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## The Alysiinae (Hym. Braconidae) parasites of the Agromyzidae (Diptera)

### VII. Supplement<sup>1</sup>

With 3 text figures

#### Introduction

The main body of information on the Alysiinae (mostly Daenusini) as parasites of the Agromyzidae in Europe remains my 1964–68 series of papers in this journal under the title “The Alysiinae parasites of the Agromyzidae”. This treated the parasites of all genera of Agromyzidae except *Phytobia* LIOY (= *Dendromyza* HENDEL), whose larvae feed in the cambium of trees and have rarely been reared.

The occasion of the deposition of my European collection of Alysiinae, on which my published work was partly based, in the British Museum (Natural History) prompts me to publish this supplement. Included are the descriptions of ten new species which were reared too late for inclusion in my previous work, together with additional rearing records which extend the known host range or geographical distribution of the parasite species. I have also given selective corrections of host records in cases where the nomenclatural changes resulting from recent research on agromyzid taxonomy may be confusing to hymenopterists. Also one case where my identification of a parasite requires correction has come to light.

Since 1968 little additional information on the life-history of the Alysiinae as parasites of the Agromyzidae has been published. MICHALSKA (1973a, 1973b) has published a block of Polish records for 34 parasite and 28 host species. These records mostly confirm host associations established in my work, only one of the host associations reported being additional.

The form of description and terminology used in this paper is identical with that used in my 1964–68 series (for explanation see GRIFFITHS 1964: 829). Most quantitative characters are again omitted from the verbal descriptions and presented in a table of biometric data.

All new material recorded in this paper is part of the collection being deposited in the British Museum (Natural History) unless otherwise stated.

#### *Dapsilarthra* FÖRSTER

##### *Dapsilarthra balteata* (THOMSON)

While this species has a wide host range, evidence is accumulating that its main hosts are the larger *Agromyza* species. In samples of parasites reared from *Agromyza* leaf-miners

<sup>1</sup> Part I: Beitr. Ent. 14, 823–914; 1964. — Part II: Beitr. Ent. 16, 551–605; 1966. — Part III: Beitr. Ent. 16, 775–951; 1966. — Part IV: Beitr. Ent. 17, 653–696; 1967. — Part V: Beitr. Ent. 18, 5–62; 1968. — Part VI: Beitr. Ent. 18, 63–152; 1968.

on cultivated cereals, this is often the most numerous parasite species. Results of breedings of *Agromyza nigrella* RONDANI from winter wheat (*Triticum aestivum*) in southern England have been reported by DUTHOIT (1968). Three specimens were also obtained from the sample from barley (*Hordeum vulgare*) in Durham, whose host is referred to in DUTHOIT's paper as "probably *Agromyza ambigua* FALLÉN". Subsequently K. A. SPENCER identified the host species as *A. rondensis* STROBL. BUHR's breedings of *Agromyza megalopsis* HERING (no. 2400) from winter barley (*Hordeum vulgare*) at Mühlhausen (Thuringia, Germany) also yielded this parasite in large numbers.

#### *Dapsilarthra gahani* (BAUME-PLUVINEL)

This species has long remained uninterpreted because the original series could not be traced. A footnote by WHARTON (1980: 86) reports that two females sent by BAUME-PLUVINEL to Gahan at the United States National Museum have been found in the collections there. These specimens key to *D. nowakowskii* KÖNIGSMANN, but differ in having bright yellow basal flagellar segments. If that is the only difference, I think that KÖNIGSMANN's name, based on material bred from the same host (*Phytomyza minuscula* GOUREAU), should be synonymized. But I refrain from making a formal proposal as I have not seen the specimens.

#### *Dapsilarthra sylvia* (HALIDAY)

The following new host records can be stated for this uncommon species:

*Chromatomyia loniceræ* (ROBINEAU-DESVOIDY) (= *Phytomyza xylostei* KALTENBACH): 8 ex. from larvae and puparia 2. ix. 66 on *Symphoricarpos rivularis*, Ballynackeen, Co. Clare, Ireland, em. 25–27. ix. 66 (2 ex.) and 10–14. iii. 67 (G. C. D. GRIFFITHS).

*Chromatomyia periclymeni* (DE MELJERE): 1♂ from puparium 12. x. 66 on *Lonicera xylosteum*, Mühlhausen, Thuringia, Germany, em. 5–13. iv. 67 (H. BUHR no. 3263).

*Phytomyza autumnalis* GRIFFITHS: 1♂ from puparium 4. x. 65 on *Cirsium palustre*, Mühlhausen, Thuringia, Germany, em. v. 66 (H. BUHR no. 2688).

The identification of the host recorded as *Cerodontha* (*Poemyza*) *pygmaea* MEIGEN (GRIFFITHS 1968b: 65) has been revised to *C. (P.) melicae* NOWAKOWSKI by NOWAKOWSKI (1973: 125).

#### *Dapsilarthra rufiventris* (NEES)

Several new host records for this common species with wide host range are included among German rearings, as follows:

*Campanulomyza gyrans* (FALLÉN): 1♂ from larva 5. ix. 66 on *Campanula trachelium*, Jena (Lobeda), Thuringia, Germany, em. 8. iv. 67 (H. BUHR no. 3145).

*Chromatomyia periclymeni* (DE MELJERE): 3♂♂ from puparia 12. x. 66 on *Lonicera xylosteum*, Mühlhausen, Thuringia, Germany, em. 27. x.–3. xi. 66 and 5.–13. iv. 67 (H. BUHR no. 3263).

*Phytomyza buhriella* SPENCER: 2♂♂ from puparia 12 & 21. vii. 66 on *Petasites albus*, Mühlhausen, Thuringia, Germany, em. 31. vii.–1. ix. 66 (H. BUHR nos. 3045 & 3099).

*Phytomyza myosotica* NOWAKOWSKI: 1♀ from larva 1. vi. 66 on *Myosotis silvatica*, Mühlhausen, Thuringia, Germany, em. 15–17. vi. 66 (H. BUHR no. 2818).

*Phytomyza marginella* FALLÉN: 1♀ from larva on *Lactuca tatarica*, Berlin (-Dahlem), Germany, em. 31. i. 66 (E. M. HERING no. 7490); 1♀ from larva 2. vii. 66 on *Crepis paludosa*, Oberlausitz (Hauswalde), Saxony, Germany, em. 12. ix. 66 (H. BUHR no. 2831).

#### *Dapsilarthra fuscula* GRIFFITHS

This species was described (GRIFFITHS 1968b: 65) on the basis of two females bred from *Cerodontha* (s. l.) in Poland. I can now add the following: 2 ♀♀ from larvae of *Phytomyza adenostylis* HERING in leaf-mines on *Adenostyles glabra*, near Nortoratsch, Switzerland, em. 20. viii. 64 (K. A. SPENCER). These have 27 and 28 antennal segments, differing from the original description only in that the central lobe of the mesoscutum is pubescent anteriorly. The new record indicates that this species has a wide host range, like other species of *Dapsilarthra*.

## *Protodacnusa* GRIFFITHS

### *Protodacnusa tristis* (NEES)

This species proves to be a frequent parasite of several members of the *Agromyza ambigua* group attacking cultivated cereals. In addition to *Agromyza nigrociliata* HENDEL, recorded as a host in a footnote to my 1966a paper (p. 556), DUTHOIT (1968) added *Agromyza nigrella* RONDANI (my identification) on the basis of specimens bred from larvae collected on winter wheat (*Triticum aestivum*) in North Oxfordshire and Berkshire, England.

### *Exotela* FÖRSTER

#### *Exotela flavicoxa* (THOMSON)

The following is an additional host record of this common parasite of grass-feeding *Agromyza* and *Cerodontha* (*Poemyza*) larvae:

*Agromyza megalopsis* HERING: 4♂♂ 3♀♀ from larvae 25. vi. 65 on *Hordeum vulgare* (winter barley), Mühlhausen, Thuringia, Germany, em. 14. vii–26. viii. 65 and 9. iii–3. iv. 66 (H. BUHR no. 2400).

NOWAKOWSKI (1973) has revised one of his host records published by me under *Cerodontha* (*Poemyza*) *incisa* (MEIGEN) (GRIFFITHS 1968b: 68) to *C. (P.) zoernereri* NOWAKOWSKI.

#### *Exotela viciae* spec. nov.

This species belongs to a poorly investigated complex associated with Papilionaceae-feeding species of *Agromyza* and is to be compared with *E. dives* (NIXON). The different coloration and lack of swelling of the temples suggest that the series before me represents a different species which needs formal naming.

Colour. Palpi, labrum and centre of mandibles yellow. Clypeus and face brownish. Antennae entirely dark or at most becoming obscurely brownish basally. Legs largely dull yellow to yellow-brown, with coxae brownish. Gaster beyond petiole largely red-brown.

Morphology. Ocelli forming a triangle whose base is distinctly longer than its sides. Face with fine punctate sculpture, densely clothed with fine pubescence which is directed upwards except along the eye margins; clypeus similarly sculptured to the face. Vertex and temples with 2–3 rows of fine hairs. Antennal segments: ♂, 20 (dwarf), 24 (holotype), 26: first flagellar segment relatively short (not much longer than second); the more apical flagellar segments short (only about 1.5 times as long as wide). Mandibles slightly expanded, 3-toothed.

Mesoscutum roughened anteriorly, pubescent over its central lobe and anterior face but with lateral lobes largely bare (at least posteriorly); notaulices with their rugose lateral extensions well developed, but not or only shortly extending longitudinally on dorsal surface of mesoscutum. Mesepisternum with obliquely placed rugose-costate precoxal suture. Metapleuron with rather sparse fine pubescence directed towards the hind coxa. Propodeum strongly shining, with a few erect hairs mainly at its sides. Petiole sparsely clothed with fine pubescence towards its sides, bare centrally along the well developed keel. Tergite 3 with patches of similar hairs at its base.

Wing as in the *E. cyclogaster* group (cf. GRIFFITHS 1966b, Fig. 78), with elongate pterostigma, strongly sinuate vein *R*<sub>4</sub> and vein *lm*—*cu* clearly received into cell *R*<sub>5</sub>; vein *Cu*<sub>up</sub> retained.

Types. Holotype ♂, 2♂♂ paratypes from larvae 16. vii. 66 of *Agromyza viciifoliae* HERING in leaf-mines on *Vicia cracca*, Woodwalton Fen, Hunts., England, em. 2. iv (2 ex., including holotype) and 8. v. 67 (G. C. D. GRIFFITHS).

Remarks. Note that this species has but a single generation a year, like its host. The unknown female may be assumed to have a short ovipositor, since the host larva mines in the leaf parenchyma. The specimen bred from another *Agromyza* species on *Vicia* reported as *Exotela* ? *dives* (GRIFFITHS 1966a: 557) is paler coloured and probably not conspecific.

#### *Exotela lathyri* spec. nov.

A pair of specimens reared by H. BUHR from *Agromyza orobi* HENDEL represent another species to be compared with *E. dives* (NIXON). The relatively large size, broad petiole and extensive pubescence of abdominal tergite 3 should enable the species to be diagnosed.

