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Annotated Checklist of the European Dacnusini and the *Dapsilarthra* genus group of the Alysiini (Hymenoptera: Braconidae, Alysiinae)

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Abstract

An annotated checklist of the European Dacnusini (426 species) and the *Dapsilarthra* genus group of the Alysiini (16 species) (Hymenoptera: Braconidae, Alysiinae) is provided. In addition to a species list with synonymy, further details are given of: (i) intrageneric groupings; (ii) a reference to each species' treatment in the unindexed and multipart major revisions of Nixon & Griffith as well as the long keys of Tobias; (iii) a hypothesis about host range for the 60% of species which have been reared, and the evidence upon which it is based; (iv) whether a DNA barcode sequence is available (30% of species); (v) for species published after Griffiths' revision a reference to similar species; (vi) any further relevant notes. One new synonym is established: *Chorebus luzulae* Griffiths **syn. nov.** is synonymised with *Chorebus aphantus* Marshall. *Mesocrina* Förster is excluded from the *Dapsilartha* genus group and whether *Grandia* Goidanich and *Lodbrokia* Hedqvist are in the Dacnusini is considered uncertain.

Key words: Parasitoids, host range, DNA barcode, intrageneric grouping, synonymy

Introduction

The Dacnusini is a tribe of small hymenopteran wasps in the subfamily Alysiinae of the family Braconidae. We recognise 426 described species in 23 genera in Europe, and they are exclusively parasitoids of cyclorrhaphan (with one exception acalypteran) Diptera with many species attacking leaf miners in the family Agromyzidae. The majority of species are relatively host specific and, unlike most groups of microhymenopterans, the biology of a large fraction (60% in Europe) of the tribe is known. The biological control potential of several species has been investigated, and one species, *Dacnusa sibirica* Telenga, is widely used in greenhouses against agromyzid leaf miners (*Liriomyza* spp.).

The rest of the Alysiinae is placed in the tribe Alysiini which is probably paraphyletic with respect to the Dacnusini (Wharton 1984). It too exclusively parasitises cyclorrhaphan Diptera, though from a broader range of families. Within the Alysiini, species in the *Dapsilathra* genus group (16 European species in 4 genera) attack phytophagous flies and are often reared from the same or similar hosts as the Dacnusini. It has been suggested that the Dacnusini may have evolved from this group of insects. They are included here as anyone studying Dacnusini biology will encounter *Dapsilarthra* and related genera.

There have been three main phases of work on Dacnusini taxonomy. First, in the 19th century, authors such as Nees, Haliday, Förster, Thomson and Marshall described about a quarter (24%) of the species known today and initiated work on their generic classification. Second, in the mid 20th century, Nixon & Griffiths, both working in the UK, described many more species, and established the generic classification largely used today (Griffiths 1964; 1967a; b; c; 1968a; b; 1984; Nixon 1937; 1943; 1944; 1945; 1946; 1948; 1954). Griffiths' revision, the most recent, was unusual (and significant) in being one of the first applications of explicit phylogenetic methods in taxonomy, and on being based on extensive reared material. Finally, since Griffiths' revision a relatively small number of species and genera have been described though there has been extensive work on East Palaearctic Dacnusini by Tobias and colleagues (Tobias 1998) that has a bearing on the European fauna. Nixon & Griffiths concentrated on species in *Dacnusa* and related genera and several genera (in particular *Chaenusa* and *Coelinidea*) have no modern treatment. The *Dapsilarthra* genus group has been revised several times over the last 70 years by Königsmann (1959a; b), Griffith (*loc. cit.*) and van Achterberg (1983; 2014).

We are now entering a fourth phase of Dacnusini taxonomy in which molecular data will play an increasingly important role. Already (August 2023) the DNA Barcode of Life Database (BOLD) holds CO1 (the barcode locus) sequence data of ~4500 individuals and 30% of species of European Dacnusini and this number will grow rapidly as the costs of mass-sequencing continue to fall. There is a risk that molecular and morphological taxonomies may split and diverge unless active measure are taken to ensure they remain joined. The first goal of the annotated checklist presented here is to provide an up-to-date and accessible summary of over 200 years of Dacnusini Linnean taxonomy with links to the BOLD database.

We know much about Dacnusini and *Dapsilarthra*-group biology thanks to generations of leaf miner and agromyzid specialists rearing their hosts. These taxa are thus a resource for biologists to investigate pattern and process in the evolution of parasitoid host range. This task is hindered by the high fraction of erroneous host records in the literature. Griffiths (*loc. cit.*) performed the excellent service of reviewing all earlier host records of which he was aware and discarding those he believed were incorrect. The second goal of the annotated checklist is to provide

a curated summary and opinion of known host associations. We do this by expressing the host range as a *hypothesis* followed by its supporting evidence (as in Godfray 2021). The use of the term hypothesis underlines the provisional nature of our knowledge and the fact that it may be disproved or updated as new evidence becomes available.

Material & Methods

Below is an example of a species entry (for *Chorebus cylindricus*) with its different components indexed by numbers in square brackets. Background and explanation for each of the numbered components is provided below. Entries for taxa above the species level have the subset of relevant information and for genus include the type species.

***cylindricus* (Telenga, 1934; *Dacnusa*) [1]**

Synonymy: *cybele* (Nixon, 1937, *Dacnusa*); synonymy by Tobias (1986). [2]
Group: 4c. [3]
Literature: Nixon 1944-143 (K 1943-165); Griffiths IV-683 [VII-353] (K IV-682); Tobias (270). [4]
Hosts: Hypothesis—Parasitoid of stem-boring *Melanagromyza* and *Ophiomyia* spp. Evidence—Griffiths (81); NMS (59). Comment—Recorded hosts: *M. lappae, M. eupatorii, M. symphyti, M. fabae, M. astragali, M. moatesi, O. melandryi.* [5]
DNA Barcode: Yes. [6]
Similar species: *C. kirvus.* [7]
Notes: *C. cylindricus* and *didas* are well separated by their barcodes, but less so by the morphological characters in Griffiths IV-682. Host records are supported by barcode sequences. [8]

[1] Taxonomy

We recognise 23 genera of European Dacnusini and note two more as *incertae sedis*. In general, we have taken a conservative view based on current practice, in the expectation that future DNA sequence data will complement morphological studies in resolving current uncertainties. Though we do not treat as formal taxa, the genera can be placed into two broad groups: the *Dacnusa* genus-group (*Amyras, Antrusa, Chaenusa, Chorebus, Coloneura, Coloneurella, Dacnusa, Exotela, Protochorebus, Protodacnusa, Tates, Terebrebus, Victorovita*) and the *Coelinius* genus-group (*Aristelix, Coelinidea, Coelinius, Epimicta, Eucoelinidea, Laotris, Polemochartus, Sarops, Synelix, Trachionus*).

We hope that all species in *Fauna Europaea* (2023) are mentioned in the checklist, those we believe no longer valid in square brackets. As of July 2024, the *Fauna Europaea* website has been unavailable for nine months so we have not been able to finally check this.

Note: Parts II and III of Griffiths' monograph state a publication date of 1966 but they were actually published in 1967 (Belokobylskij *et al.* 2003) which is the date we use here.

[2] Synonymy

A list is provided of published synonyms. One new synonym is established: *Chorebus luzulae* Griffiths **syn. nov.** is synonymised with *Chorebus aphantus* Marshall.

[3] Groups

There is not a settled intrageneric classification for the large genera *Chorebus* and *Dacnusa*. Species in the genera are assigned to informal groups with an alphanumeric code (1a, 2ci etc., defined at the beginning of the two genera) which are largely based on the work of Nixon, Griffiths and Tobias and some suggestions by the authors. Subgenera have been proposed in *Chorebus* and *Dacnusa* but are not used here (see Discussion) though we show how they align with the informal groups.

[4] Literature

The two most important treatments of European Dacnusini by Nixon (*loc. cit.*) and Griffiths (*loc. cit.*) are multipart works with no index. Neither covers the complete tribe. Complexities also arise because Nixon never finished his

revision (the treatment of the *Chorebus uliginosus* group and *Chaenusa* was planned but never completed) and because Griffiths organized his work by host taxonomy so that treatment of one species can occur in multiple places.

An index is provided to the places in Nixon and Griffiths' works where each species is treated. For Nixon the format is (i) Nixon 1937-16 referring to page 16 of the 1937 volume (4) of the *Transactions of the Society for British Entomology*, and (ii) for the series of papers beginning in 1943, Nixon 1944-143 (K 1943-165) where the species account appears on page 143 of the 1944 volume of the *Entomologist's Monthly Magazine* and the species is keyed on page 165 of the 1943 volume (if the species is keyed very near the description in the same volume it is not referenced separately). Griffiths numbered the seven parts of his monograph I – VII and the format Griffiths IV-683 [VII-353] (K IV-682) is used which indicates the main species description is on page 683 of part IV, the species is keyed on page 682 of part IV and there is also a minor discussion of the species on page 353 of Part VII (the entry in square brackets).

Tobias (1986) provides keys in Russian to European Alysiinae including the large Dacnusini genera *Chorebus* and *Dacnusa*. These are largely based on Griffiths though with some modifications and the inclusion of a number of species described in the Russian literature (a few are also telegraphically described in the keys). This work was later translated into English (Tobias 1995). Both versions have indexes though that in the English version is difficult to use as it uses the Russian-version pagination with the Russian page numbers being added in the margin. For species of the large genera *Chorebus* and *Dacnusa*, the couplet or couplets in which the species is treated is given in the format Tobias (45) or Tobias (56, 78).

[5] Hosts

Compared with many other groups of parasitoid wasps, there is relatively rich information about Dacnusini and *Dapsilarthra* genus-group host associations. Griffiths made extensive use of this in his revision and did the excellent service of reviewing all previous host associations, rejecting a very large percentage. Taxapad (Yu *et al.* 2016) lists host associations from the literature but without critical appraisal and it contains many questionable associations, and so should be used with great caution.

A new approach (Godfray 2021) is taken here to provide a summary of the different species' host associations which is designed to be of use to non-specialists. Where data is available, host range is summarized as an explicit *Hypothesis* to emphasise the provisional nature of our biological knowledge. The hypothesis is followed by a statement of the *Evidence* in its support. A fairly high bar is set for admissible evidence typically requiring voucher specimens. Figures are given for the number of reared specimens recorded by Griffiths, in the National Museum of Scotland database of reared Dacnusini maintained by the first author (as of mid 2024), and by other authors (though further records are not common). Thus "*Evidence*—Griffiths (81); NMS (59)" indicates 81 records listed by Griffiths and 59 in the NMS database. Care has been taken to avoid double-scoring. This quantitative information is helpful in judging the strength of evidence underlying the stated hypothesis. A final *Comments* statement provides any further details helpful in interpreting the hypothesis and often specific host associations if not stated in the hypothesis statement.

All hosts belong to the dipteran family Agromyzidae unless explicitly stated otherwise (and *Chromatomyia* is treated as a synonym of *Phytomyza* following Winkler *et al.* (2009)).

[6] DNA Barcodes

Work is underway to create a DNA Barcode (the sequence of part of the mitochondrial CO1 gene) library for European Dacnusini. A species is said to have a DNA Barcode if a "barcode compliant" sequence is present in BOLD (Barcode of Life Database; http://v4.boldsystems) to which a BIN (Barcode Index Number) has been assigned. For reasons given in the Discussion we do not give the BIN indices themselves, but sequence data can be found in BOLD by searching for the Linnean binomial (a majority but not all sequences are in the public domain). The application of all European Dacnusini names in BOLD have been reviewed and (at July 2024) are compliant with this checklist.

[7] Similar species

The most recent keys to the majority of genera of European Dacnusini are in Griffiths (1964; 1967a; 1967b; 1967c; 1968a; 1968b). Griffiths (1984) described a few more species and about 70 species have been described since by

various authors. For species described after Griffiths' work in the 1960s we note as a "Similar species" the nearest taxa included in Griffiths' keys, typically based on the judgement of the new species' author. The new species is also listed as a "Similar species" under the nearest species keyed by Griffiths. In the absence of an up-to-date key it is hoped that this will alert workers to the presence of post-Griffiths taxa. Similar species are also noted, where possible, in *Chaenusa* and *Coelinidea* but these genera lack a 20th or 21st century revision and these associations should be viewed as provisional.

[8] Notes

The final section includes any further relevant information, for example a species significance in pest management or references to morphological or autecological treatments.

We have not attempted to provide information on geographical distribution. There are 21st century critical national checklists for Germany (Belokobylskij *et al.* 2003), Finland (Koponen *et al.* 2016), Denmark (Peris-Felipo *et al.* 2016a), the United Kingdom (Godfray 2021), Russia (distinguishing European Russia) (Alekseev *et al.* 2019) and Spain (Docavo *et al.* 2006) while *Fauna Europaea* summarises literature records for all European countries (though must be interpreted cautiously as the literature has many misidentifications and currently (July 2024) is offline).

Results

Tribe Dacnusini Förster, 1863

Hosts: *Hypothesis*—Parasitoids of cyclorrhaphan Diptera with many species attacking leaf miners in the family Agromyzidae. *Evidence*—Summary of evidence below, no confirmed records from other host groups outside Europe. *Comment*—Some host records listed in Taxapad are almost certainly incorrect. All hosts are acalypterate Diptera except for those of *Synelix semirugosa*. Eggs are laid in host larvae except in some members of the *Coelinius* genus group where the host egg is attacked (Greene 1914; Mook 1962). The adult invariably emerges from the host puparium (Shaw & Huddleston 1991).

Notes: For keys to genera (in English) see Griffiths (I-875), Tobias (1986) and Wharton (1997) (the best illustrated, and though for North America, covers most genera).

Amyras Nixon, 1943

Type species: *clandestina* Haliday

Literature: Nixon 1954-285 (K 1943-30); Griffiths I-861.

Hosts: No information.

Notes: Two (Palaearctic) species in genus (Taxapad).

clandestina (Haliday, 1839; *Alysia*)

Synonymy: *quadridentata* (Thomson, 1895, *Dacnusa*).

Literature: Nixon 1937-16; Nixon 1954-285.

DNA Barcode: Yes.

Notes: Unusually long ovipositor.

Antrusa Nixon, 1943

Type species: *melanocera* Thomson

Literature: Griffiths I-862; Fischer *et al.* (2004a); Tormos *et al.* (2009) (key to European species).

Hosts: *Hypothesis*—Parasitoids of leaf-mining Agromyzidae. *Evidence*—Rearing records summarized below.

Notes: Griffiths considered the three species of *Antrusa* known to him (*flavicoxa*, *melanocera*, and *vaenia*) to be basal members of the genus *Exotela* with no apomorphic characters to distinguish them from his hypothesised plesiomorphic Dacnusini ground state. Authors such as Fischer *et al.* (2004) and Peris-Felipo *et al.* (2015) followed Nixon in recognising *Antrusa* and preliminary molecular data (*Antrusa* DNA barcode sequences cluster together and away from *Exotela*) suggests *Antrusa* is a natural group. 7 European and c.10 described species globally (Taxapad). The rather aberrant *Chorebus interstitialis* with a four-toothed mandible has previously been placed in *Antrusa*.

***chrysogastra* (Tobias, 1986; *Exotela*)**

Literature: Tobias (1986); Fischer *et al.* (2004).

***chrysotegula* (Tobias, 1986; *Exotela*)**

Literature: Tobias (1986); Fischer (1999), Fischer *et al.* (2004), Peris-Felipo *et al.* (2015).

DNA Barcode: Yes.

Notes: Transferred to *Aristelix* by Fischer (1999) but returned to *Antrusa* by Peris-Felipo *et al.* (2015) who provide a full description of the male holotype. DNA Barcode is from a Bulgarian male specimen that matches well the redescription.

***curtitempus* Fischer, Tormos, Docavo & Pardo, 2004**

Literature: Fischer *et al.* (2004); Tormos *et al.* (2009).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza horticola* on *Cicer arietinum* (Fabaceae). *Evidence*—Tormos *et al.* (2009).

Notes: Larval morphology and adult venom apparatus described by Tormos *et al.* (2009).

***flavicoxa* (Thomson, 1895; *Dacnusa*)**

Synonymy: *melanocera* sensu Nixon.

Literature: Nixon 1937-50; Nixon 1954-281; Griffiths II-558, VI-68 [VII-345] (K II-588).

Hosts: Hypothesis—Parasitoid of *Agromyza* & *Cerodontha* spp. on Poaceae. Evidence—Griffiths (65); NMS (17). Recorded hosts: *A. albipennis, A. megalopsis, A. nigripes, A. lucida, A. distorta, C. flavocingulata, C. incisa, C. phragmitidis, C. phalaridis, C. pygmaea, C. zoerneri.*

DNA Barcode: Yes; specimens in four BINs key to *A. flavicoxa*.

Notes: Thomson described two related species, *flavicoxa* & *melanocera,* that differed in size with *melanocera* the smaller. Nixon also recognised two species but called the larger *melanocera* and described the smaller as *persimilis*. Griffiths initially (II-558) followed Thomson, recognising *flavicoxa* and synonymising *persimilis* with *melanocera*, but then (VI-68) decided that the reared material before him (from *Agromyza* and *Cerodontha*) belonged to a single species and suggested *melanocera* was conspecific with *flavicoxa.* However, he commented that the wasps called *persimilis* by Nixon tended to be smaller and refrained from formally synonymising the two. New biological information (see *melanocera*) and barcode data support Nixon's concept of the two species: *flavicoxa* (his *melanocera*) and *melanocera* (his *persimilis*). *A. flavicoxa sensu stricto* shows considerable morphological variability and this and the DNA Barcode data suggest it may be a species complex. Mistakenly under *Dacnusa* in *Fauna Europaea* (2023).

***melanocera* (Thomson, 1895; *Dacnusa*)**

Synonymy: *persimilis* (Nixon, 1954, *Antrusa*).

Literature: Nixon 1954-281; Griffiths II-558, VI-68 [VII-345] (K II-588).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza* and *Phytomyza* on Poaceae). *Evidence*—NMS (17). Comment—Recorded hosts *Liriomyza flaveola* and *Phytomyza nigra.*

DNA Barcode: Yes; specimens in related BIN from Madeira likely represent an undescribed species near *E. melanocera*.

Notes: See *Exotela flavicoxa* notes for earlier treatment of this taxon.

***montecristiensis* Tormos, Pardo, Asís, Gayubo & de la Nuez, 2009**

Literature: Tormos *et al.* (2009).

Similar species: *A. chrysogastra*.

***vaenia* Nixon, 1954**

Literature: Nixon 1954-282; Griffiths (K II-588).

Notes: Two of the four specimens known to Nixon were captured *in copula* on a *Carduus* sp. (Asteraceae).

***Aristelix* Nixon, 1943**

Type species: *phaenicura* Haliday

Literature: Nixon 1937-49; Nixon 1943-27; Griffiths I-857; Peris-Felipo *et al.* (2015).

Hosts: No information.

Notes: Two (Palaearctic) species in genus (Peris-Felipo *et al.* 2015).

***phaenicura* (Haliday, 1839; *Alysia*)**

Synonymy: *phoenicura* misspelling.

Literature: Redescription and illustrations in Peris-Felipo *et al.* (2015).
DNA Barcode: Yes.
Notes: Associated with fenland.

***Chaenusa* Haliday, 1839**

Type species: *conjungens* Nees
CHOREBIDEA Viereck, 1914 (type species: *nereidum* Haliday)
CHOREBIDEA Nixon, 1943 (type species: *naiadum* Haliday)
CHOREBIDELLA Riegel, 1947 (type species: *bergi* Riegel)
Literature: Griffiths I-859 and see below.
Hosts: *Hypothesis*—Parasitoids of *Hydrellia* (= *Hydropota*) spp. (Ephydridae) mining the leaves of aquatic plants, particularly *Potamogeton* spp. (Potamogetonaceae), and plants growing in wet places. *Evidence*—See below for European data; Kula *et al.* (references below); Taxapad. *Comment*—The most extensive European rearing studies to date are by Burghele (1959; 1960b) who in winter mass-extracted puparia of *Hydrellia* from ponds in Romania; she records all hosts as *H. griseola* but Griffiths suggests more species may be present.
Notes: No recent revision of this genus in Europe; for work in North America see Kula and Harms (2016); Kula *et al.* (2009); Kula and Zolnerowich (2008); Kula *et al.* (2006) who stress extent of intraspecific morphological variation. Keys to some species can be found in Marshall (1897), Burghele (1960b), Tobias (1986) & Docavo *et al.* (2006). 15 species listed here but two (*limoniadum* and *lymphata*) have not been recognised since the 19th century. 36 species in Taxapad from throughout the world.

***conjungens* (Nees, 1811; Bracon)**

Synonymy: *conjugens* misspelling; *thomsoni* (Roman, 1917, *Gyrocampa*), Griffiths III-930.
Hosts: *Hypothesis*—Parasitoid of *Hydrellia* spp. (Ephydridae) mining the leaves of *Potamogeton* spp. (Potamogetonaceae) & Poaceae. *Evidence*—Burghele (1959; 1960b) (>100); NMS (8). *Comment*—Recorded hosts *H. griseola, H. maura.*
DNA Barcode: Yes.
Similar species: *C. elongata, C. orghidani.*
Notes: The commonest species in the genus. Stelfox (1957) commented on the wide range of antennal segment numbers in *C. conjungens* and speculated several species may be involved.

***dolsi* (Docavo, 1965; *Chorebidea*)**

Literature: Docavo (1965), Docavo *et al.* (2006).
Similar species: *C. naiadum*.
Notes: Adults caught on leaves of *Potamogeton* spp. (Potamogetonaceae).

***elongata* Stelfox, 1957**

Literature: Stelfox (1957).
Similar species: *C. conjungens*.
Notes: Collected from pond margin; female abdomen laterally flattened.

***kryzhanovskii* Tobias & Perepetchajenko, 1992**

Literature: Tobias and Perepechayenko (1992).
Similar species: *C. motasi.*
limoniadum **(Marshall, 1896;** Chorebus**)**
Similar species: *C. nereidum*.
Notes: Transferred from *Chorebus* by Perepechayenko (2000b). Poorly known species, little recognised since 19th century.

***llopisi* Docavo, 1962**

Literature: Docavo (1962), Docavo *et al.* (2006).
Similar species: *C. conjungens*.

***lymphata* (Haliday, 1839; *Alysia*)**

Similar species: *C. naiadum*.
Notes: Transferred from *Chorebus* by van Achterberg (1997). Not recognised since 19th century.

***motasi* (Burghele, 1959; *Chorebidea*)**

Literature: Burghele (1959).

Similar species: *C. naiadum, C. kryzhanovskii.*

Notes: Type series (four adults) collected walking on leaves of *Potamogeton* spp. (Potamogetonaceae).

***naiadum* (Haliday, 1839; *Alysia*)**

Synonymy: *naiadum* (Curtis, 1837, *Chorebus*) *nomen nudum*; *majadum, najadum* misspellings.

Hosts: *Hypothesis*—Parasitoid of *Hydrellia* spp. (Ephydridae). *Evidence*—Taxapad; NMS (4). *Comment*—Host plants *Potamogeton* spp. (Potamogetonaceae), *Sagittaria sagittifolia* (Alismataceae).

DNA Barcode: Yes.

Similar species: *C. dolsi, C. motasi.*

***natator* (Schulz, 1907; *Chorebus*)**

Notes: Schulz (1907) separated *natator* (reared from *Hydrellia griseola* on *Potamogeton lucens*, Potamogetonaceae) from *C. naiadum* on quite minor differences and Burghele (1960) considered *natator* most likely a synonym of the latter.

***nereidum* (Haliday, 1839; *Alysia*)**

Synonymy: *nereidum* (Curtis, 1837, *Chorebus*) *nomen nudum*.

DNA Barcode: Yes.

***opaca* Stelfox, 1957**

Literature: Stelfox (1957).

Notes: Body very highly sculptured. Collected from pond margins and walking on the leaves of *Potamogeton* spp. (Potamogetonaceae).

Similar species: *C. punctulata*.

***orghidani* Burghele, 1960**

Literature: Burghele (1960b).

Hosts: *Hypothesis*—Parasitoid of *Hydrellia* spp. (Ephydridae). *Evidence*—Burghele (1960b) reared "a few dozen" from *Hydrellia* (= *Hydropota*) *griseola*.

Similar species: *C. conjungens*.

***punctulata* Burghele, 1960**

Literature: Burghele (1960b).

Hosts: *Hypothesis*—Parasitoid of *Hydrellia* spp. (Ephydridae) mining *Stratiodes aloides* (Hydrocharitaceae). *Evidence*—NMS (2; a further 10 caught on *S. aloides* flowers; J. Katzenberger unpublished, Germany).

DNA Barcode: Yes.

Similar species: *C. elongata, C. opaca.*

Notes: Female abdomen laterally flattened; body densely sculptured. Distinctiveness from *opaca* needs to be confirmed.

***varinervis* Zaykov, 1986**

Literature: Zaykov (1986).

Similar species: *C. naiadum*.

Notes: First discal and submarginal cells joined.

***Chorebus* Haliday, 1833**

Type species: *affinis* Nees (=*longicornis* Nees)

AMETRIA Förster, 1863 (type species: *uliginosa* Haliday)

GYROCAMPA Förster, 1863 (type species: *affinis* Nees (=*longicornis* Nees))

PHAENOLEXIS Förster, 1863 (type species *petiolatus* Nees)

STIPHROCERA Förster, 1863 (type species: *nigricornis* Förster (=*ampliator* Nees)).

DIPLUSIA Ruthe, 1882 (type species: *diremtus* Nees)

ETRIPTES Nixon, 1943 (type species: *talaris* Haliday)

PARAGYROCAMPA Tobias, 1962 (type species: *ophthalmicus* Tobias)

TRICOCHOREBUS Tobias 1971 (type species: *piliventris* Tobias)

Literature: Griffiths I-859.

Hosts: *Hypothesis*—The majority of species attack Agromyzidae including leaf miners, stem miners and stem

borers. A few species attack *Hydrellia* (Ephydridae) and *Chamaepsila* (=*Psila*) (Psilidae) and the hosts of some species groups are unknown but unlikely to be Agromyzidae. *Evidence*—Summary of species hypotheses below.

Notes: c.450 described species from throughout the world (Taxapad), 253 in Europe.

Groupings within *Chorebus* (after Griffiths except where stated).

