhova, 1977 (BIN BOLD:ACY1765) and (B) *Ectrepesthoneura bucera* Plassmann, 1980 **sp. restit.** (BIN BOLD:ADY3228) were originally synonymized. Results achieved by DNA barcoding, however, justify to treat them as distinct species, although the morphological differences are small. Red arrows points at critical characters for their identification: 1 = apical split of tegite 9, 2 = apicolateral corner of tegite 9 and 3 = ventromedial projections of the gonocoxite. Copies of original drawings from the literature is depicted to the right of the photos.



**FIGURE 3.** Norwegian species of the *Trichonta vulcani* species complex. **A** = *Trichonta vulcani* (Dziedzicki, 1889), BIN BOLD:ADL1998 (specimen TSZD-JKJ-106532). **B** = *Trichonta* JKJ-spF (with left gonostylus detached), BIN BOLD:ACI8376 (specimen TSZD-JKJ-105559). **C** = *Trichonta trifida* Lundström, 1909 sp. restit., BIN BOLD:ADO7293 (specimen TSZD-JKJ-106531). **D** = *Trichonta tristis* (Strobl, 1898), BIN BOLD:ADY2587 (specimen TSZD-JKJ-105391). **E** = Subsection of ID-tree (Kimura-2-distance) obtained from BOLD with Norwegian sequences and BIN assignments of the four species. Letters to the right of the ID-tree corresponds to the images. Copies of available drawings in the literature, corresponding to the four species, are depicted to the right of the photos.

the BINs (apparently also in accordance with published illustrations). Based on these results *T. trifida* Lundstrom, 1909 **sp. restit.** must be treated as a distinct species separate from *T. vulcani*.

### A new synonym

#### ***Boletina plana* (Walker, 1856)**

= *Boletina conformis* Siebke, 1863: 84 **NEW SYNONYM**

Sources: Siebke (1863, 1877), (Hackman et al. 1988), Chandler (2005), Gammelmo & Sølvi (2006)

Remarks: We have studied the type material of *B. conformis* (Figure 4) deposited at NHMO, and found that it is identical to *B. plana*. The species, was described from Dovre in Norway (Siebke, 1863). The holotype, was studied and illustrated by Matile (1983) who did not realize its synonymy with *B. plana*.

### Published species removed due to positive misidentifications

#### ***Docosia moravica* Landrock, 1916**

Sources: Sølvi & Rindal (2012)

Remarks: The material for the original record published in Sølvi & Rindal (2012) has been re-examined and found to be a misidentification of *Docosia mulleri* Plassmann, 1987. Zaitzev (1994) erroneously illustrated *Docosia mulleri* as *Docosia moravica*.

#### ***Mycetophila czizeki* Landrock, 1911**

Sources: Sølvi (1994), Chandler (2005), Gammelmo & Sølvi (2006)

Remarks: The material for the original record published in Sølvi (1994) has been re-examined and found to be a misidentification of *Mycetophila formosa* Lundström, 1911.

#### ***Mycetophila mitis* (Johannsen, 1912)**

Sources: Gammelmo & Sølvi (2006), Sølvi & Rindal (2012)



**FIGURE 4.** Examination of the holotype of *Boletina conformis* Siebke, 1863 syn. n., deposited at Natural History Museum in Oslo (NHMO), revealed that the species is a junior synonym of *Boletina plana* (Walker, 1856). The terminalia was probably detached and mounted by L. Matile, who studied and illustrated the holotype in the early 1980-ies (Matile 1983).



Remarks: The material for the original record published in Søli & Rindal (2012) has been re-examined and found to be a misidentification of a species in the yet unresolved *Mycetophila stolidi* species complex.

#### ***Mycetophila sigillata* Dziedzicki, 1884**

Sources: Søli, Rindal & Hansen (2009)

Remarks: The material for the original record published in Søli, Rindal & Hansen (2009) has been re-examined and, following Zaitzev (2003), found to belong to *Mycetophila subsigillata* Zaitzev, 1999. In fact, Dziedzicki (1884) described two varieties of *Mycetophila sigillata* of which one was segregated as a separate species by Zaitzev (1999). All checked records of *Mycetophila sigillata* from Norway, Sweden and Finland studied so far, show to refer to *Mycetophila subsigillata*.

#### ***Brevicornu setigerum* Zaitzev, 1995**

Sources: Søli & Rindal (2012)

Remarks: The material for the original record published in Søli & Rindal (2012) has been re-examined and found to be a misidentification of *Brevicornu radiatum* Lundström, 1911.

#### ***Sceptonia pilosa* Bukowski, 1934**

Sources: Søli, Rindal & Hansen (2009)

Remarks: The material for the original record published in Søli, Rindal & Hansen (2009), has been re-examined and found to be a misidentification of the yet unresolved *Sceptonia fumipes* species complex, consisting of 7 different BINs.

### **The revised checklist**

The main A-checklist includes species representing accepted names, and species considered as new to science, limited to those represented by validated vouchers in museum collections. Species published without validated vouchers are listed at the end, in a separate B-checklist.

### **A-checklist, 820 species with validated records in the museum collections of TMU and/or NHMO, and one additional species deposited at Regional Museum of Lapland, Finland (LMM)**

In the main list, genera are listed in alphabetic order, as are species within each genus. Species claimed to be new to science are found at the end within each genus, using their interim-name code species epithet as used on BOLD and in our databases.

Below each species name are listed key facts about its status, given in three sections, each divided by a vertical bar (|):

The first section denotes the depository of voucher specimens with the following three codes: **TMU** = Tromsø University Museum in Tromsø (new administrative name is The Arctic University Museum of Norway, UiT – The arctic University of Norway). **NHMO** = Natural History Museum in Oslo, University of Oslo. **LMM** = Regional Museum of Lapland, Rovaniemi, Finland (concerning one species only).

The middle section lists all Barcode Index Numbers (BINs) associated by us with the species name, followed in brackets by the match ratio (integers) between our morphological identification and the automated BIN-assignments. In the few cases where the BIN originates from other sources, e.g. GenBank, this is commented on. A ratio of 1:1 points to a perfect match between our identification based on morphology and a single BIN. A ratio of 1:*n*, where *n* varies between 2 and 7, indicates that our morphologically identified vouchers are represented by 2 to 7 BINs. A ratio of *n*:1, where *n* varies between 2 and 4, indicates that 2-4 morphologically separated and identified species appear merged into a single BIN. In the latter cases, the shared species names are listed for comparison. In the list, a horizontal bar (–) denotes that the species is not yet barcoded due to lack of available fresh material; "FAILED" denotes that all submitted specimens failed to give any barcode compliant sequences (imperfect sequences may still exist); "PENDING" denotes submitted specimens still awaiting BIN-assignment on BOLD.

The last section quotes the most recent

Norwegian Red List status (Gammelmo et al. 2015), with the code "NEW" indicating species not previously recorded from Norway and, hence, not yet evaluated for the Red List.

*Acnemia angusta* Zaitzev, 1982

TMU | BOLD:ADI8839 (1:1) | NEW

*Acnemia falcata* Zaitzev, 1982

TMU | BOLD:ACZ0916 (1:1) | LC

*Acnemia longipes* Winnertz, 1864

TMU, NHMO | BOLD:ADV2942 (1:1) | LC

*Acnemia nitidicollis* (Meigen, 1818)

TMU, NHMO | BOLD:AA5351 (1:1) | LC

*Acomoptera difficilis* (Dziedzicki, 1885)

TMU, NHMO | BOLD:ADI5596 (1:1) | LC

*Acomoptera spinistyla* (Soli, 1993)

TMU, NHMO | BOLD:ACG3536 (1:1) | LC

*Allocotocera pulchella* (Curtis, 1837)

TMU, NHMO | BOLD:AAG4955 (1:1) | LC

*Allodia anglofennica* Edwards, 1921

TMU, NHMO | BOLD:ABA3403/ACI6426 (1:2) | LC

*Allodia confusa* Zaitzev, 2003

TMU | BOLD:ABA7170 (1:1) | NE

*Allodia embla* Hackman, 1971

TMU, NHMO | BOLD:ABA7175 (1:1) | LC

*Allodia lugens* (Wiedemann, 1817)

TMU, NHMO | BOLD:ABA3402 (1:1) | LC

*Allodia lundstroemi* Edwards, 1921

TMU, NHMO | BOLD:ABA3404 (1:1) | LC

*Allodia ornaticollis* (Meigen, 1818)

TMU, NHMO | BOLD:ACS5110 (1:1) | LC

*Allodia pyxidiiformis* Zaitzev, 1983

TMU, NHMO | BOLD:ABA1645 (1:1) | LC

*Allodia septentrionalis* Hackman, 1971

TMU, NHMO | BOLD:ABA1398 (1:1) | LC

*Allodia truncata* Edwards, 1921

TMU, NHMO | BOLD:ABA7177 (1:1) | LC

*Allodia tuomikoskii* Hackman, 1971

TMU | BOLD:ABA0569 (1:1) | LC

*Allodia zaitzevi* Kurina, 1998

TMU | BOLD:ABA7174 (2:1) | LC  
shares BIN with *Allodia* JKJ-spD

*Allodia* JKJ-spA

TMU | BOLD:ADY2281/ADY2282 (1:2) |  
NEW

*Allodia* JKJ-spB

TMU | BOLD:ABA1399 (1:1) | NEW

*Allodia* JKJ-spD

TMU | BOLD:ABA7174 (2:1) | NEW  
shares BIN with *Allodia zaitzevi*

*Allodiopsis domestica* (Meigen, 1830)

TMU, NHMO | BOLD:ACA4328 (1:1) | LC

*Allodiopsis gracai* Sevcik & Papp, 2003

TMU | BOLD:ACZ4621 (1:1) | NEW

*Allodiopsis pseudodomestica* (Lackschewitz, 1937)

TMU | BOLD:ACW8659 (1:1) | NEW

*Allodiopsis rustica* (Edwards, 1941)

TMU | BOLD:ACJ6410 (1:1) | LC

*Allodiopsis* JKJ-spA

TMU | BOLD:ACW9948 (1:1) | NEW

*Allodiopsis* JKJ-spB

TMU | BOLD:ACW9863 (1:1) | NEW

*Anaclileia dispar* (Winnertz, 1864)

TMU, NHMO | BOLD:ACW1816 (1:1) | LC

*Anatella alpina* Plassmann, 1977

TMU | BOLD:ACS6086 (1:1) | DD

*Anatella ankei* Plassmann, 1977

TMU, NHMO | BOLD:ACT0633 (1:1) | LC

*Anatella aquila* Zaitzev, 1989

TMU, NHMO | BOLD:ABW9258 (1:1) | NT

*Anatella breimia* Chandler, 1994

TMU | BOLD:ACU8061 (1:1) | DD

*Anatella ciliata* Winnertz, 1864

TMU, NHMO | BOLD:ADA0534 (1:1) | LC

*Anatella crispa* Zaitzev, 1994

TMU | BOLD:ACK5945 (1:1) | NEW

*Anatella dampfi* Landrock, 1924

TMU, NHMO | BOLD:ACW4338 (1:1) | LC

*Anatella emergens* Caspers, 1987

TMU | BOLD:ACW4040 (1:1) | LC

*Anatella flavomaculata* Edwards, 1925

TMU, NHMO | BOLD:ACW3926 (1:1) | LC

*Anatella fungina* Plassmann, 1984

TMU, NHMO | BOLD:ACS3041 (1:1) | DD

*Anatella gibba* Winnertz, 1864

TMU | BOLD:ADG1396 (1:1) | LC

*Anatella laffooni* Plassmann, 1977

TMU, NHMO | BOLD:ACC6327 (1:1) | LC

*Anatella lenis* Dziedzicki, 1923

TMU, NHMO | BOLD:ACT0324/ACW3651 (1:2) | LC

*Anatella longisetosa* Dziedzicki, 1923

TMU, NHMO | BOLD:ACT0323 (1:1) | LC

*Anatella maritima* Ostroverkhova, 1979

TMU | BOLD:ACU8062 (1:1) | DD

- Anatella minuta* (Staeger, 1840)  
TMU, NHMO | BOLD:ABA1411 (1:1) | LC
- Anatella novata* Dziedzicki, 1923  
TMU, NHMO | BOLD:ADR1786 (1:1) | LC
- Anatella pseudogibba* Plassmann, 1977  
TMU | BOLD:ACS4072 (1:1) | LC
- Anatella setigera* Edwards, 1921  
TMU, NHMO | BOLD:ACG9416 (1:1) | LC
- Anatella simpatica* Dziedzicki, 1923  
TMU, NHMO | BOLD:ABA1256 (1:1) | LC
- Anatella turi* Dziedzicki, 1923  
TMU, NHMO | BOLD:ACW1567 (1:1) | LC
- Anatella unguigera* Edwards, 1921  
TMU, NHMO | BOLD:ACI3897 (1:1) | LC
- Anatella* JKJ-spB  
TMU | BOLD:AAP1824 (1:1) | NEW
- Anatella* JKJ-spC  
TMU | – | NEW
- Anatella* JKJ-spD  
TMU | BOLD:ACS4048 (1:1) | NEW
- Anatella* JKJ-spE  
TMU | BOLD:ACU9208 (1:1) | NEW
- Anatella* JKJ-spG  
TMU | BOLD:ADF4329 (1:1) | NEW
- Apolephthisa subincana* (Curtis, 1837)  
TMU, NHMO | BOLD:AAY8329 (1:1) | LC
- Azana anomala* (Staeger, 1840)  
TMU, NHMO | BOLD:ABW9295/ACU8999 (1:2) | LC
- Boletina atridentata* Polevoi & Hedmark, 2004  
NHMO | BOLD:ACD8303 (1:1) | NT
- Boletina basalis* (Meigen, 1818)  
TMU, NHMO | BOLD:ABA1458 (1:1) | LC
- Boletina bidenticulata* Sasakawa & Kimura, 1974  
TMU | BOLD:AAY5581 (1:1) | NE
- Boletina borealis* Zetterstedt, 1852  
TMU, NHMO | BOLD:AAU4902 (2:1) | LC  
shares BIN with *Boletina hyperborea*
- Boletina brevicornis* Zetterstedt, 1852  
TMU, NHMO | BOLD:AAL9149 (1:1) | LC
- Boletina cincticornis* (Walker, 1848)  
TMU, NHMO | BOLD:ACM2945/ACZ0332 (1:2) | LC
- Boletina cordata* Polevoi & Hedmark, 2004  
TMU, NHMO | BOLD:ACD4510 (1:1) | VU
- Boletina digitata* Lundstrom, 1914  
NHMO | BOLD:ADI1644 (1:1) | LC
- Boletina dispecta* Dziedzicki, 1885  
TMU | BOLD:ACW3230/AAAY5579 (1:2) | LC
- Boletina dissipata* Plassmann, 1986  
TMU, NHMO | BOLD:ACZ1770 (1:1) | LC
- Boletina dubia* (Meigen, 1804)  
TMU, NHMO | BOLD:ACW3847 (1:1) | LC
- Boletina edwardsi* Chandler, 1992  
TMU, NHMO | BOLD:AAI8809 (1:1) | LC
- Boletina falcata* Polevoi & Hedmark, 2004  
NHMO | FAILED | NA
- Boletina fennoscandica* Polevoi & Hedmark, 2004  
TMU, NHMO | BOLD:ABU6854 (1:1) | LC
- Boletina gripha* Dziedzicki, 1885  
TMU, NHMO | BOLD:AAF6783 (1:1) | LC
- Boletina griphoides* Edwards, 1925  
TMU, NHMO | BOLD:ACM2292 (1:1) | LC
- Boletina groenlandica* Staeger, 1845  
TMU, NHMO | BOLD:AAL9142 (1:1) | LC
- Boletina gusakovae* Zaitzev, 1994  
NHMO | BOLD:AAJ7832 (1:1) | NEW
- Boletina hedstroemi* Polevoi & Hedmark, 2004  
TMU, NHMO | BOLD:ABU6855 (1:1) | LC
- Boletina hyperborea* Salmela in Salmela, Suuronen & Kaunisto, 2016  
TMU | BOLD:AAU4902 (2:1) | NE  
shares BIN with *Boletina borealis*
- Boletina jamalensis* Zaitzev, 1994  
TMU | FAILED | VU
- Boletina kivachiana* Polevoi & Hedmark, 2004  
TMU, NHMO | BOLD:ABA1554 (1:1) | DD
- Boletina kowarzi* Stackelberg, 1943  
NHMO | – | VU
- Boletina kurilensis* Zaitzev, 1994  
TMU, NHMO | BOLD:AAG4924 (2:1) | NT  
shares BIN with *Boletina palmata*
- Boletina landrocki* Edwards, 1924  
TMU, NHMO | BOLD:ACM2274/ADH9444 (1:2) | LC
- Boletina lapponica* Polevoi & Hedmark, 2004  
TMU | BOLD:ACW4575 (1:1) | NEW
- Boletina lundbecki* Lundstrom, 1912  
TMU | BOLD:ABA3268 (1:1) | LC
- Boletina lundstroemi* Landrock, 1912  
TMU, NHMO | BOLD:ACM2856 (1:1) | LC
- Boletina maculata* Holmgren, 1870  
TMU, NHMO | BOLD:ABY5980/AAM8956 (1:2) | LC

