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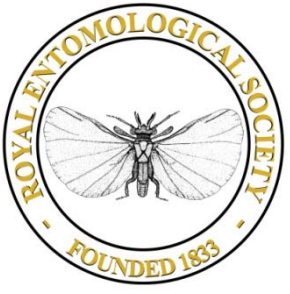

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Handbooks for the Identification of British Insects
Vol. IX Part 5

DIPTERA ORTHORRHAPHA BRACHYCERA

DOLICHOPODIDAE

E. C. M. d'Assis Fonseca

ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

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Vol. IX, Part 5

DIPTERA
ORTHORRHAPHA BRACHYCERA
DOLICHOPODIDAE

By

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ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

Published by the Royal Entomological Society of London
41 Queen's Gate, London SW7 5HU

First published 1978

Printed in Great Britain
by Adlard & Son Ltd, South Street
Dorking, Surrey

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Cover illustration: *Dolichopus popularis* Wied. ♂

CORRIGENDUM

Page 4, fig. 5: for *Hinder crossvein* read *Outer crossvein*

DIPTERA
ORTHORRHAPHA BRACHYCERA
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POSITION OF THE DOLICHOPODIDAE IN DIPTERA

The Dolichopodidae belong to the Brachycera section of the Orthorrhapha. The family is widely distributed throughout the major zoogeographical regions, and about 4,500 species have been described in some 130 genera. In 1890 Brauer proposed the superfamily name ORTHOGENA to include the two families Empididae and Dolichopodidae, and in 1935 Enderlein added the family Lonchopteridae to form a group which he named GEPHRONEURA, and which he proposed should receive the same status as the Nematocera and Brachycera. The grouping together of these three families to form a third division of the Diptera has not, however, been generally accepted and various other groups or superfamilies have been proposed over the subsequent years.

The relationship of the 14 British families belonging to the Brachycera Orthorrhapha is shown in the following key, based on Parent (1938):

1 Frontal lunule present (a crescent-shaped area immediately above the antennae) **CYCLORRHAPHA**

– No lunule above antennae (ORTHORRHAPHA) 2

2 Antenna, in addition to the two basal segments, with flagellum consisting of at least 6 segments, which are similar to one another. Palpi always pendulous, more or less filiform, usually with 4 or 5 segments. Anal cell always open and widening out towards wing-margin ..... **NEMATOCERA**

– Antenna, in addition to the two basal segments, with less than 6 segments, or if not then segments differing from one another. Palpi not pendulous, erect and having only 1 or 2 segments. Anal cell closed, or if open then at least narrowing towards wing-margin (BRACHYCERA) 3

3 Tarsi with 3 pulvilli. Head and mesonotum without true bristles **Stratiomyidae Xylomyiidae, Xylophagidae. Rhagionidae, Tabanidae, Acroceridae**

– Tarsi with 2 pulvilli, between them an empodium of different shape. Head and mesonotum with true bristles 4

4 Basal cells of wing long, especially anal cell which is long and pointed, or sometimes not even closed before reaching wing-margin **Asilidae, Therevidae, Scenopinidae, Bombyliidae**

– 2nd basal cell short, or even confluent with discal cell. Anal cell sometimes absent, but when present always short and closed, apex rounded or truncated 5

5 Wing-venation abnormal, without any crossvein in the median region of wing **Lonchopteridae, Phoridae**

– Venation normal, with at least one crossvein in median region of wing 6

6 Basal cells long enough to be conspicuous. Radial and cubital veins branching from their common stem beyond, or at least only little before, basal third of wing; cubital vein often forked. 2nd basal cell always separated from discal cell. Body colour of British species never metallic ..... **Empididae**

– Basal cells very short or even absent. Radial and cubital veins branching from their common stem close to wing-base, cubital never forked. 2nd basal cell confluent with discal cell. Body colour of great majority of species metallic **Dolichopodidae**

The family Dolichopodidae may thus be characterized as follows:

No frontal lunule above antennae. Palpi not segmented, flat, lying on proboscis. Antenna consisting of 3 distinct unlike segments, and a bisegmented arista or style arising from 3rd segment. A characteristic fringe of postocular flattened bristles, at least on upper half of occiput. Tarsi with 2 pulvilli and a filiform, pectinated empodium. Head and body with well-developed chaetotaxy. Discal cell closed by a crossvein in median region of wing. 1st basal cell very short, 2nd basal cell confluent with discal cell, anal cell short, closed and rounded at apex, or sometimes absent. Body colour generally metallic.