1. *Chorebus senilis* group *sensu lato* (subgenus *Phaenolexis* sensu Tobias etc.)
    a. *senilis* species group *sensu stricto*
    b. *bathyzonus* species group
    c. *petiolatus* species group
    d. *posticus* species group
    e. unassigned species
2. Griffiths' "plesiomorph species related to the *affinis* and *senilis* groups (part of subgenus *Stiphrocera* sensu Tobias etc.)
3. *Chorebus affinis* group sensu Griffiths (part of subgenus *Chorebus* sensu Tobias etc.)
    a. *longicornis* (=*affinis*) species group (=*Gyrocampa* sensu Nixon)
    b. *uliginosus* species group sensu Griffiths (VI-98)
    c. unassigned species
    d. *ophthalmicus* species group (=*Paragyrocampa* sensu Tobias & Papp)
4. Griffiths' "Various plesiomorph species of *Chorebus*" (except 4b, part of subgenus *Stiphrocera* sensu Tobias etc.)
    a. *nydia* species group
    b. *talaris* species group (*Etriptes* Nixon, 1943; subgenus *Etriptes* sensu Tobias etc.)
    c. *cylindricus* (=*cybele*) species group
    d. unassigned species
5. *Chorebus ovalis-lateralis* complex (part of subgenus *Stiphrocera* sensu Tobias etc.)
    a. unassigned species
    b. *lateralis* species group
    c. *diremtus* species group (sensu Nixon 1946-279)
    d. *atis* species group.
    e. *thecla* species group
    f. *alecto* species group
    i. *daimenes* species subgroup
6. *Chorebus rousseaui* group sensu Griffiths (VI-98) (part of subgenus *Chorebus* sensu Tobias etc.)
7. *Chorebus piliventris* group (subgenus *Trichochorebus* sensu Tobias)
8. [*Chorebus* subgenus *Pentalexis* from central Asia is characterised by 5-toothed mandibles and may be found in East Europe (Perepechayenko 2000b)].

***abaris* (Nixon, 1943; *Dacnusa*)**

Group: 5e.

Literature: Nixon 1946-283 (K 1943-164); Griffiths III-866 (K VI-123); Tobias (91).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. (*obscura* gp.) leaf-mining Boraginaceae & Lamiaceae. *Evidence*—Griffiths (21); NMS (10). *Comment*—Recorded hosts: *P. lycopi, P. medicaginis* (=*symphyti*)*, P. tetrasticha*.

DNA Barcode: Yes.

***abnormiceps* (Nixon, 1946; *Dacnusa*)**

Synonymy: *quadriceps* (Nixon, 1942, *Dacnusa*) preocc..

Group: 5a.

Literature: Nixon 1946-280 (K 1943-162 as *quadriceps*); Griffiths (K VI-122); Tobias (44).

***abrota* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-197 (K 1945-190); Griffith (K VI-127); Tobias (143).

***affiniformis* Docavo, Tormos & Fischer, 2002**

Group: 3a.

Literature: Docavo *et al.* (2002).

Similar species: *C. longicornis* (= *affinis*).

***agraules* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-195 (K 1945-191); Griffiths VI-85 (K VI-131); Tobias (153).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Poemyza*) *muscina* leaf-mining Poaceae. *Evidence*—Griffiths (1).

***albimarginis* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-860 (K VI-123); Tobias (92).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza albimargo* leaf-mining *Anemone nemerosa* (Ranunculaceae). *Evidence*—Griffiths (1).

Notes: Known only from holotype (Germany).

***albipes* (Haliday, 1839, *Alysia*)**

Group: 5a.

Literature: Nixon 1937-76; Nixon 1946-280 (K 1943-161, 162, 165); Griffiths III-863 (K VI-120); Tobias (14, 47, 130).

Hosts: *Hypothesis*—Parasitoid of *Aulagromyza* (=*Paraphytomyza*) spp. leaf-mining Salicaceae. *Evidence*—Griffiths (70); NMS (7); Georgiev and Boyadzhiev (2002) (3). *Comment*—Recorded hosts: *A. populi, A. tremula, A. tridentata*.

DNA Barcode: Yes; in two BINs.

***alecto* (Morley, 1924, *Rhizarcha*)**

Synonymy: *turissa* (Nixon, 1937, *Dacnusa*).

Group: 5a.

Literature: Nixon 1937-38; Nixon 1945-202 (K 1945-193); Griffiths III-870 (K VI-134); Tobias (236).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. leaf-mining Asteraceae and *P. crassiseta* on *Veronica* (Plantaginaceae). *Evidence*—Griffiths (78); NMS (34). *Comment*—Recorded hosts on Asteraceae: *P. artemisivora, P. bellidina, P. conyzae*, *P. corvimontana, P. kyffhusana, P. pullula, P. tanaceti.*

DNA Barcode: Specimens from *Veronica* miners placed in one BIN; those from Asteraceae are in two BINSs which may be morphologically distinct.

Notes: Sequence data suggest probably a species complex; Griffiths previously suggested wasps from Asteraceae and *Veronica* may be different species.

***alua* (Nixon, 1944; *Dacnusa*)**

Group: 3c.

Literature: Nixon 1944-146; Griffiths (K VI-116); Tobias (116).

Barcode: Yes.

***amasis* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-201 (K 1945-193); Griffiths III-874 (K VI-133); Tobias (225).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza crassiseta* leaf-mining *Veronica* spp. (Plantaginaceae). *Evidence*—Griffiths (6); NMS (24).

DNA Barcode: Yes; BIN shared with *C. anasellus*.

***amauromyzae* Griffiths, 1968**

Group: 5a.

Literature: Griffiths V-32 (K VI-126); Tobias (186).

Hosts: *Hypothesis*—Parasitoid of *Amauromyza carlinae* mining *Carlina vulgaris* (Asteraceae) and *A. morionella* mining *Ballota nigra* (Asteraceae). Evidence—Griffiths (7).

DNA Barcode: No; BIN with specimens resembling *C. amauromyzae* likely an undescribed species.

***ampliator* (Nees, 1834; *Alysia*)**

Synonymy: *nigricornis* (Förster, 1863, *Stiphrocera*).

Group: 5a.

Literature: Nixon 1937-70; Nixon 1946-296 (K 1943-161); Griffiths (K VI-120); Tobias (10).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza lutea* in seeds of *Pastinaca* and *Heracleum* (Apiaceae). *Evidence*—Griffiths (3); NMS (20).

DNA Barcode: Cluster in BOLD not yet assigned a BIN.

Similar species: *C. tobiasi*.

***anasellus* (Stelfox, 1952; *Dacnusa*)**

Group: 5a.

Literature: Stelfox (1952); Griffiths VII-356 (K VI-131) [VII-356]; Tobias (26, 201); Papp (2009c, p. 127).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza plantaginis* leaf-mining *Plantago coronopus* & *P. maritima* (Plantaginaceae). *Evidence*—Griffiths (16); NMS (9); Docavo *et al.* (1993).

DNA Barcode: Yes; BIN shared with *C. amasis*.

Similar species: *C. zuntus*.

Notes: Appears restricted to coastal marshes (Stelfox 1957).

***andizhanicus* (Tobias, 1966; *Dacnusa*)**

Group: 5d?

Literature: Tobias (1966); Tobias (147, 301).

Similar species: *C. thusa, C. iphias, C. trapesus.*

***angelicae* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-223 (K 1945-192); Griffiths III-855 (K VI-126, 129); Tobias (191, 284).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza angelicae* leaf-mining *Angelica sylvestris* (Apiaceae). *Evidence*—Griffiths (22); NMS (9).

DNA Barcode: Yes.

***anita* (Nixon, 1943; *Dacnusa*)**

Group: 4d.

Literature: Nixon 1946-289 (K 1943-163); Griffiths (K VI-118); Tobias (63).

***aphantus* (Marshall, 1895; *Dacnusa*)**

Synonymy: *luzulae* Griffiths 1966 **syn. nov.**

Group: 5a.

Literature: Nixon 1937-36; Nixon 1946-282 (K 1943-168); Griffiths III-842, III-845 (*luzulae*) (K VI-130, 134 (*luzulae*)); Tobias (294; *luzulae*: 240).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* & *Liriomyza* spp. leaf-mining Poaceae and Juncaceae. *Evidence*—Griffiths (26); NMS (59). *Comment*—Recorded hosts: *P. nigra, P. milii, P. luzulae, L. flaveola*.

DNA Barcode: Yes.

Notes: In describing *C. luzulae*, Griffiths noted its closeness to *C. aphantus,* differing in host, size and minor petiole characters, and commented "it is not a very distinctive species". The DNA barcode difference between the two species <0.5% and it is here synonymised with *aphantus.*

***apollyon* (Morley, 1924; *Dacnusa*)**

Group: 5a.

Literature: Griffiths (K VI-132); Tobias (262).

***ares* (Nixon, 1944; *Dacnusa*)**

Group: 1a.

Literature: Nixon 1944-101; Griffiths (K IV-660); Tobias (367).

***armida* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-200 (K 1945-193); Griffiths III-872 (K VI-134); Tobias (234).

Hosts: Hypothesis—Parasitoid of *Phytomyza* spp. leaf-mining Apiaceae. Evidence—Griffiths (94); NMS (79). Comment—Recorded hosts: *P. aegopodii, P. angelicae, P. angelicastri, P. angelicivora, P. obscurella.*

DNA Barcode: Yes; in same BIN as *C. punctus* & specimens that key to *C. pimpinellae*. Further specimens that key to *C. armida* share a BIN with *C. mitra*.

Notes: There are records from leaf miners on Asteraceae (*P. eupatorii* and *P. lappae*) but Griffiths suggests these may be a different species.

***artemisiellus* Griffiths, 1968**

Group 5fi.

Literature: Griffiths V-42 (K VI-134); Tobias (22).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza* spp. leaf-mining *Artemisia* (Asteraceae). *Evidence*—Griffiths (14). *Comment*—Recorded hosts: *L. artemisicola, L. dracunculi*.

***asini* (Docavo, 1965; *Gyrocampa*)**

Group: 3a.

Literature: Docavo (1965; 1967); Tobias (475, 482).

Similar species: *C. longicornis (= affinis), C. pseudoasini, C. pseudometallicus.*

***asperrimus* Griffiths, 1968**

Group: 4b.

Literature: Griffiths VI-73 (K VI-119); Tobias (8).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha pygmella* (=*tatrica*) leaf-mining Poaceae. *Evidence*—Griffiths (2).

***asphodeli* Griffiths, 1968**

Group: 4a.

Literature: Griffiths V-29 (K VI-119); Tobias (75).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza asphodeli* leaf-mining *Asphodelus* sp. (Asphodelaceae). *Evidence*—Griffiths (3).

Similar species: *C. irriguus, C. pseudoasphodeli.*

***asramenes* (Nixon, 1943; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-195 (K 1945-192); Griffiths VI-84 (K VI-131) [VII-356]; Tobias (170); Papp (2009c, p. 119).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Poemyza*) spp. leaf-mining Poaceae. *Evidence*—Griffiths (38); NMS (32). *Comment*—Recorded hosts: *C. melicae, C. pygmaea, C. zoerneri*

DNA Barcode: Yes; BIN shared with *Chorebus flavipes*; there are five further BINs that contain species near *asramenes* (and where rearing records are available attack miners on Poaceae); they include specimens keying to *C. poemyzae, ninella* and possibly *ganesa*; further work needed to reconcile molecular, biological and morphological data and likely undescribed species present; the morphologically distinct *C. crenulatus* clusters with this group.

Similar species: *C. pseudoasramenes, C. trapesus.*

***atis* (Nixon, 1943; *Dacnusa*)**

Group: 5d.

Literature: Nixon 1946-291 (K 1943-168); Griffiths (K VI-122); Tobias (308).

Similar species: *C. griffithsi*.

***avesta* (Nixon, 1944; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-201 (K 1944-195); Griffiths V-44 (K VI-129, 133); Tobias (244, 338).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza* spp. leaf miners. *Evidence*—Griffiths (11). *Comment*—10 of Griffiths' records are from *L. morio* mining *Galium* (Rubiaceae) and one from *L. eupatoriana* mining *Eupatorium cannabinum* (Asteraceae).

DNA Barcode: Yes; two BINs contain specimens that key to *avesta*.

***baeticus* Griffiths, 1967**

Group: 5d.

Literature: Griffiths II-566 (K VI-122); Tobias (60, 305).

Hosts: Hypothesis—Parasitoid of *Agromyza baetica* on *Phragmites australis* (Poaceae). Evidence—Griffiths (1).

Similar species: *C. tumidus.*

***bathyzonus* (Marshall, 1895; *Dacnusa*)**

Group: 1b.

Literature: Nixon 1937-19; Nixon 1944-91; Griffiths IV-675 [VII-358] (K IV-660), Tobias (394, 395).

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia* stem mines *heracleivora* stem-mining *Heraceleum* (Apiaceae). *Evidence*—Griffiths (9). Recorded hosts: *O. heracleivora* on *Heraceleum* sp. (Apiaceae), *O. ranunculicaulis* on *Ranunculus* spp. (Ranunculaceae).

DNA Barcode: Yes.

Similar species: *C. gyrinus, C. ornatus, C. salvoi.*

***bensoni* (Nixon, 1943; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1946-287 (K 1943-163); Griffiths III-859 (K VI-125) [VII-355]; Tobias (82).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza soenderupi* in stems of *Caltha palustris* (Ranunculaceae). *Evidence*—Griffiths (10); NMS (1).

DNA Barcode: Yes.

Notes: Very long ovipositor.

***bres* (Nixon, 1944; *Dacnusa*)**

Group: 5b.

Literature: Nixon 1944-252 (K 1944-195); Griffiths II-566 (K VI-128); Tobias (327).

Hosts: *Hypothesis*—Parasitoid of *Agromyza idaeiana* (=*spiraeae*) leaf-mining Roseaceae. *Evidence*—Griffiths (24); NMS (4).

DNA Barcode: Yes; shares BIN with *C. lateralis* (1.9% divergence) & *C. credne*.

***brevicornis* (Thomson, 1895; *Dacnusa*)**

Synonymy: *chrysippe* (Nixon, 1944, *Dacnusa*); *ea* (Nixon, 1944, *Dacnusa*).

Group: 1a.

Literature: Nixon 1944-94, 103; Griffiths IV-668 (K IV-659); Tobias (358).

Hosts: *Hypothesis*—Parasitoid of *Melanagromyza aenoventris* boring stems of *Cirsium* spp. (Asteraceae). *Evidence*—Griffiths (7); NMS (9).

DNA Barcode: Yes.

***brevifemur* (Tobias, 1962; *Dacnusa*)**

Group: 5b.

Literature: Griffiths (K IV-661); Tobias (412).

***buhri* Griffiths, 1967**

Group: 5a.

Literature: Griffith III-845 (K VI-129 & 131); Tobias (199).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza griffithsi* leaf-mining *Plantago* spp. (Plantaginaceae). *Evidence*—Griffiths (5).

***caelebs* (Nixon, 1944; *Dacnusa*)**

Group: 1e.

Literature: Nixon 1944-92; Griffiths (K IV-665); Tobias (431).

***caesariatus* Griffiths, 1967**

Group: 1b.

Literature: Griffith IV-72 (K IV-663); Tobias (403).

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia curvipalpis* leaf- and stem-mining *Medicago sativa* (Fabaceae). *Evidence*—Griffiths (8).

***calthae* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-857 (K VI-133); Tobias (97).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza calthivora* leaf-mining *Caltha palustris* (Ranuculaceae). *Evidence*—Griffiths (18).

Similar species: *C. stolyarovii*.

***cambricus* Griffiths, 1968**

Group: 5fi.

Literature: Griffiths V-40 (K VI-135); Tobias (212).

Hosts: *Hypothesis*—Parasitoid of a *Liriomyza* sp. leaf-mining *Hieracium* (Asteraceae). *Evidence*—Griffiths (2). *Comment*—Host given as *L. pusilla* but probably a related species on this host plant (see comments under this species at https://bladmineerders.nl/).

***canace* Tobias, 1998**

Group: 5a

Literature: Tobias (1998).

Similar species: possibly *C. lar* (small with 21-23 antennal segments but description very brief).

***canariensis* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-854 (K VI-124) [VII-355]; Tobias (42).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza syngenesiae. Evidence*—Griffiths (4).

Similar species: *C. fragilosus*.

***catron* Papp, 2009**

Group: 3d

Literature: Papp (2009c).

Similar species: *C. convergens, C. ophthalmicus, C. foveolus.*

Notes: Described from Hungary, not in *Fauna Europaea* (2023).

***catta* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-202 (K 1945-193); Griffiths (K VI-133); Tobias (220).

***chenopodii* Griffiths, 1984**

Group: 5d.

Literature: Griffiths VII-354.

Hosts: *Hypothesis*—Parasitoid of *Amauromyza chenopodivora* in stems of *Chenopodium album* (Amaranthaceae). *Evidence*—Griffiths (2).

Similar species: *C. iphias*.

***cinctus* (Haliday, 1839, *Alysia*)**

Synonymy: *castaneiventris* (Thomson, 1895, *Dacnusa*).

Group: 5b.

Literature: Nixon 1937-30; Nixon 1944-254 (K 1944-194); Griffiths II-567 (K VI-124); Tobias (316).

Hosts: *Hypothesis*—Parasitoid of *Agromyza lucida* leaf-mining Poaceae. *Evidence*—Griffiths (14); NMS (11).

DNA Barcode: Yes.

Similar species: *C. turcomanus.*

***citreus* Papp, 2009**

Group: 5a.

Literature: Papp (2009c).

Similar species: *C. rubicundus.*

Notes: Described from Slovakia, not in *Fauna Europaea* (2023).

***claripennis* Griffiths, 1984**

Group: 1b.

Literature: Griffiths VII-358.

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia hieracii* stem-mining *Hieracium* (Asteraceae). *Evidence*—Griffiths (7).

Similar species: *C. fuscipennis*.

***compressiiventris* (Telenga, 1935; *Phaenolexis*)**

Group: 1e.

Literature: Lectotype designated in Tobias (428).

Similar species: *C. heringianus*.

***concinnus* Telenga, 1935**

Group: 3a or 3b.

Literature: Lectotype designated in Tobias (457).

Similar species: possibly *C. siniffa* & *C. fordi.*

***convergens* Papp, 2009**

Group 3d.

Literature: Papp (2009c).

Similar species: *C. catron, C. foveolus, C. ophthalmicus.*

Notes: Described from Hungary, not in *Fauna Europaea* (2023).

***costai* Docavo, 1962**

Group 3b.

Literature: Docavo (1962; 1967); Griffiths (KVI-118); Tobias (449).

***coxator* (Thomson, 1895; *Dacnusa*)**

Group: 4a.

Literature: Griffiths I-880 (K VI-119); Tobias (70); Papp (2009a, p. 254).

Hosts *Hypothesis*—Parasitoid of *Agromyza* spp. leaf-mining *Phragmites communis* & *Phalaris arundinacea* (Poaceae). *Evidence*—Griffiths (13); NMS (7). *Comment*—Recorded hosts: *A. phragmitidis, A. hendeli*.

DNA Barcode: Yes.

***crassipes* (Stelfox, 1954; *Dacnusa*)**

Group: 5a.

Literature: Stelfox (1954); Griffith III-875 (K VI-123); Tobias (150).

Hosts *Hypothesis*—Parasitoid of *Phytomyza diversicornis* in stems of *Pedicularis palustris* (Orobanchaceae). *Evidence*—Griffiths (45); NMS (5); Koponen and Vikberg (2014) (3).

DNA Barcode: Yes.

Notes: Very long ovipositor.

***credne* (Nixon, 1944; *Dacnusa*)**

Group: 5b.

Literature: Nixon 1944-250 (K 1944-195); Griffiths II-568 (K VI-128) [VII-355]; Tobias (337).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. leaf-mining Roseaceae & Betulaceae. *Evidence*—Griffiths (24); NMS (19). *Comment*—Recorded hosts: *A. idaeiana* (=*spiraeae)* on Rosaceae; *A. alnivora* & *A. alnibetulae* on Betulaceae.

DNA Barcode: Yes; shares BIN with *C. lateralis* (1.9% divergence) & *C. bres*.

***crenesulcis* Fischer, Tormos, Pardo & Jiménez, 2002**

Group: 4.

Literature: Fischer *et al.* (2002).

Similar species: *C. geminus*.

***crenulatus* (Thomson, 1895; *Dacnusa*)**

Synonymy: *elegantulus* (Nixon, 1937, *Dacnusa*)

Group: 5c.

Literature: Nixon 1937-40; Nixon 1945-196 (K 1945-191); Griffiths VI-76 (K VI-131); Tobias (164); Papp (2013, p. 237).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Cerodontha*) *denticornis* mining the leaf sheaths of Poaceae. *Evidence*—Griffiths (1); NMS (1).

DNA Barcode: Yes; see also *C. asramenes.*

***crocale* (Nixon, 1945; *Dacnusa*)**

Group: 5a

Literature: Nixon 1945-198 (K 1945-191); Griffiths (K VI-131); Tobias (160).

Hosts: *Hypothesis*—Parasitoid of Agromyzidae (probably *Phytomyza antennariae*) on *Antennaria dioica* (Asteraceae). *Evidence*—NMS (8).

DNA Barcode: Yes; shares BIN with *C. merion*.

Notes: Type specimen from limestone pavement consistent with host's habitat.

***cubocephalus* (Telenga, 1934; *Rhizarcha*)**

Synonymy: *cyclops* (Nixon, 1937, *Dacnusa*); synonymy by Tobias (1986).

Group: 5c.

Literature: Nixon 1937-28; Nixon 1946-280; Griffiths IV-681; Tobias (103, 273); Papp (2009a, p. 259).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Cerodontha*) *denticornis* mining the leaf sheaths of Poaceae. *Evidence*—NMS (2). *Comment*—Records from Chloropidae (Tobias 1986) very likely incorrect.

DNA Barcode: Yes.

Notes: Nixon associated this species with *C. diremtus* in the *ovalis-lateralis* complex in his *diremtus* group (here, Group 5c). Griffiths "provisionally" placed the species in the *cylindricus* group (here, Group 4c),

largely due to its weak metapleural rosette. The DNA barcodes of *diremtus* and *cubocephalus* are very similar and this in combination with a recent rearing record (both species attack the subgenus *Cerodontha*) support Nixon's original association.

***cultratus* (Tobias, 1962; *Dacnusa*)**

Group: 1d.

Literature: Tobias (1962); Tobias (379).

Similar species: *C. posticus.*

***cylindricus* (Telenga, 1934; *Dacnusa*)**

Synonymy: *cybele* (Nixon, 1937, *Dacnusa*), synonymy by Tobias (1986).

Group: 4c.

Literature: Nixon 1937-44; Nixon 1944-143 (K 1943-165); Griffiths IV-683 [VII-353] (K IV-682); Tobias (270).

Hosts: Hypothesis—Parasitoid of stem-boring *Melanagromyza* and *Ophiomyia* spp. Evidence—Griffiths (81); NMS (63). Comment—Recorded hosts: *M. lappae, M. eupatorii, M. symphyti, M. fabae, M. astragali, M. moatesi, O. melandryi.*

DNA Barcode: Yes.

Similar species: *C. kirvus.*

Notes: *C. cylindricus* and *didas* are well separated by their barcodes, but less so by the morphological characters in Griffiths IV-682. Host records are supported by barcode sequences.

***cyparissus* (Nixon, 1944; *Dacnusa*)**

Group: 1b

Literature: Nixon 1944-91; Griffiths (K IV-663); Tobias (399).

Hosts: *Hypothesis*—Parasitoid of *Melanagromyza albocilia* in stems of *Convolvulus arvensis* (Convolvulaceae). *Evidence*—Many reared from this host in Central Europe (Tóth *et al.* 2002).

DNA Barcode: Yes; shared with *C. fuscipennis*.

***cytherea* (Nixon, 1937; *Dacnusa*)**

Synonymy: *calliope* (Nixon, 1944, *Dacnusa*); *tesmia* (Nixon, 1944, *Dacnusa*).

Group: 3c.

Literature: Nixon 1937-46; Nixon 1944-140 (K 1944-97); Griffith VI-99 (K VI-116); Tobias (414).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Dizygomyza*) spp. leaf-mining Cyperaceae, Juncaceae & Poaceae. *Evidence*—Griffiths (52); NMS (5). *Comment*—Recorded hosts: *C. chaixiana, C. hirtae, C. luctuosa, C. pygmaea, C. spinata*.

DNA Barcode: Yes.

***dagda* (Nixon, 1943; *Dacnusa*)**

Literature: Nixon 1946-288 (K 1943-162, 165); Griffiths III-846 (K VI-125, 127); Tobias (77, 132).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. leaf-mining Gentianaceae. *Evidence*—Griffiths (22); NMS (19). *Comment*—Recorded hosts: *P. gentianae, P. centaurii.*

DNA Barcode: Yes.

***daimenes* (Nixon, 1945; *Dacnusa*)**

Group: 5fi.

Literature: Nixon 1945-227 (K 1945-193); Griffiths V-39 (K VI-135); Tobias (210, 248).

Hosts: Hypothesis—Parasitoid of *Liriomyza* spp. leaf miners. Evidence—Griffiths (20); NMS (29). Comment—Recorded hosts: *L. amoena, L. bryoniae, L. pascuum, L. sonchi, L. strigata, L. ptarmicae (=millefolii), L. puella, L. pumila.*

DNA Barcode: Yes; specimens in two BINs that cluster near *C. daimenes* are probably undescribed species.

***deione* (Nixon, 1944; *Dacnusa*)**

Group: 5b.

Literature: Nixon 1944-249 (K 1944-195); Griffiths II-569 (K VI-128); Tobias (331).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. leaf miners on Boraginaceae. *Evidence*—Griffiths (16); NMS (20). *Comment*—Recorded hosts: *A. abiens, A. ferruginosa, A. myosotidis, A. pseudorufipes*.

DNA Barcode: Yes.

***densepunctatus* Burghele, 1959**

Group: 3b.

Literature: Griffiths (K VI-117); Tobias (439).

Hosts: *Hypothesis*—Parasitoid of leaf-mining *Hydrellia* sp. (Ephydridae). *Evidence*—"Hundreds" reared by Burghele (1959).

DNA Barcode: Yes; in same BIN as *C. uliginosus* though in separate clade.

Similar species: possibly *C. sculptitergum*.

[*dentatus* (Tobias, 1962, *Dacnusa*)]

Notes: synonym of *C. posticus.*

***denticurvatus* Pardo, Tormos & Verdú, 2001**

Group: 5a?

Literature: Pardo *et al.* (2001).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza horticola. Evidence*—Pardo *et al.* (2001) *Comment*—Recorded from Spain and not known from this host in Northern Europe

Similar species: *C. fallax, C. xsarus*.