- Boletina minuta* Polevoi, 1995  
TMU, NHMO | BOLD:AAQ3546 (1:1) | LC
- Boletina moravica* Landrock, 1912  
TMU, NHMO | BOLD:ACM2253 (1:1) | LC
- Boletina nasuta* (Haliday, 1839)  
TMU, NHMO | BOLD:ACX8994 (1:1) | LC
- Boletina nigricans* Dziedzicki, 1885  
TMU, NHMO | BOLD:AAI8808 (1:1) | LC
- Boletina nigricoxa* Staeger, 1840  
TMU | BOLD:ADL0407 (1:1) | NE
- Boletina nigrofusca* Dziedzicki, 1885  
TMU, NHMO | FAILED | LC
- Boletina nitida* Grzegorzek, 1885  
TMU, NHMO | BOLD:ACC7985 (1:1) | LC
- Boletina nitiduloides* Zaitzev, 1994  
TMU | BOLD:AAU4924 (1:1) | LC
- Boletina norokorpii* Salmela & Kolcsar, 2017  
TMU | BOLD:ADD1952 (1:1) | NEW
- Boletina onegensis* Polevoi, 1995  
TMU | BOLD:ABA3065 (1:1) | NEW
- Boletina palmata* Polevoi, 2013  
TMU | BOLD:AAG4924 (2:1) | NE  
shares BIN with *Boletina kurilensis*
- Boletina pectinunguis* Edwards, 1932  
TMU, NHMO | BOLD:ABA3066 (1:1) | LC
- Boletina pinusia* Maximova, 2001  
TMU, NHMO | BOLD:ABZ2146 (1:1) | DD
- Boletina plana* (Walker, 1856)  
TMU, NHMO | BOLD:ABU6853 (1:1) | LC
- Boletina polaris* Lundstrom, 1915  
TMU, NHMO | BOLD:ACS4340 (2:1) | LC  
shares BIN with *Boletina JKJ-spC*
- Boletina populina* Polevoi, 1995  
TMU, NHMO | BOLD:AAU4901 (1:1) | LC
- Boletina pseudonitida* Zaitzev, 1994  
TMU, NHMO | BOLD:ABA1459 (1:1) | LC
- Boletina rejecta* Edwards, 1941  
TMU, NHMO | BOLD:ACD0087 (1:1) | LC
- Boletina rodentistyla* Polevoi in Polevoi,  
Maximova & Subbotina, 2020  
TMU | BOLD:ACW3706 (1:1) | NEW
- Boletina sciarina* Staeger, 1840  
TMU, NHMO | BOLD:AAI8810 (1:1) | LC
- Boletina silvatica* Dziedzicki, 1885  
TMU, NHMO | BOLD:AAI8805 (1:1) | LC
- Boletina subtriangularis* Polevoi & Hedmark, 2004  
TMU, NHMO | BOLD:ACZ0682 (1:1) | DD
- Boletina takagii* Sasakawa & Kimura, 1974  
TMU, NHMO | BOLD:ACC3956 (1:1) | LC
- Boletina tirolensis* Plassmann, 1980  
TMU, NHMO | BOLD:ABU6857 (1:1) | LC
- Boletina triangularis* Polevoi, 1995  
TMU, NHMO | BOLD:AAJ7831 (1:1) | LC
- Boletina trispinosa* Edwards, 1913  
TMU, NHMO | BOLD:ACD0086 (1:1) | VU
- Boletina trivittata* (Meigen, 1818)  
TMU, NHMO | BOLD:AAI8801 (1:1) | LC
- Boletina verticillata* Stackelberg, 1943  
TMU, NHMO | BOLD:ACW1930 (1:1) | VU
- Boletina villosa* Landrock, 1912  
TMU, NHMO | BOLD:ACD7304 (1:1) | LC  
BIN mined from GenBANK
- Boletina* GS-spA  
TMU | BOLD:ACB2123 (1:1) | NEW
- Boletina* GS-spB  
TMU | BOLD:ABA4142 (1:1) | NEW
- Boletina* GS-spC  
TMU, NHMO | BOLD:ACJ5909 (1:1) | NEW
- Boletina* GS-spD  
TMU | BOLD:ACY9791 (1:1) | NEW
- Boletina* JKJ-spA  
TMU | BOLD:ABA2429 (1:1) | NEW
- Boletina* JKJ-spC  
TMU, NHMO | BOLD:ACS4340 (2:1) | NEW  
shares BIN with *Boletina polaris*
- Boletina* JKJ-spD  
TMU | BOLD:ACR2611 (1:1) | NEW
- Boletina* JKJ-spH  
TMU | BOLD:ADR1148 (1:1) | NEW
- Boletina* JKJ-spI  
TMU | BOLD:AAP9953 (1:1) | NEW
- Boletina* JKJ-spK  
TMU | BOLD:ADF9566 (1:1) | NEW
- Brachycampta adunca* Zaitzev, 1992  
TMU, NHMO | BOLD:ACR4443/ABA7176  
(3:2) | DD  
shares BIN with *Brachycampta penicillata*  
and *Brachycampta* JKJ-spB
- Brachycampta alternans* (Zetterstedt, 1838)  
TMU, NHMO | BOLD:ACJ1192 (1:1) | LC
- Brachycampta angulata* (Lundstrom, 1913)  
TMU | BOLD:ACN5415 (1:1) | NEW
- Brachycampta barbata* (Lundstrom, 1909)  
TMU, NHMO | BOLD:ACM2667 (1:1) | DD

- Brachycampta czernyi* (Landrock, 1912)  
TMU | BOLD:ACD9476 (1:1) | LC
- Brachycampta foliifera* (Strobl, 1910)  
TMU | BOLD:AAM8988 (1:1) | LC
- Brachycampta grata* (Meigen, 1830)  
TMU, NHMO | BOLD:ACJ1129 (1:1) | LC
- Brachycampta neglecta* Edwards, 1925  
TMU | BOLD:ABA1400 (1:1) | LC
- Brachycampta penicillata* (Lundstrom, 1912)  
TMU | BOLD:ACR4443 (3:1) | NEW  
shares BIN with *Brachycampta adunca* and  
*Brachycampta* JKJ-spB
- Brachycampta pistillata* (Lundstrom, 1911)  
TMU | BOLD:ACZ9039 (1:1) | NEW
- Brachycampta protenta* Lastovka & Matile, 1974  
TMU, NHMO | BOLD:ACA8357 (1:1) | LC
- Brachycampta rindeni* Kjaerandsen, 2007  
TMU | BOLD:ACR6050/ACY1598/  
ACT2802 (1:3) | DD
- Brachycampta subpistillata* Sevcik, 1999  
TMU | BOLD:ACG6105 (1:1) | NEW
- Brachycampta triangularis* (Strobl, 1895)  
TMU | BOLD:ADT6358 (1:1) | NEW
- Brachycampta* JKJ-spA  
TMU | BOLD:ACT3742 (1:1) | NEW
- Brachycampta* JKJ-spB  
TMU | BOLD:ACR4443 (3:1) | NEW  
shares BIN with *Brachycampta adunca* and  
*Brachycampta penicillata*
- Brachypeza (Brachypeza) armata* Winnertz, 1864  
TMU | BOLD:ACT0316 (1:1) | LC
- Brachypeza (Brachypeza) bisignata* Winnertz, 1864  
TMU, NHMO | BOLD:ACJ1227 (1:1) | LC
- Brachypeza (Brachypeza) radiata* Jenkinson, 1908  
NHMO | – | VU
- Brachypeza (Ristocordyla) obscura* Winnertz, 1864  
NHMO | BOLD:AAJ8887 (1:1) | LC
- Brevicornu affine* Zaitzev, 1988  
TMU, NHMO | – | DD
- Brevicornu arcticoides* Caspers, 1985  
TMU | BOLD:AAP6484 (1:1) | DD
- Brevicornu arcticum* (Lundstrom, 1913)  
TMU | BOLD:ACI9182 (1:1) | LC
- Brevicornu auriculatum* (Edwards, 1925)  
TMU, NHMO | BOLD:ABV5114/ACX9507  
(1:2) | DD
- Brevicornu beatum* (Johannsen, 1912)  
TMU, NHMO | BOLD:AAM8961 (1:1) | LC
- Brevicornu bellum* (Johannsen, 1912)  
TMU | BOLD:AAG4886 (1:1) | LC
- Brevicornu bipartitum* Lastovka & Matile, 1974  
TMU, NHMO | BOLD:AAP9951 (1:1) | LC
- Brevicornu canadense* Zaitzev, 1988  
TMU | BOLD:AAP2534 (1:1) | NEW
- Brevicornu canescens* (Zetterstedt, 1852)  
TMU | BOLD:ABV5113 (1:1) | DD
- Brevicornu cognatum* Ostroverkhova, 1979  
TMU | – | NEW
- Brevicornu disjunctum* Zaitzev, 1988  
TMU, NHMO | FAILED | VU
- Brevicornu fasciculatum* (Lackschewitz, 1937)  
TMU | BOLD:ACC1703 (1:1) | LC
- Brevicornu fennicum* (Landrock, 1927)  
TMU | BOLD:ACT4550 (1:1) | LC
- Brevicornu fissicauda* (Lundstrom, 1911)  
TMU, NHMO | BOLD:AAP2527/ADY1622  
(1:2) | LC
- Brevicornu foliatum* (Edwards, 1925)  
TMU, NHMO | BOLD:ABA1562 (1:1) | LC
- Brevicornu fuscipenne* (Staeger, 1840)  
TMU | BOLD:AAM8957 (1:1) | LC
- Brevicornu glandis* Lastovka & Matile, 1974  
TMU | BOLD:ACQ9509 (1:1) | NEW
- Brevicornu griseicolle* (Staeger, 1840)  
TMU, NHMO | BOLD:ACU9474/ACR3262/  
AEE9327 (1:3) | LC
- Brevicornu griseolum* (Zetterstedt, 1852)  
TMU, NHMO | BOLD:ACT2586 (1:1) | LC
- Brevicornu improvisum* Zaitzev, 1992  
TMU | BOLD:ABA1469 (1:1) | LC
- Brevicornu kingi* (Edwards, 1925)  
TMU, NHMO | BOLD:ABW9633/ADI6523  
(1:2) | LC
- Brevicornu nigrofusum* (Lundstrom, 1909)  
TMU | BOLD:ABA1563/ACZ9346 (1:2) | LC
- Brevicornu occidentale* Zaitzev, 1988  
TMU | FAILED | VU
- Brevicornu parafennicum* Zaitzev, 1995  
TMU | BOLD:ADB7953 (1:1) | NEW
- Brevicornu proximum* (Staeger, 1840)  
TMU | BOLD:ACJ5847/ADI5953 (1:2) |  
NEW
- Brevicornu radiatum* (Lundstrom, 1911)  
TMU | BOLD:ADI0960 (1:1) | NEW
- Brevicornu rosmellitum* Chandler, 2001  
TMU | BOLD:ACZ1325 (1:1) | NEW