Colour. Palpi, labrum and centre of mandibles yellow. Clypeus orange-yellow to brownish. Face blackish. Antennae more or less entirely dark, without any marked colour contrast between the basal flagellar segments and the rest. Legs entirely yellow. Gaster beyond petiole brownish.

Morphology. Ocelli forming a triangle whose base is distinctly longer than its sides. Face shallowly sculptured, densely clothed with pubescence which is directed upwards centrally and downwards along the eye margins. Clypeus scarcely sculptured. Vertex and temples with 3–4 rows of fine hairs. Antennal segments: ♂, 27 (holotype); ♀, 28: first flagellar segment relatively short (not much longer than second); the more apical flagellar segments short (only about 1.5 times as long as wide). Mandibles 3-toothed, slightly expanded towards apex.

Mesoscutum with its anterior face roughened, densely clothed with rather short setulae over more or less its entire surface; notaulices with only their rugose lateral extensions distinct, scarcely extending longitudinally. Mesepisternum with obliquely placed rather broad rugose-costate precoxal suture. Metapleuron bearing long hairs directed towards the hind coxa. Propodeum with a few erect hairs mainly at its sides, strongly rugose (only weakly shining). Petiole rather densely pubescent, strongly rugose (but with central keel only weakly developed). Tergite 3 (paratype) or tergites 3 and 4 (holotype) extensively clothed with fine hairs. Ovipositor (♀) not projecting beyond apical tergite in the retracted position.

Wing as in *E. dives* (cf. NIXON 1954, Fig. 314 and GRIFFITHS 1966a, Fig. 46), with the pterostigma slightly shorter and broader than in the *E. cyclogaster* group; vein *lm-cu* interstitial to narrowly received into cell *R*<sub>5</sub>; vein *Cu*<sub>1b</sub> retained.

Types. Holotype ♂, 1♀ paratype from larvae 8. vi. 65 of *Agromyza orobi* HENDEL in leaf-mines on *Lathyrus vernus*, Mühlhausen (Stadtwald), Thuringia, Germany, em. 8 (holotype) - 10. iii. 66 (H. BUHR no. 2371).

Remarks. Both host and parasite have a single generation a year. If restricted to this early-feeding host, as is likely, the adult braconids should not be found much later than the end of May.

### *Exotela chromatomyiae* spec. nov.

The affinities of this new species probably lie with those species of *Exotela* which parasitize *Paraphytomyza* larvae on *Lonicera*, of which I described two in my 1966b paper (*E. loniceræ* GRIFFITHS and *E. minuscula* GRIFFITHS). Although the available specimens are not in the best condition, having been dried out of alcohol, I do not hesitate to describe the species since it can be readily characterized on the basis of the rather elongate thorax (an unusual character in *Exotela*) and wing venation.

Colour. Palpi, labrum and centre of mandibles yellow. Clypeus varying from yellow (paratypes) to orange-brown (holotype); face similarly varying from orange-brown to dark brown. Basal antennal segments yellow at least as far as the second flagellar segment (this colour merging gradually into the dark colour of most of the flagellum). Legs entirely yellow, or at most with apical tarsal segments brownish. Thorax blackish in holotype, brownish in paratypes. Gaster (including petiole) yellow-brown to brownish.

Morphology. Ocelli forming a triangle whose base is slightly longer than its sides. Face shining, only shallowly sculptured, with fine pubescence directed upwards at its centre but downwards at its sides. Vertex and temples with more or less two rows of fine hairs. Antennal segments: ♂, 24; ♀, 22 (holotype), 23; all flagellar segments long (the more apical about three times as long as wide), without much difference in the length of the first three segments. Mandibles narrowing towards apex, 3-toothed with tooth 2 rather strongly pointed.

Thorax unusually elongate for *Exotela* (see the table of biometric data). Mesoscutum more or less entirely pubescent; notaulices deeply impressed anteriorly, reaching about middle of mesoscutum. Precoxal suture of mesepisternum absent; epinomial suture smooth for most of its length. Metapleural pubescence sparse, directed towards hind coxa. Propodeum shining, partly bare, with sparse erect hairs similar to those of metapleuron mainly at its sides. Petiole widened towards apex, almost bare. Tergite 3 without basal hairs. Ovipositor (♀) not projecting beyond apical tergite in the retracted position.

Wing (Fig. 3) with vein *R*<sub>5</sub> scarcely sinuate; *lm-cu* clearly received into cell *R*<sub>5</sub>; vein *Cu*<sub>1b</sub> retained, so that cell *2Cu* is closed at its lower distal corner.

Types. Holotype ♀ from puparium 12. x. 66 of *Chromatomyia periclymeni* (DE MELJERE) in leaf-mines on *Lonicera xylosteum*, Mühlhausen (Stadtwald), Thuringia, Germany, em. iii. 67 (H. BUHR no. 3263); 1♂ 1♀ paratypes from puparia 3. x. 64, same host, food-plant and locality, em. iii-iv. 65 (H. BUHR no. 2333).

Remarks. The repetition of BUHR's rearing of this species at Mühlhausen suggests that it must be a regular parasite there of *Chromatomyia periclymeni*, although not obtained from samples of this host in other areas. It is the first species of *Exotela* reared from a *Chromatomyia* host. All the species of *Phytomyza* reported as hosts of *Exotela* in my 1966b paper belong to *Phytomyza* in the strict sense. The paler coloration of the paratypes in comparison with the holotype could possibly be due to their being somewhat teneral.

### *Exotela minuscula* GRIFFITHS

The host of this species should properly be called *Paraphytomyza luteoscutellata* (DE MELJERE) according to SPENCER (1969: 21).

### *Exotela spinifer* (NIXON)

One new host record also extends the known geographical range of this species, as follows: 1 ♀ from larva of *Phytomyza eupatorii* HENDEL on *Eupatorium cannabinum*, Linz, Upper Austria, em. 29. vii. 66 (E. M. HERING no. 7713).

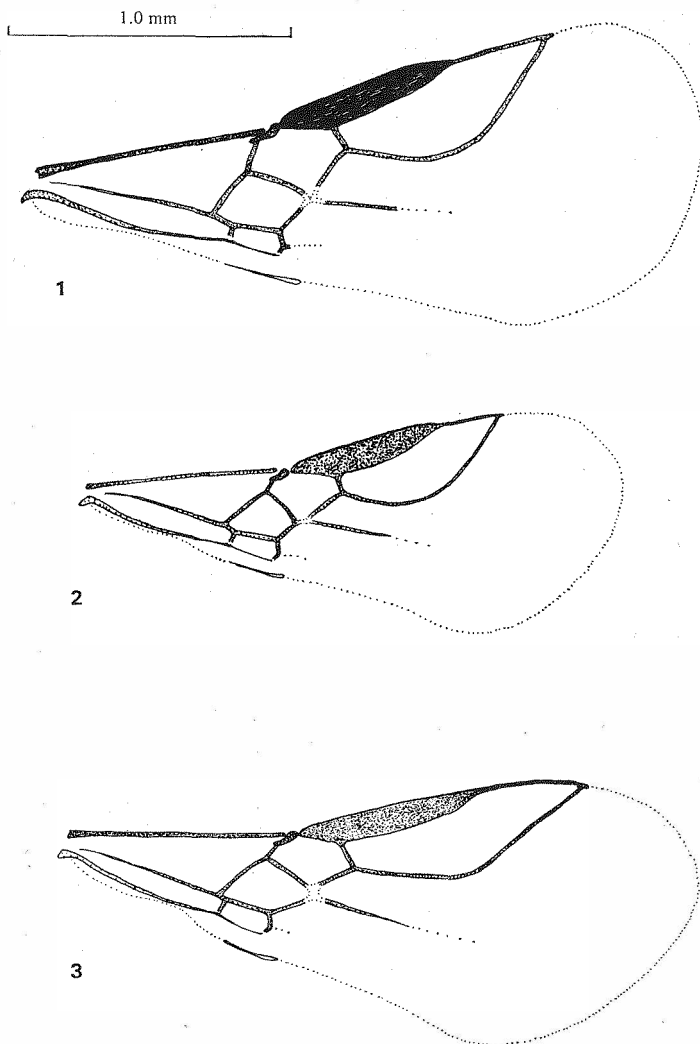
### *Exotela cyclogaster* FÖRSTER ssp. *umbellina* (NIXON)

Two new host records can be stated, both new hosts like those previously recorded being leaf-miners on Umbelliferae.

*Phytomyza pubicornis* HENDEL: 1 ex. from larva 8. vi. 65 on *Aegopodium podagraria*, Mühlhausen, Thuringia, Germany, em. 5. iii. 66 (H. BUHR no. 2381).

*Phytomyza silaus* HERING: 1♀ from larva 8. ix. 66 on *Silau silaus*, Jena (Lobeda), Thuringia, Germany, em. 7. x. 66 (H. BUHR no. 3147).





Figs. 1—3. Forewings of: 1, *Dacnusa arctica* spec. nov. (holotype ♂); 2, *Dacnusa euphrasiella* spec. nov. (holotype ♀); 3, *Exotela chromatomyiae* spec. nov. (paratype ♀).

**Revised couplets for key of European *Exotela* species (GRIFFITHS 1966 b: 877)**

- 8 Thorax rather elongate (about 1.4 times as long as high). 22—24 antennal segments, the basal segments being contrastingly yellow at least as far as the second flagellar segment. Notaulices distinct to middle of mesoscutum. Wing venation as Fig. 3 . . . . . ***E. chromatomyiae* spec. nov.**

Host: *Chromatomyia periclymeni* (DE MEIJERE)

- Thorax shorter (1.0—1.3 times as long as high). Notaulices absent or at most distinct anteriorly only . . . . . 8a
- 8a (as previous couplet 8) . . . . .

- 17 Mandibles large, at least slightly expanded apically (ratio of mandible width to head length 2.1—2.3). Basal flagellar segments short (the first at most 1.2 times as long as the second) . . . . . 17a  
 — Mandibles not expanded apically (ratio of mandible width to head length greater). Basal flagellar segments longer except in *E. spinifer* . . . . . 18  
 17a 27—28 antennal segments. Mesoscutum densely pubescent over more or less its entire surface. Petiole rather densely pubescent, about 1.5 times as long as wide. Tergite 3 also extensively pubescent . . . . . *E. lathyri* spec. nov.

Host: *Agromyza orobi* HENDEL

- 20—26 antennal segments. Lateral lobes of mesoscutum largely bare. Petiole at most sparsely pubescent towards its sides, more elongate (1.8—1.9 times as long as wide). Tergite 3 at most with basal patches of pubescence . . . . . 17b  
 17b Antennae entirely dark, or at most becoming obscurely brownish basally. Coxae brownish. Mandibles only slightly expanded apically. Wing with elongate pterostigma as in *E. cyclogaster* group (cf. GRIFFITHS 1966b, Fig. 78) *E. viciae* spec. nov.