***dentiferus* (Thomson, 1895; *Dacnusa*)**

Group: 1c or 1d.

Literature: Griffiths I-890.

Similar species: *C. petiolaris, C. posticus.*

Notes: Image of type on Flickr.

***dentisignatus* Docavo, Tormos & Fischer, 2002**

Group: 3c.

Literature: Docavo *et al.* (2002).

Similar species: *C. gracilipes.*

Notes: Known from single female with distinctive antennal morphology.

***didas* (Nixon, 1944; *Dacnusa*)**

Group: 4c.

Literature: Nixon 1944-141; Griffiths IV-684 (K IV-682); Tobias (271).

Hosts: *Hypothesis*—Parasitoid of stem-boring and internal stem-mining Agromyzidae. *Evidence*—Griffiths ("many"); NMS (14). *Comments*—Significantly broader host range than hypothesized by Griffiths. Recorded hosts: *Melanagronyza dettmeri Napomyza scrophulariae;* possibly *Melanagronyza nibletti,*

DNA Barcode: Yes; sister BIN is a likely undescribed species from Madeira.

Similar species: *C. kirvus.*

Notes: *C. cylindricus* and *didas* are well separated by their barcodes, but less well by the morphological characters in Griffiths IV-682.

***difficilis* Griffiths, 1968**

Group: 5a.

Literature: Griffiths VI-85 (K VI-134) [VII-356]; Tobias (241).

Hosts: Hypothesis—Parasitoid of *Cerodontha* (*Poemyza*) leaf miners on Poaceae. Evidence—Griffiths (36). Comment—Recorded hosts: *C. calamagrostidis, C. chaixiana, C. beigerae (=deschampsiae), C. incisa, C. pygmaea.*

DNA Barcode: specimens in four BINs key to *C. difficilis* and further work needed to resolve this likely species complex.

***diremtus* (Nees, 1834; Alysia)**

Synonymy: *diremptus* (Haliday, 1839, *Alysia*)

Group: 5c.

Literature: Nixon 1937-27; Nixon 1946-279 (K 1943-165); Griffiths VI-77 (K VI-120); Tobias (102, 141); Papp (2009a, p. 243); Papp (2009c, p. 121); Papp (2013, p. 246).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Cerodontha*) *fulvipes* leaf-mining Poaceae. *Evidence*—Griffiths (1); NMS (2).

DNA Barcode: Yes.

Similar species: *C. propediremtum, C. rostratae, C. unicus.*

***dirona* (Nixon, 1945; Dacnusa)**

Group: 5a.

Literature: Nixon 1945-221 (K 1945-193); Griffiths V-36 (K VI-122); Tobias (251).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza pusio* (=*graminicola*) leaf-mining Poaceae. *Evidence*—Griffiths (3); NMS (2).

DNA Barcode: Yes; sister BIN morphologically very similar but likely undescribed species.

***dumitus* Tobias, 1999**

Literature: Tobias (1999).

Similar species: *C. mucronatus, C. thusa.*

***endymion* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-864 (K VI-125); Tobias (136, 285).

Host: Hypothesis—Parasitoid of *Aulagromyza luteoscutellata* (=*Paraphytomyza xylostei*) on Caprifoliaceae. Evidence—Griffiths (1).

Similar species: *C. vodaron*.

***enephes* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-220 (K 1945-194); Griffiths VI-79 (K VI-122) [VII-354]; Tobias (215, 255).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* spp. leaf-mining on Poaceae. *Evidence*—Griffiths (6). *Comment*—Recorded hosts: *C. imbuta* (=*deschampsiae*), *C. phalaridis*.

***ergias* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-198; Griffiths III-852 (K VI-126); Tobias (171).

Hosts: *Hypothesis*—Parasitoid of midrib-galler *Phytomyza araciocecis* on *Crepis paludosa* (Asteraceae). Evidence—Griffiths (11).

DNA Barcode: Yes.

***eros* (Nixon, 1937; *Dacnusa*)**

Group: 5b.

Literature: Nixon 1937-30; Nixon 1944-198 (K 1944-195); Griffiths II-570 (K VI-128); Tobias (329).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. leaf miners on Poaceae. *Evidence*—Griffiths (3); NMS (10). *Comment*—Recorded host: *A. nigrociliata*.

DNA Barcode: Yes.

[*erythrogaster* (Szépligeti, 1901; *Dacnusa*)]

See *C. posticus.*

***esbeltus* (Nixon, 1937; *Dacnusa*)**

Group: 3a.

Literature: Nixon 1937-79; Nixon 1949-291; Griffiths (K VI-115); Tobias (462, 480).

***eucodonis* Griffiths, 1984**

Group: 1b.

Literature: Griffiths VII-358.

Hosts: *Hypothesis*—Parasitoid of the stem-miner *Ophiomyia eucodonus* on *Campanula trachelium* (Campanulaceae). *Evidence*—Griffiths (1).

Similar species: *C. rondanii.*

***euryale* (Nixon, 1944; *Dacnusa*)**

Group: 1a

Literature: Nixon 1944-101; Griffiths (K IV-659); Tobias (354).

***fallaciosae* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-857 (K VI-121); Tobias (184).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. leaf miners on *Ranunculus* (Ranunculaceae). *Evidence*—Griffiths (33); NMS (11). *Comment*—Recorded hosts: *P. fallaciosa, P. ranunculi, P. rydeni*.

DNA Barcode: Yes.

***fallax* (Nixon, 1937; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1937-45; Nixon 1944-142 (K 1944-97, 1945-191); Griffiths III-853 (K VI-126); Tobias (157); Papp (2009a, p. 250); Pardo *et al.* (2001).

Hosts: *Hypothesis*—Parasitoid of Agromyzidae mining *Cirsium* spp. (Asteraceae) stems, petioles and mid-ribs. *Evidence*—Griffiths (1); NMS (32). *Comment*—Unusual range of hosts for a Group 5 species, but Griffiths placement here supported by DNA barcode. Griffiths' record is from the midrib-boring *Phytomyza continua* (=*cardui*) which is not recorded from Britain where it has been reared from *Melanagromyza aeneoventris* and *Napomyza lateralis.*

DNA Barcode: Yes.

***femoratus* (Tobias, 1962; *Dacnusa*)**

Group: 1d.

Literature: Griffiths (IV-664); Tobias (420).

***flavipes* (Goureau, 1851; *Dacnusa*)**

Synonymy: *raissa* (Nixon, 1937, *Dacnusa*).

Group: 5a.

Literature: Nixon 1937-34; Nixon 1945-222 (K 1945-192); Griffiths VI-75 (K VI-121); Tobias (178).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha iraeos* leaf-mining *Iris pseudocorus* (Iridaceae). *Evidence*—Griffiths (33); NMS (12).

DNA Barcode: yes; BIN shared with *C. asramenes*.

Similar species: *C. propediremtum* Fischer *et al.* (2004a).

***fordi* (Nixon, 1954; *Dacnusa*)**

Group: 3c.

Literature: Nixon 1954-288; Griffith VI-103 (K VI-117); Tobias (469).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Poemyza*) *lateralis* leaf-mining Poaceae (*Elymus, Agrostis*). *Evidence*—Griffiths (2); NMS (3).

Similar species: possibly *C. concinnus* (Tobias 1986).

***foveolus* (Haliday, 1839; *Alysia*)**

Group: 3a.

Literature: Nixon 1937-79; Nixon 1949-292; Griffith (K VI-115); Tobias (460); Papp (2009c, p.104).

DNA Barcode: Yes.

Similar species: *C. catron, C. convergens*.

***fragilosus* Fischer, Tormos, Pardo & Jiménez, 2002**

Group: 5a.

Literature: Fischer *et al.* (2002).

Similar species: *C. canariensis*.

***freya* (Nixon, 1943; *Dacnusa*)**

Group: 4d.

Literature: Nixon 1946-299 (K 1943-161); Griffiths (K VI-118); Tobias (41).

***fuscipennis* (Nixon, 1937; *Dacnusa*)**

Group: 1b.

Literature: Nixon 1937-20; Nixon 1944-92; Griffiths IV-673 (K IV-661); Tobias (400).

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia* spp. stem miners. *Evidence*—Griffiths (37); NMS (8). *Comment*—Recorded hosts: *O. heringi* on *Sonchus* (Asteraceae); *Ophiomyia* sp. on *Stachys palustris* (Lamiaceae).

DNA Barcode: Yes; shared with *C. cyparissa*; a second BIN may also contain *fuscipennis* or a closely related undescribed species.

***galii* Griffiths, 1984**

Group: 5a.

Literature: Griffiths VII-352.

Hosts: *Hypothesis*—Parasitoid of *Aulagromyza* (=*Paraphytomyza*) *lucens* on *Galium* spp. (Rubiaceae). *Evidence*—Griffiths (1).

Similar species: *C. thusa; C. granulosus.*

***ganesa* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-219 (K 1945-194); Grifffiths VI-80, (K VI-122) [VII-354]; Tobias (257).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* spp. on Poaceae. *Evidence*—Griffiths (1). *Comment*—Recorded hosts: *C. imbuta*, *C. beigerae.*

DNA Barcode: Yes.

***gedanensis* (Ratzeburg, 1852; *Alysia*)**

Synonymy: *anguligena* (Nixon, 1937, *Dacnusa*).

Group: 1e.

Literature: Nixon 1937-25; Nixon 1944-95; Griffiths IV-680 (K IV-665); Tobias (432); Li and van Achterberg (2017).

Hosts: *Hypothesis*—Parasitoid of *Hexomyza schineri* galling *Populus tremulae* (Salicaceae). *Evidence*—Griffiths (7); Georgiev (2004) (8).

***geminus* (Tobias, 1962; *Dacnusa*)**

Group: 4.

Literature: Griffiths (K VI-118); Tobias (52).

Similar species: *C. crenesulcis*.

***gentianellus* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-847 (K VI-127); Tobias (222).

Hosts. *Hypothesis*—Parasitoid of *Phytomyza* spp. on *Gentiana* (Gentianaceae). *Evidence*—Griffiths (3). *Comment*—Recorded hosts: *P. gentianella, P. vernalis*.

***glaber* (Nixon, 1944; *Dacnusa*)**

Group: 1e.

Literature: Nixon 1944-101; Griffiths IV-678 [VII-357] (K IV-666); Tobias (388).

Hosts: *Hypothesis*—Parasitoid of stem-boring *Napomyza* spp.. *Evidence*—Griffiths ("many"), NMS (12), Docavo *et al.* (1993). Comment—Well-known parasitoid of the pest *N. cichorii* attacking *Cichorium intybus* (Asteraceae); *N. crepidicaulis* on *Crepis capillaris* (Asteraceae); *N. carotae* on *Daucus carotae* (Apiaceae).

Barcode: Yes.

***glabriculus* (Thomson, 1895; *Dacnusa*)**

Synonymy: *cortipalpis* (Nixon, 1937, *Dacnusa*) (Griffiths I-888).

Group: 5a.

Literature: Nixon 1937-34; Nixon 1945-222 (K 1945-192); Griffiths (K VI-121, 125); Tobias (181); Godfray and Warrington (2024).

Hosts. *Hypothesis*—Parasitoid of *Liriomyza virgo* on *Equisetum fluviatile* (Equisetaceae). *Evidence*—NMS (12).

***gnaphalii* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-862 (K VI-123); Tobias (110, 312).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza kyffhusana* (=*gnaphalii*) mining Asteraceae. *Evidence*—Griffiths (1).

***gracilipes* (Thomson, 1895; *Dacnusa*)**

Group: 3c.

Literature: Griffiths VI-110 (K VI-117); Tobias (446).

Hosts: Hypothesis—Parasitoid of *Cerodontha (Icteromyza) geniculata* mining *Eriophorum latifolium* (Cyperaceae). Evidence—Griffiths (2).

Similar species: *C. dentisignatus*.

***granulosus* Docavo, Tormos & Fischer, 2002**

Group: 5a.

Literature: Docavo *et al.* (2002).

Similar species: *C. thusa* and *C.galii.*

***griffithsi* Zaykov, 1984**

Group: 5d.

Literature: Zaykov (1984).

Similar species: *C. atis*.

***groschkei* Griffiths, 1967**

Group: 5d.

Literature: Griffiths II-570 (K VI-122); Tobias (306).

Hosts: *Hypothesis*—Parasitoid of *Agromyza prespana* on *Triticum* (Poaceae). *Evidence*—Griffiths (4).

***gyrinus* (Marshall 1895, *Dacnusa*)**

Literature: Marshall (1891-1896); Papp (2003).

Notes: Described from France with type now in Bucharest (Papp 2003). Marshall keys to same couplet as *C. bathyzonus*. Not treated by Nixon & Griffiths though Papp (2003) who transferred it to *Chorebus* presumably considered it a good species.

***hector* (Papp, 2009)**

Group: 4b.

Literature: Papp (2009b).

Similar species: *C. subasper, C. phaedra.*

Notes: Described from Kosovo but not in *Fauna Europaea* (2023).

***herbigradus* (Tobias, 1962; *Dacnusa*)**

Group: 1b.

Literature: Griffiths: IV-663; Tobias (407).

***heringianus* Griffiths, 1967**

Group: 1e.

Literature: Griffiths IV-672 (K IV-665); Tobias (426).

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia thalictricaulis* in stems of *Thalictrum minus* (Ranunculaceae). *Evidence*—Griffiths (5).

Similar species: *C. compressiventris & C. karelicus.*

***hilaris* Griffiths, 1967**

Group: 5a.

Literature: Griffiths II-571 (K VI-121); Tobias (189).

Hosts: *Hypothesis*—Parasitoid of *Agromyza nigripes* on *Glyceria* sp.. (Poaceae). *Evidence*—Griffiths (17).

***hirtigenus* Stelfox, 1957**

Group: 3b.

Literature: Stelfox (1957); Griffith (K VI-117); Tobias (443).

***humeralis* Griffiths, 1968**

Group: 2.

Literature: Griffiths VI-90 (K VI-114); Tobias (124).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Butomomyza*) *angulata* leaf-mining *Carex* spp. (Cyperaceae). *Evidence*—Griffiths (73).

***ibericus* Griffiths, 1967**

Group: 4c.

Literature: Griffiths IV-686 (K VI-682); Tobias (276).

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia beckeri* mining midribs of Asteraceae. *Evidence*—Griffiths (2).

***incertus* (Goureau, 1851; *Dacnusa*)**

Group: 5fi.

Literature: Grifiths V-38 (K VI-134); Tobias (209).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza pascuum* leaf-mining *Euphorbia amygdaloides* (Euphorbiaceae). *Evidence*—Griffiths (8), NMS (?2).

Notes: Possibly conspecific with *C. daimenes*; association of Goureau's *incertus* with this species not certain.

***interjectus* (Tobias, 1962; *Dacnusa*)**

Group: 5d.

Literature: Griffiths (K VI-122); Tobias (311).

***interstitialis* (Thomson, 1895; *Dacnusa*)**

Synonymy: *mamertes* (Nixon, 1943, *Dacnusa*)

Group: uncertain - possibly associated with 7 (*Trichochorebus*) though abdomen less setose.
Literature: Nixon 1946-288 (K 1943-161, 163); Griffiths I-853 (K II-588); Tobias (29); Papp (2007b, p. 24).
DNA Barcode: Yes.
Notes: Has a four-toothed mandible and was placed in *Chorebus* by Nixon (1943, his *Dacnusa mamertes*) and Tobias (1986); Griffith viewed the mandible as convergent and in the absence of other *Chorebus* characters placed it provisionally with other plesiomorphic taxa in *Antrusa* (part of his *Exotela*). Barcode sequence suggests not associated with *Antrusa* and we treat as *Chorebus* pending further research.

***ioni* Lozan & Tobias, 2002**
Group: 5d.
Literature: Lozan & Tobias (2002).
Hosts. *Hypothesis*—Parasitoid of an Agromyzidae sp. on cultivated barley (*Hordeum,* Poaceae). *Evidence*—Lozan and Tobias (2002).
Similar species: *C. iphias.*

***iphias* (Nixon, 1943; *Dacnusa*)**
Group: 5d.
Literature: Nixon 1946-292 (K 1943-168, 1945-190); Griffiths (K VI-122); Tobias (146, 300).
Similar species: *C. andizhanicus; C. chenopodii; C. ioni.*

***iridis* Griffiths, 1968**
Group: 3c.
Literature: Griffiths VI-102 (K VI-117); Tobias (415).
Hosts: *Hypothesis*—Parasitoid of *Cerodontha iridis* on *Iris foetidissima* (Iridaceae). *Evidence*—Griffiths (6).

***irriguus* Papp, 2009**
Group: 5? (unclear from description).
Literature: Papp (2009c).
Similar species: *C. asphodeli, C. venustus.*
Notes: Described from Hungary but not in *Fauna Europaea* (2023).

***kama* (Nixon, 1945; *Dacnusa*)**
Group: 5a.
Literature: Nixon 1945-217 (K 1945-192); Griffiths III-860 (K VI-132); Tobias (173).
Hosts: *Hypothesis*—Parasitoid of *Phytomyza ranunculi* leaf-mining Ranunculaceae. *Evidence*—Griffiths (53). *Comments*—Only reared from two collections (in Denmark) of this much-studied host.
DNA Barcode: Probably yes (needs confirmation).

***karelicus* Tobias, 1986**
Group: 1e.
Literature: Tobias (429).
Similar species: *C. heringianus*.

***kirvus* Tobias, 1999**
Group: 4c.
Literature: Tobias (1999).
Similar species: *C. cylindricus, C. didas.*
Notes: remarkably long ovipositor, nearly the length of the metasoma.

***knautiae* Griffiths, 1967**
Group: 5b.
Literature: Griffiths II-572 (K VI-127) [VII-355]; Tobias (324).
Hosts: *Hypothesis*—Parasitoid of *Agromyza woerzi* leaf-mining *Knautia arvensis* (Caprifoliaceae). *Evidence*—Griffiths (2).

***ladogae* Tobias, 1986**
Group: 3a.
Literature: Tobias (484).
Notes: Holotype associated with “aquatic plant”.
Similar species: *C. longicornis*.

***lanigerus* (Stelfox, 1957; *Gyrocampa*)**

Group: 3c.

Literature: Griffith VI-109 (K VI-117); Tobias (450).

Hosts: *Hypothesis*—Parasitoid of a *Cerodontha* (*Icteromyza*) sp. from an unrecorded host plant. *Evidence*—Griffiths (3).

Similar species: *C. norae*.

***lanzarotensis* Fischer, Tormos, Pardo & Jiménez, 2004**

Group: 5d.

Literature: Fischer *et al.* (2004b).

Similar species: *C. rufimarginatus.*

Notes: Only known from the Canary Islands.

***lar* (Morley, 1924; *Dacnusa*)**

Synonymy: *innanus* (Nixon, 1943, *Dacnusa*).

Group: 5a.

Literature: Nixon 1945-227 (K 1943-161, 165, 1945-192); Griffiths II-573 (K VI-120); Tobias (40, 135, 176).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. leaf-mining shrubby Fabaceae. *Evidence*—Griffiths (4); NMS (9). *Comment*—Recorded hosts: *A. genistae, A. johannae* (Griffiths, NMS); *A. pulla* (Alekseev *et al.* 2019).

DNA Barcode: Yes.

Similar species: Possibly *C. canace.*

***larides* (Nixon, 1944; *Dacnusa*)**

Group: 1a

Literature: Nixon 1944-96; Griffiths (K IV-659); Tobias (356).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* (=*Napomyza*) *evanescens* in stem pith of *Ranunculus*. *Evidence*—NHM (1).

DNA Barcode: Yes.

***lateralis* (Haliday, 1839; *Alysia*)**

Synonymy: *fuscula* (Haliday, 1839, *Alysia*); *albicoxa* (Thomson, 1895, *Dacnusa*).

Group: 5b.

Literature: Nixon 1937-31; Nixon 1944-198; Griffiths II-573 (K VI-128); Tobias (340).

Hosts: Hypothesis—Parasitoid of *Agromyza* spp. (*A. anthracina, A. reptans, A. pseudoreptans*) on *Urtica dioica* (Urticaceae) and *A. ferruginosa* on *Symphytum* spp. (Boraginaceae). Evidence—Griffiths (21, *Urtica*; 9, *Symphytum*); NMS (120, *Urtica*).

DNA Barcode: Yes, shares BIN with *C. credne* & *C. bres* with 1.9% sequence divergence.

***leptogaster* (Haliday, 1839; *Alysia*)**

Synonymy: *naenia* (Morley, 1924, *Dacnusa*); *dinae* (Burghele, 1960, *Dacnusa*).

Group: Griffiths placed in 1c but biology and DNA barcode suggest 1e.

Literature: Nixon 1937-18; Nixon 1944-90, (K 1943-164); Burghele (1960a); Griffiths IV-676 (K IV-664); Tobias (423); Docavo *et al.* (2001).

Hosts: *Hypothesis*—Parasitoid of the *Ophiomyia pulicaria* group mining leaves of Asteraceae. *Evidence*—Griffiths (53); NMS (4). *Comment*—Recorded hosts: *O. pulicaria, O. cunctata, O. pinguis*.

DNA Barcode: Yes; sister BIN may be an undescribed species or one of the similar species below.

Similar species: *C. longiventris, C. petiobrevis, C. trjapitzini.*

***liliputanus* Fischer, Tormos, Docavo & Pardo, 2004**

Group: 5a.

Literature: Fischer *et al.* (2004a).

Similar species: *C. melanophytobiae*.

[*limnicola* (Nees, 1812; *Bassus*)]

Group: ?3a.

Literature: Nees (1812) p. 261.

Notes: Nees compares with *C. longicornis*; not treated by Nixon & Griffiths and as type lost probably a *nomen dubium*.

[*lonchopterae* (Ruschka, 1926; *Dacnusa*)]

Described by Ruschka (1926) from material reared from *Lonchoptera lutea* (Lonchopteridae). Not subsequently recognised or discussed by Nixon or Griffiths. No Dacnusini are known from lonchopterids and if correct this would be a remarkable host record. Ruschka's description is too brief to place this species (which he compares to *C. ovalis*) and examination of the type, if it exists, is required to take further.

***longicornis* (Nees, 1811; *Bracon*)**

Synonymy: *affinis* (Nees, 1812, *Bassus*). Synonymy first established in Shenefelt (1974) but overlooked until O'Connor *et al.* (1999).

Group: 3a.

Literature: Nixon 1937-80; Nixon 1949-294; Griffiths (K VI-116); Tobias (476, 481).

Hosts: *Hypothesis*—Parasitoid of *Hydrellia* mining leaves of Poaceae. *Evidence*—Tobias (1986); NMS (8). *Comment*—Recorded host: *H. maura.* Tobias gives *H. griseola* (though this name often applied uncritically to *Hydrellia*) and *Phytomyza rufipes* which was not accepted by Griffiths (III-781).

DNA Barcode: Yes.

Similar species: *C. affiniformis, C. asini, C. ladogae.*

***longiventris* Docavo, Fischer & Tormos, 2001**

Group: 1c.

Literature: Docavo *et al.* (2001).

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia* sp. or *Phytomyza horticola*. *Evidence*—Docavo *et al.* (2001) (*P. horticola*: 3). *Comment*—Related species feed on *Ophiomyia* spp. whose mines can be confused with *P. horticola*.

Similar species: *C. leptogaster, C. petiobrevis.*

***lugubris* (Nixon, 1937; *Dacnusa*)**

Group: 5b.

Literature: Nixon 1937-35; Nixon 1945-219 (K 1945-192, 194); Griffiths II-574, [VII-354] (K VI-121); Tobias (190, 266).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. on Poaceae. *Evidence*—Griffiths (20); NMS (2). *Comment*—Recorded hosts: *A. albipennis, A. nigripes*.

DNA Barcode: Yes.

[*luzulae* Griffiths, 1967]

Notes: Synonymized here with *C. aphantus* q.v..

***lychnidis* Griffiths, 1967**

Group: 1b.

Literature: Griffiths IV-675 (K IV-664); Tobias (411).

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia melandricaulis* stem mining *Lychnis flos-cuculi* (Caryophyllaceae). *Evidence*—Griffiths (2); NMS (2).

***maculigastrus* Shenefelt, 1974**

Synonymy: *maculata* (Nixon, 1944, *Dacnusa*) preocc..

Group: 1a

Literature: Nixon 1944-106; Griffiths (K IV-660).

***melanophytobiae* Griffiths, 1968**

Group: 5a.

Literature: Griffiths V-43 (K VI-121, 133 & 134); Tobias (19, 196, 206).

Hosts: Hypothesis—Parasitoid of *Amauromyza (= Melanophytobia) chamaebalani* leaf-mining *Lathyrus tuberosus.* Evidence—Griffiths (5).

DNA Barcode: No; a BIN with a single specimen morphologically similar to *C. melanophytobiae* is likely an undescribed species.

Similar species: *C. liliputanus, C. stolyarovii.*

***merellus* (Nixon, 1937; *Dacnusa*)**

Group: 2.

Literature: Nixon 1937-26; Nixon 1944-144, 145 (K 1943-165); Griffiths VI-92 (K VI-114); Tobias (118).

Hosts: Hypothesis—Parasitoid of *Cerodontha* (*Dizygomyza* & *Butomomyza*) leaf-mining Cyperaceae,

Juncaceae and Poaceae. Evidence—Griffiths (82); NMS (55). Comment—Recorded hosts: *C. caricicola, C. caricivora, C. chaixiana, C. luzulae, C. scirpi, C. staryi.*

DNA Barcode: Yes.

***merion* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-197 (K 1945-191); Griffiths III-851 (K VI-131); Tobias (167).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza wahlgreni* (=*taraxacocecis*) mining leaf bases of *Taraxacum* sp. (Asteraceae). *Evidence*—Griffiths (2).

DNA Barcode: Probably; shares BIN with *C. crocale*.

Notes: Five further male specimens (NMS), probably of this species, reared from *Phytomyza cecidonomia* (on *Hypochoeris*) and an agromyzid midrib miner on *Leontodon* (both Asteraceae), share a barcode with *Chorebus crocale* though are in a separate clade with 2.2% separation. They share the iridescent wings of *crocale* but have some characters of *merion* and a host with similar biology.

***metallicus* Griffiths, 1968**

Group: 3a.

Literature: Griffiths VI-107 (K VI-115); Tobias (455).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha geniculata* leaf-mining *Eriophorum latifolium* (Cyperacaeae). *Evidence*—Griffiths (13).

Similar species: *C. pseudoasini, C. pseudometallicus.*

***miodes* (Nixon, 1949; *Gyrocampa*)**

Group: 3a.