- Brevicornu ruficorne* (Meigen, 1838)  
TMU, NHMO | BOLD:ABA1468 (1:1) | LC
- Brevicornu serenum* (Winnertz, 1864)  
TMU | BOLD:AAV8187 (1:1) | NT
- Brevicornu sericoma* (Meigen, 1830)  
TMU, NHMO | BOLD:ABA1564 (1:1) | LC
- Brevicornu setulosum* Zaitzev, 1988  
TMU, NHMO | BOLD:ABW9632/ADI8816 (1:2) | DD
- Brevicornu spathulatum* (Lundstrom, 1911)  
TMU | BOLD:ADY1308 (1:1) | NEW
- Brevicornu subfissicauda* Zaitzev, 1985  
TMU | BOLD:ACZ9285/ACC6417/ADV8945 (1:3) | NEW
- Brevicornu verralli* (Edwards, 1925)  
TMU | BOLD:ACR0892 (1:1) | LC
- Brevicornu* JKJ-spA  
TMU | – | NEW
- Brevicornu* JKJ-spB  
TMU | BOLD:AAU4981 (1:1) | NEW
- Brevicornu* JKJ-spC  
TMU | BOLD:ABW9634 (1:1) | NEW
- Brevicornu* JKJ-spD  
TMU | BOLD:ACC1443/ADB7167 (1:2) | NEW
- Brevicornu* JKJ-spE  
TMU | BOLD:ADY3612 (1:1) | NEW
- Brevicornu* JKJ-spF  
TMU | BOLD:ADY4383 (1:1) | NEW
- Brevicornu* JKJ-spG  
TMU | BOLD:ACX9610 (1:1) | NEW
- Brevicornu* JKJ-spH  
TMU | BOLD:AAY6368 (1:1) | NEW
- Brevicornu* JKJ-spI  
TMU | BOLD:ADY0962 (1:1) | NEW
- Brevicornu* JS-spA  
TMU | BOLD:AAL9129 (1:1) | NEW
- Coelophthinia thoracica* (Winnertz, 1864)  
TMU | BOLD:ACJ0721 (1:1) | LC
- Coelophthinia* JKJ-spA  
TMU | BOLD:ADV7953 (1:1) | NEW
- Coelophthinia* JKJ-spB  
TMU | BOLD:ACZ6758 (1:1) | NEW
- Coelosia flava* (Staeger, 1840)  
TMU, NHMO | BOLD:ACJ8092 (1:1) | LC
- Coelosia fusca* Bezzi, 1892  
TMU, NHMO | BOLD:ACJ6363 (1:1) | LC
- Coelosia gracilis* Johannsen, 1912  
TMU | BOLD:ACO2592 (1:1) | NEW
- Coelosia limpida* Plassmann, 1987  
TMU, NHMO | BOLD:ACT2591 (1:1) | DD
- Coelosia tenella* (Zetterstedt, 1852)  
TMU, NHMO | BOLD:ACZ5445 (1:1) | LC
- Coelosia truncata* Lundstrom, 1909  
TMU, NHMO | BOLD:AAP6487 (1:1) | LC
- Coelosia* GS-spA  
NHMO | BOLD:ACB2142 (1:1) | NEW
- Coelosynapha loici* Kjaerandsen, Polevoi & Salmela, 2020  
TMU | BOLD:ADD0785 (1:1) | NE
- Cordyla bomloensis* Kjaerandsen & Kurina, 2004  
TMU | BOLD:ACZ8992 (1:1) | LC
- Cordyla brevicornis* (Staeger, 1840)  
TMU, NHMO | BOLD:AAY7669 (1:1) | LC
- Cordyla crassicornis* Meigen, 1818  
TMU, NHMO | BOLD:AAY5643 (1:1) | LC
- Cordyla fasciata* Meigen, 1830  
TMU, NHMO | BOLD:ACS4878 (1:1) | LC
- Cordyla fissa* Edwards, 1925  
TMU, NHMO | BOLD:ACR0474 (1:1) | LC
- Cordyla flaviceps* (Staeger, 1840)  
TMU, NHMO | BOLD:ACJ2562 (1:1) | LC
- Cordyla fusca* Meigen, 1804  
TMU, NHMO | BOLD:ADH7743 (1:1) | LC
- Cordyla insons* Lastovka & Matile, 1974  
TMU | BOLD:ACC0039 (1:1) | LC
- Cordyla murina* Winnertz, 1864  
TMU, NHMO | BOLD:AAG4899 (1:1) | LC
- Cordyla nitens* Winnertz, 1864  
TMU, NHMO | BOLD:ADH7856/AAJ5766 (1:2) | LC
- Cordyla nitidula* Edwards, 1925  
TMU | – | LC
- Cordyla parvipalpis* Edwards, 1925  
TMU, NHMO | BOLD:ABW9066 (1:1) | LC
- Cordyla pusilla* Edwards, 1925  
TMU, NHMO | BOLD:AAY7668 (1:1) | LC
- Cordyla semiflava* (Staeger, 1840)  
TMU, NHMO | BOLD:ADI7992/ADR0040 (1:2) | LC
- Cordyla* JKJ-spA  
TMU | BOLD:ACD9635 (1:1) | NEW
- Cordyla* JKJ-spB  
TMU | BOLD:ACZ0834 (1:1) | NEW

- Cordyla* JKJ-spC  
 TMU | BOLD:ACC0275 (1:1) | NEW
- Docosia flavicoxa* Strobl, 1900  
 NHMO | BOLD:ACW3326 (1:1) | NE
- Docosia fumosa* Edwards, 1925  
 TMU | BOLD:ACP5806 (1:1) | LC
- Docosia fuscipes* (Roser, 1840)  
 TMU | BOLD:ACR1239 (1:1) | NT
- Docosia gilvipes* (Haliday in Walker, 1856)  
 TMU, NHMO | BOLD:AAJ7807 (1:1) | LC
- Docosia landrocki* Lastovka & Sevcik, 2006  
 TMU | BOLD:ACX7804 (1:1) | NEW
- Docosia mulleri* Plassmann, 1986  
 TMU, NHMO | BOLD:ABW9422 (1:1) | NEW
- Docosia tibialis* Lastovka & Sevcik, 2006  
 TMU | BOLD:ACU9140 (1:1) | NEW
- Docosia* JS-spA  
 TMU | BOLD:AAG4981 (1:1) | NEW
- Dynatosoma cochleare* Strobl, 1895  
 TMU | BOLD:ADN9952 (1:1) | LC
- Dynatosoma dihaeta* Polevoi, 1995  
 TMU | BOLD:ABA1524 (2:1) | NEW  
 shares BIN with *Dynatosoma nigromaculatum*
- Dynatosoma fuscicorne* (Meigen, 1818)  
 TMU, NHMO | BOLD:AAN8593 (1:1) | LC
- Dynatosoma majus* Landrock, 1912  
 TMU | BOLD:ACZ1380 (1:1) | NEW  
 only represented with barcoded larvae in  
 Norway, associated with adults from Poland.
- Dynatosoma nigromaculatum* Lundstrom, 1913  
 TMU | BOLD:ABA1524 (2:1) | LC  
 shares BIN with *Dynatosoma dihaeta*
- Dynatosoma reciprocum* (Walker, 1848)  
 TMU, NHMO | FAILED | LC
- Dynatosoma silesiacum* Sevcik, 2001  
 TMU | BOLD:ACG3566 (1:1) | NEW
- Dynatosoma thoracicum* (Zetterstedt, 1838)  
 TMU, NHMO | BOLD:ADR9113 (1:1) | LC
- Dynatosoma* JS-spA  
 TMU | BOLD:AEE4867 (1:1) | NEW
- Dziedzickia marginata* (Dziedzicki, 1885)  
 TMU, NHMO | BOLD:ADI2851 (1:1) | LC
- Dziedzickia* JKJ-spA  
 TMU | BOLD:ADF4101 (1:1) | NEW
- Ectrepesthoneura bucera* Plassmann, 1980  
 TMU | BOLD:ADY3228 (1:1) | NEW
- Ectrepesthoneura colyeri* Chandler, 1980  
 TMU, NHMO | BOLD:ACG3761 (1:1) | LC
- Ectrepesthoneura hirta* (Winnertz, 1846)  
 TMU, NHMO | BOLD:ACC1239 (1:1) | LC
- Ectrepesthoneura nigra* Zaitzev, 1984  
 TMU | PENDING | NT
- Ectrepesthoneura ovata* Ostroverkhova, 1977  
 TMU | BOLD:ACY1765 (1:1) | NE
- Ectrepesthoneura pubescens* (Zetterstedt, 1860)  
 TMU, NHMO | BOLD:ABX2328 (1:1) | LC
- Ectrepesthoneura referta* Plassmann, 1976  
 TMU, NHMO | BOLD:ABA0602 (1:1) | LC
- Ectrepesthoneura tori* Zaitzev & Okland, 1994  
 TMU | BOLD:ADI9171 (1:1) | VU
- Epicypa aterrima* (Zetterstedt, 1852)  
 TMU, NHMO | BOLD:AAJ0565 (1:1) | LC
- Epicypa limnophila* Chandler, 1981  
 NHMO | BOLD:ADB8951 (1:1) | VU
- Eudicrana nigriceps* (Lundstrom, 1909)  
 TMU | BOLD:ADT9026 (1:1) | NEW
- Exechia bicincta* (Staeger, 1840)  
 TMU, NHMO | PENDING | LC
- Exechia borealis* Lundstrom, 1912  
 TMU | BOLD:AAP6498 (1:1) | NE
- Exechia chandleri* Caspers, 1987  
 TMU | BOLD:AAJ0364 (1:1) | LC
- Exechia cincta* Winnertz, 1864  
 TMU | BOLD:ADA3950 (1:1) | LC
- Exechia confinis* Winnertz, 1864  
 TMU, NHMO | BOLD:ABA3393 (1:1) | LC
- Exechia contaminata* Winnertz, 1864  
 TMU | BOLD:AAP8159 (1:1) | LC
- Exechia cornuta* Lundstrom, 1914  
 TMU | BOLD:ABA1717/ACI4210 (1:2) | LC
- Exechia dizona* Edwards, 1924  
 TMU | BOLD:ABA3392 (1:1) | LC
- Exechia dorsalis* (Staeger, 1840)  
 TMU, NHMO | BOLD:ABA7748/ABA7749  
 (1:2) | LC
- Exechia exigua* Lundstrom, 1909  
 TMU, NHMO | BOLD:ABA3390 (1:1) | LC
- Exechia festiva* Winnertz, 1864  
 TMU | BOLD:ACU8794 (1:1) | LC
- Exechia frigida* (Boheman, 1865)  
 TMU, NHMO | BOLD:AAM9014 (1:1) | LC
- Exechia fusca* (Meigen, 1804)  
 TMU, NHMO | BOLD:AAL5088 (1:1) | LC

- Exechia inaperta* Ostroverkhova, 1979  
TMU | BOLD:ACZ0819 (1:1) | NEW
- Exechia lucidula* (Zetterstedt, 1838)  
TMU | BOLD:ACJ1028 (1:1) | NT
- Exechia lundstroemi* Landrock, 1923  
TMU | BOLD:ADF0313 (2:1) | LC  
shares BIN with *Exechia* JKJ-spE
- Exechia macula* Chandler, 2001  
TMU | BOLD:ADD4032 (1:1) | NT
- Exechia micans* Lastovka & Matile, 1974  
NHMO | BOLD:AAP1822 (1:1) | LC
- Exechia nigra* Edwards, 1925  
TMU, NHMO | BOLD:ACI6520 (1:1) | LC
- Exechia nigroscutellata* Landrock, 1912  
TMU | BOLD:ACB1546 (1:1) | LC
- Exechia parva* Lundstrom, 1909  
TMU | BOLD:ACJ4957 (1:1) | LC
- Exechia parvula* (Zetterstedt, 1852)  
TMU | BOLD:ABA3391 (1:1) | LC
- Exechia pectinivalva* Stackelberg, 1948  
TMU | BOLD:ACS0255 (1:1) | NEW
- Exechia pseudocincta* Strobl, 1910  
TMU | BOLD:ADB7569 (1:1) | LC
- Exechia pseudofestiva* Lackschewitz, 1937  
TMU | BOLD:ACI3895/AEA6293 (1:2) | LC
- Exechia repanda* Johannsen, 1912  
TMU, NHMO | BOLD:ACJ3411 (1:1) | LC
- Exechia separata* Lundstrom, 1912  
TMU, NHMO | BOLD:AAG4880 (1:1) | LC
- Exechia seriata* (Meigen, 1830)  
TMU | BOLD:ADI9065/ACJ5759/AEA6383 (1:3) | LC
- Exechia similis* Lastovka & Matile, 1974  
TMU, NHMO | BOLD:AAL9140 (1:1) | LC
- Exechia spinigera* Winnertz, 1864  
TMU, NHMO | BOLD:ACX9220 (1:1) | NE
- Exechia spinuligera* Lundstrom, 1912  
TMU | BOLD:ACZ9163 (1:1) | LC
- Exechia styriaca* Strobl, 1898  
TMU | BOLD:ACS6342 (1:1) | LC
- Exechia subfrigida* Lastovka & Matile, 1974  
TMU | BOLD:ABA2792 (1:1) | LC
- Exechia subinaperta* Subbotina & Maximova, 2011  
TMU | BOLD:ADG0655 (1:1) | NEW
- Exechia unifasciata* Lackschewitz, 1937  
TMU, NHMO | BOLD:ABU6784 (1:1) | LC
- Exechia unimaculata* (Zetterstedt, 1860)  
TMU, NHMO | BOLD:ABA3388 (1:1) | LC
- Exechia* JKJ-spA  
TMU | BOLD:ACI4958 (1:1) | NEW
- Exechia* JKJ-spB  
TMU | BOLD:ABA3389 (1:1) | NEW
- Exechia* JKJ-spC  
TMU | BOLD:ACY1393 (1:1) | NEW
- Exechia* JKJ-spD  
TMU | BOLD:ACS5846 (1:1) | NEW
- Exechia* JKJ-spE  
TMU | BOLD:ADF0313 (2:1) | NEW  
shares BIN with *Exechia lundstroemi*
- Exechia* JKJ-spF  
TMU | BOLD:ACZ0385 (1:1) | NEW
- Exechia* JKJ-spI  
TMU | BOLD:ACX9473 (1:1) | NEW
- Exechia* JKJ-spJ  
TMU | BOLD:ACH3001 (1:1) | NEW
- Exechia* JKJ-spL  
TMU | BOLD:ADF2857 (1:1) | NEW
- Exechia* JKJ-spM  
TMU | BOLD:ACC3725 (1:1) | NEW
- Exechia* JKJ-spN  
TMU | BOLD:AAY8470 (1:1) | NEW
- Exechia* JKJ-spO  
TMU, NHMO | BOLD:ACZ0844 (1:1) | NEW
- Exechia* JKJ-spP  
TMU, NHMO | BOLD:AAL9144 (1:1) | NEW
- Exechia* JKJ-spR  
TMU | BOLD:ACI6985 (1:1) | NEW
- Exechiopsis (Exechiopsis) aemula* Plassmann, 1984  
TMU | BOLD:ADI1398 (2:1) | LC  
shares BIN with *Exechiopsis (Exechiopsis) pulchella*
- Exechiopsis (Exechiopsis) clypeata* (Lundstrom, 1911)  
TMU | BOLD:ACS3592 (1:1) | LC
- Exechiopsis (Exechiopsis) distendens* (Lackschewitz, 1937)  
TMU | BOLD:ACS4406 (1:1) | LC
- Exechiopsis (Exechiopsis) dryaspagensis* Chandler, 1977  
TMU | BOLD:ACS4944 (1:1) | LC
- Exechiopsis (Exechiopsis) dimitrescae* (Burghel-Balacesco, 1972)  
TMU, NHMO | BOLD:ACZ0384 (1:1) | LC
- Exechiopsis (Exechiopsis) fimbriata* (Lundstrom, 1909)  
TMU | BOLD:AAM8974 (1:1) | LC