Host: *Agromyza vicifoliae* HERING

- Basal antennal segments yellowish. Legs entirely yellow. Mandibles strongly expanded apically. Pterostigma less elongate (NIXON 1954, Fig. 314) . . . . . *E. dives* (NIXON)

## *Dacnusa* HALIDAY

### *Dacnusa arctica* spec. nov.

A member of *Dacnusa* sensu stricto (= *Rhizarcha* FÖRSTER sensu NIXON) showing the very dense long pubescence of the metapleuron, propodeum and petiole characteristic of this group. The rather short and broad pterostigma with vein *2r* arising remote from its base (Fig. 1) is a primitive feature within *Dacnusa* s. s., to be compared with the condition of *D. lugens* (HALIDAY) as figured by NIXON (1948, Fig. 242). The present species differs in wing venation from *D. lugens* in respect of the shape of cell *2R*<sub>1</sub> (metacarp only about half as long as pterostigma, vein *R*<sub>s</sub> more strongly curved) and the nature of the vein junction in the centre of the wing (*lm—cu* only narrowly rejected from cell *R*<sub>s</sub>).

Colour: Body entirely blackish. Palpi, labrum, clypeus and antennae dark brown to blackish. Centre of mandibles orange-yellow to orange-brown. Legs entirely infuscated (dark brown to blackish) or with tibiae and tarsi somewhat paler (yellow-brown to brownish).

Morphology. Antennal segments: ♂, 20, 24 (holotype); ♀, 21 (3 ex.). Palpi short (see the table of biometric data). Mandibles small, 3-toothed.

Thorax short and deep (1.1—1.2 times as long as high). Mesoscutum with most of its dorsal surface smooth, shining and bare except for rows of hairs along the former course of the notaulices; its pubescence largely confined to its anterior face and posterior margin (where there is a pair of dense tufts of hair). Precoxal suture completely lacking. Metapleuron, propodeum and petiole very densely covered with pubescence, beneath which their only shallowly sculptured surface may be seen as a subshine. Base of tergite 3 with a few rows of similar pubescence. Petiole subtriangular. Ovipositor (♀) not projecting beyond the apical tergite in the retracted position.

Wing (Fig. 1) scarcely sexually dimorphic; pterostigma about twice as long as metacarp, broader than in most species of *Dacnusa* s. s. with vein *2r* arising remote from its base; vein *R*<sub>s</sub> strongly curved, scarcely sinuate; *lm—cu* only narrowly rejected from cell *R*<sub>s</sub>.

Types. Holotype ♂, 2♀♀ paratypes from larvae of *Phytomyza* spec. (probably *aquilonia* FREY) in leaf-mines on *Ranunculus glacialis*, Tuortertjåkko, Torne Lappmark, Sweden, em. 2—5. iii. 48 (holotype 3. iii. 48) (A. LUNDQUIST). 1♂ paratype from larva 22—25. vii. 72 of *Liriomyza* spec. in leaf-mine on *Artemisia alaskana*, near S end Kluane Lake (2800—4200 feet elevation, 61°N 138°30'W), Yukon Territory, em. 19. v. 73 (G. C. D. GRIFFITHS); 1♀ paratype from puparia 13—20. vii. 72 of *Calycomyza* spec. in leaf-mine on *Solidago decumbens*, same locality (3500 feet), em. 10. viii. 72 (G. C. D. GRIFFITHS).

Remarks. The wing venation of this species is diagnostic. Since the type locality is close to the type locality of *D. lugens* (HALIDAY) described from Hammerfest (Norway), I asked my wife Deirdre to check the wing venation of HALIDAY's holotype in the Irish National Museum of Science during a recent visit to Ireland. Both she and Dr. J. O'CONNOR of that museum concur that the wing venation of HALIDAY's type agrees with NIXON's published figure and is not the same as in the present species.

The above records indicate that this species has a wide host range (oligophagy, first degree) like a few other members of *Dacnusa* s. s. A circumpolar arctic distribution is suggested by the presence of the species in the Kluane ranges (close to the icefields) as well as in Lapland.

The North American paratypes are retained in my Nearctic collection.

***Dacnusa maculipes* THOMSON**

The following new host records can be stated for this very common species with wide host range (oligophagy, first degree). One further new host (*Liriomyza dracunculi* HERING, a leaf-miner on *Artemisia campestris*) has been recorded by MICHALSKA (1973b).

*Agromyza johannae* DE MEIJERE: 3 ex. from larvae 19. vi. 66 on *Sarothamnus* spec. cultivar, East Barnet, Herts., England, em. 11. vii—ix. 66 (G. C. D. GRIFFITHS).  
*Agromyza megalopsis* HERING: 1♀ from larva 24. v. 66 on *Hordeum vulgare* (winter barley), Mühlhausen, Thuringia, Germany, em. 12. viii—10. ix. 66 (H. BUHR no. 2782).  
*Ophiomyia heringi* STARY: 1♀ from larva 5. vii. 66 on *Hypochoeris radicata*, Oberlausitz (Kreis Kamenz/Hauswalde), Saxony, Germany, em. 11. ix. 66 (H. BUHR no. 2956).  
*Liriomyza amarellae* HERING: 1♂ from larva 12. vii. 66 on *Gentiana ciliata*, Mühlhausen, Thuringia, Germany, em. 12. ix. 66 (H. BUHR no. 3017).  
*Phytomyza lithospermi* NOWAKOWSKI: 5 ex. from larvae 4 & 8. vi. 66 on *Lithospermum arvense*, Mühlhausen, Thuringia, Germany, em. 15. vi—10. ix. 66 (H. BUHR nos. 2825 & 2851).  
*Phytomyza scotina* HENDEL: 7 ex. from larvae 24. v. 66 on *Salvia pratensis*, Mühlhausen, Thuringia, Germany, em. 8. vi to 10. vii. 66 (H. BUHR no. 2778).

The records previously stated for "*Phytomyza atricornis* MEIGEN" (GRIFFITHS 1966b: 833) refer both to *Phytomyza syngenesiae* (HARDY) and *P. horticola* GOUREAU in the sense of my 1967a revision of the *Phytomyza syngenesiae* group (which I now place in *Chromatomyia*). The identification of host 55 (GRIFFITHS 1968b: 70) has been revised to *Cerodontha* (*Poemyza*) *spenceri* NOWAKOWSKI by NOWAKOWSKI (1973: 102).

***Dacnusa areolaris* (NEES)**

The records previously stated for "*Phytomyza atricornis* MEIGEN" (GRIFFITHS 1966b: 837) refer both to *Phytomyza syngenesiae* (HARDY) and *P. horticola* GOUREAU in the sense of my 1967a revision of the *Phytomyza syngenesiae* group. Like the other recorded hosts of this species, I now separate them from *Phytomyza* in the genus *Chromatomyia*.

***Dacnusa pubescens* (CURTIS)**

This species has a host range described by me (GRIFFITHS 1966b: 916) as disjunctive monophagy because the species of *Phytomyza* and *Napomyza* attacked belong to disjunct groups. This disjunction is further emphasized by my subsequent placement in *Chromatomyia* of the *Phytomyza syngenesiae* ("*atricornis*") group and the Dipsacaceae-mining group while two other hosts (*P. rufipes* MEIGEN and *P. taraxacocecis* HERING) remain in *Phytomyza* sensu stricto. The following new host records refer to species of the *Phytomyza robustella* group (to which the recorded host *P. taraxacocecis* also belongs).

*Phytomyza buhriella* SPENCER (HERING 1957, no. 3604a): 39 ex. from puparia 22. vii—29. viii. 66 in leaf stalks of *Petasites albus*, Mühlhausen, Thuringia, Germany, em. 31. vii.—18. ix. 66 (H. BUHR nos. 3045, 3099 & 3127). 27 ex. from puparia 6. vii. 66 in leaf stalks of *Petasites hybridus*, Oberlausitz (near Obersteina), Saxony, Germany, em. 20. vii.—15. ix. 66 (H. BUHR no. 2968).  
*Phytomyza pteridocecis* HERING: 1♂ 3♀♀ from puparia 2 & 18. v. 66 in leaf midribs of *Pieris hieracioides*, Mühlhausen, Thuringia, Germany, em. 14. v.—6. vi. 66 (H. BUHR nos. 2718 & 2735).  
*Phytomyza robustella* HENDEL: 4♂♂ from puparia 2 & 13. v. 66 in leaf midribs of *Crepis biennis*, Mühlhausen, Thuringia, Germany, em. 12—24. v. 66 (H. BUHR nos. 2717 & 2728).

***Dacnusa cerpheres* (NIXON), comb. nov.**

*Rhizarcha cerpheres* NIXON. NIXON 1948: 208, 210, 214.

The life history of this member of the *Dacnusa stramineipes* group has not been recorded. I refer to this species three females reared by H. BUHR (no. 3040) from puparia (22. vii. 66) of *Phytomyza rostrata* HERING in stems of *Melampyrum nemorosum* (Mühlhausen, Thuringia, Germany, em. 24. vii.—6. viii. 66 and 16. iv. 67). These have a black thorax and more numerous antennal segments (25—26) than NIXON's original material, which is stated to have an "almost pale brown" thorax and 22—24 antennal segments. However the difference in number of antennal segments is not so great as to demonstrate that the specimens are not conspecific, and the colour difference might be due to tenerality or chemical exposure of the original material. The reared specimens agree well with NIXON's description in respect of their very slender thorax and the structure of the abdomen (with ovipositor

sheaths about as long as the three basal segments of the hind tarsus and the apical tergite far overreaching the apical sternite).

***Dacnusa merope* (NIXON)**

The host of this species (HERING 1957, no. 3604a) has since been described as *Phytomyza buhriella* SPENCER (1969). About 20 additional specimens were bred by BUHR from samples of the same host collected in 1966 both at Mühlhausen (on *Petasites albus*) and in the Saxon Oberlausitz (near Obersteina) on *Petasites hybridus* (nos. 2968, 3045, 3099 & 3127). In these new samples this species was reared in lower numbers than *D. pubescens* (CURTIS), a closely related species with wider host range.

***Dacnusa stramineipes* (HALIDAY)**

The life-history of this typical species of the *D. stramineipes* group is unclarified, and I have rejected all previously published records (GRIFFITHS 1966b, Table 9) as unreliable. A single female of the true *D. stramineipes* has been found among the long series of *D. merope* (NIXON) and *D. pubescens* (CURTIS) bred by BUHR from puparia of *Phytomyza buhriella* SPENCER in leaf-stalks of *Petasites albus* at Mühlhausen, Thuringia, Germany (em. 1—18. ix. 66, H. BUHR no. 3127). Since this is an unusually small female with only 25 antennal segments (at the lower end of the range of variation), it is evident that we still have not discovered the principal host.

***Dacnusa sasakawai* TAKADA**

*Dacnusa hospita* (FÖRSTER) sensu GRIFFITHS (1968a: 18) (not *Aphanta hospita* FÖRSTER, 1862).

*Dacnusa sasakawai* TAKADA. TAKADA 1977: 2.