SUBFAMILIES AND GENERA

The family is divided into nine fairly well-defined subfamilies in Britain: DOLICHOPODINAE with genera *Dolichopus, Hercostomus, Hypophyllus, Poecilobothrus,* and *Tachytrechus;* HYDROPHORINAE with genera *Hydrophorus, Scellus, Liancalus, Orthoceratium, Thinophilus* and *Schoenophilus;* APHROSYLINAE with the single genus *Aphrosylus;* MEDETERINAE with genera *Medetera, Thrypticus* and *Cyrturella;* RHAPHIINAE with genera *Rhaphium, Syntormon, Machaerium, Systenus, Achalcus, Bathycranium* and *Nematoproctus;* NEURIGONINAE with the single genus *Neurigona;* DIAPHORINAE with genera *Diaphorus, Chrysotus, Melanostolus* and *Argyra;* CAMPSICNEMINAE with genera *Campsicnemus, Sympycnus, Acropsilus, Teucophorus, Telmaturgus, Anepsiomyia, Micromorphus, Chrysotimus, Lamprochromus* and *Xanthochlorus;* SCIAPODINAE with the single genus *Sciapus.*

The 38 British genera contain 267 species.

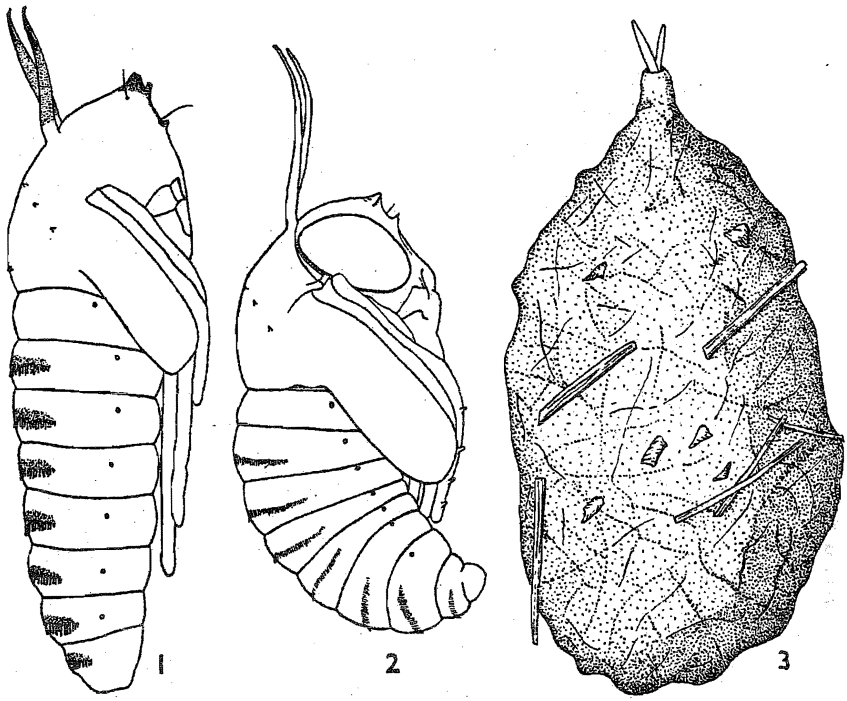
LIFE-HISTORY

The larvae of the Dolichopodidae are in general carnivorous, developing in damp soil or mud, sand, rotting wood, cattle dung, sap exudations from wounds on deciduous trees and under bark. The exception is the genus *Thrypticus* in which the larvae are phytophagous; the female flies, which have a sharp sclerotized ovipositor, depositing their eggs in the still tender stems of monocotyledons.