- Exechiopsis (Exechiopsis) forcipata* (Lackschewitz, 1937)  
TMU | BOLD:ACM2963 (1:1) | LC
- Exechiopsis (Exechiopsis) furcata* (Lundstrom, 1911)  
TMU | BOLD:ACS4002 (1:1) | LC
- Exechiopsis (Exechiopsis) grassatura* (Plassmann, 1978)  
TMU, NHMO | BOLD:ACS4408 (1:1) | VU
- Exechiopsis (Exechiopsis) hammi* (Edwards, 1925)  
TMU, NHMO | BOLD:ACT0835 (1:1) | LC
- Exechiopsis (Exechiopsis) indecisa* (Walker, 1856)  
TMU, NHMO | BOLD:AAL5090 (2:1) | LC  
shares BIN with *Exechiopsis (Exechiopsis) JKJ-spB*
- Exechiopsis (Exechiopsis) ingrlica* (Stackelberg, 1948)  
TMU | BOLD:ACS3234 (1:1) | NEW
- Exechiopsis (Exechiopsis) intersecta* (Meigen, 1818)  
TMU, NHMO | BOLD:ACS3777 (1:1) | LC
- Exechiopsis (Exechiopsis) januarii* (Lundstrom, 1913)  
TMU | BOLD:ACT4443 (1:1) | LC
- Exechiopsis (Exechiopsis) lackschewitziana* (Stackelberg, 1948)  
TMU, NHMO | BOLD:ADA4197/ADR5439 (1:2) | LC
- Exechiopsis (Exechiopsis) landrocki* (Lundstrom, 1912)  
TMU | BOLD:ADB8140 (1:1) | LC
- Exechiopsis (Exechiopsis) ligulata* (Lundstrom, 1913)  
TMU, NHMO | BOLD:ACS4407 (1:1) | LC
- Exechiopsis (Exechiopsis) magnicauda* (Lundstrom, 1911)  
TMU, NHMO | BOLD:ACS5308 (1:1) | LC
- Exechiopsis (Exechiopsis) patula* (Plassmann, 1978)  
TMU, NHMO | BOLD:ACZ0540 (1:1) | LC
- Exechiopsis (Exechiopsis) pseudindecisa* Lastovka & Matile, 1974  
TMU, NHMO | BOLD:ABW7454 (1:1) | LC
- Exechiopsis (Exechiopsis) pseudopulchella* (Lundstrom, 1912)  
TMU | BOLD:ACM2210 (1:1) | LC
- Exechiopsis (Exechiopsis) pulchella* (Winnertz, 1864)  
TMU, NHMO | BOLD:ADI1398 (2:1) | LC  
shares BIN with *Exechiopsis (Exechiopsis) aemula*
- Exechiopsis (Exechiopsis) sagittata* Lastovka & Matile, 1974  
TMU, NHMO | BOLD:ACM2859 (1:1) | LC
- Exechiopsis (Exechiopsis) subulata* (Winnertz, 1864)  
TMU, NHMO | BOLD:ACI8213 (1:1) | LC
- Exechiopsis (Exechiopsis) JKJ-spA*  
TMU | BOLD:ACS5306 (1:1) | NEW
- Exechiopsis (Exechiopsis) JKJ-spB*  
TMU | BOLD:AAL5090 (2:1) | NEW  
shares BIN with *Exechiopsis (Exechiopsis) indecisa*
- Exechiopsis (Exechiopsis) JKJ-spC*  
TMU | – | NEW
- Exechiopsis (Xenexechia) crucigera* (Lundstrom, 1909)  
TMU | BOLD:ACT0936 (1:1) | NEW
- Exechiopsis (Xenexechia) davatchii* (Matile, 1969)  
TMU | BOLD:ACS4943 (1:1) | NEW
- Exechiopsis (Xenexechia) leptura* (Meigen, 1830)  
TMU | BOLD:ACS5307 (1:1) | LC
- Exechiopsis (Xenexechia) membranacea* (Lundstrom, 1912)  
TMU | BOLD:ABA1718 (1:1) | LC
- Exechiopsis (Xenexechia) pollicata* (Edwards, 1925)  
TMU, NHMO | BOLD:ACZ0383 (1:1) | LC
- Exechiopsis (Xenexechia) praedita* (Plassmann, 1976)  
TMU | BOLD:ADA3343 (1:1) | NEW
- Exechiopsis (Xenexechia) seducta* (Plassmann, 1976)  
TMU | BOLD:ACJ0624 (1:1) | LC
- Exechiopsis (Xenexechia) stylata* Lastovka & Matile, 1974  
TMU | BOLD:ACZ6804 (1:1) | LC
- Exechiopsis (Xenexechia) JKJ-spA*  
TMU | – | NEW
- Exechiopsis (Xenexechia) JKJ-spB*  
TMU | BOLD:ACZ0629/AEE0724 (1:2) | NEW

- Gnoriste apicalis* Meigen, 1818  
TMU, NHMO | BOLD:ACW2313 (1:1) | EN
- Gnoriste bilineata* Zetterstedt, 1852  
TMU, NHMO | BOLD:ACB1880 (1:1) | LC
- Gnoriste harcyniae* Roder, 1887  
TMU, NHMO | BOLD:ADJ2769 (1:1) | NT
- Gnoriste longirostris* Siebke, 1863  
TMU, NHMO | BOLD:ACD7899 (1:1) | LC
- Greenomyia baikalica* Zaitzev, 1994  
TMU, NHMO | BOLD:ACW1770 (1:1) | VU
- Greenomyia mongolica* Lastovka & Matile, 1974  
NHMO | BOLD:ACB2160 (1:1) | VU
- Greenomyia stackelbergi* Zaitzev, 1982  
TMU, NHMO | BOLD:ACJ1241 (1:1) | NT
- Grzegorzekia collaris* (Meigen, 1818)  
TMU, NHMO | BOLD:ABW9668 (1:1) | LC
- Hadroneura palmeni* Lundstrom, 1906  
TMU | BOLD:ACC5022 (1:1) | VU
- Impleta consorta* Plassmann, 1978  
TMU | BOLD:ACZ1005 (1:1) | NEW
- Katatopygia erythropyyga* (Holmgren, 1883)  
TMU, NHMO | BOLD:AAG4964 (1:1) | NE
- Katatopygia sahlbergi* (Lundstrom, 1906)  
TMU, NHMO | BOLD:AAP6486 (1:1) | LC
- Leia bilineata* (Winnertz, 1864)  
TMU, NHMO | BOLD:AAY7720 (1:1) | LC
- Leia cylindrica* (Winnertz, 1864)  
TMU, NHMO | BOLD:AAK8058 (1:1) | LC
- Leia fascipennis* Meigen, 1818  
TMU, NHMO | BOLD:AAK8048 (1:1) | LC
- Leia longiseta* Barendrecht, 1938  
NHMO | BOLD:ACW4476 (1:1) | VU
- Leia picta* Meigen, 1830  
TMU, NHMO | BOLD:ACP5961 (1:1) | LC
- Leia subfasciata* (Meigen, 1818)  
TMU, NHMO | BOLD:ABW9506 (1:1) | LC
- Leia winthemi* Lehmann, 1822  
TMU, NHMO | BOLD:AAG4898 (1:1) | LC
- Leptomorphus forcipatus* Landrock, 1918  
TMU | BOLD:ACM2966 (1:1) | LC
- Leptomorphus walkeri* Curtis, 1831  
NHMO | BOLD:ACJ3410 (1:1) | LC
- Macrobrachius kowarzii* Dziedzicki, 1889  
NHMO | BOLD:ACJ3281 (1:1) | EN
- Manota unifurcata* Lundstrom, 1913  
NHMO | BOLD:ACH5289 (1:1) | EN  
BIN mined from GenBANK
- Megalopelma nigroclavatum* (Strobl, 1909)  
TMU, NHMO | BOLD:AAY5298 (1:1) | LC
- Megophthalmidia crassicornis* (Curtis, 1837)  
TMU, NHMO | BOLD:ACV0933 (1:1) | VU
- Monoclona braueri* (Strobl, 1895)  
TMU | BOLD:ACU8866 (2:1) | LC  
shares BIN with *Monoclona furcata*
- Monoclona furcata* Johannsen, 1910  
TMU | BOLD:ACU8866 (2:1) | LC  
shares BIN with *Monoclona braueri*
- Monoclona rufilatera* (Walker, 1836)  
TMU, NHMO | BOLD:AEA0195/AAY8348 (1:2) | LC
- Monoclona silvatica* Zaitzev, 1983  
TMU | FAILED | DD
- Mycetophila abbreviata* Landrock, 1914  
TMU, NHMO | BOLD:ADR1069 (1:1) | LC
- Mycetophila abiecta* (Lastovka, 1963)  
TMU | BOLD:ABV5739 (1:1) | LC
- Mycetophila adumbrata* Mik, 1884  
TMU | BOLD:ADI6438 (1:1) | LC
- Mycetophila alea* Laffoon, 1965  
TMU | BOLD:ACZ9175 (1:1) | LC
- Mycetophila attonsa* (Laffoon, 1957)  
TMU | BOLD:ACF6387 (1:1) | LC
- Mycetophila autumnalis* Lundstrom, 1909  
TMU | BOLD:ACM2688 (1:1) | LC
- Mycetophila bartaki* Sevcik, 2004  
TMU | BOLD:ADD2071 (1:1) | NEW
- Mycetophila bialorussica* Dziedzicki, 1884  
TMU, NHMO | BOLD:ABV5738 (1:1) | LC
- Mycetophila biusta* Meigen, 1818  
TMU | BOLD:ABW6635 (1:1) | LC
- Mycetophila blanda* Winnertz, 1864  
TMU | BOLD:ACB2137 (1:1) | LC
- Mycetophila bohemicana* (Lastovka, 1963)  
TMU | BOLD:ABW6637 (1:1) | LC
- Mycetophila boreocruciator* Sevcik, 2003  
TMU, NHMO | BOLD:AAL9127 (1:1) | NT
- Mycetophila brevitarsata* (Lastovka, 1963)  
TMU | BOLD:AAP8160 (1:1) | LC
- Mycetophila britannica* Lastovka & Kidd, 1975  
NHMO | BOLD:ACR0359 (1:1) | LC  
BIN mined from GenBANK
- Mycetophila caudata* Staeger, 1840  
TMU | BOLD:AAI3260 (1:1) | LC
- Mycetophila cingulum* Meigen, 1830  
TMU, NHMO | BOLD:AAM8979 (1:1) | LC

- Mycetophila confluens* Dziedzicki, 1884  
TMU, NHMO | BOLD:ABW5986 (1:1) | LC
- Mycetophila confusa* Dziedzicki, 1884  
NHMO | FAILED | VU
- Mycetophila curviseta* Lundstrom, 1911  
TMU | BOLD:AA5455 (1:1) | LC
- Mycetophila deflexa* Chandler, 2001  
TMU | BOLD:ACU7640 (1:1) | NEW
- Mycetophila dentata* Lundstrom, 1913  
TMU | BOLD:ACG3992 (1:1) | LC
- Mycetophila distigma* Meigen, 1830  
NHMO | BOLD:AAY8340 (1:1) | DD
- Mycetophila dziedzickii* Chandler, 1977  
TMU | BOLD:ACM2656 (1:1) | LC
- Mycetophila edwardsi* Lundstrom, 1913  
TMU | BOLD:ACQ8258 (1:1) | LC
- Mycetophila eppingensis* Chandler, 2001  
TMU | BOLD:ADY3050 (1:1) | NEW
- Mycetophila evanida* Lastovka, 1972  
TMU, NHMO | BOLD:AAL9133 (1:1) | LC
- Mycetophila finlandica* Edwards, 1913  
TMU | BOLD:ADP5499 (1:1) | LC
- Mycetophila flava* Winnertz, 1864  
TMU | BOLD:ADF1420 (1:1) | NEW
- Mycetophila forcipata* Lundstrom, 1913  
TMU | BOLD:ACG5496 (2:1) | LC  
shares BIN with *Mycetophila pseudoforcipata*
- Mycetophila formosa* Lundstrom, 1911  
TMU, NHMO | BOLD:ACP0306/ACJ5863  
(1:2) | LC
- Mycetophila fungorum* (De Geer, 1776)  
TMU, NHMO | BOLD:ABU7342 (1:1) | LC
- Mycetophila gemerensis* Sevcik & Kurina, 2011  
TMU | BOLD:ACD1714 (2:1) | NEW  
shares BIN with *Mycetophila strigata*
- Mycetophila gentilicia* Zaitzev, 1999  
TMU | – | LC
- Mycetophila gibbula* Edwards, 1925  
TMU | BOLD:ADF0022 (1:1) | LC
- Mycetophila haruspica* Plassmann, 1990  
TMU, NHMO | BOLD:ABW7064 (1:1) | DD
- Mycetophila hetschkoi* Landrock, 1918  
TMU | BOLD:ACZ7694 (1:1) | LC
- Mycetophila ichneumonea* Say, 1823  
TMU, NHMO | BOLD:ACJ2585 (1:1) | LC
- Mycetophila laeta* Walker, 1848  
TMU | BOLD:AAU4986 (1:1) | LC
- Mycetophila lastovkai* Caspers, 1984  
TMU | BOLD:ACJ5863 (1:1) | VU
- Mycetophila lubomirskii* Dziedzicki, 1884  
TMU | FAILED | LC
- Mycetophila luctuosa* Meigen, 1830  
TMU, NHMO | BOLD:AAG3628 (1:1) | LC
- Mycetophila lunata* Meigen, 1804  
TMU, NHMO | BOLD:AEA6200 (1:1) | LC
- Mycetophila magnicauda* Strobl, 1895  
TMU | BOLD:ACB1569 (1:1) | LC
- Mycetophila marginata* Winnertz, 1864  
TMU, NHMO | BOLD:AAY8339 (1:1) | LC
- Mycetophila mohilevensis* Dziedzicki, 1884  
TMU, NHMO | BOLD:ACL8544 (1:1) | LC
- Mycetophila monstera* Maximova, 2002  
TMU | BOLD:ACW4861 (1:1) | NEW
- Mycetophila morata* Zaitzev, 1999  
TMU, NHMO | BOLD:ABA0531 (1:1) | NEW
- Mycetophila morosa* Winnertz, 1864  
TMU, NHMO | BOLD:ABA1685 (1:1) | LC
- Mycetophila nigrofusca* Dziedzicki, 1884  
TMU | BOLD:ACZ7087 (1:1) | LC
- Mycetophila occultans* Lundstrom, 1913  
TMU | BOLD:ADR9886 (1:1) | LC
- Mycetophila ocellus* Walker, 1848  
TMU, NHMO | BOLD:ABU8760/ACA9583  
(1:2) | LC
- Mycetophila ornata* Stephens, 1829  
TMU, NHMO | BOLD:ACJ6199 (1:1) | LC
- Mycetophila perpallida* Chandler, 1993  
TMU | BOLD:AAG4872 (1:1) | LC
- Mycetophila pictula* Meigen, 1830  
TMU, NHMO | – | LC
- Mycetophila pseudoforcipata* Zaitzev, 1998  
TMU, NHMO | BOLD:ACG5496 (2:1) | LC  
shares BIN with *Mycetophila forcipata*
- Mycetophila pumila* Winnertz, 1864  
TMU, NHMO | BOLD:ABX1298 (1:1) | LC
- Mycetophila pyrenaica* Matile, 1967  
TMU | BOLD:ADB7262 (1:1) | VU
- Mycetophila quadra* Lundstrom, 1909  
TMU | BOLD:ABU9898 (1:1) | LC
- Mycetophila rudis* Winnertz, 1864  
TMU | BOLD:ACJ4960 (1:1) | NEW
- Mycetophila ruficollis* Meigen, 1818  
TMU, NHMO | BOLD:AAY8336 (1:1) | LC
- Mycetophila schnablii* (Dziedzicki, 1884)  
TMU, NHMO | BOLD:ADF2598 (1:1) | LC