Two new species of *Dacnusa* bred from *Chromatomyia horticola* (GOUREAU) (= "*Phytomyza atricornis*" auctt., in part) in Japan have been described by TAKADA (1977). One of these, *D. sasakawai* TAKADA, is a species close to the European *D. hospita* (FÖRSTER), with which it shares the unusual venational feature of loss of vein  $R_s + M$  ("first abscissa of cubitus" in TAKADA's terminology). The true *D. hospita* is the species bred from the *Phytomyza* spec. near *ranunculi* (? *stolonigena* HERING) described by me (GRIFFITHS 1966b: 802), which has a shorter pterostigma than *D. sasakawai*. Subsequently I recorded as *D. hospita* two specimens bred by BUHR in the Rostock Botanical Gardens from the polyphagous *Liriomyza bryoniae* (KALTENBACH) (GRIFFITHS 1968a: 18). These have a more elongate pterostigma than in the true *D. hospita*, and I now revise their identification to *D. sasakawai* TAKADA. These records suggest that *D. sasakawai* may be a species with wide host range distributed from Eastern Europe across the Palaearctic Region.

***Dacnusa sibirica sibirica* TELENGA**

In my 1966b treatment I recognized a dark-legged Irish subspecies, *D. s. comis* (NIXON), taken on the East coast of Ireland, where I bred it from *Chromatomyia asteris* (HENDEL). The range of this dark-legged race must be quite restricted since a series subsequently bred by me from the same host on the West coast of Ireland (4 ♂♂ 5 ♀♀ from puparia on *Aster tripolium*, Poulnaclogh Bay, Co. Clare, em. 7. ix.—4. x. 66) have yellow legs and according to the colour criterion can only be referred to the widespread typical subspecies *sibirica*. It may be questioned whether the subdivision of this species on the basis of colour is the most fundamental subdivision, since it does not coincide with a possible biological distinction between Western European populations restricted to *Chromatomyia asteris* (HENDEL) in salt marshes and oligophagous populations ranging naturally from Central Europe to Siberia. The occurrence of this species in greenhouses in England (GRIFFITHS 1968a: 24) is almost certainly due to introduction of continental stock along with the non-native host *Liriomyza bryoniae* (KALTENBACH).

***Dacnusa nigropygmaea* STELFOX**

*Dacnusa (Pachysema) nigropygmaea* STELFOX. STELFOX 1954: 164.

*Pachysema nigropygmaea* (STELFOX). NIXON 1954: 273.

*Dacnusa nigropygmaea* STELFOX. GRIFFITHS 1966b: 897.

The life history of this species taken widely in Ireland by STELFOX has been hitherto unrecorded. As a result of my collecting in Ireland in 1966 I have established that the host is *Phytomyza affinis* FALLÉN (= *tenella* auctt.) whose larvae feed in the seed capsules of *Euphrasia* (Scrophulariaceae). The data of the series obtained is as follows: 2 ♂♂ 1 ♀ from larvae 3. ix. 66 on *E. brevipila*, Ballyeigher Lough, Co. Clare., em. 10. v.—vii. 67; 1 ♂ from larva 3. ix. 66 on *E. micrantha*, same locality, em. 1. v. 67; 2 ♀♀ from larvae 28. viii. 66 on the large-flowered *Euphrasia* listed by WEBB (1962) as no. iv, Doolin, Co. Clare, em. 31. v. & 16. vi. 67; 2 ♂♂ 2 ♀♀ from larvae 1. ix. 66 on same large-flowered *Euphrasia*, Fannore, Co. Clare, em. 8—21. v. 67.

The last sample also yielded a closely related second species of *Dacnusa*, which is next described.

***Dacnusa euphrasiella* spec. nov.**

Closely related to *D. nigropygmaea* STELFOX and *D. nigrella* GRIFFITHS, which likewise have a projecting ovipositor (♀) in adaptation to parasitizing host larvae inside seed capsules. The low number of antennal segments and the shape of wing cell  $2R_1$  (vein  $R_s$  strongly curved, metacarp very short) differentiate this species as new. It is one of the smallest species of *Dacnusa* known to me (wing length below 2.0 mm, body length below 1.5 mm).

Colour. Entirely dark. Palpi, labrum, clypeus and antennae black. Centre of mandibles orange-brown. Legs entirely dark brown to black.

Morphology. Antennae short (the more apical segments not much longer than broad), with 18—19 segments (♀). Mandibles 8-toothed, hardly expanded. Face almost smooth, entirely clothed with moderately dense fine pubescence.

Mesoscutum with its dorsal surface smooth and shining (without notaulices), with sparse pubescence distributed mainly along the former course of the notaulices and to a varying extent on the central lobe. Precoxal suture absent. Metapleural pubescence somewhat dense, directed towards the hind coxa. Propodeum with similar pubescence towards its sides but becoming more sparsely pubescent centrally, with its shining rugose surface clearly visible in posterior view. Petiole about as long as wide (as in related species), with short pubescence rather densely distributed over its entire surface. Tergite 3 with few or no basal hairs. Ovipositor (♀) slightly upcurved, projecting beyond the apical tergite in the retracted position by two-thirds of to the full length of the petiole (as in *D. nigropygmaea*).

Wing (Fig. 2) with cell  $2R_1$  very short, bounded by strongly curved, not at all sinuate, vein  $R_s$  (with metacarp less than half as long as pterostigma);  $lm-cu$  well rejected from cell  $R_s$ ; vein stub  $Cu_{1+2}$  weakly developed or lost.

Types. Holotype ♀, 3 ♀♀ paratypes from larvae 28. viii. 66 of *Phytomyza affinis* FALLÉN (= *tenella* auctt.) in seed capsules of the large-flowered *Euphrasia* species listed by WEBB (1962) as no. iv, Doolin, Co. Clare, Ireland, em. 5. vii (holotype) & 15—28. vii. 67 (G. C. D. GRIFFITHS).

Remarks. The unknown male may be expected to have 20—22 antennal segments, on the assumption that this species shows similar sexual dimorphism to its close relatives.

The closely related *D. nigropygmaea* STELFOX, which attacks the same host, differs in respect of the wing venation (especially the shape of cell  $2R_1$ ) (see NIXON 1954, Fig. 320), the more numerous antennal segments (♂, 25—29; ♀, 24—26) and the more densely pubescent mesoscutum and propodeum.

***Dacnusa alpestris* GRIFFITHS**

Two additional specimens have been identified among material received from BUHR, as follows: 1 ♂ from larva 30. vi. 66 of *Phytomyza marginella* FALLÉN on *Hieracium laevigatum*, Oberlausitz (Röderbrunn), Saxony, Germany, em. 16. viii. 66 (no. 2951); 1 ♀ from larva 13. vi. 66 of *Phytomyza tussilaginis* HENDEL on *Tussilago farfara*, Mühlhausen, Thuringia, Germany, em. 15. iv. 67 (no. 2863). The first of these records adds a new host, the second extends the known distribution of this species previously reported only from alpine areas (GRIFFITHS 1966b: 807).

***Dacnusa angelicina* GRIFFITHS**

This species is evidently widespread. A series was bred from a *Phytomyza* on *Angelica* on Heimaey (Westman Islands, Iceland) in 1965 by H. ANDERSSON (LINDROTH et al. 1973: 58). It has also been reared in Poland (MICHALSKA 1973a: 92).

***Dacnusa lissos* (NIXON)**

Under this species I referred (GRIFFITHS 1966b: 813) to a tentatively identified specimen bred from an undescribed *Phytomyza* species (HERING 1957, no. 358) on *Anemone sylvestris*. This host species has since been described as *Phytomyza anemonantheae* SPENCER (1969).

**Revised couplets for key of European *Dacnusa* species (GRIFFITHS 1966b: 892)**

- 2 Pterostigma relatively short, with vein  $2r$  arising remote from its base; the part of the pterostigma beyond the origin of  $2r$  is less than three times as long as that before. Legs dark. 20—24 antennal segments . . . . . 2a  
 — Pterostigma longer, the part beyond the origin of vein  $2r$  being well over three times as long as that before . . . . . 3  
 2a Wing as Fig. 1, with short cell  $2R_1$  bounded by strongly curved vein  $R_s$ ; metacarp only about half as long as pterostigma; vein  $lm-cu$  only narrowly rejected from cell  $R_s$  . . . . . ***D. arctica* spec. nov.**

Hosts: several leaf-mining Phytomyzinae

- Wing (NIXON 1948, Fig. 242) with longer cell  $2R_1$  bounded by less strongly curved vein  $R_s$ ; metacarp more than half as long as pterostigma; vein  $lm-cu$  widely rejected from cell  $R_s$  . . . . . ***D. lugens* (HALIDAY)**  
 18 Vein  $R_s + M$  completely lost. Metapleuron densely pubescent, but petiole sparsely pubescent to almost bare . . . . . 18a  
 —  $R_s + M$  present . . . . . 19  
 18a Pterostigma shorter than or at most as long as metacarp (GRIFFITHS 1966b, Figs. 100—101). Petiole widened towards apex, not much longer than apically wide . . . . . ***D. hospita* (FÖRSTER)**

Host: *Phytomyza* spec. near *ranunculi* SCHRANK (? *stolonigena* HERING)

- Pterostigma distinctly longer than metacarp (TAKADA 1977, Fig. 8—9). Petiole more or less parallel-sided, about twice as long as wide . . . . . ***D. sasakawai* TAKADA**

Hosts: *Chromatomyia horticola* (GOURRAU) and *Liriomyza bryoniae* (KALTENBACH)

- 34 Antennal segments: ♀, 18—19. Cell  $2R_1$  extremely short, bounded by strongly curved (not at all sinuate) vein  $R_s$  (Fig. 2) . . . . . ***D. euphrasiella* spec. nov.**

Host: *Phytomyza affinis* FALLÉN

- Antennal segments more numerous. Cell  $2R_1$  not so extremely short, with vein  $R_s$  at least slightly sinuate . . . . . 34a  
 34a (as previous couplet 34) . . . . .

***Chorebus* HALIDAY*****Chorebus talaris* (HALIDAY)**

The known range is extended to Moscow, Russia, by a male bred from *Cerodontha* (*Poemyza*) *pygmaea* (MEIGEN) on an unidentified grass by K. A. SPENCER (em. 10. viii. 68). NOWAKOWSKI (1973) has referred one of the breeding records listed by me under *C. (P.) pygmaea* (MEIGEN) to *C. (P.) zoeneri* NOWAKOWSKI.

***Chorebus galii* spec. nov.**

This new species will be readily recognized by its unusual combination of expanded mandibles with a very low number of antennal segments.

Colour. Palpi dull yellowish. Labrum yellow-brown. Clypeus dark, like the face. Centre of mandibles orange-yellow. Antennae entirely dark. Legs largely brownish, with coxae and hind femora dark brown. Gaster beyond petiole red-brown.

**Morphology.** Mandibles large, expanded apically, with all four teeth well developed. Antennae short, with 23 segments (♂). Palpi short (see the table of biometric data). Face shining, only weakly punctate.