Larvae of the littoral species, e.g. *Aphrosylus, Machaerium* spp., are usually to be found in intertidal habitats; these, and others not normally associated with the seashore, have been shown by Dyte (1959) to tolerate quite high degrees of salinity. In order to survive in environments periodically flooded, the pupae have developed respiratory horns (figs 1, 2) and, as an additional protection, the final instar larva spins a cocoon shortly before pupation (fig. 3).

FEEDING HABITS OF ADULTS

Adult Dolichopodidae are generally accepted as being predaceous, although, apart from species of the genus *Medetera,* they are seldom found with prey. The feeding habits of four species of *Medetera,* namely *jacula* Fall., *truncorum* Mg., *dendrobaena* Kow. and *ambigua* Zett., are described by Laurence (1951), who found that tiny insects of the orders Collembola, Diptera, Hemiptera, Thysanoptera and Psocoptera were selected as prey, with a marked preference for Thysanoptera. Laurence also refers to a record by Malloch (1917) of a species (not named) of *Sciapus* preying on a small thrips. An instance of the capture and 'mastication' of a tiny psychodid fly (unidentified) by a female *Sciapus maritimus* Beck. is described by Colyer and Hammond (1951).



FIGS 1–3. Pupae and cocoon. 1, *Dolichopus nubilus* Mg. (after Dyte). 2, pupa and 3, cocoon of *Liancalus virens* Scop. (after Hinton).

White (1976) describes his observations on three species of *Dolichopus*, namely, *griseipennis* Stann., *trivialis* Hal. and *ungulatus* L., feeding on aphid exuviae and excretions in the neighbourhood of a compost bed in his garden. In the same article he records females of *Chrysotus gramineus* Fall. preying on three species of the collembolid genus *Smynthurus* (*pallipes* Lub., *aureus* Lub. and *luteus* Lub.) on leaves of Meadowsweet (*Filipendula ulmaria*) and Broad Bean (*Vicia faba*).

I have observed a male of *Poecilobothrus nobilitatus* L. preying on Water Fleas (*Chydorus sphaericus* Muell.). The fleas, together with numerous other tiny aquatic animals, were in stagnant water contained in an earthenware dish. The fly was stationed on the side of the dish at the water's edge, and whenever a flea surfaced close to the edge, the fly made a short lightening movement forward and back, almost too rapid to see, catching its prey between the labella. Smith and Empson (1955) record *P. nobilitatus* preying upon larvae of *Culex*. Fonseca (1955) and Smith (1959) describe the courtship behaviour of *Neurigona* species which prey upon Typhlocibidae (Homoptera) on tree trunks.

ADULT CHARACTERS USED IN IDENTIFICATION

The great majority of adult males possess striking secondary sexual characters and their identification is therefore a comparatively easy matter. Such characters are to be found mainly in modified leg parts, these members being sometimes

modified to an enormous extent. The male genitalia, conspicuous in most of the species, also afford valuable taxonomic characters. In general, the colour and dusting of frons and face, the colour of the antennae, lower postocular cilia and squamal fringe, the chaetotaxy of the thorax (mainly dorsocentrals), the presence or absence of hairs on the face and on the disc of scutellum, the colour and chaetotaxy of the legs and the wing-venation are the principal taxonomic characters to be found in both sexes.

The diagnostic characters used in the following keys are remarkably consistent, but variation within a species, though rare, is always possible. In such a case, an attempt to run a specimen down in the alternative section will usually settle the matter. Practically every character is paired and each one of a pair should be examined before a conclusion is drawn. Where it is important, the correct point of