- Mycetophila setifera* Zaitzev, 1999  
TMU | BOLD:AAP6483 (1:1) | NEW
- Mycetophila sigmoides* Loew, 1869  
TMU | BOLD:ADA5875 (1:1) | DD
- Mycetophila signata* Meigen, 1830  
TMU, NHMO | BOLD:ADT2014 (1:1) | LC
- Mycetophila signatoides* Dziedzicki, 1884  
TMU, NHMO | BOLD:AAP8158 (1:1) | LC
- Mycetophila sinuosa* Plassmann & Schacht, 1999  
TMU | BOLD:AEA4697 (1:1) | NEW
- Mycetophila sordida* Wulp, 1874  
TMU, NHMO | BOLD:ABA1684 (1:1) | LC
- Mycetophila spectabilis* Winnertz, 1864  
TMU, NHMO | BOLD:ACY9339 (1:1) | NT
- Mycetophila stolidia* Walker, 1856  
TMU, NHMO | BOLD:ACB1967/AAY8337 (1:2) | LC
- Mycetophila stricklandi* (Laffoon, 1957)  
TMU, NHMO | BOLD:AAP6502 (1:1) | LC
- Mycetophila strigata* Staeger, 1840  
TMU | BOLD:ACD1714 (2:1) | VU  
shares BIN with *Mycetophila gemerensis*
- Mycetophila strigatoides* (Landrock, 1927)  
TMU, NHMO | BOLD:AAG4922 (1:1) | LC
- Mycetophila strobli* Lastovka, 1972  
TMU | BOLD:ACP9774 (1:1) | LC
- Mycetophila stylata* (Dziedzicki, 1884)  
TMU | BOLD:ACB1763 (1:1) | LC
- Mycetophila subbrevitarsata* Zaitzev, 1999  
TMU | BOLD:ADY0939 (1:1) | NEW
- Mycetophila sublunata* Zaitzev, 1998  
TMU, NHMO | BOLD:ACN3570 (1:1) | LC
- Mycetophila subsigillata* Zaitzev, 1999  
TMU | FAILED | LC
- Mycetophila sumavica* (Lastovka, 1963)  
TMU, NHMO | BOLD:ACS9451 (1:1) | LC
- Mycetophila tomensis* (Plotnikova, 1962)  
TMU | BOLD:ACM2305 (1:1) | NEW
- Mycetophila triangularis* Lundstrom, 1912  
TMU | BOLD:ADR8617 (1:1) | NEW
- Mycetophila trinotata* Staeger, 1840  
TMU | BOLD:AAY6369 (1:1) | NEW
- Mycetophila uliginosa* Chandler, 1988  
TMU, NHMO | BOLD:ABV5732 (2:1) | DD  
shares BIN with *Mycetophila* GS-spA
- Mycetophila unguiculata* Lundstrom, 1913  
NHMO | FAILED | LC
- Mycetophila unicolor* Stannius, 1831  
NHMO | BOLD:ACJ5758 (1:1) | NEW
- Mycetophila uninotata* Zetterstedt, 1852  
TMU, NHMO | BOLD:ABU9488/ACZ5233/ABU9892 (1:3) | LC
- Mycetophila unipunctata* Meigen, 1818  
TMU, NHMO | BOLD:ACZ9322 (1:1) | LC
- Mycetophila v-nigrum* Lundstrom, 1913  
TMU | – | LC
- Mycetophila vittipes* Zetterstedt, 1852  
TMU, NHMO | BOLD:AAU4899 (1:1) | LC
- Mycetophila vivida* Plassmann & Schacht, 1999  
TMU | BOLD:AEA5562 (1:1) | NEW
- Mycetophila xanthopyga* Winnertz, 1864  
TMU | BOLD:ADQ9453 (1:1) | LC
- Mycetophila zetterstedtii* Lundstrom, 1906  
TMU | BOLD:ACZ0355 (1:1) | LC
- Mycetophila* GS-spA  
NHMO | BOLD:ABV5732 (2:1) | NEW  
shares BIN with *Mycetophila uliginosa*
- Mycetophila* JKJ-spA  
TMU | FAILED | NEW
- Mycetophila* JKJ-spB  
TMU | FAILED | NEW
- Mycetophila* JKJ-spC  
TMU | BOLD:AEE2293 (1:1) | NEW
- Mycetophila* JKJ-spF  
TMU | FAILED | NEW
- Mycetophila* JKJ-spG  
TMU | BOLD:ACA4611 (1:1) | NEW
- Mycetophila* JKJ-spH  
TMU | FAILED | NEW
- Mycetophila* JKJ-spJ  
TMU | BOLD:ADF0984 (1:1) | NEW
- Mycetophila* JKJ-spK  
TMU | BOLD:ACP8520 (1:1) | NEW
- Mycetophila* JKJ-spL  
TMU | BOLD:ADE9902 (1:1) | NEW
- Mycetophila* JKJ-spM  
TMU | PENDING | NEW
- Mycetophila* JS-spB  
TMU | BOLD:ADQ7521 (1:1) | NEW
- Mycetophila* JS-spC  
TMU | BOLD:ADB8954 (1:1) | NEW
- Mycetophila* JS-spF  
TMU | BOLD:ADG2230 (1:1) | NEW

- Mycomya (Calomycomya) pulchella* (Dziedzicki, 1885)  
TMU, NHMO | BOLD:AAF5241 (1:1) | LC
- Mycomya (Coheromyia) branderi* Vaisanen, 1984  
NHMO | BOLD:ADV7494 (1:1) | NEW  
BIN mined from GenBANK
- Mycomya (Cymomyia) circumdata* (Staeger, 1840)  
TMU, NHMO | BOLD:ACQ5825 (1:1) | LC
- Mycomya (Lycomya) pectinifera* (Edwards, 1924)  
TMU | BOLD:ADF4278 (1:1) | NA
- Mycomya (Mycomya) annulata* (Meigen, 1818)  
TMU, NHMO | BOLD:AAH3510/ACJ6400 (1:2) | LC
- Mycomya (Mycomya) bialorussica* (Landrock, 1925)  
TMU, NHMO | BOLD:ADY2345 (1:1) | VU
- Mycomya (Mycomya) bicolor* (Dziedzicki, 1885)  
TMU, NHMO | BOLD:ACT4008/ACG3392 (1:2) | LC
- Mycomya (Mycomya) bisulca* Lackschewitz, 1937  
NHMO | – | DD
- Mycomya (Mycomya) britteni* Kidd, 1955  
TMU | BOLD:ADY2797 (1:1) | VU
- Mycomya (Mycomya) brunnea* (Dziedzicki, 1885)  
TMU | BOLD:ADF3135/ADF9647 (1:2) | LC
- Mycomya (Mycomya) cinerascens* (Macquart, 1826)  
TMU, NHMO | BOLD:ACC6515 (1:1) | LC
- Mycomya (Mycomya) collini* Edwards, 1941  
TMU | BOLD:AEA6665 (1:1) | DD
- Mycomya (Mycomya) danielae* Matile, 1972  
TMU | BOLD:AAU4918 (1:1) | NEW
- Mycomya (Mycomya) denmax* Vaisanen, 1979  
TMU, NHMO | BOLD:ACJ6460/ACZ0830 (1:2) | LC
- Mycomya (Mycomya) digitifera* Edwards, 1925  
NHMO | – | NT
- Mycomya (Mycomya) disa* Vaisanen, 1984  
TMU, NHMO | BOLD:AAG4884 (4:1) | NT  
shares BIN with *Mycomya islandica*, *M. kurildisa* and *M. tenuis*
- Mycomya (Mycomya) dura* Garrett, 1924  
LMM | PENDING | NEW
- Mycomya (Mycomya) dziedzickii* Vaisanen, 1981  
TMU | BOLD:ACG7131 (1:1) | LC
- Mycomya (Mycomya) egregia* (Dziedzicki, 1885)  
TMU | BOLD:ADV7493 (1:1) | LC
- Mycomya (Mycomya) festivalis* Vaisanen, 1984  
NHMO | FAILED | VU
- Mycomya (Mycomya) flavicollis* (Zetterstedt, 1852)  
NHMO | – | LC
- Mycomya (Mycomya) forestaria* Plassmann, 1978  
TMU | BOLD:ADY2237 (1:1) | NEW
- Mycomya (Mycomya) fuscata* (Winnertz, 1864)  
TMU, NHMO | BOLD:ACD1366 (1:1) | LC
- Mycomya (Mycomya) griseovittata* (Zetterstedt, 1852)  
TMU, NHMO | BOLD:ABU7344 (1:1) | LC
- Mycomya (Mycomya) hackmani* Vaisanen, 1984  
TMU, NHMO | BOLD:ACJ6259 (1:1) | LC
- Mycomya (Mycomya) heydeni* Plassmann, 1970  
NHMO | – | DD
- Mycomya (Mycomya) hians* (Lundstrom, 1912)  
TMU, NHMO | BOLD:ADY2989 (1:1) | DD
- Mycomya (Mycomya) hiisi* Vaisanen, 1979  
NHMO | – | NT
- Mycomya (Mycomya) humida* Garrett, 1924  
TMU | BOLD:ACM6567 (1:1) | NT
- Mycomya (Mycomya) indistincta* Polevoi, 1995  
TMU | PENDING | NEW
- Mycomya (Mycomya) insignis* (Winnertz, 1864)  
TMU | BOLD:ACV0809 (1:1) | NEW
- Mycomya (Mycomya) islandica* Vaisanen, 1984  
NHMO | BOLD:AAG4884 (4:1) | NA  
shares BIN with *Mycomya disa*, *M. kurildisa* and *M. tenuis*
- Mycomya (Mycomya) karelica* Vaisanen, 1979  
TMU | BOLD:ADY2613 (1:1) | LC
- Mycomya (Mycomya) kurildisa* Vaisanen, 1984  
TMU | BOLD:AAG4884 (4:1) | NEW  
shares BIN with *Mycomya disa*, *M. islandica* and *M. tenuis*
- Mycomya (Mycomya) kuusamoensis* Vaisanen, 1979  
TMU | BOLD:AEA0228 (1:1) | NEW
- Mycomya (Mycomya) lambi* Edwards, 1941  
NHMO | FAILED | LC
- Mycomya (Mycomya) levis* (Dziedzicki, 1885)  
TMU, NHMO | BOLD:AAK8905 (1:1) | LC
- Mycomya (Mycomya) livida* (Dziedzicki, 1885)  
TMU | BOLD:AEA6868 (1:1) | NEW
- Mycomya (Mycomya) maculata* (Meigen, 1804)  
TMU, NHMO | BOLD:AAP9083 (1:1) | LC
- Mycomya (Mycomya) marginata* (Meigen, 1818)  
TMU, NHMO | BOLD:AEA6193/ACR1321

- (1:2) | LC  
*Mycomya (Mycomya) neohyalinata* Vaisanen, 1984  
 TMU, NHMO | BOLD:ADL1560 (1:1) | LC  
*Mycomya (Mycomya) nigricornis* (Zetterstedt, 1852)  
 TMU, NHMO | BOLD:ABA3578 (1:1) | LC  
*Mycomya (Mycomya) nitida* (Zetterstedt, 1852)  
 TMU, NHMO | BOLD:AAG4983 (1:1) | LC  
*Mycomya (Mycomya) ornata* (Meigen, 1818)  
 TMU, NHMO | BOLD:AAH3808 (1:1) | LC  
*Mycomya (Mycomya) parva* (Dziedzicki, 1885)  
 TMU, NHMO | BOLD:ACB2102 (1:1) | NEW  
*Mycomya (Mycomya) prominens* (Lundstrom, 1913)  
 TMU | BOLD:ADX8991 (1:1) | LC  
*Mycomya (Mycomya) pseudoapicalis* (Landrock, 1925)  
 TMU | BOLD:ACJ6460 (1:1) | NT  
*Mycomya (Mycomya) punctata* (Meigen, 1804)  
 TMU | BOLD:ACA9714 (2:1) | NA  
 shares BIN with *Mycomya norna*  
*Mycomya (Mycomya) ruficollis* (Zetterstedt, 1852)  
 TMU, NHMO | BOLD:ACF6960 (1:1) | LC  
*Mycomya (Mycomya) safena* Vaisanen, 1984  
 TMU | BOLD:ABA3577 (1:1) | NEW  
*Mycomya (Mycomya) shermani* Garrett, 1924  
 TMU, NHMO | BOLD:AAK8904 (1:1) | LC  
*Mycomya (Mycomya) siebecki* (Landrock, 1912)  
 TMU, NHMO | BOLD:ADF4373/ADF4334 (1:2) | LC  
*Mycomya (Mycomya) sigma* Johannsen, 1910  
 TMU, NHMO | BOLD:ABU7343 (1:1) | LC  
*Mycomya (Mycomya) simulans* Vaisanen, 1984  
 TMU, NHMO | BOLD:ADH7491 (1:1) | EN  
*Mycomya (Mycomya) storai* Vaisanen, 1979  
 TMU | BOLD:ADM5559 (1:1) | NEW  
*Mycomya (Mycomya) subarctica* Vaisanen, 1979  
 TMU, NHMO | BOLD:ADG8144 (1:1) | LC  
*Mycomya (Mycomya) tenuis* (Walker, 1856)  
 TMU, NHMO | BOLD:AAG4884 (4:1) | LC  
 shares BIN with *Mycomya disa*, *M. kurildisa*  
 and *M. islandica*  
*Mycomya (Mycomya) tridens* (Lundstrom, 1911)  
 TMU | BOLD:ADZ0809 (1:1) | VU  
*Mycomya (Mycomya) trivittata* (Zetterstedt, 1838)  
 TMU, NHMO | BOLD:ACG6928/ACI4555 (1:2) | LC  
*Mycomya (Mycomya) tumida* (Winnertz, 1864)  
 TMU, NHMO | BOLD:ACF6390 (1:1) | LC  
*Mycomya (Mycomya) vittiventris* (Zetterstedt, 1852)  
 TMU, NHMO | BOLD:ABA3287 (1:1) | LC  
*Mycomya (Mycomya) wankowiczii* (Dziedzicki, 1885)  
 TMU, NHMO | BOLD:ACM9370 (1:1) | LC  
*Mycomya (Mycomya) winnertzi* (Dziedzicki, 1885)  
 TMU | BOLD:AAZ8344 (1:1) | LC  
*Mycomya (Mycomyopsis) affinis* (Staeger, 1840)  
 TMU, NHMO | BOLD:AAH3524 (1:1) | LC  
*Mycomya (Mycomyopsis) confusa* Vaisanen, 1979  
 TMU, NHMO | BOLD:ACT0703 (1:1) | LC  
*Mycomya (Mycomyopsis) fennica* Vaisanen, 1979  
 NHMO | BOLD:ACW4311 (1:1) | LC  
*Mycomya (Mycomyopsis) frequens* Johannsen, 1910  
 TMU | BOLD:ADG2606 (1:1) | NEW  
*Mycomya (Mycomyopsis) neolittoralis* Vaisanen, 1984  
 NHMO | – | NT  
*Mycomya (Mycomyopsis) paradedentata* Vaisanen, 1984  
 TMU | BOLD:AEA4598 (1:1) | LC  
*Mycomya (Mycomyopsis) permixta* Vaisanen, 1984  
 TMU, NHMO | BOLD:ACC1746 (1:1) | LC  
*Mycomya (Mycomyopsis) trilineata* (Zetterstedt, 1838)  
 TMU, NHMO | PENDING | LC  
*Mycomya (Neomycomya) fimbriata* (Meigen, 1818)  
 TMU, NHMO | BOLD:ABA3579 (1:1) | LC  
*Myrosia maculosa* (Meigen, 1818)  
 TMU, NHMO | BOLD:ADD3072 (1:1) | LC  
*Myrosia* JKJ-spA  
 TMU | BOLD:ACX0137 (1:1) | NEW  
*Neoempheria pictipennis* (Haliday, 1833)  
 TMU, NHMO | BOLD:ACJ2824 (1:1) | LC  
*Neoempheria striata* (Meigen, 1818)  
 TMU | BOLD:ACR4414 (1:1) | NT  
*Neuratelia nemoralis* (Meigen, 1818)  
 TMU, NHMO | BOLD:ACJ6170 (1:1) | LC  
*Neuratelia nigricornis* Edwards, 1941  
 NHMO | – | NT  
*Neuratelia subulata* Zaitzev, 1994  
 TMU, NHMO | BOLD:ACI4951 (1:1) | NT