Thorax about 1.3 times as long as high. Sides of pronotum bare and shining above the finely pubescent oblique suture, with traces of linear sculpturation. Mesoscutum pubescent and slightly roughened on its anterior face and anterior half of central lobe, but with most of lateral lobes and posterior half of central lobe bare, smooth and shining; notaulices weak, extending to about middle of mesoscutum. Precoxal suture rugose-costate. Metapleuron without well defined raised swelling, with its fairly dense pubescence not forming a distinct rosette (cf. GRIFFITHS 1964, Fig. 21). Propodeal pubescence fairly dense, but not fully obscuring the shining rugose surface beneath. Hind coxa without distinct tuft of pubescence. Petiole somewhat widening towards its apex, with distinct central keel, bare centrally but with a few fine hairs basally and along its sides. Tergite 3 without basal hairs.

Wing with vein  $R_5$  only slightly sinuate, vein  $lm-cu$  well rejected from cell  $R_2$  and cell  $2Cu$  open at its lower distal corner due to loss of vein  $Cu_1$  (compare *C. thusa* (NIXON); GRIFFITHS 1966b, Fig. 86).

Type. Holotype ♂ from larva 8. vi. 66 of *Paraphytomyza lucens* (DE MEIJERE) in stem-mine on *Galium mollugo*, Mühlhausen (Bahndamm an der Heyeröder Strecke), Thuringia, Germany, em. 26. iv. 67 (H. BUHR no. 2840).

Remarks. Previously (GRIFFITHS 1966b: 776) I alluded to the lack of information on the parasites of the *Galium*-feeding species of *Paraphytomyza*. The present record is the first of a *Chorebus* species reared from this group of hosts. No doubt many additional species of parasites remain to be discovered.

The affinities of *C. galii* are uncertain. The weak differentiation of its metapleural pubescence (not forming a well-defined rosette) places it among the assemblage of "various plesiomorph species" according to the breakdown in my key (GRIFFITHS 1968b: 118). But that assemblage is not a monophyletic group. Included in the assemblage are several species with expanded mandibles, among which is one with a similarly low number of antennal segments, *C. thusa* (NIXON). Whether *C. galii* is in fact very closely related to *C. thusa* is uncertain. These species may be readily distinguished by the vestiture of the petiole (largely bare in *C. galii*, densely pubescent in *C. thusa*).

### *Chorebus cybele* (NIXON)

The third host listed by me for this species (GRIFFITHS 1967b: 684), which was then undescribed, has since been described as *Melanagromyza chaerophylli* SPENCER (1969). I can now add *M. dettmeri* HERING to the list of hosts on the basis of the following records: 1 ♂ from puparium 29. ix. 66 in stem of *Lapsana communis*, Mühlhausen, Thuringia, Germany, em. 11. iv. 67 (H. BUHR no. 3229); 1 ♀ from puparium 19. viii. 66 in stem of *Hieracium boreale*, same locality, em. 12. iv. 67 (H. BUHR no. 3120).

I also received from K. A. SPENCER 2 ♂♂ 1 ♀ from puparia x. 70 of *Melanagromyza fabae* SPENCER in roots of cultivated *Vicia faba*, Chatteris, Cambs., England, em. v. 71 (A. BIDDLE). These differ from typical material of *C. cybele* in having all coxae and the entire hind legs infuscated, as well as the palpi and labrum. On this account I previously told SPENCER that they probably represented a new species, as reported in his description of the host (SPENCER 1973: 44). However, I have failed to find any significant structural difference between these specimens and typically yellow-legged specimens of *C. cybele*. In view of the colour variation already noted in German material (GRIFFITHS 1967b: 683), I now think it prudent to treat the material bred from *M. fabae* as conspecific unless it can be demonstrated otherwise.

### *Chorebus rostratae* spec. nov.

This is a small elongate species with subcubical head, very close to *C. diremtus* (NEES), a common parasite of the grass-feeding *Cerodontha* (*C.*) *fulvipes* (MEIGEN) (see GRIFFITHS 1968b: 77), from which it differs most obviously in having fewer antennal segments and better developed notaulices.

**Colour.** Palpi and labrum yellow. Clypeus red-brown, scarcely paler than face. Centre of mandibles orange-yellow. Antennae yellow to yellow-brown basally (as far as first flagellar segment), this colour merging gradually into the dark colour of most of the flagellum. Legs uniformly yellow, or at most with bases of hind coxae and tarsal segments 5 brownish. Gaster beyond petiole orange-yellow to yellow-brown.

**Morphology.** Head large and subcubical (1.4–1.5 times as wide as long). Antennal segments: ♂, 27; ♀, 23–26 (26 in holotype). Mandibles small, narrowing distally, with the long pointed tooth 2 much better developed than the other three teeth (cf. NIXON 1943, Fig. 37). Face almost smooth.

Thorax elongate, 1.6–1.8 times as long as high. Sides of pronotum largely bare and shining, but with fine pubescence below the oblique suture. Mesoscutum with only its anterior face roughened, largely smooth and shining, with pubescence along the course of the notaulices and to a varying extent on the central lobe but lateral lobes bare; notaulices well developed at least anteriorly, in some specimens complete (reaching posterior fovea). Precoxal suture rugose-costate, long and narrow, extending towards hind margin of mesepisternum. Metapleural swelling rugose-punctate, surrounded by usual rosette of dense pubescence. Propodeal pubescence dense and whitish. Petiole parallel-sided or only slightly widened towards its apex, sparsely pubescent along sides and with thin accumulations of pubescence at its apical corners. Tergite 3 without basal hairs. Ovipositor (♀) short, not or only slightly projecting beyond apical tergite in the retracted position. Wing venation as in *C. diremtus* (see NIXON 1946, Fig. 220).

Types. Holotype ♀, 43♂ 55♀ paratypes from puparia 30. vi & 7. vii. 66 of *Phytomyza rostrata* HERING in stems of *Melampyrum pratense*, Oberlausitz (Röderbrunn/Ohorn), Saxony, Germany, em. 11–23. vii. 66 (H. BUHR nos. 2920 & 2984).

Remarks. While the host of this species is not closely related to the host of *C. diremtus* (NEES), its puparia have a similar slender form and remain within the plant tissues. The elongate form of the parasites with relatively large head is no doubt adaptive to development in and emergence from puparia of this type.



***Chorebus lugubris* (NIXON)**

The following Irish record adds a new host: 9 ex. from larvae 13. vi. 65 of *Agromyza nigripes* MEIGEN in leaf-mines on *Holcus lanatus*, Lough Goller, Co. Clare, em. 30. vi.—2. vii. 65 (G. C. D. GRIFFITHS).

***Chorebus enephes* (NIXON)**

Previously this species has been recorded as reared only from *Cerodontha* (*Poemyza*) *deschampsiae* SPENCER. The following is a new record for the closely related host *C. (P.) phalaridis* NOWAKOWSKI: 2 ♀♀ from larvae 2. vii. 66 on *Phalaris arundinacea*, Oberlausitz (Hauswalde), Saxony, Germany, em. 12—19. iv. 67 (H. BUHR no. 2927).

***Chorebus ganesa* (NIXON)**

The host of this species has been separated from *Cerodontha* (*Poemyza*) *deschampsiae* SPENCER as *C. (P.) beigeriae* NOWAKOWSKI (see NOWAKOWSKI 1973). The former feeds on *Deschampsia*, the latter on *Calamagrostis* and *Agrostis*.

***Chorebus chenopodii* spec. nov.**

A single female reared by BUHR represents a species close to *C. iphias* (NIXON), but differing from NIXON's (1943, 1946) descriptions of that species in having a dark flagellum, more elongate thorax, not so short hind tarsi and a petiole somewhat widening towards its apex. I find a second female among caught material recently sent to me for identification by Dr. A. ZAYKOV of Plovdiv (Bulgaria).

**Colour.** Palpi and labrum yellow. Clypeus dark red-brown, like the face. Centre of mandibles orange-yellow. Antennae more or less entirely dark, or at most (in holotype) with scape and pedicel partly yellowish. Legs almost entirely yellow, with only tarsal segments 3 infuscated. Gaster with tergites 3 and 4 orange-yellow, becoming red-brown towards its apex; petiole also partly red-brown in holotype.

**Morphology.** Head massive (1.5 times as wide as thorax), with extremely enlarged mandibles narrowly separated anteriorly by the relatively small clypeus (see table of biometric data). All four teeth of mandibles well developed, the projecting first tooth concealing the clypeus in lateral view. 28 antennal segments (2 ♀♀). Face shining, scarcely sculptured. Eyes relatively small, narrower in lateral view than the swollen temples. Palpi rather long (see table of biometric data).

Thorax about 1.4 times as long as high. Sides of pronotum bare and shining above the finely pubescent oblique suture, with traces of linear sculptulation. Mesoscutum rather densely pubescent on its anterior face and central lobe but with lateral lobes largely bare, largely smooth except for its roughened anterior face; notaulices well developed as rugose furrows anteriorly, extending at least to middle of mesoscutum (more or less to posterior fovea in the paratype). Precoxal suture rugose-costate. Metapleural and propodeal pubescence dense and whitish, that of metapleuron radiating around the rugose-punctate swelling. Hind coxa without distinct tuft of pubescence. Petiole widening towards its apex, its short pubescence similarly distributed to that of *C. iphias* (cf. NIXON 1943, Fig. 54), sparse except for pairs of denser basal and apical patches. Tergite 3 without basal hairs. Ovipositor (?) short, not projecting beyond apical tergite in the retracted position (extruded in holotype).

Wing venation as normally in the *C. ovalis/lateralis* complex, with vein  $R_s$  sinuate, vein  $lm-cu$  well rejected from cell  $R_2$  and cell  $2Cu$  more or less open at its lower distal corner.

**Types.** Holotype ♀ from puparium 28. ix. 66 of *Amauromyza chenopodivora* SPENCER (= *abnormalis* auctt.) in stem of *Chenopodium album*, Mühlhausen (Katzentreppen), Thuringia, Germany, em. 7. iv. 67 (H. BUHR no. 3219). 1 ♀ paratype (caught), Plovdiv, Bulgaria, 10. vi. 79 (A. ZAYKOV, deposited in collection of University of Plovdiv).

**Remarks.** The development of the massive head and enlarged mandibles in this species is no doubt to be attributed to the need for the adult wasps to force their way out of the persistent dead stems of *Chenopodium* following emergence from the host puparium. The host larva must be attacked at an early stage when feeding beneath the surface of the stem, since the ovipositor of the parasite is short.