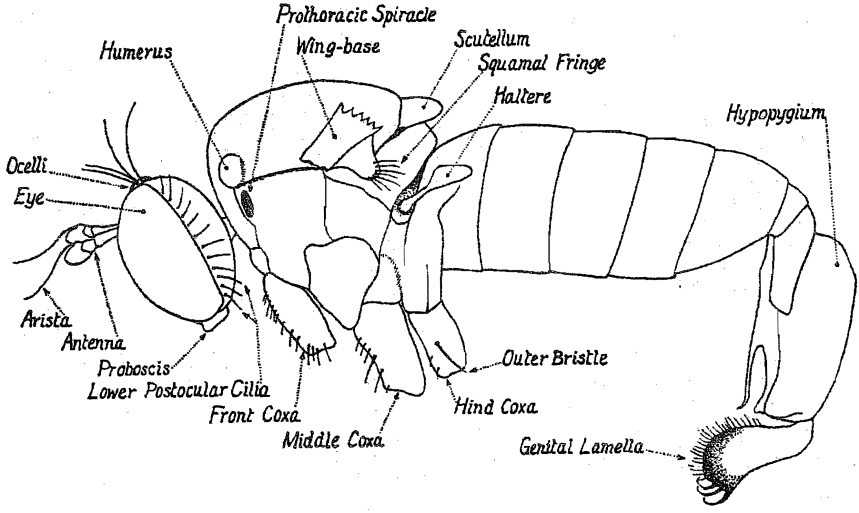


FIG. 4. Head and body of ♂ *Dolichopus*.

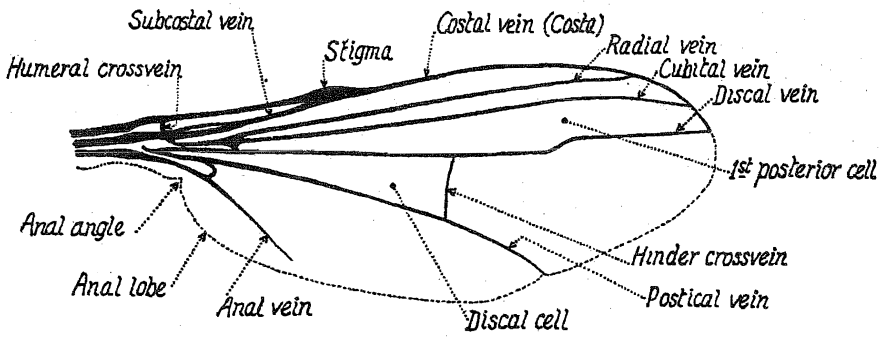


FIG. 5. Wing of *Dolichopus* species, ♂.

view and direction of illumination are specified; an incorrect angle of view can sometimes make a black face look white. The sizes given in the keys are overall length excluding antennae and genitalia. I have personally examined every species and carefully checked the characters used. Where thought to be desirable in order to facilitate identification, characters have been illustrated by figures. Fig. 1 is copied from a drawing by Mr C. E. Dyte and figs 2 and 3 from drawings by Professor H. E. Hinton. All the other figures were drawn by myself.

NOTES ON SOME NOMENCLATURE

The 'Critical Notes' of Collin (1940) have been accepted in full, except in regard to the use of the genus *Gymnopternus* Loew (1857). Becker (1907) and most subsequent authors have sunk the above genus as synonymous with *Hercostomus* Loew and this is followed in the present Handbook.

Macrodolichopus Stack. and *Hygroceleuthus* Lw. are both regarded as subgenera of *Dolichopus*, as proposed by Stackelberg.

Submedetera Beck. In agreement with Frey, Negrobov and Stackelberg, this genus is regarded as synonymous with *Thrypticus*.

Rhaphium, Porphyrops, Xiphandrium and *Argyra*. The type-species of *Rhaphium* Mg. (1803) is *macrocerum* Mg., designated by Curtis (1835), a species belonging to *Xiphandrium* Lw. The type-species of *Porphyrops* Mg. is *Musca diaphana* F., designated by Curtis (1835). *Musca diaphana* was also designated by Rondani (1856) as type-species of *Argyra* Macq. The name *Porphyrops* has priority over *Argyra*, but the present established use of *Argyra* in Diaphorinae, and the former use of *Porphyrops* in Rhaphiinae, make a suspension of the latter name in favour of *Argyra* advisable to avoid confusion. Application has been made to the International Commission on Zoological Nomenclature. The species which formerly were placed in *Porphyrops* and *Xiphandrium* are now all referred to *Rhaphium*.