- Notolopha brachycera* (Zetterstedt, 1852)  
TMU, NHMO | BOLD:ABV0134 (1:1) | LC
- Notolopha cristata* (Staeger, 1840)  
TMU, NHMO | BOLD:ACY1737/ABV5363 (1:2) | LC
- Notolopha sibirica* (Zaitzev & Maximova, 2000)  
TMU | BOLD:ACS5984 (1:1) | DD
- Palaeodocosia alpicola* (Strobl, 1895)  
TMU, NHMO | BOLD:ADQ9149 (1:1) | LC
- Palaeodocosia vittata* (Coquillett, 1901)  
TMU, NHMO | BOLD:ACI0822/ADF4099 (1:2) | LC
- Paratinia sciarina* Mik, 1874  
TMU, NHMO | BOLD:ADY3748 (1:1) | LC
- Phronia aviculata* Lundstrom, 1914  
TMU, NHMO | BOLD:ABU7081 (1:1) | LC
- Phronia avidoides* Jakovlev & Polevoi, 2009  
TMU | BOLD:ADR1627 (1:1) | NEW
- Phronia basalis* Winnertz, 1864  
TMU | BOLD:ACR0705 (1:1) | NEW
- Phronia biarcuata* (Becker, 1908)  
TMU | BOLD:AAV6367/ABA3292 (1:2) | LC
- Phronia bicolor* Dziedzicki, 1889  
TMU, NHMO | BOLD:ACM2610 (1:1) | LC
- Phronia braueri* Dziedzicki, 1889  
TMU, NHMO | BOLD:ABA3501 (1:1) | LC
- Phronia caliginosa* Dziedzicki, 1889  
TMU, NHMO | BOLD:ABA1328 (1:1) | LC
- Phronia cinerascens* Winnertz, 1864  
TMU, NHMO | BOLD:ABA2656 (1:1) | LC
- Phronia conformis* (Walker, 1856)  
TMU, NHMO | BOLD:ACR0568 (1:1) | LC
- Phronia cordata* Lundstrom, 1914  
TMU | BOLD:AAQ3543 (1:1) | LC
- Phronia coritana* Chandler, 1992  
TMU | BOLD:ACR1692 (1:1) | LC
- Phronia cornuta* Lundstrom, 1914  
TMU | BOLD:ACJ0438 (1:1) | NEW
- Phronia crassitarsus* Hackman, 1970  
TMU | BOLD:ABA3506 (1:1) | NEW
- Phronia digitata* Hackman, 1970  
TMU | BOLD:ADG0085/ADQ9951 (1:2) | LC
- Phronia disgrega* Dziedzicki, 1889  
TMU, NHMO | BOLD:ABU7057 (1:1) | LC
- Phronia distincta* Hackman, 1970  
TMU, NHMO | BOLD:AAL4861 (1:1) | DD
- Phronia dziedzickii* Lundstrom, 1906  
TMU | BOLD:ACB9729 (1:1) | LC
- Phronia egregia* Dziedzicki, 1889  
TMU | BOLD:AAM9015 (1:1) | LC
- Phronia electa* Dziedzicki, 1889  
TMU | BOLD:ADH7342 (1:1) | LC
- Phronia elegans* Dziedzicki, 1889  
TMU | BOLD:ACB1651 (1:1) | VU
- Phronia elegantula* Hackman, 1970  
TMU | BOLD:ACJ2889 (1:1) | NE
- Phronia exigua* (Zetterstedt, 1852)  
TMU, NHMO | BOLD:ABA3294/ACB1497 (1:2) | LC
- Phronia flavipes* Winnertz, 1864  
TMU | BOLD:ABA3505 (1:1) | LC
- Phronia forcipata* (Winnertz, 1864)  
TMU, NHMO | BOLD:ABA3003 (1:1) | LC
- Phronia forcipula* Winnertz, 1864  
TMU, NHMO | BOLD:ADH8981 (1:1) | LC
- Phronia gracilis* Hackman, 1970  
TMU | BOLD:ADL1439 (1:1) | NEW
- Phronia humeralis* Winnertz, 1864  
TMU, NHMO | BOLD:ABU7059 (1:1) | LC
- Phronia interstincta* Dziedzicki, 1889  
TMU, NHMO | BOLD:ABU7060 (1:1) | LC
- Phronia longelamellata* Strobl, 1898  
TMU | BOLD:ACJ2991 (1:1) | LC
- Phronia lutescens* Hackman, 1970  
TMU | BOLD:ACU8502 (1:1) | LC
- Phronia maculata* Dziedzicki, 1889  
TMU | BOLD:ACB1568 (1:1) | LC
- Phronia mutabilis* Dziedzicki, 1889  
TMU | BOLD:ACW3443 (1:1) | LC
- Phronia mutila* Lundstrom, 1911  
TMU | BOLD:ADA0364 (1:1) | NEW
- Phronia nigricornis* (Zetterstedt, 1852)  
TMU, NHMO | BOLD:ABA3510 (2:1) | LC  
shares BIN with *Phronia* JKJ-spE
- Phronia nigripalpis* Lundstrom, 1909  
TMU, NHMO | BOLD:ABA3004 (1:1) | LC
- Phronia nitidiventris* (Wulp, 1858)  
TMU, NHMO | BOLD:ACB2159 (1:1) | LC
- Phronia notata* Dziedzicki, 1889  
TMU, NHMO | BOLD:ACT9248 (1:1) | LC
- Phronia obscura* Dziedzicki, 1889  
TMU | BOLD:ACM2779 (1:1) | NT
- Phronia obtusa* Winnertz, 1864  
TMU | BOLD:ACJ2989/ACW2040/  
ABA3509 (1:3) | LC

- Phronia peculiaris* Dziedzicki, 1889  
TMU, NHMO | BOLD:ABA3512 (1:1) | LC
- Phronia persimilis* Hackman, 1970  
TMU, NHMO | BOLD:ABA3297 (1:1) | LC
- Phronia petulans* Dziedzicki, 1889  
TMU | BOLD:ADS1558/AAL4862 (1:2) | LC
- Phronia portschinskyi* Dziedzicki, 1889  
TMU | BOLD:ABA1329/ACW2958/  
ACW2867/AAP6497/ADY3338 (1:5) | NT
- Phronia prolongata* Salmela, in Salmela &  
Kolsar, 2017  
TMU, NHMO | BOLD:ACW2188 (1:1) | NE
- Phronia siebeckii* Dziedzicki, 1889  
TMU, NHMO | BOLD:ACB9955 (1:1) | LC
- Phronia signata* Winnertz, 1864  
TMU, NHMO | BOLD:ABW9671 (1:1) | LC
- Phronia sompio* Salmela in Salmela & Kolsar, 2017  
TMU | PENDING | NEW
- Phronia spinigera* Hackman, 1970  
TMU | BOLD:ADI8546 (1:1) | NEW
- Phronia strenua* Winnertz, 1864  
TMU | BOLD:ABA1330 (1:1) | LC
- Phronia subsilvatica* Hackman, 1970  
TMU | BOLD:ADY3715 (1:1) | NEW
- Phronia sudetica* Dziedzicki, 1889  
TMU, NHMO | BOLD:ADS4119 (1:1) | LC
- Phronia sylvatica* Dziedzicki, 1889  
TMU | BOLD:ADY3371 (1:1) | NEW
- Phronia tenuis* Winnertz, 1864  
TMU, NHMO | BOLD:AAG4873 (1:1) | LC
- Phronia tiefii* Dziedzicki, 1889  
TMU, NHMO | BOLD:ACB1916 (1:1) | LC
- Phronia triangularis* Winnertz, 1864  
TMU | BOLD:ACJ6084 (1:1) | LC
- Phronia unica* Dziedzicki, 1889  
TMU, NHMO | BOLD:ADY0491 (1:1) | LC
- Phronia vitrea* Plassmann, 1999  
TMU | BOLD:ADF2868 (1:1) | LC
- Phronia willistoni* Dziedzicki, 1889  
TMU | BOLD:ADX8860 (1:1) | LC
- Phronia* GS-spB  
NHMO | BOLD:ACB1652 (1:1) | NEW
- Phronia* GS-spC  
NHMO | BOLD:AAL9135 (1:1) | NEW
- Phronia* JKJ-spA  
TMU | BOLD:ABA3300 (1:1) | NEW
- Phronia* JKJ-spB  
TMU | BOLD:ADX9816 (1:1) | NEW
- Phronia* JKJ-spD  
TMU | PENDING | NEW
- Phronia* JKJ-spE  
TMU | BOLD:ABA3510 (2:1) | NEW  
shares BIN with *Phronia nigricornis*
- Phronia* JKJ-spF  
TMU | BOLD:ACW2190 (1:1) | NEW
- Phronia* JKJ-spG  
TMU | BOLD:ABA3293 (1:1) | NEW
- Phronia* JKJ-spH  
TMU | BOLD:ABU7058 (1:1) | NEW
- Phronia* JKJ-spI  
TMU | BOLD:ACY9464 (1:1) | NEW
- Phronia* JKJ-spJ  
TMU | BOLD:ACM2924 (1:1) | NEW
- Phronia* JKJ-spL  
TMU | BOLD:ADD1476 (1:1) | NEW
- Phronia* JKJ-spM  
TMU | BOLD:AEE3789 (1:1) | NEW
- Phronia* JKJ-spN  
TMU | BOLD:AEA4465 (1:1) | NEW
- Phronia* JKJ-spO  
TMU | PENDING | NEW
- Phronia* JS-spB  
TMU | BOLD:ACW2189 (1:1) | NEW
- Phthinia congenita* Plassmann, 1984  
TMU | BOLD:ACT4683 (1:1) | NEW
- Phthinia humilis* Winnertz, 1864  
TMU, NHMO | BOLD:ACF6717 (2:1) | LC  
shares BIN with *Phthinia mira*
- Phthinia mira* (Ostroverkhova, 1977)  
TMU | BOLD:ACF6717 (2:1) | LC  
shares BIN with *Phthinia humilis*
- Phthinia setosa* Zaitzev, 1994  
TMU | BOLD:ADI5707/AEF0334 (1:2) | VU
- Phthinia winnertzi* Mik, 1869  
TMU, NHMO | BOLD:ACJ6353 (1:1) | LC
- Phthinia zaitzevi* Plassmann, 1990  
TMU | BOLD:ADA8842 (1:1) | NEW
- Phthinia* JKJ-spA  
TMU | BOLD:ADJ2406 (1:1) | NEW
- Platurocypta punctum* (Stannius, 1831)  
TMU, NHMO | BOLD:ACI4115 (1:1) | LC
- Platurocypta testata* (Edwards, 1925)  
TMU, NHMO | BOLD:ACF9393 (1:1) | LC
- Polylepta borealis* Lundstrom, 1912  
TMU, NHMO | BOLD:ABW8794 (1:1) | LC



- Polylepta guttiventris* (Zetterstedt, 1852)  
TMU, NHMO | BOLD:ACB2068 (1:1) | LC
- Pseudexechia altaica* Zaitzev, 1988  
TMU | BOLD:ACZ6252 (1:1) | NEW
- Pseudexechia aurivernica* Chandler, 1978  
TMU, NHMO | BOLD:ACS4781 (1:1) | LC
- Pseudexechia canalicula* (Johannsen, 1912)  
TMU | BOLD:ACZ2166 (1:1) | DD
- Pseudexechia parallela* (Edwards, 1925)  
TMU | BOLD:ACS9483 (1:1) | NEW
- Pseudexechia pectinacea* (Ostroverkhova, 1979)  
TMU | BOLD:ACY0706 (1:1) | NEW
- Pseudexechia trilobata* Ostroverkhova, 1979  
TMU | BOLD:ADF2803 (1:1) | NEW
- Pseudexechia trisignata* (Edwards, 1913)  
TMU, NHMO | BOLD:ACT5217 (1:1) | LC
- Pseudexechia trivittata* (Staeger, 1840)  
TMU | BOLD:ACZ0466 (1:1) | NE
- Pseudexechia tuomikoskii* Kjaerandsen, 2009  
TMU, NHMO | BOLD:ABW6554 (1:1) | NE
- Pseudobrachypeza helvetica* (Walker, 1856)  
TMU, NHMO | BOLD:ACU9051 (1:1) | LC
- Pseudorymosia fovea* (Dziedzicki, 1910)  
TMU, NHMO | BOLD:ACS4119/ADF8984 (1:2) | LC
- Rondaniella dimidiata* (Meigen, 1804)  
TMU, NHMO | BOLD:ABW8814 (1:1) | LC
- Rymosia acta* Dziedzicki, 1910  
TMU | BOLD:ACS4762 (1:1) | LC
- Rymosia affinis* Winnertz, 1864  
TMU | BOLD:ACW8713 (1:1) | LC
- Rymosia armata* Lackschewitz, 1937  
TMU | BOLD:ACZ1367 (1:1) | LC
- Rymosia bifida* Edwards, 1925  
TMU, NHMO | BOLD:ACI9513 (1:1) | LC
- Rymosia britteni* Edwards, 1925  
TMU, NHMO | BOLD:ABU6068 (1:1) | DD
- Rymosia connexa* Winnertz, 1864  
TMU | BOLD:ACZ5585 (1:1) | NEW
- Rymosia fasciata* (Meigen, 1804)  
TMU, NHMO | BOLD:AAX9640 (1:1) | LC
- Rymosia fraudatrix* Dziedzicki, 1910  
TMU, NHMO | BOLD:ACS3031 (1:1) | LC
- Rymosia guttata* Lundstrom, 1912  
TMU | BOLD:ACZ5587/ADB8296/ACS4764 (1:3) | NT
- Rymosia istræ* Zaitzev, 1993  
TMU, NHMO | BOLD:ACS3160 (1:1) | DD
- Rymosia lacki* Edwards, 1935  
TMU | BOLD:ACG1604 (1:1) | NEW
- Rymosia pinnata* Ostroverkhova, 1979  
TMU | BOLD:ADA3409/ADA5067 (1:2) | NEW
- Rymosia placida* Winnertz, 1864  
TMU, NHMO | BOLD:ACS9747 (1:1) | LC
- Rymosia sagulata* Plassmann, 1976  
TMU | BOLD:ADA4284 (1:1) | NEW
- Rymosia setiger* Dziedzicki, 1910  
TMU | BOLD:ACU8146 (1:1) | LC
- Rymosia signatipes* (Wulp, 1859)  
TMU, NHMO | BOLD:ACT0608/ACW8971 (1:2) | LC
- Rymosia spinipes* Winnertz, 1864  
TMU | BOLD:ADR4567 (1:1) | LC
- Rymosia thorneae* Chandler, 1994  
TMU | BOLD:ADF4511 (1:1) | NEW
- Rymosia virens* Dziedzicki, 1910  
TMU | BOLD:ACJ5208 (1:1) | NEW
- Rymosia* JKJ-spA  
TMU | BOLD:ADF2672 | NEW
- Rymosia* JKJ-spC  
TMU | BOLD:ACS4763/ADF4512 (1:2) | NEW
- Rymosia* JKJ-spF  
TMU | BOLD:ACT2141 (1:1) | NEW
- Rymosia* JKJ-spG  
TMU | FAILED | NEW
- Rymosia* JKJ-spH  
TMU | BOLD:ADG1920 (1:1) | NEW
- Rymosia* JKJ-spI  
TMU | BOLD:ADB8263 (1:1) | NEW
- Rymosia* JKJ-spJ  
TMU | BOLD:AEA3825 (1:1) | NEW
- Rymosia* JKJ-spK  
TMU | BOLD:ADF2672 (1:1) | NEW
- Saigusaia flaviventris* (Strobl, 1894)  
TMU, NHMO | BOLD:ACD8279 (1:1) | LC
- Sceptonia concolor* Winnertz, 1864  
TMU, NHMO | FAILED | LC
- Sceptonia costata* (Wulp, 1858)  
TMU, NHMO | FAILED | LC
- Sceptonia demejerei* Bechev, 1997  
TMU | BOLD:AAI0703 (1:1) | LC
- Sceptonia flavipuncta* Edwards, 1925  
TMU | BOLD:ACP8177 (1:1) | NEW
- Sceptonia fumipes* Edwards, 1925