***Chorebus sylvestris* GRIFFITHS**

According to my recent revision (GRIFFITHS 1974) the hosts of this species should now be called *Chromatomyia aprilina* (GOUREAU) (= *Phytomyza lonicerella* HENDEL), *C. loniceræ* (ROBINEAU-DESVOIDY) (= *P. xylostei* KALTENBACH) and *C. alpigenæ* (HENDEL). The known range is extended to Ireland by the following two rearings from *C. loniceræ*: 1 ♀ from puparium 30. viii. 66 on *Lonicera periclymenum*, Poulavallan, Co. Clare, em. 2. ix. 66 (G. C. D. GRIFFITHS); 10 ex. from larvae and puparia 2. ix. 66 on *Symphoricarpos rivularis*, Ballynalacken, Co. Clare, em. 2—18. ix. 66 and 7—15. iii. 67 (2 ex.) (G. C. D. GRIFFITHS).

***Chorebus punctus* (GOUREAU)**

The known range is extended to Ireland by the following record: 1 ♂ 7 ♀♀ from larvae 6. ix. 66 of *Phytomyza scolopendrii* ROBINEAU-DESVOIDY on *Polypodium vulgare*, Killarney, Co. Kerry, em. 9. ix.—5. x. 66 (G. C. D. GRIFFITHS).

***Chorebus oritias* (NIXON)**

*Dacnusa oritias* NIXON. NIXON 1945: 191, 198.

*Chorebus oritias* (NIXON). GRIFFITHS 1968b: 126.

I have before me a series of specimens reared by BUHR which differ from the material accepted by me as *Chorebus ergias* (NIXON) (GRIFFITHS 1966b: 852) in having more distinct tufts of pubescence on the hind coxae which are more or less smooth (without the distinct rugosity present in *C. ergias*), in having the hairs along the outer side of the hind tibiae longer and more outstanding, and in the female in having a slightly longer ovipositor distinctly projecting beyond the apical tergite in the retracted position. They agree well with NIXON's (1945) description of *oritias*, a species whose life history has not hitherto been recorded. The data are as follows: 4 ♂♂ 3 ♀♀ from puparia 2 & 18. v. 66 of *Phytomyza picridocecis* HERING in swollen leaf midribs of *Picris hieracioides*, Mühlhausen, Thuringia, Germany, em. 14. v.—6. vi. 66 (H. BUHR nos. 2718 & 2735); 1 ♀ from puparium 19. viii. 66 of an unidentified *Phytomyza* (not *picridocecis*) in stem of *Picris hieracioides*, same locality, em. 19. viii. 66 (H. BUHR no. 3121); 1 ♀ from puparium 20. v. 66 of an unidentified *Phytomyza* (*robustella* group) in swollen leaf midribs of *Leontodon hispidus*, Süd-Kyffhäuser, Thuringia, Germany, em. 23. v. 66 (H. BUHR no. 2756). The previously unknown males have 37—38 antennal segments, compared with 31—34 in the females.

***Chorebus canariensis* GRIFFITHS**

The identification of the host should be revised to *Chromatomyia syngenesiae* HARDY (= "*Phytomyza atricornis*" auctt., in part) according to my determination of a male fly reared from the same sample (GRIFFITHS 1967a: 9).

***Chorebus sativi* (NIXON)**

The host of the type series of this species is surely *Chromatomyia horticola* (GOUREAU), the only member of the *C. syngenesiae* superspecies (= "*Phytomyza atricornis*" auctt.) known to infest leguminous crops (GRIFFITHS 1967a).

***Chorebus credne* (NIXON)**

Under host 2 I listed (GRIFFITHS 1966a: 569) records for two different host species. Only the Swedish record for the miner on *Betula* refers to *Agromyza alnibetulae* HENDEL. The miner on *Alnus* has been described as *Agromyza alnivora* SPENCER (1969).

***Chorebus knautiae* GRIFFITHS**

This species was described on the basis of a single male bred from *Agromyza woerzi* GROSCHKE in Poland (GRIFFITHS 1966a). I have received a second male bred from the same host at Mühlhausen, Thuringia, Germany (from larva 31. viii. 65 in leaf-mine on *Knautia arvensis*, em. 3. iv. 66, H. BUHR no. 2646). This second male has 45 antennal segments.

***Chorebus bensoni* (NIXON)**

The following record extends the known range of this species to the mountains of Central Europe: 2 ♂♂ 4 ♀♀ from puparia of *Phytomyza soenderupi* HERING in stems of *Caltha palustris*, Oberlausitz (Röderbrunn/Rammenau), Saxony, Germany, em. 8—9. iv. 67 (H. BUHR no. 2889).

***Chorebus tenellae* GRIFFITHS**

This species is new to the British list. I described it (GRIFFITHS 1966b: 861) on the basis of two long Danish series mounted with puparia of *Phytomyza tenella* MEIGEN (in the SCHLICK collection). I have reared a female from a sample of larvae of this same host collected 29. viii. 66 in seed capsules of *Pedicularis palustris*, Mullagh More, Co. Clare, Ireland, em. 15. iii. 67 (G. C. D. GRIFFITHS).

***Chorebus anasella* (STELFOX)**

*Dacnusa anasella* STELFOX. STELFOX 1952: 321. STELFOX 1957: 119.  
*Chorebus anasella* (STELFOX). GRIFFITHS 1968b: 131.

During my 1966 visit to Ireland I was able to establish that this species, reported by STELFOX (1952, 1957) as widespread in salt marshes in Ireland, is a parasite of *Phytomyza plantaginis* ROBINEAU-DESVOIDY. The records are as follows: 3 ♂♂ 4 ♀♀ from puparia 31. viii. 66 in leaves of *Plantago coronopus*, Murrough, Co. Clare, em. 3—20. ix. 66; 2 ♂♂ from puparia 10. ix. 66 in leaves of *Plantago maritima*, Derreen, Co. Clare, em. 16. ix. 66 & 17. v. 67. It is noteworthy that this parasite has only been found in coastal marshes, and never bred from inland collections of *Phytomyza plantaginis* on other species of *Plantago*. The possibility that the coastal and inland host populations are not identical merits investigation.

***Chorebus alecto* (MORLEY)**

The range is extended to Ireland by 2 ♂♂ 2 ♀♀ reared from puparia of *Phytomyza crassisetosa* ZETTERSTEDT in leaves of *Veronica chamaedrys*, Doolin, Co. Clare, em. 17—25. ix. 66 (G. C. D. GRIFFITHS). These show the roughening of the mesoscutum noted as absent in other specimens bred from this same host (GRIFFITHS 1966b: 872), thus reducing my grounds for suspecting that they might not be conspecific.

The host of this species recorded as *Phytomyza albiceps* MEIGEN in my 1966b paper should now be called *P. artemisivora* SPENCER.

***Chorebus ninella* (NIXON)**

According to NOWAKOWSKI (1973) the two breeding records of this species given in my 1968b paper (p. 81) refer to different hosts, only the miner on *Calamagrostis canescens* in Germany being the true *Cerodontha* (*Poemyza*) *calamagrostidis* NOWAKOWSKI. The identification of the species I sampled on *Calamagrostis epigeios* at Woodwalton Fen was revised by him to *C. (P.) spenceri* NOWAKOWSKI.

***Chorebus poemyzae* GRIFFITHS**

The identification of the third host has been revised to *Cerodontha* (*Poemyza*) *beigerae* NOWAKOWSKI by NOWAKOWSKI (1973: 82).

***Chorebus asramenes* (NIXON)**

NOWAKOWSKI (1973) refers some of the breeding records listed by me (GRIFFITHS 1968b: 84) to *Cerodontha* (*Poemyza*) *melicae* NOWAKOWSKI and *C. (P.) zoernerii* NOWAKOWSKI, not all to the true *C. (P.) pygmaea* (MEIGEN).

***Chorebus difficilis* GRIFFITHS**

The identification of the fourth host has been revised to *Cerodontha* (*Poemyza*) *beigerae* NOWAKOWSKI by NOWAKOWSKI (1973: 87).

***Chorebus endymion* GRIFFITHS**

The host of this species should properly be called *Paraphytomyza luteoscutellata* (DE MEIJERE) according to SPENCER (1969: 21).

***Chorebus nana* (NIXON)**

Along with material of this species bred from usual hosts, members of the *Phytomyza symphyti* group mining Boraginaceae, I received from BUHR one dwarf female bred from the polyphagous *Chromatomyia horticola* (GOUREAU) (= *Phytomyza atricornis* auctt., in part) on *Symphytum officinale* (from puparium 31. v. 66, Mühlhausen, Thuringia, Germany, em. 7. vi. 66, H. BUHR no. 2800). This is doubtless a case of xenophagy, attack on a less suitable host encountered while searching the food-plant of one of the normal hosts.

***Chorebus pelion* (NIXON)**

NOWAKOWSKI (1973: 216) tentatively refers the records for host 4 (GRIFFITHS 1968b: 96) in part to *Cerodontha (Dizygomyza) gallica* NOWAKOWSKI and in part to *C. (D.) morosa* (MEIGEN).

***Chorebus stenocentrus* (THOMSON) comb. nov.**

*Dacnusa (Dacnusa) stenocentra* THOMSON. THOMSON 1895: 2319. GRIFFITHS 1967b: 660.

As I have previously stated, THOMSON's holotype of this species has broken antennae and most of the legs missing. Consequently it is difficult to decide the proper application of the name. The following redescription is based on a series received from BUHR which agree with the holotype, in so far as its characters are known, except that the females have a slightly longer ovipositor. But the difference does not seem outside the range of variation possible within species. Accordingly, I propose that the species before me be regarded as *stenocentrus* unless the contrary can be demonstrated.

This species is very close to *C. senilis* (NEES), agreeing with my description of that species (GRIFFITHS 1967b: 666) except as otherwise stated.

**Colour.** Paler than in *C. senilis*. Palpi and labrum yellow. Clypeus and centre of mandibles orange-yellow. Antennae yellowish basally as far as about basal third of flagellum, this colour merging gradually into the dark colour of the more apical flagellar segments. Legs largely yellow, with only the bases of the hind coxae and the tips of the hind femora infuscated to some degree (usually brownish). Gaster beyond petiole brownish.

**Morphology.** Antennal segments: ♂, 33–36; ♀, 29–31. Notaulices better developed, with their longitudinal extensions more or less distinct (in some specimens complete, reaching the posterior fovea). Petiole densely pubescent along its sides (but slightly less densely so than in *C. senilis*), with more broadly bare central keel. Ovipositor (♀) stout, shortly projecting beyond apical tergite in the retracted position (by about half the length of the petiole).

**Remarks.** The above description is based on a series of 12♂♂ 3♀♀ from larvae and puparia 6. vii. 66 of *Phytomyza lukriella* SPENCER in leaf-stalks of *Petasites hybridus*, Oberlausitz (near Qbersteina), Saxony, Germany, em. 20. vii. – 11. viii. 66 (H. BUHR no. 2968).

■ The rearing of this series establishes that members of the *Chorebus senilis* group can attack *Phytomyza* hosts, which means that my reluctance to accept the record of *C. pulchellus* as a parasite of *P. cecidonomia* HERING (GRIFFITHS 1967b: 668) was perhaps unjustified. *Chorebus pulchellus* GRIFFITHS is in fact very similar to *C. stenocentrus*, differing in having completely yellow femora and weaker notaulices.