Leucostola Lw., with its single British species *vestita* Wied., is sunk as a synonym of *Argyra*, and *Ectomus* Mik is, following Parent (1938), regarded as a subgenus of *Campsicnemus*.

COLLECTING DOLICHOPODIDAE

The legs of almost all species of Dolichopodidae are long and slender and therefore easily damaged. The bag of the collecting net should be of as fine a mesh as possible, so that the danger of legs protruding through the mesh is reduced to a minimum. The larger species, which can usually be seen resting in full view on leaves, tree-trunks or stones, are best collected individually, the surest way of obtaining a perfect specimen and one to be used wherever possible. There are, however, occasions when sweeping is the only means of obtaining the smaller species, particularly those whose habit is to rest on exposed stones in the bed of a stream. All sweeps should be of short duration to avoid damage by churning of large numbers of specimens in the bottom of the net. Over long exposure of specimens to killing or relaxing agents should be avoided, as this is liable to destroy any dusting, especially that of the frons and face.

ACKNOWLEDGEMENTS

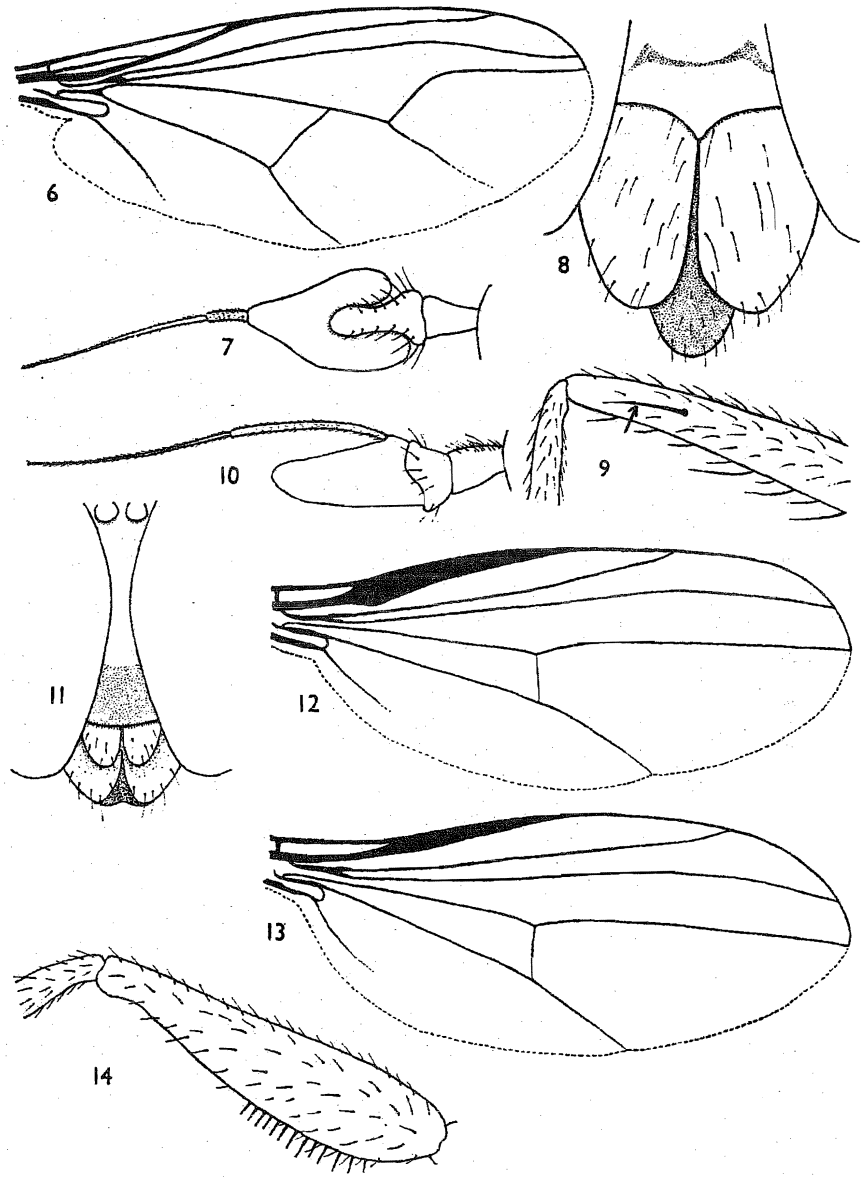
I wish to express my grateful thanks to the following: Dr R. W. Crosskey, of the British Museum (Natural History), London, for making the named collections and accessions available for examination. Professor G. C. Varley, of the Hope Department of Entomology, University Museum, Oxford, for permission to examine the