Literature: Nixon 1949-292; Griffith (K VI-115); Tobias (453, 488).

***misellus* (Marshall, 1895; *Dacnusa*)**

Group; 5fi.

Literature: Nixon 1937-39; Nixon 1945-225 (K 1943-161, 1945-192); Griffiths V-41 (K VI-134); Tobias (21, 195).

Hosts: *Hypothesis*—Chiefly a parasitoid of *Liriomyza* spp. leaf miners. *Evidence*—Griffiths (14); NMS (10); Docavo *et al.* (1993) (4). *Comment*—Single rearing records from *Phytomyza syngenesiae* & *P. horticola*. Recorded hosts: *L. balcanica* (= *cyparissiae*), *L. congesta, L. centaureae*.

DNA Barcode: Yes; a single specimen in a related BIN probably represents an undescribed species.

Similar species: *C. stolyarovi*.

***mitrus* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-217 (K 1945-191, 193); Griffiths III-868 (K VI-128, 133); Tobias (219).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza campanulae* leaf-mining *Campanula* spp. (Campanulaceae). *Evidence*—Griffiths (18); NMS (4).

DNA Barcode: Yes; shares BIN with specimens morphologically similar to *Chorebus armida* reared from *Phytomyza* on Asteraceae.

***mucronatus* (Telenga, 1934; *Dacnusa*)**

Group: 5a.

Literature: Tobias (32), Fischer (2001).

Hosts: *Hypothesis*—Parasitoid of *Pseudonapomyza atra* (a Poaceae miner). *Evidence*—Tobias (1986); *Comment*—Record from *Phytomyza campanulae*, which mines *Campanula* spp. (Campanulaceae) (Shenefelt 1974) probably incorrect.

Similar species: *C. nitidus*, *C. dumitus*.

***myles* (Nixon, 1943; *Dacnusa*)**

Group: 4a.

Literature: Nixon 1946-292 (K 1943-163); Griffiths (K VI-118); Tobias (62).

***nanus* (Nixon, 1943; *Dacnusa*)**

Group: 5e.

Literature: Nixon 1946-285 (K 1943-164); Griffiths III-867 (K VI-124) [VII-357]; Tobias (98).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. (*obscura* gp.) leaf-mining Boraginaceae & Lamiaceae.

Evidence—Griffiths (28); NMS (4). *Comment*—Recorded hosts: *P. medicaginis* (= *symphyti*), *P. myosotica, P. obscura, P. origani, P. petoei* and *P. horticola* [dwarf specimen].

[*navicularis* (Nees, 1812; *Bassus*)]

Literature: Nees (1812; 1834), Godfray (2020).

Notes: Not recognised since 19th century and type lost; possibly a synonym of *Protodacnusa tristis* Nees but likely a *nomen dubium* (Godfray 2020).

***nerissus* (Nixon, 1937; *Dacnusa*)**

Group: 1b.

Literature: Nixon 1937-19; Nixon 1944-92; Griffiths (K IV-664); Tobias (409).

***nigriscaposus* (Nixon, 1949; *Gyrocampa*)**

Synonymy: *propodealis* (Nixon, 1949, *Gyrocampa*) (Griffiths VI-109).

Group: 3c.

Literature: Nixon 1949-296; Griffith VI-108 (K VI-117); Tobias (465, 471, 486).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Icteromyza*) *geniculata* leaf-mining *Eriophorum* (Cyperaceae). *Evidence*—Griffiths (43). Comments—Griffiths also records *C. calosoma* as a host whose host plant is unknown.

Notes: Synonymy, due to Griffiths.

***ninella* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-221 (K 1945-194); Griffiths II-575 but see VI-80 (K VI-132) [VII-356]; Tobias (265).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* spp. leaf-mining Poaceae. *Evidence*—Griffiths (11). *Comment*—Recorded host: *C. calamagrostidis (=spenceri*)).

DNA Barcode: see *C. asramenes.*

***nitidus* (Tobias, 1966; *Dacnusa*)**

Group: 5a.

Literature: Tobias (33); Fischer (2001).

Similar species: *C. mucronatus* (both small dark species).

***nixoni* Burghele, 1959**

Group: 3b

Literature: Burghele (1959); Griffiths (K VI-117); Tobias (441).

Hosts: *Hypothesis*—Parasitoid of *Hydrellia* spp. (Ephydridae) mining aquatic plants. *Evidence*—"Hundreds" reared from *H. griseola* pupae (Burghele 1959).

Notes: *C. stagnalis* Heymons might be a senior synonym (Burghele 1960a).

***nobilis* Griffiths, 1968**

Group: 2.

Literature: Griffiths VI-94 (K VI-114); Tobias (125).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Butomomyza*) *eucaricis* leaf-mining *Carex* spp. (Cyperaceae). *Evidence*—Griffiths (18); NMS (24).

DNA Barcode: Yes.

***nomia* (Nixon, 1937; *Dacnusa*)**

Group: 1a.

Literature: Nixon 1937-43; Nixon 1944-106; Griffiths (K IV-660); Tobias (361).

DNA Barcode: Yes.

***norae* Graham, 1986**

Group: 3c.

Literature: Graham (1986).

Similar species: *C. lanigerus*.

Notes: A Madeira endemic; metasomal tergites pubescent and punctate.

***nydia* (Nixon, 1937; *Dacnusa*)**

Group: 4a.

Literature: Nixon 1937-75; Nixon 1946-281 (K 1943-162); Griffiths I-879 [II-576] (K VI-119); Tobias (69).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* leaf miners on Poaceae. *Evidence*—Griffiths (71); NMS (2). *Comment*—Recorded hosts: *A. albipennis, A. nigripes*.

DNA Barcode: Yes.

[*obliquus* (Thomson, 1895; *Dacnusa*)]

Griffiths (VI-98) discusses and considers a *nomen nudum* as type lost.

***obscurator* Jiménez & Tormos, 1988**

Group: 1e.

Literature: Jimenez and Tormos (1988), Docavo *et al.* (2006).

Similar species: *C. rondanii*.

***obscuripes* (Ruschka, 1913; *Dacnusa*)**

Group 6.

Literature: Ruschka (1913); Burghele (1960a).

Hosts: Type specimen reared from a dipteran puparium, possibly *Hydrellia* sp. (Ephydridae), in petiole of *Potamogeton natans* (Potamogetonaceae).

Notes: Poorly known species, Burghele (1960a) thought likely the same as *C. striola* which she also considered synonymous with *C. rousseaui.*

***oltenicus* (Burghele, 1960; *Dacnusa*)**

Group: 5a.

Literature: Burghele (1960a); Griffiths (K VI-120); Tobias (332).

***ophthalmicus* (Tobias, 1962; *Paragyrocampa*)**

Group: 3d.

Literature: Tobias (1962); Tobias (492).

Similar species: *C. catron, C. convergens.*

Notes: not treated by Griffiths; eyes highly convergent ventrally.

***orbiculatae* Griffiths, 1967**

Group: 1e.

Literature: Griffiths IV-671 (K IV-666); Tobias (389).

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia orbiculata* in roots and stems of *Pisum sativum* (Fabaceae). *Evidence*—Griffiths (3).

***oreoselini* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-869 (K VI-134); Tobias (237 [as "*areoselini*"], 242).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza pauliloewii* leaf-mining *Peucedanum oreoselinum* (Apiaceae). *Evidence*—Griffiths (7).

***orissa* (Nixon, 1944; *Dacnusa*)**

Group: 2.

Literature: Nixon 1944-146; Griffiths (K VI-115); Tobias (122).

***oritias* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-198; Griffiths VII-355 (K VI-126); Tobias (158).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. in Asteraceae petioles and stems. *Evidence*—Griffiths (9). *Comment*—Recorded hosts: *P. picridocecis* in petioles, and *Phytomyza* sp., in stems of *Picris hieracioides*; *Phytomyza* sp. in *Leontodon hispidus* petioles.

***ornatus* (Telenga, 1935; *Dacnusa*)**

Group: 1a.

Literature: Tobias (1998); Papp (2007a).

Notes: Synonymised with *C. bathyzonus* by Tobias but this not accepted by Papp (though he did not give distinguishing characters).

Similar species: *C. bathyzonus.*

***ovalis* (Marshall, 1896; *Dacnusa*)**

Group: 5a

Literature: Nixon 1937-38; Nixon 1945-194 (K 1943-165, 1945-193); Griffiths (K VI-132); Tobias (228, 259).

***parvungulus* (Thomson, 1895; *Dacnusa*)**

Synonymy: *acco* (Nixon, 1943, *Dacnusa*).

Group: 4c.

Literature: Nixon 1946-294 (K 1943-162); Griffiths IV-685 (K IV-682); Tobias (273).

Hosts: *Hypothesis*—Parasitoid of stem- and flowerhead-boring *Napomyza* on Asteraceae. *Evidence*—Griffiths (18); NMS (8). *Comment*—Recorded hosts: *N. lateralis, N. cichorii.*

DNA Barcode: Yes.

***pelion* (Nixon, 1944; *Dacnusa*)**

Group: 2.

Literature: Nixon 1944-146; Griffiths (K VI-114) [VII-357]; Tobias (121).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* spp. leaf mining *Carex* spp. (Cyperaceae). *Evidence*—Griffiths (84). *Comment*—Recorded hosts: *C. eucaricis, C. morosa, C. vigneae,* ?*C. caricicola*

***perkinsi* (Nixon, 1944; *Dacnusa*)**

Group: 5b.

Literature: Nixon 1944-251 (K 1944-195); Griffiths II-576 (K VI-127); Tobias (334).

Hosts: *Hypothesis*—Parasitoid of *Agromyza albitarsis* (= *lycophaga*) leaf mining Salicaceae. *Evidence*—Griffiths (6).

DNA Barcode: Yes; the sister BIN with a single specimen probably represents an undescribed species.

***petiobrevis* Docavo, Fischer & Tormos, 2001**

Group: 1c.

Literature: Docavo *et al.* (2001).

Hosts: *Hypothesis*—Possibly a parasitoid of *Phytomyza horticola*. *Evidence*—Docavo *et al.* (2001) (4). *Comment*—Related species feed on *Ophiomyia* spp. which can be confused with *P. horticola*

Similar species: *C. leptogaster, C. longiventris*.

***petiolatus* (Nees, 1834; *Alysia*)**

Group: 1c

Literature: Nixon 1937-27; Nixon 1944-150, (K 1943-165); Griffiths (K IV-664); Tobias (374).

Hosts: Largest European *Chorebus* and probably not a parasitoid of Agromyzidae. Tobias (1986) gives as host, without citation, *Platyparea poeciloptera* (Tephritidae) which feeds on *Asparagus officinalis* (Asparagaceae); though old records of *C. petiolatus* from *Asparagus* likely refer to *C. rondanii* parasitizing *Ophiomyia simplex* (Giard 1904, Griffiths IV-670). *P. poeciloptera* is not found in the UK where *C. petiolatus* is common.

DNA Barcode: Yes.

Similar species: *dentiferus* (Griffiths I-890).

***phaedra* (Nixon, 1937; *Dacnusa*)**

Group: 4d.

Literature: Nixon 1937-74; Nixon 1946-293 (K 1943-163); Griffiths (K VI-118); Tobias (54).

DNA Barcode: Yes.

Similar species: *C. hector.*

***piliventris* (Tobias, 1971; *Trichochorebus*)**

Group: 7.

Literature: Tobias (1975); Tobias (1986, p. 170).

Notes: Metasomal tergites entirely pubescent.

***pimpinellae* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-870 (K VI-133); Tobias (223).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza pimpinellae* leaf-mining *Pimpinella* spp. (Apiaceae). *Evidence*—Griffiths (1); NMS (1).

DNA Barcode: Possibly; specimens that key to *pimpinellae* are in a BIN which also contains *C. armida* & *C. punctus*

Notes: Possibly synonymous with *Chorebus armida.*

***pione* (Nixon, 1944)**

Group: 5b.

Literature: Nixon 1944-254; Griffiths II-576 (K VI-124); Tobias (318).

Hosts: *Hypothesis*—Parasitoid of *Agromyza phragmitidis* on *Phragmites communis* (Poaceae). *Evidence*—Griffiths (6); NMS (1).

***poemyzae* Griffiths, 1968**

Group: 5a.

Literature: Griffiths VI-80 (K VI-132) [VII-356]; Tobias (264).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* spp. leaf-mining Poaceae. *Evidence*—Griffiths (27); NMS (?4). *Comment*—Recorded hosts: *C. incisa, C. pygmaea, C. beigerae* (= *deschampsiae*).

DNA Barcode: see *C. asramenes.*

***polygoni* Griffiths, 1967**

Group: 5b.

Literature: Griffiths II-577 (K VI-128); Tobias (320).

Hosts: *Hypothesis*—Parasitoid of leaf-mining *Agromyza* spp.. *Evidence*—Griffiths (8). *Comment*—Holotype (+5) reared from *A. polygoni* on *Bistorta officinalis* (= *Polygonum bistorta*) (Polygonaceae); two from *A. nigrescens* (which is a *Geranium* [Geraniaceae] miner); an unusual combination of hosts.

***posticus* (Haliday, 1839; *Alysia*)**

Synonymy: *gracilis* (Nees, 1834, *Alysia*), synonymy by van Achterberg (1997); *egregia* (Marshall, 1895, *Dacnusa*); *dentatus* (Tobias, 1962, *Dacnusa*), synonymy by Tobias (1986); *?erythogaster* (Szépligeti, 1901, *Dacnusa*) after Tobias (1986).

Group: 1d.

Literature: Nixon 1937-23; Nixon 1944-148, (K 1943-163); Griffiths (K IV-665); Tobias (85, 377, 381).

Hosts: *Hypothesis*—Parasitoid of *Chamaepsila* (=*Psila*) *rosae* (Psilidae) on roots of Apiaceae. *Evidence*—Nixon 1944-148; Wright *et al.* (1947); van't Sant (1961); Burn (1984); NMS (2). *Comment*—The host is the carrot fly, a well-known pest of the vegetable. May also attack *Chamaepsila nigricornis* though needs confirmation.

DNA Barcode: Yes; in two BINs which both contain specimens that would key to *posticus* & *selene* in Nixon, and which do not seem to have consistent morphological differences.

Similar species: *C. cultratus*; *C. dentiferus* (Griffiths I-890).

Notes: The only Dacnusini recorded from Psilidae. A large species with, in the female, a laterally compressed abdomen. Wright *et al.* (1947) provide details of life history and juvenile stages. An attempted introduction to North America apparently failed (Maybee 1952). The distinctiveness and status of *C. selene* needs further research. *C. dentatus* listed as species in *Fauna Europaea* (2023).

***pratensis* (Tobias, 1962 *Dacnusa*)**

Group: 1a.

Literature: Griffiths (K IV-659); Tobias (350).

DNA Barcode: No; single specimen in a BIN that is morphologically similar to *C. pratensis* likely represents an undescribed species.

***propediremptum* Fischer, Tormos, Docavo & Pardo, 2004**

Group: 5c.

Literature: Fischer *et al.* (2004a).

Similar species: *C. diremptus, C. flavipes.*

prosper* (Nixon, 1945) *Dacnusa

Group: 5a.

Literature: Nixon 1945-203; Griffiths (K VI-130); Tobias (229).

***pseudoasini* Docavo & Tormos, 1998**

Group: 3a.

Literature: Docavo and Tormos (1998).

Similar species: *C. asini, C. metallicus, C. pseudometallicus.*

***pseudoasphodeli* Tormos, Pardo, Jiménez, Asís & Gayubo, 2003**

Group: 4a.

Literature: Tormos *et al.* (2003).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza chaerophylli* on *Daucus carota* (Apiaceae). *Evidence*—Tormos *et al.* (2003).

Similar species: *C. asphodeli.*

Notes: Description includes information on larval morphology and venom apparatus.

***pseudoasramenes* Tormos, Pardo, Jiménez, Asís & Gayubo, 2003**

Group: 5a.

Literature: Tormos *et al.* (2003).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha phragmitophila* on *Arundo donax* (Poaceae). *Evidence*—Tormos *et al.* (2003).

Notes: Description includes some information on larval morphology and venom apparatus.

Similar species: *C. asramenes.*

***pseudometallicus* Docavo & Tormos, 1998**

Group: 3a.

Literature: Docavo and Tormos (1998).

Similar species: *C. asini, C. metallicus.*

***pseudomisellus* Griffiths, 1968**

Group: 5f.

Literature: Griffiths V-44 (K VI-134); Tobias (27, 200).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza congesta* mining Fabaceae. *Evidence*—Griffiths (7).

DNA Barcode: No; BIN with specimens similar to *C. pseudomisellus* likely an undescribed species.

Similar species: *C. xsarus*.

***pulchellus* Griffiths, 1967**

Group: 1a.

Literature: Griffiths IV-667 (K IV-659) [VII-357]; Tobias (351).

Hosts: *Hypothesis*—Parasitoid of an Agromyzidae feeding in the midrib of *Hypochoeris radicata* (Asteraceae), likely *Phytomyza cecidonomia*. *Evidence*—Griffiths (3).

Similar species: *C. separatus*.

***pulverosus* (Haliday, 1839; *Alysia*)**

Synonymy: *marsyas* (Nixon, 1937, *Dacnusa*) synonymy by van Achterberg (1997).

Group: 1a.

Literature: Nixon 1937-42; Nixon 1944-99; Griffiths (K IV-660); Tobias (364).

Notes: Griffiths (IV-660) considered the name *pulverosus* unavailable, a view rejected by van Achterberg (1997).

***punctus* (Goureau, 1851; *Dacnusa*)**

Group: 5a.

Literature: Griffiths III-848 (K VI-130) [VII-355]; Tobias (288).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. leaf-mining ferns (Pteridophyta) and Crassulaceae. *Evidence*—Griffiths (34); NMS (29). *Comment*—Recorded fern-feeding hosts: *P. scolopendri, P. dorsata*; from Crassulaceae: *P. rhodiolae*, *P. sedicola*.

DNA Barcode: Yes; specimens from ferns and *P. rhodiolae* (UK) share a BIN with *C. armida* (q.v.); specimens from *P. sedicola* (Finland) are in a separate BIN.

Notes: Griffiths III-848 speculated that wasps associated with ferns and Crassulaceae were separate species which partially accords with DNA barcode data.

***pusiculus* Papp, 2009**

Group: 1c.

Literature: Papp (2009c).

Similar species: *C. serus, C. xiphidius*.

Notes: Described from Slovakia but not in *Fauna Europaea* (2023).

***resa* (Nixon, 1937; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1937-21; Nixon 1944-151, (K 1943-165); Griffiths II-577 (K VI-123); Tobias (108); Papp (2013, p. 237).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. (*ambigua* group) leaf-mining Poaceae. *Evidence*—Griffiths (3). *Comment*—Record from *Phytomyza melana* which feeds on Apiaceae (Alekseev *et al.* 2019) likely an error.

DNA Barcode: Yes; specimens in two sister BINs.

***rhanis* (Nixon, 1943; *Dacnusa*)**

Group: 4b.

Literature: Nixon 1946-290 (K 1943-162); Griffiths (K VI-119); Tobias (7).

***risilis* (Nixon, 1949; *Gyrocampa*)**

Group: 3a.

Literature: Nixon 1949-297; Griffith (K VI-116); Tobias (473).

***rondanii* (Giard, 1904; *Dacnusa*)**

Synonymy: *galbus* (Nixon, 1944, *Dacnusa*); *bathyzonus* auct. non Marshall.

Group: 1e.

Literature: Nixon 1944-93; Griffiths IV-669 (K IV-665); Tobias (386).

Hosts: *Hypothesis*—Parasitoid of *Ophiomyia simplex* in stems of *Asparagus officinalis* (Asparagaceae). *Evidence*—Giard (1904); Barnes and Walton (1934); Barnes (1937); Griffiths (many); Morrison *et al.* (2014).

DNA Barcode: Yes.

Similar species: *C. eucodonis; C. obscurator.*

Notes: Host a pest of cultivated asparagus.

***rostratae* Griffiths, 1984**

Group: 5c.

Literature: Griffiths VII-353; Godfray and Warrington (2023).

Hypothesis—Parasitoid of *Phytomyza rostrata* in seedheads of Orobanchaceae. *Evidence*—Griffiths (60), NMS (3), Moraal and Dirkse (1992).

Similar species: *C. diremtus, C. unicus.*

***rotundiventris* (Thomson, 1895; *Dacnusa*)**

Group: 5a.

Literature: Griffiths II-578 (K VI-125); Tobias (80).

Hosts: *Hypothesis*—Parasitoid of *Agromyza distorta* leaf-mining Poaceae. *Evidence*—Griffiths (18).

***rousseaui* (Schulz, 1907; *Dacnusa*)**

Group: 6.

Literature: Rousseau (1907); Burghele (1960a); Griffiths (K VI-113).

Notes: A freshwater-adapted species; whether it is distinct from *C. striola* (q.v.), needs further investigation.

***rubicundus* Griffiths, 1968**

Group: 5a.

Literature: Griffiths VI-78 (K VI-140); Tobias (112).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* spp. leaf-mining Poaceae. *Evidence*—Griffiths (2). *Comment*—Two records from *C. pygmaea* but Griffiths considers main host likely a different species.

DNA Barcode: Yes; in two BINs that seem morphologically very similar.

Similar species: *C. citreus, C. vodaro.*

***ruficollis* (Stelfox, 1957; *Gyrocampa*)**

Group: 3a.

Literature: Griffiths (K VI-115); Tobias (463); Yari *et al.* (2016).

DNA Barcode: Yes.

***rufimarginatus* (Stelfox, 1954; *Dacnusa*)**

Group: 5d.

Literature: Stelfox (1954); Griffiths (K VI-123); Tobias (51).

Similar species: *C. tergoflavus, C. lanzarotensis.*

[*rufipes* (Nees, 1812; *Bassus*)]

Notes: Not treated by Nixon or Griffiths; Haliday (1833) considered a synonym of *Dacnusa pubescens* and Thomson (1895) stated similar to *D. exserens* (= *pubescens*). Thus not *Chorebus* and as type lost probably a *nomen dubium*.

***salvoi* Jiménez & Tormos, 1988**

Group: 1b.

Literature: Jimenez and Tormos (1988); Docavo *et al.* (2006).

Similar species, *C. bathyzonus*.

***sativi* (Nixon, 1943; *Dacnusa*)**

Group: 5a.

Literature: Griffiths III-854 (K VI-124) [VII-355]; Tobias (36).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza horticola* (= *atricornis*, part) leaf-mining Fabaceae. *Evidence*—Griffiths (3); Docavo *et al.* (2006).

Notes: Described from Morocco and recorded from Spain.

***scabiosae* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-849 (K VI-129); Tobias (37).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza scabiosae* on *Scabiosa columbaria* (Dipsacaceae). *Evidence*—Griffiths (20).

***scabrifossa* Stelfox, 1957**

Group: 6.

Literature: Stelfox (1957); Tobias (436); Papp (2009a, p. 257).

Notes: A freshwater-adapted species.

Similar species: possibly *C. sculptitergum*.

***schlicki* Griffiths, 1968**

Group: 5a.

Literature: Griffiths V-33 (K VI-125); Tobias (183); Godfray and Warrington (2024).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza virgo* on *Equisetum fluviatile* (Equisetaceae). *Evidence*—Griffiths (35).

***sculptitergum* Tobias, 1998**

Group: 3b or 6?

Literature: Tobias (1998).

Similar species: possibly *C. scabrifossa* or *C. densepunctatus.*

***scythicus* Perepechayenko, 2004**

Group: 1e.

Literature: Perepechayenko (2004).

Similar species: Perepechayenko (2004) does not compare with other species but says belongs to Nixon's *senilis* s.s. group but with relatively little pubescence and a shiny black body.

Notes: Possibly associated with *Caragana frutex* (Fabaceae). Described from Ukraine though not in *Fauna Europaea* (2023).

***selene* (Nixon, 1937; *Dacnusa*)**

Group: 1d.

Literature: Nixon 1937-24; Nixon 1944-149; Griffiths (K IV-665); Tobias (86, 382).

Notes: Not well characterised—see *C. posticus* notes.

***senilis* (Nees, 1812; *Bassus*)**

Synonymy: *tomentosus* (Thomson, 1895, *Dacnusa*); *nemesis* (Morley, 1924, *Dacnusa*).

Group: 1a.

Literature: Nixon 1937-41; Nixon 1944-99, (K 1943-164); Griffiths IV-666 (K IV-660) [VII-357]; Tobias (366).

Hosts: *Hypothesis*—Parasitoid of *Melanagromyza* & *Napomyza* boring stems of Asteraceae, Scrophulariaceae & Apiaceae. *Evidence*—Griffiths (16); NMS (20); Docavo *et al.* (1993). *Comment*—Recorded hosts: *M. aenoventris, N. lateralis, N. carotae, N. cichorii, N. scrophulariae*. Records from Cecidomyiidae and Psilidae almost certainly incorrect.

DNA Barcode: Yes; the BIN is split into two sub-clades, one containing *senilis* as described above and the other a similar but morphologically distinct wasps reared from *Ophiomyia* sp.; probably two species are involved.

Similar species: *C. stenocentrus.*

***separatus* (Telenga, 1935; *Dacnusa*)**

Group: 1a.

Literature: Tobias (352).

Similar species: *C. pulchellus.*

***serus* (Nixon, 1937; *Dacnusa*)**

Group: 1b.

Literature: Nixon 1937-22; Nixon 1944-94; Griffiths (K IV-660); Papp (2009c, p. 115); Tobias (370).

DNA Barcode: Yes.

Similar species: *C. pusiculus*.

***singularis* (Tobas, 1962; *Dacnusa*)**

Group: 4a.

Literature: Griffiths (K VI-119); Tobias (72).

***siniffa* (Nixon, 1937; *Dacnusa*)**

Group: 3a.

Literature: Nixon 1937-81; Nixon 1949-297 (K 1943-164); Griffith VI-105 (K VI-116); Tobias (468, 490).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Dizygomyza*) leaf-mining Cyperaceae. *Evidence*—Griffiths (3); NMS (3). *Comment*—Recorded hosts: *C. suturalis* on *Bulboschoenus maritima*, *C. morosa* on *Carex vulpina.*

DNA Barcode: Yes.

Similar species: possibly *C. concinnus.*

***solstitialis* (Stelfox, 1952; *Dacnusa*)**

Group: 5a.

Literature: Griffiths II-579 (K VI-121); Tobias (303).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. leaf-mining Poaceae. *Evidence*—Griffiths (19); NMS (12). *Comment*—Recorded hosts *A. megalopsis, A. albipennis*.