***Chorebus senilis* (NEES)**

The following is a new host record: 1 ♂ from puparium 12. ix. 67 of *Napomyza carotae* SPENCER in root of cultivated carrot (*Daucus carota*), Nes, Friesland, Holland, em. 28. ix. 67 (L. E. VAN 'T SANT).

***Chorebus glaber* (NIXON)**

Previously this species has been recorded (GRIFFITHS 1967b) only from *Napomyza cichorii* SPENCER, of which it is evidently the dominant parasite. Subsequently I also received the following specimen reared from *Napomyza carotae* SPENCER: 1 ♀ from puparium in root of cultivated carrot (*Daucus carota*), Nes, Friesland, Holland, em. 15. ix. 66 (L. E. VAN 'T SANT).

***Chorebus bathyzonus* (MARSHALL)**

I have previously recorded this species only as a parasite of *Ophiomyia heracleivora* SPENCER (GRIFFITHS 1967b: 676), rejecting earlier published records. A second verified host, *O. ranunculicaulis* HERING, can now be recorded on the basis of the following rearings: 1 ♀ from puparium 12. viii. 66 in stem-mine on *Ranunculus repens*, Mühlhausen, Thuringia, Germany, em. 22. iv. 67 (H. BUHR no. 3102); 1 ♂ from puparium 12. ix. 66 in stem-mine on *Ranunculus lanuginosus*, same locality, em. 18. iv. 67 (H. BUHR no. 3175).

***Chorebus claripennis* spec. nov.**

This new species belonging to the *Chorebus senilis* group sensu lato appears very close to *C. fuscipennis* (NIXON), as evidenced for instance by the form of the mandibles, but can be distinguished from that species by its paler coloration, the distinctly costate precoxal suture and the presence of bare areas on the sides of the pronotum.

Colour. Palpi and labrum yellow. Clypeus dark, like the face. Centre of mandibles orange-yellow to orange-brown. Antennae with scape and pedicel brownish, flagellum more or less entirely dark. Legs almost entirely yellow, with only tarsal segments 5 somewhat infuscated (brownish). Gaster beyond petiole uniformly orange-yellow to red-brown.

Morphology. Back of head entirely clothed with more or less uniformly dense pubescence, not forming differentiated tufts above bases of mandibles; cheeks scarcely angulate. Mandibles as in *C. fuscipennis* (cf. GRIFFITHS 1967b, Fig. 162), with hollowed dilation posteriorly near their base, hardly expanded towards their apex. Antennal segments: ♂, 25–26; ♀, 25–27 (25 in holotype). Palpi fairly long (see table of biometric data).

Sides of pronotum with dense matted pubescence along and below the oblique suture, but with bare shining area above this. Mesoscutum broad and slightly flattened centrally, punctate only on anterior face, more or less entirely clothed with short dense pubescence (but this becoming sparser on lateral lobes), with notaulices weakly developed (but reaching posterior fovea as smooth impressions in some specimens). Precoxal suture visible as well-defined long linear groove which is distinctly costate anteriorly. Metapleuron and propodeum with dense matted whitish pubescence, that of metapleuron forming rosette around rugose central swelling (as normally in the *C. senilis* group). Hind coxa with matted basal tuft of pubescence. Petiole parallel-sided, about 2.5 times as long as wide, rather densely pubescent basally but becoming largely bare on its distal half. Ovipositor (?) not or hardly projecting beyond the apical tergite in the retracted position. Wing as in *C. fuscipennis* (GRIFFITHS, 1967b, Fig. 150).

Types. Holotype ♀, 3♂♂ 3♀♀ paratypes from puparia 7–9. vii. 66 of *Ophiomyia hieracii* SPENCER in stem-mines on *Hieracium laevigatum*, Oberlausitz (Röderbrunn/Ohorn), Saxony, Germany, em. 15–29. vii. 66 (H. BUHR nos. 2977 & 3060).

Remarks. This species appears to be a host vicariant of *C. fuscipennis* (NIXON), which was reared from puparia of *Ophiomyia heringi* STARY in stems of *Hypochoeris radicata* collected at the same locality (H. BUHR nos. 2940 & 2994).

***Chorebus eucodonis* spec. nov.**

This is another new species close to *C. fuscipennis* (NIXON), whose discovery adds further confirmation that the *Chorebus* parasites of stem-mining *Ophiomyia* species are narrowly host specific. Although only a single specimen is available, I do not hesitate to describe this species as it appears well characterized. The strongly rugose-costate precoxal suture will separate this species from most of the other parasites of stem-mining *Ophiomyia* species. It would run to *C. rondanii* (GIARD) (couplet 31) in my 1967b key, but that species has the back of the head bare centrally.

Colour. Palpi and labrum yellow. Clypeus dark, like the face. Centre of mandibles orange-brown. Antennae more or less entirely dark. Legs 1 and 2 more or less entirely deep yellow except for the infuscated tarsal segments 5; hind legs slightly darker, with brownish coxae and yellow-brown femora. Gaster beyond petiole uniformly deep orange-yellow.

Morphology. Back of head entirely clothed with more or less uniformly dense pubescence, not forming differentiated tufts above bases of mandibles; cheeks appearing only weakly angulate in lateral view. Mandibles similar to those of *C. fuscipennis* (cf. GRIFFITHS 1967b, Fig. 162), but with tooth 1 larger (slightly expanded) and with the hollowed posterior area at their base hardly dilated. 28 antennal segments (?). Palpi fairly long (see the table of biometric data).

Sides of pronotum with dense matted pubescence along and below the oblique suture, but shining and only sparsely pubescent above this. Mesoscutum broad, somewhat flattened centrally, with almost its entire surface roughened and densely pubescent; notaulices distinct anteriorly only. Precoxal suture long and linear, deeply impressed and rugose-costate anteriorly. Metapleuron and propodeum with dense matted whitish pubescence, that of metapleuron forming rosette around rugose central swelling as normally in the *C. senilis* group. Hind coxa with matted basal tuft of pubescence. Petiole parallel-sided, about 2.4 times as long as wide, rather densely pubescent basally but becoming almost bare on its distal half. Ovipositor (fully retracted?) slightly projecting beyond the apical tergite in the holotype. Wing as in *C. fuscipennis* (GRIFFITHS 1967b, Fig. 150).

Type. Holotype ♀ from larva/puparium 29. vii. 66 of *Ophiomyia eucodonis* HERING in stem-mine on *Campanula trachelium*, Mühlhausen (Stadtwald), Thuringia, Germany, em. 10–15. iv. 67 (H. BUHR no. 3078).

**Revised couplets for key of various plesiomorph European species of *Chorebus* (GRIFFITHS, 1968b: 118)**

- |   |   |    |
|---|---|----|
| 4 | Antennae with 20–23 segments . . . . .    | 4a |
| — | Antennal segments more numerous . . . . . | 4b |

- 4a Petiole densely pubescent . . . . . *C. thusa* (NIXON)  
 Host: *Phytomyza rufipes* MEIGEN
- Petiole largely bare . . . . . *C. galii* spec. nov.  
 Host: *Paraphytomyza lucens* (DE MEIJERE)
- 4b Antennae with 39—46 segments. Large species (length about 3 mm) . . . . .  
 . . . . . *C. phaedra* (NIXON)
- Antennae with 28—34 segments . . . . . 5

**Revised couplets for key of European species of the *Chorebus ovalis/lateralis* complex (GRIFFITHS 1968b: 120)**

- 2 Small species, 1.6—2.2 mm, with subcubical head (at most 1.5 times as wide as long) and elongate thorax. Mandibles small, narrowing distally, with tooth 2 long and pointed (NIXON 1943, Fig. 37). Petiole bare centrally but with a thin accumulation of pubescence at its apical corners (NIXON 1946, Fig. 215) . . . . . 2a
- Not as above. If head subcubical and mandibles narrow (*crenulatus*, see couplet 72), the petiole is entirely pubescent . . . . . 3
- 2a Antennal segments: ♂, 30—33; ♀, (25)—26—28—(29). Notaulices weakly indicated anteriorly only . . . . . *C. diremtus* (NEES)  
 Host: *Cerodontha (Cerodontha) fulvipes* (MEIGEN)
- Antennal segments: ♂, 27; ♀, 23—26. Notaulices well developed at least anteriorly . . . . . *C. rostratae* spec. nov.  
 Host: *Phytomyza rostrata* HERING
- 3 Mesoscutum with pubescence on its anterior face, but its dorsal surface virtually bare except for a few hairs along the course (or former course) of the notaulices, i. e. both its central and lateral lobes virtually bare . . . . . 4
- Pubescence of mesoscutum more extensive, extending on its dorsal surface at least over the anterior part of the central lobe . . . . . 15
- 20 Petiole with evenly distributed pubescence. Antennal segments: ♂, 29; ♀, 25—26 . . . . . *C. rufimarginatus* (STELFOX)
- Petiole bare centrally, with pairs of basal and apical patches of pubescence (NIXON 1943, Fig. 54). 28—29 antennal segments (♀) . . . . . 20a
- 20a Thorax about 1.4 times as long as high. Antennal flagellum more or less entirely dark . . . . . *C. chenopodii* spec. nov.  
 Host: *Amauromyza chenopodiivora* SPENCER
- Thorax shorter in relation to its height. Antennae yellowish on about basal half . . . . . *C. iphias* (NIXON)

**Revised couplets for key of European species of the *Chorebus senilis* group sensu lato (GRIFFITHS 1967b: 658)**

- 10 Antennal segments: ♂, (36)—37—41; ♀, 35—36. Legs pale, with hind femora infuscated only apically and hind tibiae entirely yellow or yellow-brown. Mandibles large (GRIFFITHS 1967b, Fig. 160), distinctly widened towards their apex . . . . . *C. marsyas* (NIXON)
- Antennal segments: ♂, (31)—33—36; ♀, 29—34. Mandibles (GRIFFITHS 1967b, Fig. 158) only slightly widened towards their apex . . . . . 10a
- 10a Legs largely pale, with only bases of hind coxae and tips of hind femora somewhat infuscated. Antennae yellowish basally, including basal third of flagellum. Notaulices rather well developed, with more or less distinct longitudinal extensions. . . . . *C. stenocentrus* (THOMSON)