- TMU, NHMO | BOLD:ACF1970/ACC1392/  
ACL0789/ACY1723/ADD2470/ADG0361/  
AEA6321 (1:7) | LC
- Sceptonia fuscipalpis* Edwards, 1925  
TMU, NHMO | BOLD:ABU6106 (1:1) | LC
- Sceptonia hamata* Sevcik, 2004  
TMU | FAILED | NEW
- Sceptonia longisetosa* Sevcik, 2004  
TMU | BOLD:AAG4902 (1:1) | LC
- Sceptonia membranacea* Edwards, 1925  
TMU | BOLD:AAP8860 (1:1) | NEW
- Sceptonia nigra* (Meigen, 1804)  
TMU, NHMO | BOLD:ACP3236/ACF1969  
(1:2) | LC
- Sceptonia pughi* Chandler, 1991  
TMU | BOLD:AEA6026 (1:1) | LC
- Sceptonia regni* Chandler, 1991  
TMU | FAILED | LC
- Sceptonia thaya* Sevcik, 2004  
TMU | BOLD:AAI0702 (1:1) | LC
- Sciophila acuta* Garrett, 1925  
TMU | PENDING | NEW
- Sciophila adamsi* Edwards, 1925  
TMU | BOLD:ADY1311 (1:1) | LC
- Sciophila antiqua* Chandler, 1987  
TMU | BOLD:ADT6662 (1:1) | NEW
- Sciophila balderi* Zaitzev & Okland, 1994  
TMU | BOLD:ADR1691 (1:1) | VU
- Sciophila bicuspidata* Zaitzev, 1982  
TMU | BOLD:ACL3021/ACW2908 (1:2) | EN
- Sciophila buxtoni* Freeman, 1956  
TMU | BOLD:AAZ7973 (1:1) | NT
- Sciophila cliftoni* Edwards, 1925  
TMU | BOLD:ACW3533 (1:1) | NEW
- Sciophila cornuta* Zaitzev, 1981  
TMU | PENDING | NEW
- Sciophila fenestella* Curtis, 1837  
TMU, NHMO | BOLD:ACL7524 (1:1) | LC
- Sciophila fridolini* Stackelberg, 1943  
TMU, NHMO | BOLD:ADI8843 (1:1) | LC
- Sciophila geniculata* Zetterstedt, 1838  
TMU, NHMO | BOLD:ACZ7980 (1:1) | LC
- Sciophila hirta* Meigen, 1818  
TMU, NHMO | BOLD:AAE2681/ABU6119  
(1:2) | LC
- Sciophila interrupta* (Winnertz, 1864)  
TMU, NHMO | PENDING | VU
- Sciophila karelica* Zaitzev, 1982  
TMU | BOLD:ABU6113 (1:1) | NEW
- Sciophila krysheni* Polevoi, 2001  
TMU | BOLD:ACM2864/ADY7292 (1:2) |  
NEW
- Sciophila limbatella* Zetterstedt, 1852  
TMU, NHMO | BOLD:ACW1790 (1:1) | NT
- Sciophila lutea* Macquart, 1826  
TMU, NHMO | BOLD:AAG4944 (1:1) | LC
- Sciophila minuta* Zaitzev, 1982  
TMU | BOLD:ACB1879 (1:1) | NEW
- Sciophila modesta* Zaitzev, 1982  
NHMO | – | NEW
- Sciophila nigrinitida* Landrock, 1925  
TMU, NHMO | BOLD:AAJ6335 (1:1) | LC
- Sciophila nonnisilva* Hutson, 1979  
TMU | BOLD:AAZ7972 (1:1) | LC
- Sciophila plurisetosa* Edwards, 1921  
TMU | BOLD:ABU6114 (1:1) | NEW
- Sciophila pomacea* Chandler, 2006  
TMU | BOLD:ACU9134 (1:1) | LC
- Sciophila rufa* Meigen, 1830  
TMU | BOLD:ACM2865 (1:1) | LC
- Sciophila salassea* Matile, 1983  
TMU | BOLD:ADH3439 (1:1) | NT
- Sciophila spinifera* Zaitzev, 1982  
TMU, NHMO | BOLD:ABU6116 (1:1) | LC
- Sciophila subbicuspidata* Zaitzev & Okland, 1994  
TMU | BOLD:ACC1380 (1:1) | LC
- Sciophila thoracica* Staeger, 1840  
TMU, NHMO | BOLD:ACY5557 (1:1) | LC
- Sciophila varia* (Winnertz, 1864)  
TMU, NHMO | BOLD:ADQ9830 (1:1) | LC  
BIN based on barcoded larvae only
- Sciophila yakutica* Blagoderov, 1992  
TMU | BOLD:ABW9419 (1:1) | LC
- Sciophila zaitzevi* Bechev, 1988  
TMU | – | NEW
- Sciophila* GS-spA  
TMU | BOLD:ABU6115 (1:1) | NEW
- Sciophila* JKJ-spC  
TMU | BOLD:ACR6199 (1:1) | NEW
- Sciophila* JKJ-spD  
TMU | FAILED | NEW
- Sciophila* JKJ-spE  
TMU | BOLD:ADI9396 (1:1) | NEW
- Sciophila* JKJ-spF  
TMU | BOLD:ADJ0663 (1:1) | NEW

- Speolepta leptogaster* (Winnertz, 1864)  
TMU, NHMO | BOLD:ACJ6457/ADA6003  
(1:2) | LC
- Stigmatomeria crassicornis* (Stannius, 1831)  
TMU, NHMO | BOLD:AAJ6370 (1:1) | LC
- Stigmatomeria obscura* (Winnertz, 1864)  
TMU | BOLD:ABA1467 (1:1) | LC
- Synapha fasciata* Meigen, 1818  
TMU, NHMO | BOLD:ADD0786 (1:1) | LC
- Synapha vitripennis* (Meigen, 1818)  
TMU, NHMO | BOLD:AAJ7922/ADQ8260  
(1:2) | LC
- Synplasta bayardi* (Matile, 1971)  
TMU | BOLD:ACW8668 (1:1) | NEW
- Synplasta dulcia* (Dziedzicki, 1910)  
TMU | BOLD:ACN6966 (1:1) | NEW
- Synplasta exclusa* (Dziedzicki, 1910)  
TMU | BOLD:ACZ8968 (1:1) | NEW
- Synplasta gracilis* (Winnertz, 1864)  
TMU | BOLD:ACW9844 (1:1) | LC
- Synplasta ingeniosa* (Kidd, 1969)  
TMU | BOLD:ACS4687 (1:1) | NEW
- Synplasta karelica* Zaitzev, 1993  
TMU | BOLD:ACG6319 (1:1) | NEW
- Synplasta praeformida* (Dziedzicki, 1910)  
TMU | BOLD:ACB1842 (1:1) | NEW
- Synplasta pseudingeniosa* Zaitzev, 1993  
TMU | BOLD:ABA1502 (1:1) | DD
- Synplasta rufilatera* (Edwards, 1941)  
TMU | BOLD:AAP4733 (1:1) | NEW
- Synplasta* JKJ-spB  
TMU | – | NEW
- Synplasta* JKJ-spC  
TMU | BOLD:ACJ3637 (1:1) | NEW
- Sytemna daisetsuzana* Okada, 1938  
TMU, NHMO | BOLD:ACM2799 (1:1) | NT
- Sytemna elegantia* Plassmann, 1978  
TMU | BOLD:ABW6599 (1:1) | LC
- Sytemna hungarica* (Lundstrom, 1912)  
TMU, NHMO | BOLD:ABV3941 (1:1) | LC
- Sytemna morosa* Winnertz, 1864  
TMU | BOLD:ADF3113/ADF8591 (1:2) |  
NEW
- Sytemna nitidula* Edwards, 1925  
TMU, NHMO | BOLD:ABV4436 (1:1) | LC
- Sytemna penicilla* Hutson, 1979  
TMU | BOLD:ABV4435 (1:1) | LC
- Sytemna relictata* (Lundstrom, 1912)  
TMU, NHMO | BOLD:ACY1448 (1:1) | LC
- Sytemna setigera* (Lundstrom, 1914)  
TMU | BOLD:ADA6873/ABV4432/  
ACS4413 (1:3) | LC
- Sytemna stylata* Hutson, 1979  
TMU, NHMO | BOLD:ABW6600 (1:1) | LC
- Sytemna stylatoides* Zaitzev, 1994  
TMU | BOLD:ACY1684 (1:1) | NEW
- Tarnania dziedzickii* (Edwards, 1941)  
TMU, NHMO | BOLD:ACW8566 (1:1) | DD
- Tarnania fenestralis* (Meigen, 1818)  
TMU, NHMO | BOLD:ACR1999 (1:1) | LC
- Tarnania nemoralis* (Edwards, 1941)  
TMU | BOLD:ACU8257 (1:1) | VU
- Tarnania tarnanii* (Dziedzicki, 1910)  
TMU, NHMO | BOLD:ABW8792 (1:1) | LC
- Tetragoneura ambigua* (Grzegorzek, 1885)  
TMU | BOLD:ADH2272 (1:1) | NEW
- Tetragoneura obirata* Plassmann, 1990  
TMU, NHMO | BOLD:ADG0324 (1:1) | DD
- Tetragoneura sylvatica* (Curtis, 1837)  
TMU, NHMO | BOLD:AAG4900 (1:1) | LC
- Trichonta aberrans* Lundstrom, 1911  
TMU | PENDING | VU
- Trichonta apicalis* Strobl, 1898  
TMU | BOLD:ACR1754 (1:1) | LC
- Trichonta atricauda* (Zetterstedt, 1852)  
TMU, NHMO | BOLD:AAU4985 (1:1) | LC
- Trichonta beata* Gagne, 1981  
TMU, NHMO | BOLD:ACJ6434/ADY5987  
(1:2) | VU
- Trichonta bicolor* Landrock, 1912  
TMU | BOLD:ABA3358 (1:1) | LC
- Trichonta bifida* Lundstrom, 1909  
TMU | BOLD:ABW9582 (1:1) | NE
- Trichonta brevicauda* Lundstrom, 1906  
TMU | BOLD:ABV0806 (1:1) | LC
- Trichonta clara* Gagne, 1981  
TMU | BOLD:ADF3766 (1:1) | NEW
- Trichonta clavigera* Lundstrom, 1913  
TMU | BOLD:ADF3765 (1:1) | NEW
- Trichonta comica* Gagne, 1981  
TMU, NHMO | – | LC
- Trichonta conjungens* Lundstrom, 1909  
TMU | BOLD:AEE4671/ACR0271 (1:2) |  
NEW

- Trichonta delicata* Gagne, 1981  
TMU | BOLD:AAL9147 (1:1) | VU
- Trichonta excisa* Lundstrom, 1916  
TMU | BOLD:ADV2732 (1:1) | LC
- Trichonta eximia* Gagne, 1981  
TMU | BOLD:ADG9892 (1:1) | NEW
- Trichonta facilis* Gagne, 1981  
TMU, NHMO | BOLD:ACU9685 (1:1) | LC
- Trichonta falcata* Lundstrom, 1911  
TMU | – | LC
- Trichonta fissicauda* (Zetterstedt, 1852)  
TMU, NHMO | BOLD:ADA8978 (1:1) | LC
- Trichonta flavicauda* Lundstrom, 1914  
TMU | BOLD:ADY4603 (1:1) | LC
- Trichonta foeda* Loew, 1869  
TMU | BOLD:AEE4895 (1:1) | NEW
- Trichonta fragilis* Gagne, 1981  
TMU, NHMO | PENDING | LC
- Trichonta generosa* Gagne, 1981  
NHMO | – | DD
- Trichonta girschneri* Landrock, 1912  
TMU | BOLD:ABW9583 (1:1) | LC
- Trichonta hamata* Mik, 1880  
TMU, NHMO | BOLD:ABA1597 (1:1) | LC
- Trichonta lyrica* Gagne, 1981  
NHMO | – | VU
- Trichonta melanura* (Staeger, 1840)  
TMU, NHMO | BOLD:ABU5984 (1:1) | LC
- Trichonta nigrifula* Edwards, 1925  
TMU | BOLD:ACB1761 (1:1) | NEW
- Trichonta paraterminalis* Zaitzev, 1999  
TMU | BOLD:ACW2320 (1:1) | NEW
- Trichonta patens* Johannsen, 1912  
TMU, NHMO | BOLD:ACB9217 (1:1) | DD
- Trichonta subfusca* Lundstrom, 1909  
TMU, NHMO | BOLD:AAH8078 (1:1) | LC
- Trichonta submaculata* (Staeger, 1840)  
TMU, NHMO | BOLD:AAU4912/ACJ2631/  
ACB1761 (1:3) | LC
- Trichonta subterminalis* Zaitzev & Menzel, 1996  
TMU | BOLD:ACB2155 (1:1) | LC
- Trichonta terminalis* (Walker, 1856)  
TMU, NHMO | BOLD:AAJ8386 (1:1) | LC
- Trichonta trifida* Lundstrom, 1909  
TMU | BOLD:ADO7293 (1:1) | NEW
- Trichonta tristis* (Strobl, 1898)  
TMU, NHMO | BOLD:ADY2587 (1:1) | VU
- Trichonta trivittata* Lundstrom, 1916  
TMU, NHMO | BOLD:ACI3865 (2:1) | VU  
shares BIN with *Trichonta* JKJ-spC
- Trichonta venosa* (Staeger, 1840)  
TMU, NHMO | BOLD:ABA1523 (1:1) | LC
- Trichonta vitta* (Meigen, 1830)  
TMU | BOLD:AAG4888/ACJ2631 (1:2) | LC
- Trichonta vulcani* (Dziedzicki, 1889)  
TMU, NHMO | BOLD:ADL1998 (1:1) | LC
- Trichonta vulgaris* Loew, 1869  
TMU | BOLD:ADD1898/ADY1465 (1:2) | LC
- Trichonta* JKJ-spA  
TMU | BOLD:ACF9596 (1:1) | NEW
- Trichonta* JKJ-spB  
TMU | BOLD:ADJ3194 (1:1) | NEW
- Trichonta* JKJ-spC  
TMU | BOLD:ACI3865 (2:1) | NEW  
shares BIN with *Trichonta trivittata*
- Trichonta* JKJ-spD  
TMU | BOLD:ADN9281 (1:1) | NEW
- Trichonta* JKJ-spE  
TMU | BOLD:ABV0812 (1:1) | NEW
- Trichonta* JKJ-spF  
TMU | BOLD:ACI8376 (1:1) | NEW
- Trichonta* JKJ-spG  
TMU | BOLD:ACU8111 (1:1) | NEW
- Trichonta* JKJ-spH  
TMU | PENDING | NEW
- Trichonta* JS-spA  
TMU | BOLD:ABW8806 (1:1) | NEW
- Zygomysia angusta* Plassmann, 1977  
TMU | BOLD:ACC7486 (1:1) | LC
- Zygomysia humeralis* (Wiedemann, 1817)  
TMU | BOLD:AAZ6371 (1:1) | LC
- Zygomysia kiddi* Chandler, 1991  
TMU | – | LC
- Zygomysia notata* (Stannius, 1831)  
TMU, NHMO | BOLD:ABW9283/ACC5637  
(1:2) | LC
- Zygomysia pictipennis* (Staeger, 1840)  
TMU | BOLD:ABW9135 (1:1) | LC
- Zygomysia pseudohumeralis* Caspers, 1980  
TMU | BOLD:ADB9103 (1:1) | LC
- Zygomysia semifusca* (Meigen, 1818)  
TMU, NHMO | FAILED | LC
- Zygomysia valeriae* Chandler, 1991  
TMU | BOLD:AAZ5527 (1:1) | LC