DNA Barcode: Yes.

***spenceri* Griffiths, 1964**

Group: 4a.

Literature: Griffiths I-881 (K VI-119); Tobias (67).

Hosts: *Hypothesis*—Parasitoid of *Agromyza phragmitidis* on *Phragmites australis* (Poaceae)). *Evidence*—Griffiths (1).

***stagnalis* (Heymons, 1908)**

Poorly known; Burghele (1960a) thought perhaps a prior name for *C. hirtigenus* or *C. nixoni.*

***stenocentrus* (Thomson, 1895; *Dacnusa*)**

Group: 1a.

Literature: Griffiths VII-357.

Hosts *Hypothesis*—Parasitoid of *Phytomyza buhriella* in stems of *Petasites hybridus* (Asteraceae). *Evidence*—Griffiths (15).

Similar species: *C. senilis.*

stenocerus* (Thomson, 1895) *Dacnusa

Synonymy: *praeclara* (Nixon, 1944, *Dacnusa*) (Griffiths IV-659).

Group: 1a.

Literature: Nixon 1944-100 (as *praeclara*); Griffiths IV-659; Tobias (346).

***stilifer* Griffiths, 1968**

Group: 3c.

Literature: Griffiths VI-116 (K VI-101); Tobias (406).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha staryi* on *Carex* sp. (Cyperaceae). *Evidence*—Griffiths (9).

***stolyarovi* Perepechayenko, 2008**

Group: 5fi.

Literature: Perepechayenko (2008).

Similar species: *C. misellus, C. melanophytobiae, C. calthae, C. thecla.*

***striola* Stelfox, 1957**

Group: 6.

Literature: Stelfox (1957); Tobias (438); Burghele (1960a).

Notes: Burghele (1960a) believed, probably correctly, that this species is a synonym of *C. rousseaui*. A freshwater-adapted species; Tobias (1986) records *Hydrellia* sp. as a host but not clear on what authority.

***subasper* Griffiths, 1968**

Group: 4b.

Literature: Griffiths VI-72 (K VI-119); Tobias (5).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha alpina* leaf-mining *Trisetum alpestre* (Poaceae). *Evidence*—Griffiths (1).

Barcode: No; unidentified wasps in two BINs key to near *subasper*.

Similar species: *C. hector.*

***subfuscus* Griffiths, 1968**

Group: 4a.

Literature: Griffiths V-30 (K VI-119); Tobias (76).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza buhri* in stems of Campanulaceae. *Evidence*—Griffiths (5).

***sylvestris* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-843 (K VI-130) [VII-354]; Tobias (293).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. leaf-mining *Lonicera* spp. & *Symphoricarpus albus* (Caprifoliaceae). *Evidence*—Griffiths (56); NMS (169). *Comment*—Recorded hosts: *P. alpigenae, P. aprilina* (= *lonicerella*)*, P. lonicerae* (= *xylostei*).

DNA Barcode: Yes; a single specimen that morphologically and biologically matches *C. sylvestris* is in a different BIN with *C. xylostellus*; non-barcode compliant sequences from wasps reared from *Phytomyza cirsii* (NMS 15) are associated with *C. sylvestris* BIN but probably represent an undescribed species.

***talaris* (Haliday, 1839; *Alysia*)**

Group: 4b.

Literature: Nixon 1937-51; Nixon 1954-288; Griffiths VI-71 (K VI-118), [VII-352]; Papp (2009a, p. 246), Tobias (3).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Poemyza*) spp. leaf-mining Poaceae. *Evidence*—Griffiths (47); NMS (5). *Comment*—Recorded hosts: *C. incisa, C. pygmaea, C. pygmella, C. zoerneri*.

DNA Barcode: Yes.

Notes: Nixon erected the genus *Etriptes* for this species because it fitted poorly into his concept of *Dacnusa* (*Chorebus* in modern sense), though doubted it had "genuine validity".

***tamiris* (Nixon, 1943; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1946-286 (K 1943-164); Griffiths III-858 (K VI-126, 129); Tobias (96).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza calthophila* leaf-mining *Caltha palustris* (Ranuculaceae). *Evidence*—Griffiths (48); NMS (3).

DNA Barcode: Yes.

***tamsi* (Nixon, 1944; *Dacnusa*)**

Group: 1e.

Literature: Nixon 1944-93; Griffiths (K IV-665); Tobias (384).

***tanis* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon (K 1945-191), Griffiths III-850 (K VI-131); Tobias (161).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. mining the leaves and leaf midribs of Dipsacaceae. *Evidence*—Griffiths (52); NMS (48). *Comment*—Recorded hosts: *P. ramosa, P. succisae, P. scabiosarum*.

DNA Barcode: Yes.

***tenellae* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-861 (K VI-126) [VII-356]; Tobias (253).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. in seed heads of *Pedicularis* (Orobanchaceae). *Evidence*—Griffiths (31); NMS (37). *Comment*—Recorded hosts: *P. tenella*, *P. diversicornis, P.* ?*monticola*.

DNA Barcode: Yes.

***tergoflavus* Docavo, Fischer & Tormos, 2001**

Group: 5d.

Literature: Docavo *et al.* (2001).

Similar species: *C. rufimarginatus*.

***testaceipes* Griffiths, 1968**

Group: 5fi.

Literature: Griffiths V-40 (K VI-135); Tobias (213).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza* spp. leaf-mining (Asteraceae). *Evidence*—Griffiths (17). *Comments*—Recorded hosts: *L. scorzonerae, L. pusilla, L. puella.*

***thalictri* Griffiths, 1967**

Group: 5a.

Literature: Griffiths (K VI-129); Tobias (289).

Hosts: Hypothesis—Parasitoid of *Phytomyza aquilegiae* on *Thalictrum aquilegifolium* (Ranunculaceae). Evidence—Griffiths (1).

***thecla* (Nixon, 1943; *Dacnusa*)**

Group: 5e.

Literature: Nixon 1946-285 (K 1943-164); Griffiths III-865 [V-35] (K VI-124); Tobias (93).

Hosts: *Hypothesis*—Parasitoid of (i) *Phytomyza lithospermi* leaf-mining *Lithospermum officinale* (Boraginaceae) and (ii) *Liriomyza* sp. leaf-mining *Hieraceum pilosella* (Asteraceae). *Evidence*—Griffiths (i: 23; ii: 1). *Comment*—Curious disjunct host range that would benefit from molecular study.

Similar species: *C. stolyarovi.*

***thisbe* (Nixon, 1937; *Dacnusa*)**

Group: 5b.

Literature: Nixon 1937-32; Nixon 1944-253 (K 1944-195); Griffiths II-579 (K VI-128); Tobias (323).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. leaf-mining Poaceae. *Evidence*—Griffiths (2). *Comment*—Recorded host: *A. nigrociliata*.

DNA Barcode: Yes; specimens in 3 further BINs morphologically similar to *C. thisbe.*

Notes: Likely a species complex.

[*thomsoni* (Roman, 1917; *Gyrocampa*)]

Griffiths (III-930) synonymised with *Chaenusa conjungens*

***thusa* (Nixon, 1937; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1937-72; Nixon 1946-296 (K 1943-168); Griffiths III-862 (K VI-118); Tobias (24, 56, 280).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza rufipes* in stems and midribs of *Brassica* (Brassicaceae). *Evidence*—Griffiths (2). *Comment*—Records from *Delia florilega* (Anthomyiidae) (Nixon 1946-296) very likely incorrect.

Similar species: *C. granulosus, C. andizhanicus, C. dumitus, C. tumidus.*

***tobiasi* Lozan, 2004**

Group: 5a.

Literature: Lozan (2004).

Similar species: *C. ampliator.*

***transversus* (Nixon, 1954; *Dacnusa*)**

Group: 2.

Literature: Nixon 1954-288; Griffiths VI-88 (K VI-114); Tobias (106).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Butomomyza*) *angulata* leaf-mining *Carex* spp. (Cyperaceae). *Evidence*—Griffiths (91); NMS (9).

DNA Barcode: Yes.

Similar species: *C. vicinus*.

Notes: Unusually for a *Chorebus* has a three-toothed mandible.

***trapesus* Papp, 2009**

Group: 5a.

Literature: Papp (2009c).

Similar species: *C. andizhanicus, C. asramenes.*

Notes: Described from Hungary but not in *Fauna Europaea* (2023).

***trilobomyzae* Griffiths, 1968**

Group: 5b.

Literature: Griffiths V-46 (K VI-128); Tobias (245).

Hosts: *Hypothesis*—Parasitoid of *Amauromyza* spp. leaf miners. *Evidence*—Griffiths (43); NMS (44). *Comment*—Recorded hosts: *A. labiatarum* (on Lamiaceae), *A. verbasci* (on Scrophulariaceae), *A. flavifrons* (on Caryophyllaceae).

DNA Barcode: Yes.

***trjapitzini* Tobias, 1986**

Literature: Tobias (1986).

Notes: Described briefly in key from single damaged male (Karelia).

Similar species: *C. leptogaster.*

***tumidus* (Tobias, 1966; *Dacnusa*)**

Group: 5a.

Literature: Tobias (1966), Tobias (1986), Žikić *et al.* (2000), Papp (2009b).

Similar species: *C. thusa, C. lugubris.*

***turcomanus* Tobias, 1966**

Group: 5b.

Literature: Tobias (1966).

Similar species: *C. cinctus.*

***uliginosus* (Haliday, 1839; *Alysia*)**

Synonymy: *thienemanni* (Ruschka, 1913, *Gyrocampa*) (Nixon 1949-298).

Group: 3b.

Literature: Griffiths (K VI-118); Tobias (448).

Hosts: *Hypothesis*—Parasitoid of *Hydrellia* spp. (Ephydridae) leaf-mining aquatic plants. *Evidence*—Natural History Museum London (5); NMS (8 *ex Potamogeton*). Ruschka (1913) described *thienemanni* from *H. griseola* mining *Stratiotes aloides* (Hydrocharitaceae); Burghele (1959).

DNA Barcode: Yes.

Notes: Strongly associated with freshwater habitats. Griffiths (VI-118) states "Back of head largely covered with short dense pubescence" in couplet (22) leading to *uliginosus* while pubescence actually much sparser.

***uma* (Nixon, 1944; *Dacnusa*)**

Group: 5b.

Literature: Nixon 1944-249 (K 1944-196); Griffiths (K VI-128); Tobias (341).

DNA Barcode: Yes.

***unicus* Papp, 2009**

Group: 5c.

Literature: Papp (2009c).

Similar species: *C. diremtus, C. rostratae.*

Notes: Described from Hungary but not in *Fauna Europaea* (2023).

***varuna* (Nixon, 1945; *Dacnusa*)**

Group: 5a.

Literature: Nixon 1945-202, (K 1945-192); Griffiths V-45 (K VI-132); Tobias (203); Papp (2013, p. 258).

Hosts: *Hypothesis*—Parasitoid of *Metopomyza flavonota* leaf-mining Poaceae. *Evidence*—Griffiths (1).

DNA Barcode: Yes; three other BINs with morphological affinities to *C. varuna* likely represent undescribed species.

***venustus* (Tobias, 1962; *Dacnusa*)**

Group: 5a.

Literature: V-35 (K VI-123); Tobias (114).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza* spp. (Asteraceae). *Evidence*—Griffiths (5). *Comments*—Recorded hosts: *L. soror, L. sonchi*.

DNA Barcode: Yes.

Similar species: *C. irriguus*.

***veratri* Griffiths, 1968**

Group: 5a.

Literature: Griffiths V-32 (K VI-126); Tobias (127, 155).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza veratri* leaf-mining *Veratrum album* (Melanthiaceae). *Evidence*—Griffiths (3).

***vernalis* Griffiths, 1968**

Group: 3c.

Literature: Griffith VI-106 (K VI-116); Tobias (491).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Dizygomyza*) *caricicola* leaf-mining *Carex* spp. (Cyperaceae). *Evidence*—Griffiths (1); NMS (1).

DNA Barcode: Yes.

***vicinus* Fischer, Tormos, Docavo & Pardo, 2004**

Group: 2.

Literature: Fischer *et al.* (2004a).

Similar species: *C. transversus.*

***vitripennis* Griffiths, 1968**

Group: 5a.

Literature: Griffiths VI-83 (K VI-130); Tobias (168).

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* (*Poemyza*) *superciliosa* leaf-mining *Ammophila arenaria* (Poaceae). *Evidence*—Griffiths (2).

Notes: Griffiths notes 26 swept specimens (5 localities) all from sand dunes, consistent with its host's ecology.

***vodaron* Papp, 2009**

Group: 5a.

Literature: Papp (2009c).

Similar species: *C. endymion, C. rubicundus.*

Notes: Described from Hungary but not in *Fauna Europaea* (2023).

***xanthaspidae* Griffiths, 1968**

Group: 5a.

Literature: Griffiths V-37 (K VI-121); Tobias (252).

Hosts: *Hypothesis*—Parasitoid of *Metopomyza interfrontalis* (= *xanthaspidae*) probably mining *Carex* sp. (Cyperaceae). *Evidence*—Griffiths (15).

DNA Barcode: No; a BIN with specimens morphologically similar to *C. xanthaspidae* likely represents an undescribed species.

***xiphidius* Griffiths, 1967**

Group: 1c.

Literature: Griffiths IV-678 (K IV-664); Tobias (418).

Hosts: Hypothesis—*Ophiomyia* sp. on *Picris hieracioides* (Asteraceae). Evidence—Griffiths (10).

Similar species: *C. pusiculus.*

***xsarus* Papp, 2007**

Group: 5?

Literature: Papp (2007a).

Similar species: *C. pseudomisellus, C. denticurvatus*.

Notes: Described from Greece; absence of vein *2-1A* unusual.

***xylostellus* Griffiths, 1967**

Group: 5a.

Literature: Griffiths III-844 (K VI-130); Tobias (15, 291).

Hosts: Hypothesis—*Phytomyza periclymeni* on *Lonicera xylosteum.* (Caprifoliaceae). Evidence—Griffiths (63), NMS (19).

DNA Barcode: Yes; the BIN includes a single specimen keying to *C. sylvestris* (q.v.) from *Lonicera periclymenum.*

***zuntus* Papp, 2009**

Group: 5a.

Literature: Papp (2009c).

Similar species: *C. anasellus.*

Notes: Described from Hungary but not in *Fauna Europaea* (2023).

***Coelinidea* Viereck, 1913**

Type species: *niger* Nees (in *Stephanus*)

LEPTON Zetterstedt, 1838 preocc. (type species: *attenuator* Zetterstedt (=*gracilis* Curtis))

ERICOELINIUS Viereck, 1913 (type species: *longulus* Ashmead)

FISCHERASTRIOLUS Perepechayenko, 1999 (type species: *rufa* Astafurova)

Notes: Generic synonymy follows van Achterberg (2014), see notes under *Coelinius*. The 19th century literature is summarised by Marshall (1891-1896, pp 512-522) and Marshall (1897-1900, pp 247; 332-333) with an addendum on Thomson's species by Maréchal (1938). Herrich-Schäffer largely deals with *Coelinidea* (under *Coelinius*) in fascicle 153 of his *Faunae insectorum Germanicae* (Herrich-Schäffer 1838) with additional information in 154 and 156 (Belokobylskij *et al.* (2003) provide an index to the very complex pagination). Since then four European species have been described while Tobias (1986) has keyed the European Russian and Astrafurova in Tobias (1998) the East Palearctic species (the latter translated into German by Fischer (2001)) though it is not always straightforward to reconcile the Russian interpretation of species with their original description. The extent of red colouration on the mesosoma and metasoma is frequently used for species determination but the degree to which it varies intraspecifically is not clear. The identity of some species described in the 19th century is uncertain, and some may be better placed in *Coelinius* but are provisionally left here until types can be located and studied (Curtis types are in the Museums Victoria, Melbourne, Australia). There are several undescribed species. DNA barcodes seem to be less helpful in *Coelinidea* than in other genera with one BIN containing several traditional species (*elegans*, *gracilis, ruficollis*) while specimens that match *niger* and *elegans* occur in multiple BINs. BIN associations are not given here pending further research, but sequences seem to cluster in three clades, one associated with the names *elegans*, *gracilis, ruficollis*, one with *niger* and *vidua*, and one with an undescribed species. Until the genus is revised putting names to many specimens will be problematic. The North American fauna is somewhat better known than the European due to Riegel (1982) and Kula (2008).

Hosts: *Hypothesis*—Parasitoids of Chloropidae in stems of grass (Poaceae). *Evidence*—Riegel (1982), Nartshuk (2006). *Comments*—Both evidence sources are uncritical summaries of the literature and include species of *Chlorops, Meromyza* and *Oscinella* with most European records involving *Coelinidea nigra*.

***albimana* (Snellen van Vollenhoven, 1873; *Polemon*)**

Literature: Marshall (1891-1896, p. 516); Tobias (1986).

Hosts: Rudow (1918) gives *Seioptera vibrans* (Ulidiidae) which would be a new host family for the Dacnusini, but a high proportion of his host associations are incorrect and confirmation is required.

Notes: Palps and anterior legs (except coxae and base of femur) whiteish; Tobias' (1986) interpretation seems not to match original description.

[*depressa* (Herrich-Schäffer, 1838; *Coelinius*)]

Literature: Herrich-Schäffer (1838); Marshall (1891-1896, p. 522); Maréchal (1938).

Notes: Herrich-Schäffer comments "Easily distinguished from the other species by the triangular shape of the petiole [less than twice as long as broad]" so probably not *Coelinidea* in modern sense. Not recognised since original brief description and Maréchal (1938) who searched for the type considered it untraceably so we treat as a *nomen dubium*.

***elegans* (Curtis, 1829; *Chaenon*)**

Synonymy: *brevicornis* (Curtis, 1829, *Chaenon*); *cingulatus* (Curtis, 1829, *Chaenon*); *rufinotatus* (Curtis, 1829, *Chaenon*); *similis* (Curtis, 1829, *Chaenon*).

Literature: Marshall (1891-1896, p. 520); Marshall (1899, p.6); Tobias (1986).

[*fuliginosa* (Curtis, 1829; *Chaenon*)]

Literature: Curtis (1829).

Notes: Not recognised since Curtis' description and omitted by Marshall (1897-1900) who synonymized most Curtis taxa. Curtis very briefly distinguishes it from *affinis* (=*nigra*) on minor colour details and we treat as a synonym of *nigra.*

***gracilis* (Curtis, 1829; *Chaenon*)**

Synonymy: *attenuator* (Zetterstedt, 1838, *Lepton*) (Papp 1994).

Literature: Marshall (1891-1896, p. 519); Marshall (1899, p.5); Tobias (1986),

Hosts: A record quoted in Taxapad from *Photedes extrema* (= *Tapinostola concolor*) (Noctuidae, Lepidoptera) is almost certainly incorrect. The species feeds in *Calamagrostis* (Poaceae) stems and the true host is likely a chloropid in this habitat.

[*gravis* (Herrich-Schäffer, 1838; *Coelinius*)]

Literature: Herrich-Schäffer (1838); Marshall (1891-1896, p. 522).

Notes: Unrecognised since description; Herrich-Schäffer was unaware of previously described *Coelinidea* (and misinterpreted *Coelinius parvulus* Nees with which he compares *gravis*). Maréchal (1938) who searched for the type considered it untraceably, so we treat as a *nomen dubium*.

***niger* (Nees, 1811; *Stephanus*)**

Synonymy: *affinis* (Curtis, 1829, *Chaenon*); *nigricans* (Westwood, 1835, *Chaenon*); *olivieri* (Guérin-Ménéville, 1842, *Alysia*); ?*fulignosa* (Curtis, 1829, *Chaenon*). Often in literature in the feminine form *nigra*.

Literature: Marshall (1891-1896, p. 517); Marshall (1899, p.3); Tobias (1986).

Hosts: *Hypothesis*—Parasitoid of Chloropidae. *Evidence*—In the applied literature, long noted (e.g. Curtis 1845) as a parasitoid of chloropid pests of cereal (such as *Oscinella frit,* Frit Fly; and *Chlorops pumilionis*, Gout Fly). Riegel (1982) & Nartshuk (2006) review 19th & 20th century literature but no recent studies we are aware of.

***parvipennis* (Thomson, 1895; *Dacnusa*)**

Literature: Thomson (1895) who described in subgenus *Coelinius*; Marshall (1897-1900, pp. 333); Maréchal (1938).

Notes: Maréchal (1938) provides a detailed redescription and comments on low number of antennal segments. Otherwise not recognised since original description.

[*parvulus* (Herrich-Schäffer, 1838; *Coelinius*) not *parvulus* (Nees, 1811; *Chaenon*)]

Literature: Herrich-Schäffer (1838); Marshall (1891-1896, p. 522).

Notes: Herrich-Schäffer was not aware of Nees' *parvulus* (which he knew as *rimator* and *circulator*) and his very brief description shows his *parvulus* was a different species. Not recognised since original brief description and Maréchal (1938) who searched for the type considered it untraceably so we treat as a *nomen dubium*.

***podagrica* (Haliday, 1839; *Alysia*)**

Literature: Marshall (1891-1896, p. 516); Marshall (1899, p.3); Tobias (1986).

Notes: Little recognised since Haliday's time; this species has very short legs but otherwise resembles *viduus* (Marshall 1900). Capek and Hoffmann (1997) note a specimen in Lausanne reared from *Hydrellia* (Ephydridae) which would be a novel host for the *Coelinius* genus complex and requires confirmation.

[*pospelovi* (Kurdjumov, 1912; *Gyrocampa*)]

Cannot be recognised to genus from its description and Griffiths (VI-98) suspected it might be a *Coelinidea* as apparently reared from *Oscinella frit* (Chloropidae); not discussed by Tobias (1986) and we treat as a *nomen dubium*.

***pusilla* (Astafurova, 1998; *Coelinius*)**

Literature: Astrafurova in Tobias (1998); Fischer (2001), detailed redescription.

Similar species: *C. ruficollis* (*pusilla* more extensively light-coloured).

***rufa* (Astafurova, 1998; *Coelinius*)**

Literature: Astrafurova in Tobias (1998); Fischer (2001), detailed redescription.

Similar species: *C. semirufa* (*rufa* more extensively light-coloured).

***ruficollis* (Herrich-Schäffer, 1838; *Coelinius*)**

Synonymy: *procerus* (Haliday, 1839, *Alysia*).

Literature: Marshall (1891-1896, p. 519); Marshall (1899, p.4); Tobias (1986).

Notes: Characterised by a completely red pronotum, though specimens with extensive red on the pronotum but

which are probably referable to *gracilis* also occur and would run to *ruficollis* in existing keys. See also note under *Coelinius parvulus.*

***semirufa* Fischer, 1957**

Literature: Fischer (1957) ; Tobias (1986).

Notes: Fischer (1957) states the female is extensively red on the head and thorax while the male is darker and similar to *elegans*.

***stenostigma* (Thomson, 1895; *Dacnusa*)**

Literature: Thomson (1895) who described in subgenus *Coelinius*; Marshall (1897-1900, pp. 333).

Notes: Not recognised since original description; Thomson distinguishes from related species by the second cubital cell being shorter than the basal thickness of the stigma.

***trjapitzini* Tobias, 1971**

Literature: Tobias (1986).

Notes: Tobias (1986) compares with *niger* but has far fewer antennal segments.

***vidua* (Curtis, 1829; *Chaenon*)**

Synonymy: *ater* (Curtis, 1837, *Chaenon*) nom. nud.; *obscurus* (Curtis, 1829; *Chaenon*), synonymised by Marshall (1891-1896).

Literature: Marshall (1891-1896, p. 515); Marshall (1899, p.2); Tobias (1986).

Hosts: Fulmek (1962) & Riegel (1982) quote several records from Chloropidae in Poaceae stems, though the latter points out host identifications may not match modern species.

***Coelinius* Nees, 1818**

Type species: *parvulus* Nees

CHAENON Curtis, 1829 (type species: *anceps* Curtis (=*parvulus* Nees))

COPISURA Schiødte, 1837 (type species: *rimatur* Schiødte (=*parvulus* Nees))

COPIDURA Förster,1862 (type species not designated)

Literature: Griffiths I-856.

Notes: Griffiths (1964) proposed that *Polemochartus* and *Coelinidea* should be included as subgenera of *Coelinius*. Wharton and Austin (1991), Wharton (1994), Kula (2008) and Kula and Zolnerowich (2008) supported the concept of an enlarged *Coelinius*, including *Sarops*, but, pointing to intermediate taxa in the Oriental Region, argued against the retention of subgenera. van Achterberg (2014) (and in *Fauna Europaea* 2023) treats this group as five genera (including the more recently described *Eucoelinidea* Tobias) and provides a generic key using new characters. Astrafurova in Tobias (1998) uses a broad concept of *Coelinius* with subgenera though their conceptions of *Coelinidea* (which she calls *Lepton)* and *Coelinius* are not identical to those of van Achterberg (2014). Taxapad lists ~70 species of *Coelinidea* and *Coelinius* from Europe, Asia, Africa, Australasia & North America though this includes several *nomina dubia* and duplicate entries. There is one widespread Palaearctic species of *Coelinius* as interpreted here and at least one further poorly known species.

***Coelinius parvulus* (Nees, 1811; *Chaenon*)**

Synonymy: ?*cultriformis* (Latreille, 1802, *Ichneumon*); *circulator* (Gravenhorst, 1807, *Ichneumon*) preocc.; *anceps* (Curtis, 1829, *Chaenon*); *rimator* (Schiødte, 1837, *Copisura*); *bicarinatus* Herrich-Schäffer, 1838; *flexuosus* Herrich-Schäffer, 1838.

Literature: Marshall (1897-1900, p. 332); Marshall (1899, p.7); Maréchal (1938) (detailed and illustrated redescription); Tobias (1986).

Hosts: No information but considering related genera probably Chloropidae.

DNA Barcode: Yes. Several *Coelinidea* spp. in the BOLD database were erroneously labelled *C. parvulus*.

Notes: The taxon Thompson called *circulator* Gravenhorst is not *parvulus* but a species of *Coelinidea* (Maréchal 1938). Thomson (1895) discussed a variety with a red prothorax that Marshall (1891-1896) thought might be *ruficollis* (= *procerus*) but Maréchal (1938) considered distinct and labelled var. *bicolor* commenting it might deserve species status.