Host: *Phytomyza buhriella* SPENCER



Table of Biometric Data

	Absolute Measurements (1 = 0.01 mm)																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	Head			Eye-width (lateral)	Distance between Eyes	Clypeus Width	Mandibles Width	Antennal Segments			Maxillary Palpus Segments				Thorax			Hind Leg			Hind Tarsal Segments				
	Width	Length	Height					3	4	5	3	4	5	6	Length	Width	Height	Femur	Tibia	Tarsus	1	2	3	4	5
1	53	30	41	14	27	20	10	14	11	11	7	9	6	5	72	40	63	50	65	60	23	11	9	6	10
2	51	27	40	12	27	19	9	11	10	10	6	9	6	6	71	40	60	46	67	60	23	11	9	7	10
3	45	26	38	10	22	15	13	11	9	8	5	6	3	4	59	32	50	37	55	47	19	9	6	5	9
4	46	24	37	16	23	19	7	12	12	11	9	11	9	11	66	40	48	45	64	52	21	10	7	5	9
5	55	30	40	14	27	18	14	11	10	9	7	9	6	7	67	38	60	46	61	50	18	10	8	6	9
6	66	35	49	16	33	20	15	11	10	10	9	12	8	10	88	50	70	56	80	62	24	12	10	7	9
7	69	35	50	18	35	20	15	10	10	10	8	11	8	9	85	50	69	57	80	60	22	11	9	7	10
8	47	27	35	11	24	15	11	10	9	8	5	6	5	5	55	34	41	36	54	45	15	9	7	6	9
9	39	26	36	13	19	13	5	12	11	10	5	7	4	6	62	27	35	33	55	54	20	11	8	5	9
10	44	31	40	16	21	16	7	15	13	12	6	8	6	8	74	34	46	43	65	67	26	14	10	8	10
11	61	37	49	15	30	15	22	14	12	11	9	11	6	9	72	42	52	47	70	61	24	12	8	6	11
12	62	36	49	14	30	24	14	20	15	14	10	16	11	14	92	44	62	60	95	98	42	21	13	9	14
13	64	35	51	18	32	22	13	19	16	14	9	16	9	14	94	46	60	64	100	90	40	20	14	9	13
14	55	33	46	18	27	22	12	12	11	11	8	12	8	9	88	52	62	46	71	65	27	13	9	7	9
15	50	28	41	15	23	18	10	10	10	9	7	10	7	8	73	41	50	41	68	62	26	13	8	6	9
16	57	34	46	15	30	20	12	10	10	10	7	11	8	9	85	43	53	47	72	69	27	14	10	7	10

Nos. 1–2. *Dacnusa arctica* spec. nov., Torne Lappmark (1 the holotype).  
No. 3. *Dacnusa euphrasiella* spec. nov., holotype.  
No. 4. *Exotela chromatomyiae* spec. nov., holotype.  
No. 5. *Exotela viciae* spec. nov., holotype.  
Nos. 6–7. *Exotela lathyri* spec. nov. ex *Agromyza orobi* HENDEL, Thuringia (6 the holotype).  
No. 8. *Chorebus galii* spec. nov., holotype.

- Legs darker, with hind femora entirely infuscated and often also apex of hind tibiae infuscated. Antennae more or less entirely dark. Notaulices not extending longitudinally on dorsal surface of mesoscutum . . . . . 11
- 29 Back of head entirely clothed with dense pubescence. Mandibles hollowed posteriorly near their base. Legs largely yellow, at most with hind coxae and femora brownish . . . . . 29a
- Back of head bare centrally, except in *C. orbiculatae* which has dark legs. Mandibles not hollowed posteriorly near their base . . . . . 29b
- 29a Mandibles dilated posteriorly near their base, but not expanded apically (cf. *C. fuscipennis*; GRIFFITHS 1967b, Fig. 162). Legs entirely yellow. Mesoscutum roughened only on anterior face . . . . . *C. claripennis* spec. nov.
- Host: *Ophiomyia hieracii* SPENCER
- Mandibles scarcely dilated basally but with tooth 1 expanded. Hind coxae brownish. Mesoscutum with almost its entire surface roughened . . . . . *C. eucodonis* spec. nov.
- Host: *Ophiomyia eucodonis* HERING

29b (as previous couplet 29) . . . . .

Acknowledgements

I once again record my debt to the late Dr. habil. H. BUHR for his untiring efforts in rearing parasites of Agromyzidae for me during the last years of his life. Many of the new records stated in this paper are based on the last material I received from him during 1967.  
My wife Deirdre was kind enough to examine one of HALIDAY's types for me during a recent visit to Dublin.

Summary

Supplementary information from the author's collection of European Alysiniinae (mainly Dacnusiini) is here published on the occasion of the deposition of that collection in the British Museum (Natural History). Ten new species are described, two in *Dacnusa* HALIDAY (*D. arctica* spec. nov. and *D. euphrasiella* spec. nov.), three in *Exotela* FÖRSTER (*E. viciae* spec. nov., *E. lathyri* spec. nov. and *E. chromatomyiae* spec. nov.) and five in *Chorebus* HALIDAY (*C. galii* spec. nov., *C. rostratae* spec. nov., *C. chenopodii* spec. nov., *C. claripennis* spec. nov. and *C. eucodonis* spec. nov.). *Chorebus stenocentrus* THOMSON is redescribed.



														Ratios																			
26	27	28	29	30	31	32	A	B	C		D	E			F	G	H	I	J					K	L								
Hind Coxa		Wing Length	Gaster Length	Petiole		Total Body Length	Length/ Width of Head	Length/ Height of Head	Width of Head/ Distance between Eyes/ Width of Clypeus	Width of / Length Mandibles / of Head	Antennal Segments			Height/Length of Thorax	Thorax/ Width / Head	Wing / Body Length / Length	Hind Tibia/Tarsus	Hind Tarsal Segments					Lengths of Petiole/ Gaster	Width/Length of Petiole									
																									3	4	5	1	2	3	4	5	
14	25	235	93	25	27	200	1.8	1.4	2.0:1.0:7	3.0	1.3:1.1:0	1.1	1.3	0.9	0.9	2.1:1.0:8:0.6:0.9	3.4	1.1															
15	23	230	81	27	25	190	1.9	1.5	1.9:1.0:7	3.0	1.1:1.1:0	1.2	1.3	0.8	0.9	2.1:1.0:8:0.6:0.9	3.2	0.9															
10	19	188	63	20	21	145	1.7	1.5	2.0:1.0:7	2.0	1.2:1.0:9	1.2	1.4	0.8	0.9	2.1:1.0:7:0.6:1.0	3.0	1.1															
12	21	213	85	20	26	173	1.9	1.5	2.0:1.0:8	3.4	1.0:1.0:9	1.4	1.2	0.8	0.8	2.1:1.0:7:0.5:0.9	3.3	1.3															
11	19	218	89	15	27	180	1.8	1.3	2.0:1.0:7	2.1	1.1:1.0:9	1.1	1.4	0.8	0.8	1.8:1.0:8:0.6:0.9	3.3	1.8															
13	20	250	120	23	35	240	1.9	1.4	2.0:1.0:6	2.3	1.1:1.1:0	1.3	1.3	0.9	0.8	2.0:1.0:8:0.6:0.8	3.4	1.5															
16	25	250	100	23	34	220	2.0	1.4	2.0:1.0:6	2.3	1.0:1.1:0	1.2	1.4	0.9	0.8	2.0:1.0:8:0.6:0.9	2.9	1.5															
10	16	168	82	14	19	163	1.7	1.3	2.0:1.0:6	2.5	1.1:1.0:9	1.3	1.4	1.0	0.8	1.7:1.0:8:0.7:1.0	4.3	1.4															
11	18	170	97	11	22	185	1.5	1.4	2.1:1.0:7	5.2	1.1:1.0:9	1.8	1.4	1.1	1.0	1.8:1.0:7:0.5:0.8	4.4	2.0															
14	21	210	122	15	26	225	1.4	1.3	2.1:1.0:8	4.4	1.2:1.0:9	1.6	1.3	1.1	1.0	1.9:1.0:7:0.6:0.7	4.7	1.7															
15	20	230	100	21	34	213	1.7	1.3	2.0:1.0:5	1.7	1.2:1.0:9	1.4	1.5	0.9	0.9	2.0:1.0:7:0.5:0.9	2.9	1.6															
14	25	270	130	20	40	255	1.7	1.4	2.1:1.0:8	2.6	1.3:1.0:9	1.5	1.4	0.9	1.0	2.0:1.0:6:0.4:0.7	3.2	2.0															
15	30	270	160	19	41	280	1.8	1.5	2.0:1.0:7	2.7	1.2:1.0:9	1.6	1.4	1.0	1.0	2.0:1.0:7:0.5:0.7	3.9	2.2															
14	20	220	107	13	34	225	1.7	1.4	2.0:1.0:8	2.8	1.1:1.1:0	1.4	1.1	1.0	0.9	2.1:1.0:7:0.5:0.7	3.2	2.6															
13	19	218	110	12	30	210	1.8	1.5	2.2:1.0:8	2.8	1.0:1.0:9	1.5	1.2	1.0	0.9	2.0:1.0:6:0.5:0.7	3.7	2.5															
15	20	220	133	13	31	250	1.7	1.4	1.9:1.0:7	2.8	1.0:1.1:0	1.6	1.3	1.1	1.0	1.9:1.0:7:0.5:0.7	4.3	2.4															

- Nos. 9–10. *Chorebus rostratae* spec. nov. ex *Phytomyza rostrata* HERING, Saxony (10 the holotype).  
 No. 11. *Chorebus chenopodii* spec. nov., holotype.  
 Nos. 12–13. *Chorebus stenocentrus* (THOMSON) ex *Phytomyza buhriella* SPENCER, Saxony.  
 Nos. 14–15. *Chorebus claripennis* spec. nov. ex *Ophiomyia hieracii* SPENCER, Saxony (15 the holotype).  
 No. 16. *Chorebus eucodonis* spec. nov., holotype.

# Zusammenfassung

Zusätzliche Informationen aus der Sammlung europäischer Alysini (hauptsächlich Dacnusi) des Autors werden veröffentlicht aus Anlaß der Übergabe dieser Sammlung an das British Museum (Natural History). Zehn neue Arten werden beschrieben, zwei in *Dacnusa* HALIDAY (*D. arctica* spec. nov. und *D. euphrasiella* spec. nov.), drei in *Exotela* FÖRSTER (*E. viciae* spec. nov., *E. lathyri* spec. nov. und *E. chromatomyiae* spec. nov.) und fünf in *Chorebus* HALIDAY (*C. galii* spec. nov., *C. rostratae* spec. nov., *C. chenopodii* spec. nov., *C. claripennis* spec. nov. und *C. eucodonis* spec. nov.). *Chorebus stenocentrus* (THOMSON) wird neu beschrieben.

# Резюме

По поводу передачи коллекции европейских Alysini (прежде всего Dacnusi) автора Британскому музею (British Museum, Natural History) дается дополнительная информация об этой коллекции. Описываются 10 новых видов, 2 вида из *Dacnusa* HALIDAY (*D. arctica* spec. nov. и *D. euphrasiella* spec. nov.), 3 из *Exotela* FÖRSTER (*E. viciae* spec. nov., *E. lathyri* spec. nov. и *E. chromatomyiae* spec. nov.) и 5 из *Chorebus* HALIDAY (*C. galii* spec. nov., *C. rostratae* spec. nov., *C. chenopodii* spec. nov., *C. claripennis* spec. nov. и *C. eucodonis* spec. nov.). *Chorebus stenocentrus* (THOMSON) снова описывается.

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Autor(en)/Author(s):

Artikel/Article: [The Alysiniinae \(Hym. Braconidae\) parasites of the Agromyzidae \(Diptera\). VII Supplement. 343-362](#)