*Zygomomyia valida* Winnertz, 1864  
TMU | BOLD: AAY5526 (1:1) | LC  
*Zygomomyia vara* (Staeger, 1840)  
TMU | BOLD: AAY8079 (1:1) | LC  
*Zygomomyia zaitzevi* Chandler, 1991  
TMU | BOLD: AAY5267 (1:1) | LC  
*Zygomomyia* JKJ-spA  
TMU | BOLD: ADF3515 (1:1) | NEW  
*Zygomomyia* JS-spA  
TMU | BOLD: ACQ8661/AEF0247 (1:2) |  
NEW

### The B-checklist, 14 published species without validated vouchers

Here we list sources for, and briefly comment on 14 additional species published from Norway for which we have not been able to trace back and verify any voucher material. We assume that the majority, is correctly reported from Norway, but we refrain to include them in the A-checklist until vouchers have been located and validated, or new records are found, determined and deposited in museum collections. Most species listed here concern records published by Økland (1996) and Økland & Zaitzev (1997). The original voucher material for these important and pionering studies, has long been searched for in vain and must be regarded as lost.

#### *Boletina cornuta* Zaitzev, 1994

Sources: Økland (1996), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Søli (2006)

Remarks: The original voucher material for the records published by Økland (1996) and Økland & Zaitzev (1997), is regarded as lost. The species, is scarcely recorded in both Sweden and Finland, so it is likely that it occurs in Norway. Its inclusion in the A-list pending validated records.

#### *Dynatosoma rufescens* (Zetterstedt, 1838)

Sources: Siebke (1877), Hackman et al. (1988), Økland (1996), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Søli (2006)

Remarks: We are unable to trace any voucher specimens for the Norwegian record given by Siebke (1877) and repeated in Catalogue of

Palaeartic Diptera (Hackman et al. 1988). The original voucher material for the records published by Økland (1996) and Økland & Zaitzev (1997), are also regarded as lost. The species is not common, but widely recorded in both Sweden and Finland, so it is likely that it occurs in Norway. Its inclusion in the A-list pending validated records.

#### *Exechia nigrofuscusca* Lundstrom, 1909

Sources: Chandler (2005), Gammelmo & Søli (2006)

Remarks: We are unable to trace any voucher specimens for the country record given by Chandler (2005), repeated in Gammelmo & Søli (2006). The species is rare, but recorded in both Sweden and Finland, so it is likely that it occurs in Norway. Its inclusion in the A-list pending validated records.

#### *Leia bimaculata* (Meigen, 1804)

Sources: Hackman et al. (1988), Økland & Zaitzev (1997), Gammelmo & Søli (2006)

Remarks: We are unable to trace any voucher specimens for the country record given in Catalogue of Palaeartic Diptera (Hackman et al. 1988). The original voucher material for the records published by Økland & Zaitzev (1997), is also regarded as lost. The species is widely recorded in both Sweden and Finland, so it is likely that it occurs in Norway too. Its inclusion in the A-list pending validated records.

#### *Leia crucigera* Zetterstedt, 1838

Sources: Hackman et al. (1988), Chandler (2005), Gammelmo & Søli (2006)

Remarks: We are unable to trace any voucher specimens for the country record given in Catalogue of Palaeartic Diptera (Hackman et al. 1988), repeated in Chandler (2005) and Gammelmo & Søli (2006). The species is sparsely recorded in both Sweden and Finland, so it is likely that it occurs in Norway too. Its inclusion in the A-list pending validated records.

#### *Mycetophila immaculata* Dziedzicki, 1884

Sources: Økland (1996), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Søli (2006)

Remarks: The original voucher material for the records published by Økland (1996) and Økland & Zaitzev (1997), is regarded as lost. The species, is scarcely recorded in both Sweden and Finland, so it is likely that it occurs in Norway too. Its inclusion in the A-list pending validated records.

***Mycetophila lapponica* Lundstrom, 1906**

Sources: Økland (1996), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Sølvi (2006), Sølvi & Rindal (2012)

Remarks: The original voucher material for the records published by Økland (1996) and Økland & Zaitzev (1997), is regarded as lost. The material for the record published in Sølvi & Rindal (2012) has been re-examined and found to be a misidentification of *Mycetophila* GS-spA and *Mycetophila uliginosa* Chandler, 1988. The species, was described from northern Finland and is scarcely recorded in both Sweden and Finland, so it is likely that it also occurs in Norway. Its inclusion in the A-list pending validated records.

***Mycomya (Mycomya) mituda* Vaisanen, 1980**

Sources: Økland (1996), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Sølvi (2006)

Remarks: The original voucher material for the records published by Økland (1996) and Økland & Zaitzev (1997), is regarded as lost. The species described from Finland, is scarcely recorded in both Sweden and Finland, and is a likely species to occur in Norway. Its inclusion in the A-list pending validated records.

***Mycomya (Mycomya) norna* Vaisanen, 1984**

Sources: Økland (1996), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Sølvi (2006)

Remarks: The original voucher material for the records published by Økland (1996) and Økland & Zaitzev (1997), is regarded as lost. The species, was described from and is scarcely recorded in Finland, so it is likely that it also occurs in Norway. Its inclusion in the A-list pending validated records.

***Mycomya (Mycomyopsis) penicillata* (Dziedzicki, 1885)**

Sources: Økland (1996), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Sølvi (2006)

Remarks: The original voucher material for the records published by Økland (1996) and Økland & Zaitzev (1997), is regarded as lost. The species is widely recorded in both Sweden and Finland, so it is likely that it occurs in Norway too. Its inclusion in the A-list pending validated records.

***Sceptonia tenuis* Edwards, 1925**

Sources: Økland (1996), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Sølvi (2006)

Remarks: The original voucher material for the records published by Økland (1996) and Økland & Zaitzev (1997), is regarded as lost. The species is widely recorded in both Sweden and Finland, so it is likely that it occurs in Norway too. Its inclusion in the A-list pending validated records.

***Sciophila distincta* Garrett, 1925**

Sources: Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Sølvi (2006)

Remarks: The original voucher material published in Økland & Zaitzev (1997), is regarded as lost. This species, was originally described from North America, and the Norwegian records are the only one from the Palaearctic Region. The fact that this species, to the best of our knowledge, has never been illustrated may explain why it is not recorded elsewhere from Europe. A.I. Zaitzev in his Holarctic revision of the genus *Sciophila* Meigen, 1818 (Zaitzev 1982) apparently did not study the type material, deposited at British Museum of Natural History, and thus did not illustrate the species. Examination of the type material is crucial to clarify if it may hide among the assumed new species recorded from Norway.

***Sciophila exserta* Zaitzev, 1982**

Sources: Økland (1996), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Sølvi (2006)

Remarks: The original voucher material for the records published by Økland (1996) and Økland & Zaitzev (1997), is regarded as lost. This species, was originally described from North America and the Norwegian records are the only one from the Palaearctic Region. The fact that A.I. Zaitzev described and illustrated this species makes it highly likely that his determination of the Norwegian record was correct. The species belongs to a difficult species group, and may be confused with other species in Europe.

### ***Trichonta comis* Gagne, 1981**

Sources: Søli (1994), Økland & Zaitzev (1997), Chandler (2005), Gammelmo & Søli (2006)

Remarks: The original voucher material published by Søli (1994) and Økland & Zaitzev (1997), is regarded as lost. The rarely recorded species, was described from Finland, so it is likely that it occurs in Norway too. Its inclusion in the A-list pending validated records.

### **Unconfirmed, grey-published species on Norway's Species Map Service (Artskart)**

Despite contacting the contributor, we have not received any confirmation, nor information on the depository of reference material for the following species.

### ***Neoempheria bimaculata* (von Roser, 1840)**

Sources: Norway's Species Map Service (Artskart).

## **Discussion**

The revised checklist of Norwegian Mycetophilidae lists 821 species, all with confirmed vouchers, and another 14 species previously published but without vouchers. Excluding assumed undescribed species, 703 vouchered species remains. This is about the same species diversity of Mycetophilidae as reported from Finland (Jakovlev 2014), with additions by Salmela & Kaunisto (2015), Salmela et al. (2016),

Salmela & Kolsar (2017) and Kjærandsen et al. (2020). It is slightly more than is known from Sweden (Kjærandsen 2016). Yet, Finland shares only some 87 %, and Sweden some 92 % of its species with Norway. Including the 118 assumed undescribed species, Norway has by far the highest diversity of Mycetophilidae reported to date in any Nordic country. Still, more species will undoubtedly emerge in the future, but looking at the country as a whole, we assume the present set of records depict a mean, representing the major regions and different landscapes in a fair way (Fig. 1). Still, mountainous areas above the treeline remains poorly covered in Norway, and among the counties, Agder, Rogaland and Trøndelag remain among the least studied.

For the majority of species included in the checklist (92 %), we present a link between a species' name based on morphological identification and its barcodes and assigned BINs. Such a high degree of barcode coverage linked to morphological identified materials has never before, been presented for the family Mycetophilidae, and probably not for any other family of Diptera in Norway. It is our expectation that this objective reference to BINs, will increase the reproducibility of this study tremendously, as it will enable examination and verification of our determinations by others through the BOLD archive. This will meet the demand for a higher degree of replicability in entomological biodiversity surveys as pointed out by e.g. Owens (2018) and Monckton et al. (2020). The same could in theory, be achieved by re-checking the thousands of vouchers deposited in our museum collections, but the BIN system clearly makes this process much more efficient as taxonomists all over the world now can check our determinations against their own material.

Given the fragmented and often low quality descriptions and illustrations available in the literature, it is likely that our list still covers some errors. Regular contact with other experts in the field, however, allow us to discuss our interpretations of troublesome species and thus eliminate the chances for misidentifications. For numerous species, we have checked type materials and learned how to properly identify

them. Nevertheless, with a diversity as displayed by Mycetophilidae, our determinations, are still based largely on original or subsequently published illustrations of the species terminalia. Hence, the barcodes and assigned BINs on BOLD have truly been a great support in our identification of species. The sequence data allows us to sort out difficult species complexes and straighten misunderstandings about species identities, as well as correcting the inevitable, and frankly, not insignificant, self-error rate. The process of building the reference library on BOLD has been gradual and iterative over the last decade, and literally thousands of hours have been spent “post-sequence” to go through the BINs and recheck specimens morphologically in order to correct errors and where appropriate emend the definition of the species. In the process numerous previously overlooked species were uncovered.

The *Trichonta vulcani* species group (Figure 3) makes a good case to illustrate how the species interpretations have changed and narrowed over time. Gagné (1981), in his Holarctic monograph of *Trichonta*, failed to include *Trichonta tristis* (described as *Phronia* and not illustrated in the original publication) and regarded *Trichonta trifida* a junior synonym of *Trichonta vulcani*, although he did not check any type material. As *Trichonta vulcani*, Gagné (1981) probably illustrated what we now believe is a species unknown to science, *Trichonta* JKJ-spF, which by BIN association has shown to be widely distributed in North-America as well as in Norway. Zaitzev (2003) recognized and illustrated *Trichonta tristis* as a separate species, but retained *Trichonta trifida* as a junior synonym of *Trichonta vulcani*. Our DNA barcoding clearly separates between four different BINs from Norway, corresponding to these four rather similar yet morphologically distinct species. We consider, however, it naive to believe that the machine generated BIN assignments on BOLD perfectly reflects the true speciation events among fungus gnats. There are 39 apparent conflicts where two to four morphologically distinct and separated species merge into the same BIN. In these cases, we retain the species as is, pending future studies involving other gene regions to prove the unlikely scenario that they actually

belong to polymorphic species. A much larger proportion concerns cases where a morphological identified species split into two or more BINs. For the majorities of such cases, we have re-examined the specimens looking for morphological evidence that they actually are different species. Usually, then, the BINs reflects closely related species pairs, with one or more unnamed species in addition to the described one. In a few cases, old synonyms have been revived in this process. Still, for 85 cases of BIN splits, we currently retain the species as one name with two or several different BINs, pending further studies.

By experts it has long been realized that the Nordic fauna of Mycetophilidae holds a substantial proportion of undescribed species, and that the finding of new such undescribed species greatly surpass the formal description of new species. In the Swedish checklist of fungus gnats (Kjærandsen et al. 2007), 34 species were assumed to be new to science, of which the majority still today remains undescribed. (These species are also included as undescribed in the present list). In the grey-literature, specifically the BOLD database, these undescribed species have appeared under their informal name for many years. This happens inevitably as the species are both associated with unique barcodes and BINs, and can hardly be ignored. Without a large scale, focused effort to describe them, the list of species assumed to be new to science should continue to grow, although for the now rather well studied Norwegian fauna of Mycetophilidae perhaps at a declining rate.

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