***venustus* (Marshall, 1898)**

Literature: Marshall (1897-1900, pp. 247, 333)

Notes: Marshall states that the only male specimen is very similar to *C. parvulus* (=*anceps*) but larger with a yellow prothorax. Not recognised since original description and provisionally placed in *Coelinius.*

***Coloneura* Förster, 1863**

Type species: *stylata* Förster

ISOMERISTA Förster, 1863 (Type species: *oligomera* Förster (=*stylata* Förster))

TRISISA Förster, 1863 (Type species: *exilis* Förster (=*stylata* Förster))

MERITES Nixon, 1943 (Type species: *taras* Nixon (=*stylata* Förster))

Literature: Griffiths I-862, V-11 (key to European species); van Achterberg (1976) (key to European species).

Notes: 17 Palaearctic species (Taxapad), 11 in Europe. van Achterberg (1976) recognised three subgenera but subsequently raised *Coloneurella* to genus rank.

Subgenus *Coloneura* Förster, 1863

***stylata* Förster, 1863**

Synonymy: *exilis* (Förster, 1863, *Trisisa*); *oligomera* (Förster, 1863, *Isomerista*); *taras* (Nixon, 1943, *Merites*); *stilata* misspelling, Tobias (1986).

Literature: Nixon 1954-287; Griffiths V-14 (K V-13); van Achterberg (1976).

Hosts: *Hypothesis*—Parasitoid of *Phytoliriomyza mesnili* mining liverworts (Hepaticae: Ricciacae). *Evidence*—Griffiths accepted C. Granger's identification of *C. stylata* as the parasitoid reared from *P. mesnili*. *Comments*—The host is one of the few European agromyzids known to feed on liverworts.

Subgenus *Priapsis* Nixon, 1943

Type species: *dice* Nixon

***arestor* (Nixon, 1954, *Priapsis*)**

Literature: Griffiths (K V-13), van Achterberg (1976).

DNA Barcode: Yes.

***ate* (Nixon, 1943, *Dacnusa*)**

Literature: Griffiths V-16, van Achterberg (1976)

Hosts: Griffiths mentions a single reared specimen with a pupae he thought *Liriomya* or *Metopomyza*.

***danica* Griffiths, 1968**

Literature: Griffiths V-13, van Achterberg (1976).

Hosts: Hypothesis—Parasitoid of *Metapomyza nigrohumeralis* mining *Carex acuta* (Cyperaceae). Evidence—Griffiths (7).

***dice* (Nixon, 1943, *Priapsis*)**

Literature: Nixon 1954-280; Griffiths III-799, V-16 (K V-13), van Achterberg (1976).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* and *Liriomyza* spp.. *Evidence*—Griffiths (27). *Comments*—Recorded hosts: *P. silai* & *P. angelicivora* mining Apiaceae, and *Liriomyza cyparissiae* leaf-mining *Euphorbia cyparissias* (Euphorbiaceae), a rather disjunct host range.

***fuerteventurensis* Fischer, Tormos, Pardo & Jiménez, 2002**

Literature: Fischer *et al.* (2002).

Similar species: *C. moskovita*.

Notes: Known only from Canary Islands.

***major* Griffiths, 1967**

Literature: Griffiths III-876, (K V-13), van Achterberg (1976).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza dasyops* whose host plant is unknown but likely internal feeder in Orobanchaceae. *Evidence*—Griffiths (14).

***moskovita* Tobias, 1986**

Literature: Tobias (1986).

Similar species: In Tobias' key this species comes out in a couplet with *stylata* but venation places it in subgenus *Priapsis*.

***ortegae* Fischer, Tormos, Pardo & Jiménez, 2002**

Literature: Fischer *et al.* (2002).

Similar species: *C. siciliensis*.

Notes: Known only from the Canary Islands.

[*pygmaeator* (Zetterstedt, 1838; *Bracon*)]

Literature: Papp (1994) examined the slightly damaged male holotype (at Lund, the only specimen) and stated he was unclear whether the species belonged to *Coloneura* or *Chorebus*.

***siciliensis* Griffiths, 1968**

Literature: Griffiths V-16, van Achterberg (1976).

Hosts: *Hypothesis*—Parasitoid of an agromyzid (a *Phytomyza* or *Pseudonapomyza*) leaf-mining *Ferula communis* (Apiaceae). Evidence—Griffiths (3).

***vitoshensis* Zaykov, 1986**

Literature: Zaykov (1986).

Similar species: *C. arestor*.

***Coloneurella* van Achterberg, 1976**

Type species: *lomnickii* Niezabitowski (=*rectinervis* van Achterberg)

Literature: van Achterberg (1976).

***lomnickii* (Niezabitowski, 1910; *Dacnusa*)**

Synonymy: *rectinervis* van Achterberg (1976).

Literature: van Achterberg (1976).

DNA Barcode: Yes.

***Dacnusa* Haliday, 1833**

Type species: *areolaris* Nees

AGONIA Förster, 1863 (type species: *adducta* Haliday)

APHANTA Förster, 1863 (type species: *hospita* Förster)

BRACHYSTROPHA Förster, 1863 (type species: *monticola* Förster)

LIPOSCIA Förster, 1863 (type species: *discolor* Förster)

PACHYSEMA Förster, 1863 (type species: *macrospila* Haliday)

RHIZARCHA Förster, 1863 (type species: *areolaris* Nees)

TANYSTROPHA Förster, 1863 (type species: *haemorrhoa* Förster (=*stramineipes* Haliday))

RADIOLARIA Provancher, 1886 (type species: *clavata* Provancher)

Literature: Griffiths I-860.

Notes: C.160 described species from throughout the world (Taxapad), about 73 in Europe. All species show sexual dimorphism with the male pterostigma darker than in the female.

Groupings within *Dacnusa* (after Griffiths)

1. *Dacnusa* s.s. (Griffith) (*Rhizarcha sensu* Nixon)
    a. *areolaris* species group
    b. *stramineipes* species group
    c. unassigned species
2. *Pachysema* group
    a. *hospita* species group (*Aphanta sensu* Nixon)
    b. *adducta* species group (*Agonia sensu* Nixon)
    c. *discolor* species group (part of *Pachysema sensu* Nixon)
    d. unassigned species (part of *Pachysema sensu* Nixon)

***abdita* Haliday, 1838**

Synonymy: *incidens* Thomson, 1895; *lepida* Marshall, 1896.

Group: 2d.

Literature: Nixon 1937-53; Nixon 1954-263; Griffiths II-562 (K III-896); Tobias (99, 165).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. in blotch mines on Urticaceae and Boraginaceae. *Evidence*—Griffiths (17); NMS (56). *Comment*—Recorded hosts: *A. anthracina, A. pseudoreptans, A. abiens, A. lithospermi, A. myosotidis.*

DNA Barcode: Yes.

***adducta* (Haliday, 1839; *Alysia*)**

Synonymy: *abducta* misspelling.

Group: 2b.

Literature: Nixon 1937-48; Nixon 1954-278; Griffiths V-22 (VI-70) (K III-895); Zheng and Chen (2017); Tobias (224).

Hosts: *Hypothesis*—Parasitoid of Agromyzidae leaf-mining Poaceae. *Evidence*—Griffiths (3); NMS (15). *Comment*—Recorded hosts: *Liriomyza flaveola*, *Cerodontha pygmaea*.

DNA Barcode: Yes; BIN shared with *D. macrospila* and an undescribed species near *D. centaurea*e.

Notes: Based on its unusual venation, *adducta* is sometimes placed in the monotypic genus *Agonia* but Griffiths (I-854) considered it a derived species of *Dacnusa* which is supported by DNA data.

***alpestris* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-807 (VII-351) (K III-898); Tobias (132, 191).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. on Asteraceae. *Evidence*—Griffiths (8); NMS (7). *Comment*—Recorded hosts: *P. albiceps* (= *rydeniana*), *P. alpina, P. marginella, P. senecionis, P. tussilaginis*. Griffiths noted that his sole UK specimen (from *P. albiceps*) differed from his other continental material and might be distinct. The 7 NMS wasps (3 reared from *P. albiceps*, the others from unidentified Agromyzidae) resemble this specimen but are not as distinct from the continental material. Pending further research all treated as *D. alpestris*.

DNA Barcode: Yes (UK reared and Norwegian adult specimens).

***alticeps* Nixon, 1937**

Group: 2d.

Literature: Nixon 1937-65; Nixon 1948-214; Tobias (13).

DNA Barcode: Yes.

***angelicina* Griffiths, 1967**

Literature: Griffiths III-809 (K III-899), [VII-351]; Tobias (149, 188); Godfray and Bland (2023).

Group: 2d.

Hosts: *Hypothesis*—Parasitoid of *Phytomyza angelicae* leaf-mining Apiaceae. *Evidence*—Griffiths (6+), NMS (2). *Comment*—Recorded from *P. aegopodii* which is now considered a synonym of *P. angelicae*.

DNA Barcode: Cluster in BOLD but no BIN assigned.

[*annulata* (Nees, 1834; *Alysia*)]

Literature: Marshall (1891-1896).

Notes: Known from a single damaged female; Marshall considers not definitely *Dacnusa* and imperfectly described, and we treat as a *nomen dubium*.

***aquilegiae* Marshall, 1896**

Group: 2d.

Literature: Nixon 1937-54; Nixon 1954-263; Griffiths III-815 (K III-896); Tobias (95, 168).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. forming blotch mines on Ranunculaceae and occasionally other families. *Evidence*—Griffiths (115); NMS (68). *Comment*—Recorded hosts: *P. aquilegiae, P. albimargo, P. rydeni, P. thalictricola, P. heracleana, P. medicaginis* (=*symphyti*).

DNA Barcode: Yes.

***arctica* Griffiths, 1984**

Group: 1a.

Literature: Griffiths VII-348, (K VII-352).

Hosts: *Hypothesis*—Parasitoid of Agromyzidae leafminers. *Evidence*—Griffiths (5). *Comment*—3 Swedish specimens from a *Phytomza* sp. (probably *aquilonia*) on *Rancunculus nivalis* (Ranunculaceae) and two further specimens from a *Liriomya* sp. and a *Calycomyza* sp. on Asteraceae in the Yukon, Canada. Appears to be a high-latitude circumpolar species,

Similar species: *D. lugens.*

***areolaris* (Nees, 1811; *Bracon*)**

Synonymy: *lysias* Goureau, 1851.

Group: 1a.

Literature: Nixon 1937-66; Nixon 1948-215; Griffiths III-837 (K III-894); Tobias (43, 75).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza syngenesiae* on Asteraceae, *P. asteris* on *Tripolium pannonicum* (= *Aster tripolium*) (Asteraceae) and *P. nigra* on Poaceae. *Evidence*—Griffiths (many); NMS (818); literature. *Comment*—Probably also attacks *P. horticola* & *P. fuscula*; does not seem to attack *P. milii.* Records from Chloropidae (Alekseev *et al.* 2019) very likely incorrect.

DNA Barcode: Yes (BIN contains specimens reared from both *P. syngenesiae* and *P. nigra*).

Notes: In many localities the commonest Dacnusini; has been used as a biological control agent against *P. syngenesiae* in greenhouses. Introduced and common in New Zealand (from at least 1902) & Australia (Wharton & Austin 1991). Haviland (1922) provides a detailed description of the larval development of a species she calls *Dacnusa areolaris* but which from the host association is almost certainly *D. laevipectus*.

***astarte* (Nixon, 1948; *Rhizarcha*)**

Group: 1b.

Literature: Nixon 1948-215; Tobias (8).

***aterrima* Thomson, 1895**

Group: 2d.

Literature: Griffiths (I-886) (K III-895); Tobias (85).

***austriaca* (Fischer, 1961; *Pachysema*)**

Group: 2d.

Literature: Fischer (1961); Griffiths V-21 (K III-899); Tobias (159, 214).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza* spp. on *Artemisia*. *Evidence*—Griffths (12), Michalska (1987). *Comment*—Recorded hosts: *L. artemesicola, L. demeijerei, L. dracunculi.*

Similar species: *D. rodriguezi, D. cicerina.*

***brevistigma* (Tobias, 1962; *Pachysema*)**

Group: 2d.

Literature: Griffiths III-812 (K III-899); Tobias (118, 201).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. mining Ranunculaceae. *Evidence*—Griffiths (27), NMS (1). *Comment*—Recorded hosts: *P. anemones, P. fallaciosa* (=*auricomi*)*, P. hellebori*.

***campanariae* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-814 (K III-897); Tobias (184).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza socia* (=*campanariae*) on *Pulsatilla* sp. (Ranunculaceae). *Evidence*—Griffiths (1).

***centaureae* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-805 (K III-907); Tobias (153).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza montana* leafmining *Centaurea montana* (Asteraceae). *Evidence*—Griffiths (5).

DNA Barcode: No; an undescribed species near *D. centaureae* shares a BIN with *D. macrospila* and *D. adducta.*

***cerpheres* (Nixon, 1948; *Rhizarcha*)**

Group: 1b.

Literature: Nixon 1948-214; Griffiths VII-349; Tobias (10, 77).

Notes: Three wasps reared from *Phytomyza rostrata* in seedheads of *Melampyrum nemorosum* (Orobanchaceae) might be this species (Griffiths VII-349).

DNA Barcode: Yes.

[*chereas* Goureau, 1851]

Literature: Griffiths III-930.

Notes: Reared from *Phytomyza minuscula* from which there have been no further rearings of Dacnusini. The description is very short, and the type is lost, and hence we consider a *nomen dubium*.

[*cingulator* (Nees, 1834)]

Literature: Marshall (1896).

Notes: discussed by Marshall (1891-1896), who considers it imperfectly described; type lost and we consider a *nomen dubium*.

***clematidis* Griffiths, 1967**

Group: 1d.

Literature: Griffiths III-814 (K III-899); Tobias (157, 200).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza kaltenbachi* (=*atragenis*) on *Clematis alpina* (Ranunculaceae). *Evidence*—Griffiths (6).

***cicerina*, Tormos, Pardo, Asís & Gayubo, 2008**

Group: 2d.

Literature: Tormos *et al.* (2008).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza cicerina*, a pest of chickpea (*Cicer arietinum,* Fabaceae). *Evidence*—Tormos *et al.* (2008) (many).

Similar species: *D. austriaca, D. rodriguezi.*

Notes: Tormos *et al.* (2008) describe immature stages and venom apparatus and record facultative hyperparasitism by a *Eurytoma* sp. (Chalcidoidea, Eurytomidae).

***confinis* Ruthe, 1859**

Synonymy: *minuta* (Curtis, 1826, *Alysia*) (Lectotype image: Atlas of Living Australia T21080).

Group: 1a.

Literature: Nixon 1948-218; Griffiths III-832 (K III-894); Tobias (30, 60).

Hosts: *Hypothesis*—Host uncertain. *Comment*—Griffiths discussed 8 specimens reared from *Phytomyza ranuculi* and *P. glechomae*; however morphological *confinis* reared from *P. ranunculi* have *D. maculipes* DNA barcodes.

DNA Barcode: four BINs including one that is likely the true *confinis* cluster with *D. faeroeensis* and with the Asian *Dacnusa nipponica* Takada. Specimens genetically very similar to material in Genbank under *D. nipponica* occur in Europe.

Notes: *Alysia minuta* was listed as a species of *Alysia* by Shenefelt (1974) and Fitton *et al.* (1978) although a junior homonym of *Alysia minuta* Nees, 1812; Wharton (1986) showed it to belong to *Dacnusa* and van Achterberg concluded that it is conspecific with *confinis*. Barcode data suggests likely a species complex.

[*dampfella* (Roman, 1925; *Rhizarcha*)]

Literature: Roman (1925).

Notes: Described from the Faeroe Islands and not discussed by subsequent authors. From the description appears likely to be *Dacnusa pubescens* but examination of the type required to establish its status.

***delphinii* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-817 (K III-896); Tobias (96); Gaal (1995).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza aconiti* on *Delphinium* and *Aconitum* (Ranunculaceae). *Evidence*—Griffiths (60); NMS (1).

DNA Barcode: Possibly; needs confirmation as only a single specimen in BIN which clusters away from other *Dacnusa*.

***discolor* (Förster, 1863; *Liposcia*)**

Synonymy: *cercides* (Nixon, 1954; *Pachysema*)

Group: 2c.

Literature: Nixon 1937-61; Nixon 1954-271 (as *cercides*); Griffiths III-824, V-24 (K III-897); Tobias (108, 211).

Hosts: Hypothesis—Parasitoid of *Phytomyza primulae* on *Primula* spp. (Primulaceae), *Phytomyza sedicola* on *Hylotelephium* (=*Sedum*) *telephium*, *Calycomyza humeralis* on *Tripolium pannonicum* (=*Aster tripolium*) (Asteraceae) in saltmarshes, and *Liriomyza strigata* on several plant family. Evidence—Griffiths (41); NMS (92). Comment—Molecular studies of this somewhat disjunct host range would be helpful.

DNA Barcode: Yes; same BIN (*P. primulae* specimens) as *D. plantaginis*.

***docavoi* Jiménez & Tormos, 1987**

Group: ?.

Literature: Jimenez and Tormos (1987), Docavo *et al.* (2006).

Notes: Species with enlarged head and mandibles, known only from female holotype and generic placement not absolutely certain.

[*dolorosa* Marshall, 1898]

Literature: Marshall (1897-1900; p.246).

Notes: Female and male specimen from Mallorca; generic placement unclear from description, not recognised in 20th century revisions and examination of the type required to establish status.

***dryas* (Nixon, 1948; *Rhizarcha*)**

Group: 1c.

Literature: Nixon 1948-223; Griffiths II-564 (K III-893); Tobias (23, 59).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. on *Vicia* spp. and *Medicago* spp. (Fabaceae). *Evidence*—Griffiths (2); NMS (3); Heimpel and Meloche (2001). *Comment*—Recorded hosts: *A. frontella, A. vicifoliae.* Has been introduced to North America where it also attacks a *Liriomyza* sp.

DNA Barcode: Yes (British partial sequences cluster strongly with a Canadian clade).

Notes: Introduced to the United States and Canada in the late 1970s where it controlled the introduced *A. frontella*, a pest there called the alfalfa blotch miner (reviewed by Heimpel & Meloche 2001). Guppy and Meloche (1987) describe life history and immature stages in Canada.

***ergeteles* (Nixon, 1954; *Pachysema*)**

Group: 2d.

Literature: Nixon 1954-267; Griffiths III-811 (K III-899); Tobias (117).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* sp., possibly on Ranunculaceae. *Evidence*—Griffiths (1 Danish specimen but host unclear).

***euphrasiella* Griffiths, 1984**

Group: 2d.

Literature: Griffiths VII-351 (K VII-352).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza affinis* in seedheads of *Euphrasia* spp. (Orobanchaceae). *Evidence*—Griffiths (4).

***evadne* Nixon, 1937**

Group: 2d.

Literature: Nixon 1937-60; Nixon 1954-264; Griffiths II-564 (K III-896); Tobias (101, 169).

Hosts: *Hypothesis*—Parasitoid of *Agromyza idaeiana* (= *spiraeae*) on *Filipendula ulmaria* (Roseaceae). *Evidence*—Griffiths (10); NMS (11).

DNA Barcode: Yes.

***faeroeensis* (Roman, 1917; Rhizarcha)**

Synonymy: *lestes* Nixon, 1937.

Group: 1c.

Literature: Nixon 1937-68; Nixon 1948-221; Griffiths (K III-893); Tobias (32, 61); Papp (2007b, p. 31).

Hosts: *Hypothesis*—Parasitoid of *Scaptomyza graminum* (Drosophilidae) on Brassicaceae and *Anthyllis vulneraria* (Fabaceae). *Evidence*—NMS (28).

DNA Barcode: Yes; see also *D. confinis*.

Notes: Parasitoids from different host plants have same barcode. Not closely related to *Dacnusa temula*, the only other Dacnusini attacking drosophilids.

***fasciata* Stelfox, 1954**

Group: 2d.

Literature: Nixon 1954-273; Griffiths III-822 (K III-897); Tobias (135, 176).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza dasyops* (whose host plant was not recorded but likely internal feeder in Orobanchaceae). *Evidence*—Griffiths (7).

[*festa* (Goureau, 1851, *Coelinius*)]

Literature: Marshall (1891-1896, p. 522); Griffiths III-929.

Notes: Griffiths (loc. cit.) discusses and considers the taxa a *nomen dubium*. Host (*Phytomyza primulae* [=*cinerella*]) and figure in Goureau suggest *Dacnusa*-genus group rather than *Coelinius*.

[*flavicoxa* Thomson, 1895; *Dacnusa*]

Notes: *Antrusa flavicoxa* mistakenly in *Dacnusa* in Fauna Europaea (2023).

***fuscipes* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-818 (K III-896); Tobias (93).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. forming blotch mines. *Evidence*—Griffiths (5). *Comment*—Recorded hosts *P. angelicae* (= *laserpitii*) on *Laserpitium latifolium* (Apiaceae) and *P. aconiti* on *Delphinium oxysepalum* (Ranunculaceae). Disjunct host association would benefit from further research.

[*gallarum* (Ratzeburg, 1852; *Bracon*)]

Literature: Ratzeburg (1852).

Notes: Not treated by modern authors; reared from *Nematus* leaf-galls (Symphyta) on *Salix* (Salicaeae) and if host correct very unlikely to be Dacnusini.

***gentianae* Griffiths, 1967**

Group: 1a.

Literature: Griffiths III-831 (K III-893); Tobias (27, 60).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. mining Gentianaceae. *Evidence*—Griffiths (5). *Comment*—Recorded hosts *P. vernalis, P. gentianae, P. swertiae*.

***groschkeana* Griffiths, 1968**

Group: 2d.

Literature: Griffiths V-20 (K V-18); Tobias (33, 61).

Hosts: *Hypothesis*—Parasitoid of *Liriomyza veratri* mining *Veratrum album* (Melanthiaceae). *Evidence*—Griffiths (12).

Similar species: *D. laeta.*

***helvetica* Griffiths, 1967**

Group: 1a.

Literature: Griffiths III-830 (K III-893); Tobias (20).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza ramosa* mining *Knautia arvensis* (Caprifoliaceae). *Evidence*—Griffiths (2).

***heringi* Griffiths, 1967**

Group: 1c.

Literature: Griffiths III-827 (K III-892); Tobias (38, 53).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza griffithsi* on *Plantago media* (Plantaginaceae). *Evidence*—Griffiths (8).

DNA Barcode: No; BIN with likely undescribed species near *D. heringi*.

***hospita* (Förster, 1863; *Aphanta*)**

Group: 2a.

Literature: Nixon 1954-279; Griffiths III-802, [V-18, VII-350] (K III-895); Tobias (222).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. on *Ranunculus* spp. (Ranunculaceae). *Evidence*—Griffiths (2); NMS (2).

DNA Barcode: Yes.

Similar species: *D. sasakawai.*

Notes: Based on its unusual venation, *hospita* is sometimes placed in the genus *Aphanta* (with *sasakawai* Takada); Griffith's I-854 argument that it is a derived species of *Dacnusa* is followed here.

***jakovlevi* Tobias, 1986**

Literature: Tobias (219).

Similar species: *D. obesa*.

Notes: Briefly described in a key from a single female.

***laeta* (Nixon, 1954; *Pachysema*)**

Group: 2d.

Literature: Nixon 1954-265; Griffiths II-565, III-802 (K III-895); Tobias (128, 179); Gaal (1996); Papp (2007b, p. 31).

Hosts: *Hypothesis*—Parasitoid of leaf-mining Agromyzidae though precise associations unclear. *Evidence*—Records from *Phytoliriomyza melampyga* on *Impatiens* (Balsaminaceae), Griffiths (5), NMS (5); *Phytomyza* spp. on Ranunculaceae, Griffiths (19); *Agromyza spiraeoidearum* (=*arunci*) and *A. idaeiana* (=*spiraeae*) on Roseaceae, Griffiths (2). *Comment*—Further research is needed to understand this restricted but disjoint host range.

DNA Barcode: cluster of specimens in BOLD but no BIN assigned.

Similar species: *D. groschkeana.*

***laevipectus* Thomson, 1895**

Synonymy: *nox* (Morley, 1924, *Rhizarcha*).

Group: 1a.

Literature: Nixon 1937-67; Nixon (K 1948-219); Griffiths III-839 (K III-894); Tobias (48, 66).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp., chiefly attacking species feeding on Ranunculaceae & Apiaceae, though also *P. glechomae* on *Glechoma* (Lamiaceae). *Evidence*—Griffiths (170); NMS (659).

DNA Barcode: Yes; large number of specimens in BOLD with a single individual assigned to a sister BIN but morphologically indistinguishable from *laevipectus*; several DNA sequences in GENBANK mislabeled *D. sibirica*.

Notes: Very common species. Haviland (1922) provides a detailed description of the larval development of a species she calls *Dacnusa areolaris* but which from the host association is almost certainly this species.

***liopleuris* Thomson, 1895**

Group: 2c.

Literature: Griffiths V-25 (III-826), not keyed; Tobias (111, 195).

Hosts: *Hypothesis*—Parasitoid of *Campanulomyza gyrans* mining *Campanula persicifolia* (Campanulaceae) and *Liriomyza scorzonerae* mining *Scorzonera humilis* (Asteraceae). *Evidence*—Griffiths (7). *Comment*—Disjunct host range needs further research.

Similar species *D. veronicae.*

***lissos* (Nixon, 1954; Pachysema)**

Group: 2d.

Literature: Nixon 1954-268; Griffiths III-813 (K III-898) [VII-352]; Tobias (146, 197).

Hosts: *Hypothesis—Phytomyza* spp. mining Ranunculaceae. *Evidence*—Griffiths (12). *Comment*—Recorded hosts: *P. abdominalis* on *Hepatica* spp., *P. aconitophila* on *Aconitum*, *P. anemonantheae* on *Anemone sylvestris*.

***lithospermi* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-810 (K III-899); Tobias (148).

Hosts: Hypothesis—*Phytomyza lithospermi* feeding on *Lithospernum officinale* (Boraginaceae). Evidence—Griffiths (1).

***longicauda* Thomson, 1895**

Group 1b.

Literature: Nixon 1954-211; Griffiths I-890.

Notes: Nixon synonymised with *D. stramineipes.* Griffiths examined two Thomson specimens under this name and concluded they "represent two different species in the *Dacnusa stramineipes* group" which he did not revise. Status currently unclear.

***longiradialis* Nixon, 1937**

Group: 1a.

Literature: Nixon 1937-68; Nixon 1948-220; Griffiths (K III-894); Tobias (41, 72).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza milii* feeding on Poaceae. *Evidence*—NMS (28).

DNA Barcode: Yes.

Similar species: *D. longithorax*.

***longithorax* (Tobias, 1962)**

Group: 1a.

Literature: Tobias (1962); Tobias (73).