Verrall-Collin collection, and to borrow many of the rarer species for illustration. Dr Hugo Andersson, of the Zoological Institute, Lund, Sweden, who kindly supplied me with a number of rare species on loan. Mrs E. C. Broadhead, of the Zoological Department, University of Leeds, who went to considerable trouble to make her own and the University collections of Dolichopodidae available to me. Dr A. v. Stackelberg, of the Zoological Institute, Academy of Sciences, Leningrad, for the gift and loan of rare species which were otherwise unobtainable. Dr J. Olejníček, of the Institute of Parasitology, Czechoslovak Academy of Science, Prague, for the gift of specimens of *Dolichopus cilifemoratus* Macq. Mr C. E. Dyte, of Datchet, Bucks., who supplied me with relevant papers by Continental authors, afforded valuable assistance with the nomenclature and synonymy and joined me in many helpful discussions of the problems involved. Mr A. C. Pont, of the British Museum (Natural History), for obtaining specimens of some of the rarer species from Continental collections, and for his ever ready help in so many other ways throughout the preparation of this handbook. Mr O. M. White, of Nottingham, whose careful testing of the draft keys has brought to light several long-standing errors and has otherwise resulted in many improvements being made to the taxonomy. My many other friends, whose collections and distribution notes have been made available to me, and particularly to Mr A. A. Allen for his valuable assistance with the difficult genus *Medetera*.