Similar species: *D. longiradialis*.

***lonicerella* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-819 (K III-896); Tobias (122).

Hosts: Hypothesis—Parasitoid of *Aulagromyza cornigera* (=*Paraphytomyza lonicerae*) on *Lonicera xylosteum* (Caprifoliaceae). Evidence—Griffiths (1).

***lugens* (Haliday, 1839; *Alysia*)**

Group: 1c.

Literature: Nixon 1937-69; Nixon 1948-224; Griffiths (K III-892); Tobias (36, 54).

Similar species: *D. arctica*.

***macrospila* (Haliday, 1839; *Alysia*)**

Group: 2d.

Literature: Nixon 1937-59; Nixon 1954-266; Griffiths III-804 (K III-899); Tobias (115, 198, 208).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. on *Ranunculus* (Ranunculaceae). *Evidence*—Griffiths (16); NMS (105). *Comment*—Recorded hosts: *P. ranunculi, P. notata.*

DNA Barcode: Yes; two BINs, one shared with *D. adducta* and an undescribed species near *D. centaureae*.

Notes: Griffiths (III-899) considers Nixon's interpretation of *macrospila* to be an undescribed species.

[*maculata* Goureau, 1851]

Notes: Discussed by Griffiths III-929 who considers a *nomen dubium*.

***maculipes* Thomson, 1895**

Group: 1a.

Literature: Nixon 1937-66; Nixon 1948-217; Griffiths II-566, III-832 [VI-70, VII-349] (K III-893); Tobias (29, 60); Zheng and Chen (2017).

Hosts: *Hypothesis*—Polyphagous parasitoid of Agromyzidae, particularly *Phytomyza, Tribolomyza* and *Liriomyza*. *Evidence*—Griffiths (many); NMS (346).

DNA Barcode: Yes.

Notes: Very common species, the most polyphagous of the Dacnusini, with over 60 recorded host species.

***mara* (Nixon, 1948; *Rhizarcha*)**

Group: 1a.

Literature: Nixon 1948-219; Griffiths (K III-894); Tobias (47, 68).

DNA Barcode: Yes.

***marica* (Nixon, 1948; *Rhizarcha*)**

Group: 1a.

Literature: Nixon 1948-220; Griffiths (K III-894); Tobias (45, 68).

DNA Barcode: No; BIN with likely undescribed species near *D. marica*.

***maxima* (Fischer, 1961; *Pachysema*)**

Group: 2d.

Literature: Griffiths II-563 (K III-896); Tobias (98, 166).

Hosts: *Hypothesis*—Parasitoid of *Agromyza abiens* on Boraginaceae. *Evidence*—Griffiths (2). *Comment*—Same host as *D. abdita.*

Notes: Griffiths comments that *maxima* may just be a large form of *D. abdita*.

***melicerta* (Nixon, 1954; *Pachysema*)**

Synonymy: *fumipes* Tobias, 1998.

Group: 2d.

Literature: Nixon 1954-267; Griffiths III-804 (K III-898); Tobias (154, 206).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. (*albiceps* group) on Asteraceae. *Evidence*—Griffiths (4); NMS (14). *Comment*—Recorded hosts: *P. achillea, P. corvimontana, P. pullula* (=*matricariae*).

DNA Barcode: Yes.

***merope* (Nixon, 1948; *Rhizarcha*)**

Group: 1b.

Literature: Nixon 1948-213; Griffiths III-830 [VII-350]; Tobias (16, 83).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza buhriella* (=*notabalis*) in stems of *Petasites albus* (Asteraceae). *Evidence*—Griffiths (47). DNA Barcode: Yes.

DNA Barcode: Yes.

***metula* (Nixon, 1954; *Pachysema*)**

Group: 2d.

Literature: Nixon 1954-271; Griffiths III-800 (K III-895); Tobias (88, 161).

Hosts: *Hypothesis*—Parasitoid of internally pupating *Phytomyza* mining Dipsacaceae (*Dipsacus, Succisa*). *Evidence*—Griffiths (11); NMS (1). *Comment*—Recorded hosts: *P. ramosa, P. succisae.*

***monticola* (Förster, 1863; *Brachystropha*)**

Synonymy: *mutia* (Nixon, 1948, *Rhizarcha*); *coracina* Stelfox, 1957

Group: 2d.

Literature: Nixon 1948-223, 1954-273; Griffiths III-820 (K III-895); Tobias (6, 52, 138, 177).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza tenella* in seed heads of *Pedicularis* (Orobanchaceae). *Evidence*—Griffiths (22).

DNA Barcode: No; BIN with likely undescribed species near *D. monticola*.

Notes: Unusually long upcurved ovipositor.

***nigrella* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-821 (K III-897); Tobias (137, 173).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza tenella* in seed heads of *Pedicularis palustris* (Orobanchaceae). *Evidence*—Griffiths (41); NMS (2).

DNA Barcode: Cluster of specimens in BOLD but no BIN assigned; a BIN with likely undescribed species near *D. nigrella*.

***nigropygmaea* Stelfox, 1954**

Group: 2d.

Literature: Stelfox (1954); Nixon 1954-273; Griffiths III-808, VII-351 (K III-897); Tobias (158, 174).

Hosts: Hypothesis—Parasitoid of *Phytomyza affinis* in seedheads of *Euphrasia* spp. (Orobanchaceae). *Evidence*—Griffiths (8).

***obesa* Stelfox, 1954**

Group: 2d.

Literature: Stelfox (1954); Nixon 1954-272; Griffiths V-23 (K III-898); Tobias (120, 218); Godfray and Warrington (2024).

Hosts: Hypothesis—Parasitoid of *Liriomyza virgo* in stems of *Equisetum fluviatile* (Equisetaceae). *Evidence*—Griffiths (77).

Similar species: *D. jakovlevi*.

***ocyroe* Nixon, 1937**

Group: 2d.

Literature: Nixon 1937-60; Nixon 1954-297; Griffiths III-808 (K III-898); Tobias (47, 190).

Hosts: Hypothesis—Parasitoid of *Phytomyza* (primarily *albiceps* group) on Asteraceae. Evidence—Griffiths (32); NMS (33). Comment—Recorded hosts: *P. albiceps, P. alpina, P. bipunctata, P. conyzae, P. lappae* (=*lappina*), *P. leucanthemi, P. marginella, P. senecionis, P. solidaginis*. The only non-*albiceps* group record is *P. farfarae* (*ciliata* group).

DNA Barcode: Yes.

***plantaginis* Griffiths, 1967**

Synonymy: *discolor* misident. (Nixon 1954)

Group: 2c.

Literature: Nixon 1954-269 (as *discolor*); Griffiths III-825 (K III-897); Tobias (107, 210).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* (*P. plantaginis, P. griffithsi*) on *Plantago* spp. (Plantaginaceae). *Evidence*—Griffiths (26); NMS (66).

DNA Barcode: Yes; same BIN as *D. discolor*.

***prisca* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-801 (K III-895); Tobias (155).

Notes: Griffiths considers a record from *Phytomza albiceps* probably erroneous.

***pubescens* (Curtis, 1826; *Alysia*)**

Synonymy: *exserens* (Nees, 1834; *Alysia*), ?*rufipes* (Nees, 1812, *Bassus*) see *Chorebus rufipes* (above).

Group: 1b.

Literature: Nixon 1937-63; Nixon 1948-211; Griffiths III-829 [VII-349] (K III-894); Tobias (17, 80).

Hosts: *Hypothesis*—Chiefly a parasitoid of Phytomyzinae feeding in protected niches (stems: *Phytomza rufipes, P. buhriella, Napomyza lateralis;* thick midribs: *P. picridocecis*, *P. ramosa*, *P. robustella*; galls: *P. taraxacoecis, P. cecidonomia*) though also reared from leafminers: *P. solidaginis*, *P. syngenesiae. Evidence*—Griffiths (>86); NMS (15). *Comment*—Stout exerted ovipositor consistent with biology.

DNA Barcode: Yes; specimens in four BINs.

Notes: The number of BINs and the broad host range suggest a species complex but consistent differences in morphology, biology and sequence have not yet been discovered.

***radialis* (Tobias, 1966)**

Literature: Tobias (1966), Tobias (142, 181).

Group: 2d.

Notes: very short radial cell.

***rodriguezi* Docavo & Tormos, 1997**

Literature: Docavo and Tormos (1997).

Group: 2d.

Hosts: *Hypothesis*—Parasitoid of *Phytomyza syngenesiae* & *horticola* mining leaves of Asteraceae. *Evidence*—Docavo and Tormos (1997) (8), NMS (3).

DNA Barcode: Yes.

Similar species: *D. austriaca, D. cicerina*.

***sasakawai* Takada 1977**

Synonymy: *distracta* Tobias (1986, couplet 223) (Alekseev *et al.* 2019).

Group: 2a.

Literature: Takada (1977); Griffiths II-350 (K VII-352).

Hosts: *Hypothesis*—In Europe a parasitoid of the polyphagous *Liriomyza bryoniae*. *Evidence*—Griffiths (2). *Comment*—Reared in Japan from *Phytomyza horticola*.

DNA Barcode: Possibly; specimens in BOLD mined from GenBank under this name but relationship with *D. hospita* not clear.

Notes: Closely related and with the distinctive venation of *D. hospita* (sometimes placed in the genus *Aphanta*).

***sibirica* Telenga, 1934**

Synonymy: *comis* (Nixon, 1954; *Pachysema*).

Group: 2c.

Literature: Nixon 1954-271; Griffiths III-822 [VII-350] (K III-897); Tobias (112, 215).

Hosts: *Hypothesis*—A parasitoid of agromyzid leafminers; (i) in the British Isles found on *Phytomyza asteris* (and possibly other *Phytomyza*) on *Tripolium pannonicum* (= *Aster tripolium*) (Asteraceae) in salt marshes; (ii) in continental Europe a broader range of *Phytomyza* spp. are attacked; (iii) used commercially as a biological control agent against leafminers (especially *Liriomyza* spp.) in greenhouses. *Evidence*—(i) Griffiths (9); NMS (17); (ii) Griffiths (29); (iii) commercial material: NMS. *Comment*—Recorded hosts in continental Europe: *P. ranuculi, P. plantaginis, P. spinaciae/autumnalis.*

DNA Barcode: Yes.

Notes: The two subspecies distinguished by Griffiths (III-822) (*sibirica* and *comis*) overlap in host range and morphology and have similar DNA barcodes and, as anticipated by Griffiths (VII-350), are not separated here. There is a moderately extensive applied literature on this species (e.g. Abe *et al.* 2005; Croft & Copland 1994a; b; 1995; Dicke & Minkenberg 1991; Kandori *et al.* 2008; Minkenberg 1990; Sugimoto *et al.* 1990).

***soldanellae* Griffiths, 1967**

Group: 2d.

Literature: Griffiths III-806 (K III-898); Tobias (130, 194).

Hosts: Hypothesis—Parasitoid of *Phytomyza soldanellae* mining leaves of *Soldanella* sp. (Primulaceae). *Evidence*—Griffiths (18).

DNA Barcode: No; morphologically similar single specimen in a BIN probably represents an undescribed species near *D. soldanellae.*

***soma* (Nixon, 1948; *Rhizarcha*)**

Literature: Nixon 1948-220; Griffiths (K III-894); Tobias (20, 62).

Group: 1a.

Hosts: Hypothesis—Parasitoid of agromyzid (?*Phytomyza luzulae*) mining leaves of *Luzula* sp. (Juncaceae). *Evidence*—NMS (1).

DNA Barcode: Yes.

***stramineipes* (Haliday, 1839; *Alysia*)**

Synonymy: *haemorrhoa* (Förster, 1863, *Tanystropha*); see also under *D. longicauda* Thompson.

Group: 1b.

Literature: Nixon 1937-64; Nixon 1948-211; Griffiths [VII-350] (K III-894); Tobias (15, 82).

Host: *Comment*—A single specimen has been reared from *Phytomyza buhriella* in stems of *Petasites albus* (Asteraceae) in Germany, but because of its small size Griffiths considered it a non-typical host. Records from Diptera on Brassicaceae (Alekseev *et al.* 2019) need confirmation (*Phytomyza rufipes*) or are probably incorrect (*Delia radica,* Anthomyiidae).

DNA Barcode: Yes.

***tarsalis* Thomson, 1895**

Synonymy: *nitetis* (Nixon, 1948, *Rhizarcha*)

Group: 1c.

Literature: Nixon 1948-217; Griffiths III-828 (K III-894); Tobias (39, 76).

Hosts: *Hypothesis*—A parasitoid of *Phytomyza* spp. mining the leaves of Asteraceae. *Evidence*—Griffiths (5); NMS (54). *Comment*—Recorded hosts: *P. spinaciae*, *P. autumnalis* & *P. farfarae*.

DNA Barcode: Yes; a morphologically very similar specimen with uncertain biology occupies the sister BIN.

***temula* (Haliday, 1839; *Alysia*)**

Group: 2d.

Literature: Nixon 1937-58; Nixon 1954-269; Griffiths (K III-895); Tobias (140, 220).

Hosts: *Hypothesis*—Parasitoid of *Scaptomyza flava* (Drosophilidae) leaf-mining Brassicaceae. *Evidence*—Griffiths (no details); NMS (38). *Comment*—Nixon's report from *Hylemyia* (Anthomyiidae) on *Brassica* very likely incorrect.

DNA Barcode: Yes.

Notes: Not closely related to *Dacnusa faeroeensis*, the only other Dacnusini attacking drosophilids.

***terminalis* (Tobias, 1962)**

Group: 2d.

Literature: Tobias (1962); Griffiths (K III-896); Tobias (126).

***veronicae* Griffiths, 1967**

Group: 2c.

Literature: Griffiths III-826 (K III-897/898); Tobias (110, 207).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza crassiseta* leaf-mining *Veronica* (Plantaginaceae). *Evidence*—Griffiths (5); NMS (21).

DNA Barcode: Yes; in two BINs.

Similar species: *D. liopleuris*.

***Epimicta* Förster, 1863**

Type species: *marginalis* Haliday

Literature: Griffiths I-859; Wharton (1994); Belokobylskij (2005) (key to Palaearctic species); Kula and Zolnerowich (2005) (includes electron micrographs of *E. marginalis*).

Hosts: Known only for *E. marginalis* (see below).

Notes: Four species (Taxapad), two Holarctic, one each from the west and east Palaearctic. Close to *Trachionus* and possibly congeneric (see literature cited above), a hypothesis supported by recent rearing records (below).

***marginalis* (Haliday, 1839; *Alysia*)**

Hosts: *Hypothesis*—Parasitoid of *Phytobia carbonaria*, a cambial miner of Rosaceae trees. *Evidence*—van Achterberg *et al.* (2012); NMS (7).

DNA Barcode: cluster of specimens in BOLD but no BIN assigned.

***Eucoelinidea* Tobias, 1979**

Type species *compressa* Tobias 1979

NEOPOLEMON Perepachayrnko, 1999 (type species: *breviventris* Telenga) (van Achterberg 2014)

Literature: Tobias (1986), van Achterberg (2014).

Hosts: No information; possibly attacks Chloropidae based on related genera.

Notes: Two (Palaearctic) species.

***compressa* Tobias, 1979**

Literature: Tobias (1979).

***breviventris* (Telenga, 1935; *Coelinidea*)**

Literature: Keyed as a species of *Polemochartus* by van Achterberg and Falcó (2001).

***Exotela* Förster, 1863**

Type species: *cyclogaster* Förster.

MESORA Förster, 1863 (type species: *gilvipes* Haliday)

TOXELEA Nixon, 1943 (type species: *gilvipes* Haliday)

Literature: Griffiths I-862.

Hosts: *Hypothesis*—Parasitoids of leaf-mining Agromyzidae. *Evidence*—Rearing records summarized below.

Notes: Griffiths used a wider concept of *Exotela* including *Antrusa* (see under that genus for why separated here). Griffiths defines a *cyclogaster* species group (*cyclogaster*, *senecionis*, *sonchina, spinifer, tartrica*) and species with expanded mandibles associated with Fabaceae (*dives, lathyri, viciae*) could be placed in a *dives* species group (species boundaries in this poorly-sampled group need more research). 27 described species globally (Taxapad), 21 in Europe.

***aconiti* Griffiths, 1967**

Literature: Griffiths III-784 (K III-878).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza aconitella* leaf-mining *Aconitum plicatum* (=*callibotrys* [sic]) (Ranuculaceae). *Evidence*—Griffiths (2).

***arunci* Griffiths, 1967**

Literature: Griffiths II-556 (K III-877).

Hosts: *Hypothesis*—Parasitoid of *Agromyza spiraeoidearum* (=*arunci*) leaf-mining *Aruncus* ?*dioicus* (*silvester* in Griffiths) and the introduced *Spiraea chamaedryfolia* (=*ulmifolia*) (Rosaceae). *Evidence*—Griffiths (18).

***chromatomyiae* Griffiths, 1984**

Literature: Griffiths VII-346.

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* (=*Chromatomyia*) *periclymeni* leaf-mining *Lonicera xylosteum* (Caprifoliaceae). *Evidence*—Griffiths (3).

***cyclogaster* Förster, 1863**

Synonymy: *bellina* (Nixon, 1937, *Dacnusa*); *umbellina* (Nixon, 1954, *Toxelea*).

Literature: Nixon 1937-56; Nixon 1954-276; Griffiths III-789 [VII-346] (K III-878).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. on Apiaceae. *Evidence*—Griffiths (104); NMS (233). *Comment*—Griffiths records a few specimens from *Phytomyza* on Asteraceae but molecular confirmation they are *cyclogaster* (as opposed to *sonchina* or another species) is desirable.

DNA Barcode: Yes; BIN structure unstable with single BIN recently split into three sister BINs.

Notes: Griffiths (III-789) divided *cyclogaster* into three subspecies: nominate *cyclogaster*, *umbellina* and *sonchina*. Tobias (1986) later treated these as separate species although Godfray (1984) argued that *umbellina* and *cyclogaster* are variants associated with different hosts. DNA barcodes support the synonymy of *umbellina* with *cyclogaster* and that *sonchina* bred from Asteraceae is distinct. *E. cyclogaster,* as defined here, is one of the most common Dacnusini.

***dives* (Nixon, 1954, *Toxelea*)**

Literature: Nixon 1954-277; Griffiths II-557 (K III-878).

Hosts: *Hypothesis*—Parasitoid of *Agromyza viciae* leaf-mining *Vicia* (Fabaceae). *Evidence*—Griffiths (1) though some uncertainty if single wasp bred from this host is true *dives*.

DNA Barcode: Possibly: unclear if BIN represents *E. dives* or *viciae.*

***facialis* (Thomson, 1895; *Dacnusa*)**

Literature: Griffiths (K III-877).

Hosts: *Hypothesis*—Parasitoid of Agromyzidae leaf-mining *Lonicera xylosteum* (Caprifoliaceae). *Evidence*—NMS (5).

DNA Barcode: Yes; 3 & 2 individuals in sister BINs; a related further BIN probably an undescribed species near *E. facialis*.

Notes: Previously known from the male holotype and distinguished from other European *Exotela* by its yellow face. Five recently reared specimens from Finland include four yellow-faced males and a dark-faced females.

***gilvipes* (Haliday, 1839; *Alysia*)**

Synonymy: *albilabris* (Thomson, 1895, *Dacnusa*).

Literature: Nixon 1937-57; Nixon 1954-278; Griffiths III-785 (K II-588).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. on *Ranunculus* spp. (Ranunculaceae). *Evidence*—Griffiths (6); NMS (6). *Comment*—Recorded hosts: *P. ranunculi* and *P. notata*. Report from *P. milii* (Alekseev *et al* 2019) likely incorrect.

DNA Barcode: Yes; in two sister BINs.

***hera* (Nixon, 1937; *Dacnusa*)**

Literature: Nixon 1937-55; Nixon 1954-275; Griffiths II-560 (K III-878).

Hosts: *Hypothesis*—Parasitoid of *Agromyza* spp. leaf-mining *Urtica dioica* (Urticaceae). *Evidence*—"I once swept this species in abundance from nettle", Nixon (1954); Griffiths (18); NMS (114). *Comment*—Recorded hosts: *A. reptans, A. pseudoreptans, A. anthracina*.

DNA Barcode: Yes; sister BIN likely undescribed species near *E. hera*.

***lathyri* Griffiths, 1984**

Literature: Griffiths VII-345.

Hosts: *Hypothesis*—Parasitoid of *Agromyza orobi* leaf-mining *Lathyrus vernus* (Fagaceae). *Evidence*—Griffiths (2).

***lonicerae* Griffiths, 1967**

Literature: Griffiths III-787 (K III-877).

Hosts: *Hypothesis*—Parasitoid of *Aulagromyza* (= *Paraphytomyza*) *hendeliana* on *Lonicera periclymenum* (Caprifoliaceae). *Evidence*—Griffiths (15); NMS (18). *Comment*—Not recorded from other Agromyzidae on *Lonicera.*

DNA Barcode: Yes; a specimen in a nearby BIN likely belongs to an undescribed species.

***minuscula* Griffiths, 1967**

Literature: Griffiths III-788 (K III-877).

Hosts: Hypothesis—Parasitoid of *Aulagromyza luteoscutellata* (=*Paraphytomyza xylostei*) leaf-mining *Lonicera xylosteum* (Caprifoliaceae). Evidence—Griffiths (3).

***nowakowskii* Griffiths, 1967 [1966]**

Literature: Griffiths II-560 (K III-877).

Hosts: *Hypothesis*—Parasitoid of *Agromyza idaeiana* (= *spiraeae*) leaf-mining *Rubus idaeus* (Roscaceae). *Evidence*—Griffiths (5). Comment—Report from the Poaceae-feeding *A. phragmitidis* (Alekseev *et al* 2019) needs confirmation.

***obscura* Griffiths, 1967**

Literature: Griffiths III-795 (K III-877).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. leaf-mining Apiaceae. *Evidence*—Griffiths (79); NMS (12). *Comment*—Recorded hosts: *P. aegopodii, P. angelicae* (including *P. laserpitii*)*, P. pubicornis.*

DNA Barcode: Yes.

***phryne* (Nixon, 1954; *Toxelea*)**

Literature: Nixon 1954-277; Griffiths III-561 (K III-877)

Hosts: *Hypothesis*—Parasitoid of *Agromyza alnivora* on *Alnus* (Betulaceae). *Evidence*—Griffiths (3); NMS (11). *Comment—A. alnivora* was recently separated from *A. alnibetulae* which feeds on *Betula* and may also be a host.

DNA Barcode: Yes.

***senecionis* Griffiths, 1967**

Literature: Griffiths III-797 (K III-878).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. Asteraceae. *Evidence*—Griffiths (16). *Comment*—Recorded hosts: *P. alpina, P. homogyneae, P. senecionis*.

DNA Barcode: No; a BIN with a single specimen probably represents an undescribed species near *E. senecionis.*

***sonchina* Griffiths, 1967**

Literature: Griffiths III-790 (K III-878).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza marginella* on Asteraceae. *Evidence*—Griffiths (32); NMS (23). *Comment*—A British specimen from *Phytomyza thysselini* on *Peucedanum palustre* (Apiaceae) that keys to this species needs further research as do a few continental European records from other *Phytomyza* spp. on Asteraceae & Apiaceae.

DNA Barcode: Yes.

Notes: See *E. cyclogaster.*

***spinifer* (Nixon, 1954; *Toxelea*)**

Literature: Nixon 1954-275; Griffiths III-798 [VII-346] (K III-878).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. (*albiceps* group, sensu Winkler *et al*. 2009) on Asteraceae. *Evidence*—Griffiths (13); NMS (37). *Comment*—Recorded hosts: *P. cirsii, P. alpina, P. albiceps* (=*rydeniana*)*, P. conyzae, P. lappae* (=*lappina*).

DNA Barcode: Yes.

***sulcata* (Tobias, 1962; *Pachysema*)**

Literature: Griffiths III-786 (K III-877)

Hosts: *Hypothesis*—Parasitoid of *Phytomyza* spp. on *Caltha palustris* (Ranunculaceae). *Evidence*—Griffiths (91); NMS (6). *Comment*—Recorded hosts: *P. calthivora*, *P. calthophila*.

DNA Barcode: Yes.

***tatrica* Griffiths, 1967**

Literature: Griffiths (K III-877).

Hosts: *Hypothesis*—Parasitoid of *Phytomyza aronici* mining leaves of *Doronicum clusii*. *Evidence*—Griffiths (2).

***viciae* Griffiths, 1984**

Literature: Griffiths VII-345 (K VII-348).

Hosts: *Hypothesis*—Parasitoid of *Agromyza vicifoliae* on *Vicia cracca* (Fabaceae). *Evidence*—Griffiths (3); NMS (1).

DNA Barcode: Possibly: unclear if BIN represents *E. dives* or *viciae*.

***Laotris* Nixon, 1943**

Type species: *striatula* Haliday

Literature: Griffiths I-856, VI-66.

Hosts: *Hypothesis*—Parasitoids of *Cerodontha* (subgenus *Dizygomyza*) spp. on Juncaceae and Cyperaceae. *Evidence*—Below.

Notes: Four described Palaearctic species in genus (Godfray 2023) and further undescribed species in North America (Godfray 2023, Wharton 1994).

***luzulae* Godfray, 2023**

Literature: Godfray (2023).

Hosts: Hypothesis—Parasitoid of *Cerodontha silvatica* mining *Luzula sylvatica* (Juncaceae). Evidence—NMS (5).

DNA Barcode: Yes.

***rupestris* Griffiths, 1968**

Literature: Griffiths VI-66.

Hosts: *Hypothesis*—Parasitoid of *Cerodontha* sp. mining *Carex sempervirens* (Cyperaceae). *Evidence*—Griffiths (1).

***striatula* (Haliday, 1839; *Alysia*)**

Literature: Nixon 1937-52; Nixon 1954-284; Griffiths VI-66.

Hosts: *Hypothesis*—Parasitoid of *Cerodontha luctuosa* mining *Juncus effusus* (Juncaceae). *Evidence*—Griffiths (39); NMS (10).

DNA Barcode: Yes.

***Polemochartus* Schulz, 1911**

Type species: *liparae* Giraud

POLEMON Giraud, 1863 (type species: *liparae* Giraud) (homonym recognised by Schulz (1911))

Literature: Key to Palaearctic species: Papp (1992); Maetoˆ (1983); van Achterberg and Falcó (2001).

Hosts: *Hypothesis*—Parasitoids of *Lipara* spp. (Chloropidae) galling *Phragmites* (Poaceae). *Evidence*—Taxapad; records below.

Notes: Has been considered a subgenus of *Coelinius* (see note under that genus). Six species from the Palaearctic (Taxapad), the largest European Dacnusini.

***aboletus* Papp, 1992**

Literature: Papp (1992); van Achterberg and Falcó (2001); Fischer (2005).

Hosts: *Hypothesis*—Parasitoid of *Lipara similis* (Chloropidae) galling *Phragmites australis* (Poaceae). *Evidence*—Dely-Draskovits *et al.* (1993) (7); Dely-Draskovits *et al.* (1994) (73).

***ibericus* van Achterberg & Falcó, 2001**

Literature: Maetoˆ (1983); van Achterberg and Falcó (2001); Fischer (2005).

Notes: Holotype associated with marshland.

***liparae* (Giraud, 1863; *Polemon*)**

Hosts: *Hypothesis*—Parasitoid of *Lipara lucens* (Chloropidae) galling *Phragmites australis* (Poaceae), occasionally attacking other *Lipara* spp. on same host plant. *Evidence*—Giraud (1863); Chvála *et al.* (1974); Bruyn (1987) (86); Dely-Draskovits *et al.* (1993) (17); Dely-Draskovits *et al.* (1994) (177); NMS (9).

DNA Barcode: Yes.

Notes: Oviposition behaviour into host egg described by Mook (1962).

***melas* (Giraud, 1863; *Polemon*)**

Hosts: *Hypothesis*—Parasitoid of *Lipara rufitarsis* (Chloropidae) galling *Phragmites australis* (Poaceae), occasionally attacking other *Lipara* spp. on same host plant. *Evidence*—Giraud (1863); Chvála *et al.* (1974); Bruyn (1987) (38); Dely-Draskovits *et al.* (1994) (43); NMS (2).

DNA Barcode: Yes.

***Protochorebus* Perepechayenko, 1997**

Type species: *kasparyani* Perepechayenko

Literature: Perepechayenko (1997b), Kostromina *et al.* (2016).

Hosts: *Protochorebus pervushini* Kostromina was reared from *Selachops flavocincta* feeding on underground stems of *Carex* sp. in the Central Urals (Kostromina *et al.* 2016).

Notes: Two (Palaearctic) species in genus.

***kasparyani* Perepechayenko, 1997**

Literature: Perepechayenko (1997b).

***Protodacnusa* Griffiths, 1964**

Type species: *tristis* Nees

Literature: Griffiths I-891; Mao *et al.* (2015) (key to world species).

Hosts: Only confirmed hosts for *P. tristis* (below); records in Taxapad from Chloropidae probably incorrect.

Notes: 18 species in genus (Alekseev *et al.* 2019).

***aridula* (Thomson, 1895)**

Synonymy: *miser* (Nixon, 1954-282, *Antrusa*) (Griffiths I-894).

Literature: Griffiths I-894 (K I-892).

***litoralis* Griffiths, 1964**

Literature: Griffiths I-896 (K I-892).

Notes: Coastal species.

***ruthei* Griffiths, 1964**

Literature: Griffiths I-893 (K I-892).

***tristis* (Nees, 1834)**

Synonymy: *ampliator* (Haliday, 1839, *Alysia*) preocc.; *longistigma* (Telenga, 1935, *Dacnusa*); ?*navicularis* (Nees, 1812; *Bassus*) (Godfray 2020).

Literature: Nixon 1937-71; Nixon 1946-298 (K 1943-162); Griffiths I-853, 892 [VII-345] (K I-892).

Hosts: *Hypothesis*—Parasitoid of *Agromyza ambigua* gp. leaf-mining Poaceae. *Evidence*—Griffiths (>3). *Comment*—Recorded hosts: *A. nigrella, A. nigrociliata*; old records from Chloropidae (Nixon) very likely incorrect.

***Sarops* Nixon, 1942**

Type species: *rea* Nixon

Literature: Nixon (1942); Griffiths I-856; Riegel (1982); Maetoˆ (1983); Tobias (1986) who keys the two European species, Fischer (2005) who keys the world species.

Hosts: Only known for *S. rea* (see below).

Notes: Eight species in genus (Fischer 2005). Has been considered a synonym or subgenus of *Coelinius* (see note under that genus). A further undescribed species is present in Norway.

***popovi* Tobias, 1962.**

Literature: Tobias (1962), Tobias (1986).

DNA Barcode: Yes.

***rea* Nixon, 1942**

Literature: Nixon (1942).

Hosts: *Hypothesis*—Parasitoid of *Cryptonevra flavitarsis* (Chloropidae), an inquiline of *Lipara* spp. (Chloropdae) galling *Phragmites australis* (Poaceae). *Evidence*—Tobias (1986); Fischer (2005) (who also adds *Lipara rufitarsis*). *Comment*—Type specimen associated with *Phragmites*.

DNA Barcode: Yes.

***Synelix* Förster, 1863**

Type species: *agnata* Förster (=*semirugosa* Haliday)

ECTILIS Nixon, 1943 (type species: *semirugosa* Haliday)

EUSYNELIX Tobias, 1986 (type species: *ghilarovi* Tobias)

Literature: Griffiths I-856; Maetoˆ (1983); Wharton (1994).

Notes: Four European species in genus (*Fauna Europaea* 2023), with the range of *S. semirugosa* extending to North America (Wharton 1994; BOLD database).

***brevicornis* Burghele, 1960**

Literature: Burghele (1960).

***ghilarovi* Tobias, 1986**

Literature: Tobias (1986).

Notes: Described briefly in key, and placed in a new subgenus, *Eusynelix* Tobias.

***rossica* (Telenga, 1934; *Epimicta*)**

Literature: Tobias (1986).

***semirugosa* (Haliday, 1839; *Alysia*)**

Synonymy: *agnata* Förster, 1863; *amaurosomae* (Telenga, 1935, *Dacnusa*)

Literature: Nixon 1937-77; Nixon 1954-284; Wharton (1994).

Hosts: *Hypothesis*—Parasitoid of *Nanna* (=*Amaurosoma*) *armillata* (Scathophagidae) in developing flower heads of *Phleum* spp. (Poaceae). *Evidence*—King *et al.* (1935) (2); Telenga (1935).

DNA Barcode: Yes; in two sister BINS.

Notes: Only Dacnusini known to parasitise a calypterate dipteran.

***Tates* Nixon, 1943**

Type species: *heterocera* Thomson

Literature: Griffiths I-863.

Hosts: No information.

Notes: Single species in genus (Taxapad).

***heterocera* (Thomson, 1895; *Dacnusa*)**

Literature: Nixon 1937-73; Nixon 1954-286.

DNA Barcode: Yes.

Notes: Displays unusually strong sexual dimorphism in antennal segment number.

***Terebrebus* Tobias, 1999**

Type species: *monstrosus* Tobias

Literature: Tobias (1999) .

Hosts: No information.

Notes: Single species in genus (Taxapad).

***monstrosus* Tobias, 1999**

Literature: Tobias (1999) .

Notes: Remarkably ovipositor, longer than abdomen, sub-sinuate.

***Trachionus* Haliday, 1833**

Type species: *mandibularis* Nees

AENONE Curtis, 1837 preocc. (type species: *mandibularis* Nees)

AENONE Haliday, 1838 preocc. (type species: *mandibularis* Nees)

OENONE Haliday, 1839 preocc. (type species: *mandibularis* Nees)

SYMPHYA Förster, 1863 (type species: *mandibularis* Nees)

ANARMUS Ruthe, 1882 (type species: *mandibularis* Nees)

Hosts: *Hypothesis*—Parasitoids of *Phytobia* spp. (Agromyzidae) in bark cambium. *Evidence*—Literature records (Taxapad) plus specimens in NHM & NMS. *Comment*—Records from *Cerodontha* (Agromyzidae) almost certainly incorrect (part of genus used to be called *Phytobia*). Thought to oviposit into host egg (Greene 1914).

Literature: Griffiths I-858; Tobias (1986); van Achterberg (1997); Cui *et al.* (2015); Fischer (1994); Perepechayenko (2000a) (in Russian but key to European females in English).

Notes: Generic synonymy follows van Achterberg (1997). Closely related to *Epimicta* (q.v.). 13 species in genus (Cui *et al.* 2015).

Subgenus *Trachionus* Haliday, 1833

***kotenkoi* (Perepechayenko, 1997)**

Literature: Perepechayenko (1997a); Perepechayenko (2000a).

***mandibularis* (Nees, 1816; *Sigalphus*)**

Hosts: *Hypothesis*—Parasitoid of *Phytobia cerasiferae,* a cambial miner of *Prunus* sp. (Rosaceae). *Evidence*—Pitcher (1956); NMS (45). *Comment*—NMS specimens discussed in Warrington (2023); Pitcher & Warrington found 80% hosts parasitised; possibly attacks other *Phytobia* spp.

DNA Barcode: Yes.

***rugosus* (Zaykov, 1982)**

Literature: Zaykov (1982).

Subgenus *Planiricus* Perepechayenko, 2000

Type species: *hians* Nees

***hians* (Nees, 1816; *Sigalphus*)**

Hosts: *Hypothesis*—Parasitoid of *Phytobia cambii* (=*betulae*) mining cambia of Betulaceae. *Evidence*—Barnes (1933); Moraal (1987); van Achterberg *et al.* (2012); NMS (1). *Comment*—Possibly attacks other *Phytobia* spp.

DNA Barcode: Yes.

***pappi* (Zaykov, 1982)**

Literature: Zaykov (1982).

Hosts: *Hypothesis*—Parasitoid of *Phytobia cerasiferae,* a cambial miner of *Prunus* sp. (Rosaceae). *Evidence*—van Achterberg *et al.* (2012). *Comment*—Possibly attacks other *Phytobia* spp.

***ringens* (Haliday, 1839; *Alysia*)**

Hosts: *Hypothesis*—Parasitoid of *Phytobia cambii* (=*betulae*) mining cambia of Betulaceae. *Evidence*—Barnes (1933); Moraal (1987); van Achterberg *et al.* (2012). *Comment*—Possibly attacks other *Phytobia* spp.

DNA Barcode: Yes.

***Victorovita* Tobias, 1985**

Type species: *genalis* Tobias (=*caudata* Szépligeti)

Literature: Tobias (1985), Perepechayenko (2000b), Perepechayenko (2009), comprehensive redescription.

Notes: Two (Palaearctic) species in genus.

***caudata* (Szépligeti, 1901; *Dacnusa*)**

Synonymy: *genalis* Tobias (Papp 2004) though not accepted by Perepechayenko (2009).

Literature: Tobias (1985), Perepechayenko (2009).

Genera *incertae sedis*

***Grandia* Goidanich 1936**

Type species: *cyanaraphila* Richello

Literature: Goidanich (1936); Nixon 1954-289; Griffiths I-843; Wharton (1984); Belokobylskij (1996).

Hosts: Only information from *G. cynaraphila* (below).

Notes: 2*r-m* absent which is the main Dacnusini apomorphic character. Nixon (1954) treated as Dacnusini but Griffiths I-843 and Wharton (1994) considered Alysiini with independent loss of vein. Two (Palaearctic) species in genus.

***cynaraphila* (Richello, 1929; *Dacnusa*)**

Synonymy: *Dacnusa navicularis* (Nees) var. *cynaraphila* Richello, 1929.

Literature: Richello (1929); Goidanich (1936); Griffiths II-556.

Hosts: *Hypothesis*—Parasitoid of *Agromyza apfelbecki* (=*andalusiaca)* mining *Cynara scolymus* (Asteraceae) (pest of cultivated globe artichoke). *Evidence*—Richello (1929); Goidanich (1936).

***Lodbrokia* Hedqvist, 1962**

Type species: *hirta* Hedqvist.

Literature: Hedqvist (1962); Belokobylskij and Kostromina (2011); Belokobylskij and Kula (2012).

Hosts: No information.

Notes: Micropterous; mandibles with 5 or 7 teeth. Often considered in Dacnusini (though not by Griffiths I-844) and position needs further study. Three (Palaearctic) species in genus (the third *uralica* Belokobylskij and Kostromina, 2011, is from the Asian side of the Ural Mountains).

***hirta* Hedqvist, 1962**

Literature: Hedqvist (1962); Belokobylskij and Kostromina (2011).

***mariae* Sterzyński, 1984**

Literature: Sterzyński (1984).

Tribe Alysiini [part]: *Dapsilarthra* genus group

Literature: Königsmann (1959a); Königsmann (1959b); van Achterberg (1983); van Achterberg (2014).

Hosts: *Hypothesis*—Parasitoids of leaf-mining Agromyzidae, Tephritidae and Anthomyiidae. *Evidence*—see below.

Notes: All the genera here have at some time been included as subgenera of *Dapsilarthra* and their current treatment as a genus group is due to van Achterberg (1983) who provides a generic key (but see *Mesocrina* below). Like Dacnusini they are parasitoids of phytophagous cyclorrhaphan Diptera and may be their sister group (Griffiths 1964){Jasso-Martinez, 2022 #821}.

***Adelurola* Strand, 1928**

Type species: *florimela* Haliday

ADELURA Förster, 1863 preocc. (type species: *florimela* Haliday)

NEOCARPA Fischer, 1966 (type species: *amplidens* Fischer)

Literature: van Achterberg (1983); key to world species, Peris-Felipo *et al.* (2016b).

Hosts: Known only from *A. florimela* (below)

Notes: Four Palearctic species (Peris-Felipo *et al.* 2016b).

***florimela* (Haliday, 1838; *Alysia*)**

Synonymy: *multiarticulata* (Marshall, 1898, *Phaenocarpa*); *pentapleuroides* (Fischer, 1971, *Dapsilarthra*) unavailable.

Literature: Illustrated redescription, Peris-Felipo *et al.* (2016b).

Hosts: *Hypothesis*—Parasitoid of leaf-mining *Pegomya* spp. (Anthomyiidae). *Evidence*—van Achterberg (1983); NMS (723). *Comments*—Recorded hosts: *P. solennis* (= *nigritarsis*), ?*P. bicolor, P. dulcamarae, P. steini*. Records from *Acidia cognata* (Tephritidae) (Peris-Felipo *et al.* 2016b; van Achterberg 1983) are probably incorrect.

DNA Barcode: Yes.

***Dapsilarthra* Förster, 1863**

Type species: *apii* Curtis

Literature: key to European species, van Achterberg (1983); Fischer (1993).

Hosts: *Hypothesis*—Parasitoids of leaf-mining Agromyzidae and Tephritidae. *Evidence*—see below.

***apii* (Curtis, 1826; *Alysia*)**

Synonymy: *laevipectus* (Thomson, 1895, *Alysia*); *americana* (Brues, 1907, *Orthostigma*).

Hosts: *Hypothesis*—Parasitoid of *Euleia* (=*Philiphylla*) *heraclei* (Tephritidae) leaf-mining Apiaceae. *Evidence*—van Achterberg (1983); NMS (136). *Comment*—record from *Chamaepsila* (=*Psila*) *rosae* (Psilidae) (van Achterberg 1983) is probably incorrect.

DNA Barcode: Cluster of specimens in BOLD but no BIN assigned yet.

***sylvia* (Haliday, 1839; *Alysia*)**

Synonymy: *carpathica* van Achterberg, 1983, synonymy by van Achterberg (1997).

Literature: Griffiths [II-555, V-9, VI-65, VII-344].

Hosts: *Hypothesis*—Polyphagous parasitoid of leaf-mining Agromyzidae. *Evidence*—Königsmann (1959a); Griffiths (21), NMS (6). *Comments*—Recorded host genera: *Agromyza, Amauromyza, Cerodontha, Phytomyza.*

DNA Barcode: Yes.

***Grammospila* Förster, 1863**

Type species: *isabella* Haliday

PARAORTHOSTIGMA Königsmann,1972 (type species *tirolense* Königsmann)

Literature: van Achterberg (1983); Fischer (1993); key to seven world species, van Achterberg (2018).

Hosts: *Hypothesis*—Parasitoids of leaf-mining Agromyzidae. *Evidence*—see below.

***fuscula* (Griffiths, 1968; *Dapsilarthra*)**

Literature: Griffiths VI-65, [VII-344].

Hosts: *Hypothesis*—Polyphagous parasitoid of leaf-mining Agromyzidae. *Evidence*—Griffiths (4). *Comments*—Recorded host species: *Cerodontha* sp*., Phytomyza adenostylis.*

***isabella* (Haliday, 1838; *Alysia*)**

Hosts: *Hypothesis*—Parasitoid of *Parallelomma* (= *Americina*) *paridis* (Scathophagidae) leaf-mining *Paris quadrifolia* (Melanthiaceae). *Evidence*—NMS (11); van Achterberg (2018).

DNA Barcode: Cluster of specimens in BOLD but no BIN assigned.

***martae* van Achterberg, 2018**

Literature: van Achterberg (2018).

***ochrogaster* (Szepligeti, 1898; *Phaenocarpa*)**

Notes: Resurrected from synonymy with *rufiventris* by van Achterberg (2018), though he notes "Further research is needed to corroborate its independent status".

***rufiventris* (Nees, 1812; *Bassus*)**

Synonymy: *flaviventris* (Haliday, 1838, *Alysia*); *gracilicornis* (Thomson, 1895; *Alysia*); *fuscula* (Griffiths, 1968 [VI-65]; *Dapsilarthra*) synonymised by van Achterberg (1983).

Literature: Griffiths [III-782, VII-344]

Hosts: *Hypothesis*—Polyphagous parasitoid of Agromyzidae. *Evidence*—Königsmann (1959a); Griffiths (44); NMS (132). *Comments*—Most records from *Phytomyza* spp.; also recorded from *Amauromyza*, *Liriomyza,*

Cerodontha.

DNA Barcode: Yes; specimens assigned to 2 BINs may may not be conspecific.

***tirolensis* (Konigsmann, 1972; *Paraorthostigma*)**

Literature: van Achterberg (1983, 2018).

***Heterolexis* Förster, 1863**

Type species: *subtilis* Förster

Literature: Griffiths V-8 (as *Dapsilartha balteata* group); van Achterberg (1983); Fischer (1993).

Hosts: *Hypothesis*—Parasitoids of leaf-mining Agromyzidae and Anthomyiidae. *Evidence*—see below.

Notes: about 10 described species globally (Taxapad).

***balteata* (Thomson, 1895; *Alysia*)**

Literature: Griffiths [II-555, V-9, VI-65, VII-344].

Hosts: *Hypothesis*—Polyphagous parasitoid of larger Agromyzidae, chiefly *Agromyza* spp. & *Cerodontha* spp.. *Evidence*—Königsmann (1959a); Griffiths (29); NMS (32). *Comments*—Königsmann (1959a) mentions several *Phytomyza* spp. as hosts; one record from a *Liriomyza* sp. (Griffiths V-9); as noted by van Achterberg (1983) a record from a *Pegomya* sp. (Anthomyiidae) requires confirmation.

DNA Barcode: Yes.

Notes: Often the most frequent parasitoid of *Agromyza* spp. on cereals (Griffiths VII-343).

***boscoloi* Fischer, 1993**

Literature: Fischer (1993).

***dictynna* (Marshall, 1895; *Adelura*)**

Hosts: *Hypothesis*—Parasitoid of *Chirosia* (= *Pycnoglossa*) spp. (Anthomyiidae) leaf-mining ferns (Pteridophyta). *Evidence*—NMS (55). *Comments*—Recorded hosts *C. histricina, C. flavipennis*; records from other species of *Chirosia* need confirmation.

DNA Barcode: Yes.

***gahani* (Baume-Pluvinel, 1915; *Adelura*)**

Synonomy: *nowakowski* Königsmann, 1959.

Literature: Königsmann (1959a); Griffiths III-783, [VII-344].

Hosts: *Hypothesis*—Parasitoid of *Phytomyza minuscula* mining leaves of *Aquilegia* and *Thalictrum* (Ranunculaceae). *Evidence*—Königsmann (1959a); Griffiths III-783.

***latimata* Fischer, 1993**

Literature: Fischer (1993).

***levisulca* (Griffiths, 1968; *Dapsilarthra*)**

Literature: Griffiths V-10.

Hosts: *Hypothesis*—Polyphagous parasitoid of Agromyzidae, *Evidence*—Griffiths (9). *Comments*—Reared from species of *Liriomyza* and *Phytomyza*.

***subtilis* Förster, 1862**

Synonomy: *fuscula* (Griffiths, 1968 [VI-65]; *Dapsilarthra*) synonymised by van Achterberg (1983).

Literature: Griffiths V-9; van Achterberg (1983)

Hosts: *Hypothesis*—Polyphagous parasitoid of Agromyzidae, *Evidence*—Griffiths (11). *Comments*—Reared from a single species each of *Liriomyza* and *Cerodontha*.

DNA Barcode: Yes.

Genus excluded from the *Dapsilarthra* genus group

***Mesocrina* Förster, 1863**

Type species *indagatrix* Förster

PSEUDOMESOCRINA Königsmann, 1959 (type species: *venatrix* Marshall, 1895)

Literature: Königsmann (1959b); van Achterberg (1983); Belokobylskij (1998); van Achterberg (2014); Godfray and van Achterberg (2024).

Hosts: *Hypothesis*—Parasitoids of Diptera in gilled fungi. *Evidence*—Females of an American and the two European species have been captured on fungi.

Notes: Förster described *indagatrix* in the new genus *Mesocrina*. Königsmann rejected the present interpretation of *indagatrix* and erected the genus *Pseudomesocrina* with type species *venatrix* Marshall to represent this taxon. van Achterberg (1983) argued for the traditional interpretation and synonymised *Pseudomesocrina venatrix* with *Dapsilarthra* (*Mesocrina*) *indagatrix*, treating *Mesocrina* as a subgenus. Papp (1991 [1990]) later raised *Mesocrina* to generic level which was accepted by other authors (Belokobylskij 1998; van Achterberg 2014). Wharton (1980) suggested *Mesocrina* was nearer *Alysia* than the *Dapsilarthra* group and this is supported by recent molecular data (Godfray & van Achterberg 2024; Jasso-Martinez *et al.* 2022) and putative host associations (above), hence we here exclude *Mesocrina* from the *Dapsilarthra* genus group. Eight (6 Palaearctic, 2 Nearctic) species.

***chandleri* Godfray & van Achterberg 2024**

Literature: Godfray and van Achterberg (2024).

Hosts: *Hypothesis*—Parasitoid of Diptera in gilled fungi. *Evidence*—Female captured on gilled fungus (Godfray & van Achterberg 2024).

DNA Barcode: Yes.

***indagatrix* Förster, 1863**

Synonymy: *venatrix* Marshall, 1895.

Literature: van Achterberg (1983); Godfray and van Achterberg (2024).

Hosts: *Hypothesis*—Parasitoid of Diptera in gilled fungi. *Evidence*—Female captured on gilled fungus (Godfray & van Achterberg 2024). *Comments*—Godfray and van Achterberg (2024) review earlier host records quoted by Königsmann (1959b) from phytophagous Diptera and argue they are likely misidentifications.

DNA Barcode: Yes.

Discussion

The taxonomy of the *Dacnusa* genus-group adopted here largely follows Griffiths (*loc. cit*) with a few more recently described genera (Perepechayenko 2000b). It includes two very large taxa (*Chorebus* and *Dacnusa*), their size a consequence of Griffiths rigid adherence to phylogenetic principles. Attempts have been made to define subgenera, but this is difficult because of intermediate species and inconsistent application by different authors, and we follow Griffiths and place species in provisional informal groups pending further research though explaining how these groups map onto proposed subgenera. Griffiths included *Antrusa* within *Exotela*, though noted the unsatisfactory nature of this placement. DNA barcodes from the two taxa cluster apart and we follow Fischer *et al.* (2004a) and others (but not Godfray 2021) in treating them as distinct. *Chaenusa*, which parasitise Ephydridae feeding on aquatic plants, is without a modern revision.

The generic treatment of the *Coelinius* genus-group is based on van Achterberg (2014). East European workers have tended to recognise more genera (e.g. Perepechayenko 2000b) while American workers fewer (e.g. Wharton 1994). The majority of genera are small, and identification is relative straightforward, with the exception of *Coelinidea*. Despite being one of the most common and easily recognised genera of Dacnusini, it has no modern revision, and many individuals cannot be placed to species. DNA barcodes seem to be of less value in this genus than in other Dacnusini.

Of the two *incertae sedis* taxa: *Grandia* shares the main apomorphic (wing venation) character of the Dacnusini but otherwise more closely resembles genera in Alysiini. *Lodbrokia* is micropterous and opinion is divided as to its tribal placement. The *Dapsilartha* genus-group taxonomy is based on van Achterberg (2014) except that the genus *Mesocrina* is excluded (Godfray & van Achterberg 2024).

Compared with many other groups of parasitoid wasps, there is relatively rich information about Dacnusini and *Dapsilarthra* genus-group host associations. Griffiths made extensive use of biological information in his revision and did the excellent service of reviewing all previous host associations (for leafminers collected in Fulmek (1962)), rejecting a very large percentage. Currently, host associations are known for 60% of the species listed here and for each of these species we state a hypothesis about its host range and discuss the evidence behind it and any records we do not accept.

DNA barcode sequences have now been obtained for over a third of European Dacnusini most of which have been given a Barcode Identification Number (BIN) in the BOLD database. We decided not to quote the BIN in this checklist as BINs can change as more material is sequenced and currently there is no simple way to follow BIN

evolution through time. Instead, we have ensured European Dacnusini taxonomy in BOLD matches this checklist so sequences can be found by searching for the Linnean binomial.

There are cases of several species (with clear morphological and biological support) occupying the same BIN which we suspect reflect mitochondrial introgression, though in one case we have synonymised a species (*Chorebus luzulae*) which Griffiths thought might be conspecific with *C. aphantus* based on their shared barcode. There are also a number of examples of one species containing several BINs. In some cases, we can find no biological or morphological differences between insects in different BINs and we suspect mitochondrial introgression has occurred, in others we suspect cryptic species may be present. We note these instances in the checklist pending further research.

Though two thirds of European species currently lack DNA barcodes, existing sequence data are spread quite evenly across the taxa so that the vast majority of novel sequences will be identifiable to genus and most of these to quite small assemblages of species. We have examined specimens from all but a small number of BINs in the BOLD database (as of mid-2023) and currently estimate they include approximately 20-30 undescribed species (excluding *Coelinidea*). A reason for assembling this checklist is to facilitate further study of these insects, though quite a few likely novel BINS are represented by single or small numbers of specimens and further material is needed before they can be described. We recommend that wherever possible DNA barcode data is obtained when a new species is described.

The authors would be grateful to be told of any errors in, omissions from, or additions to, the checklist.

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