KEY TO GENERA OF BRITISH DOLICHOPODIDAE

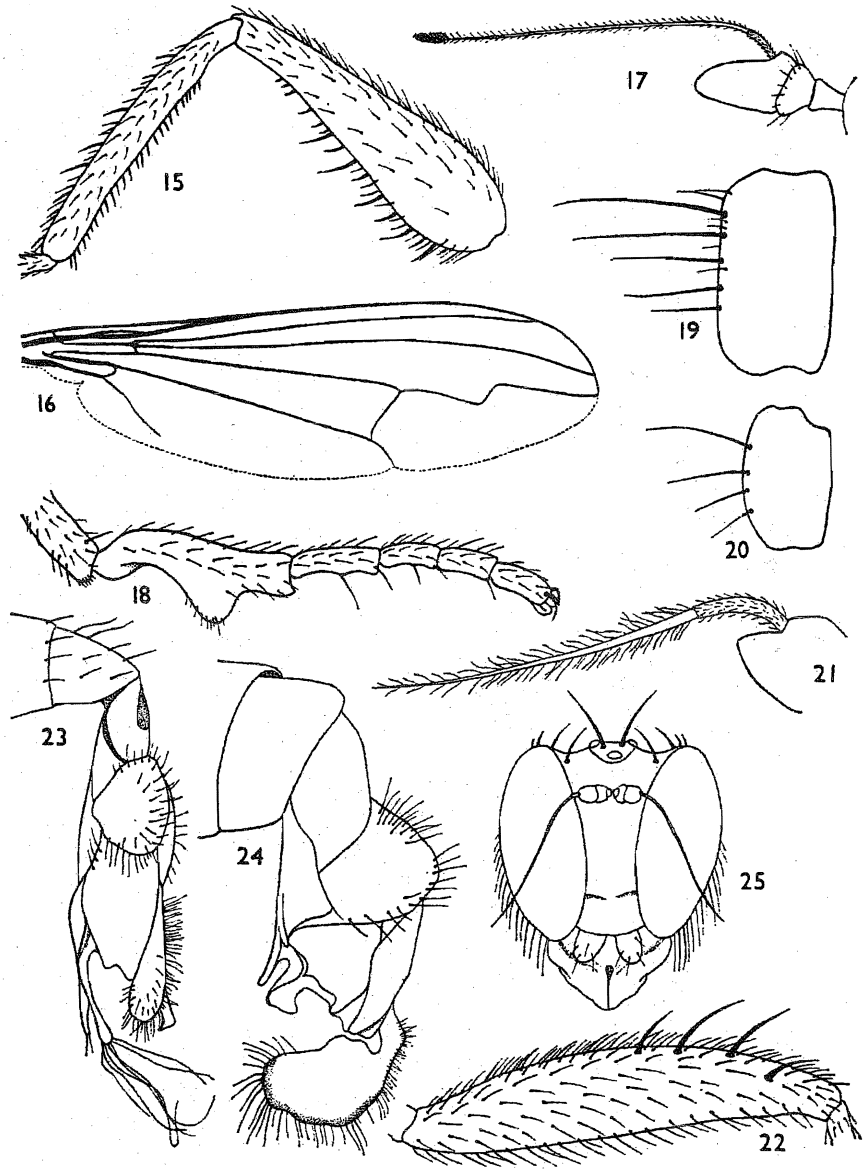
Males

1 Discal vein forked, anterior branch reaching wing-margin close to cubital vein, posterior branch usually incomplete. Greatest distance between cubital and discal veins 5–6 times their separation at tips (fig. 6).....**SCIAPUS** (p. 82)
– Discal vein not forked, or when apparently so (some *Dolichopus*) then greatest distance between cubital and discal veins not more than twice their separation at tips.....2
2 2nd antennal segment, seen on inside face, forming a more or less long thumb-like projection into 3rd segment (fig. 7).....**SYNTORMON** (p. 58)
– 2nd antennal segment not as above.....3
3 Acrostichal bristles absent. [*Medetera micacea*, in which the acrostichals are occasionally absent, has only 3 dorsocentrals and belongs to the next section. *Scellus*, *Campsicnemus*, *Chrysotimus*, *Teucophorus* and *Xanthochlorus*, about which there may be some doubt as to acrostichals, are included in both sections].....4
– Acrostichals distinct, even though sometimes small.....15
4 Proboscis stout, with a slightly curved short stout spine beneath at apex. Front coxa and trochanter strongly spinose.....**APHROSYLUS** (p. 42)
– Proboscis without the above apical spine. Front coxa and trochanter not spinose....5
5 Thorax with 8 to 12 dorsocentral bristles. 1st antennal segment 2.5–3.0 times as long as 2nd segment.....**SCELLUS** (p. 41)
– Not more than 6 dorsocentrals. 1st antennal segment at most twice as long as 2nd segment.....6
6 Apical section of discal vein more or less distinctly sinuous and converging with cubital vein.....7
– Apical section of discal vein quite or practically straight and parallel with cubital vein 9
7 Very small species, about 1 mm. Anal vein absent. Arista apical. Occiput concave **CYRTURELLA** (p. 50)
– Larger species, 3 mm or more. Anal vein present. Arista dorsal. Occiput convex 8
8 Body largely yellow, with yellow or brownish-yellow bristles. Face narrowing more or less uniformly from antennae to mouthedge. Palpi small. No postvertical bristles. Hind femur without a preapical bristle.....**XANTHOCHLORUS** (p. 81)
– Body entirely dark metallic, with black bristles. Face distinctly narrowing to just before middle, then slightly widening towards mouthedge. Palpi very broad and conspicuous, lying flat on proboscis (fig. 8). Strong postverticals present. Hind femur with preapical, though this is rather more dorsal in position than normal (see fig. 35).....**THINOPHILUS** (p. 41)



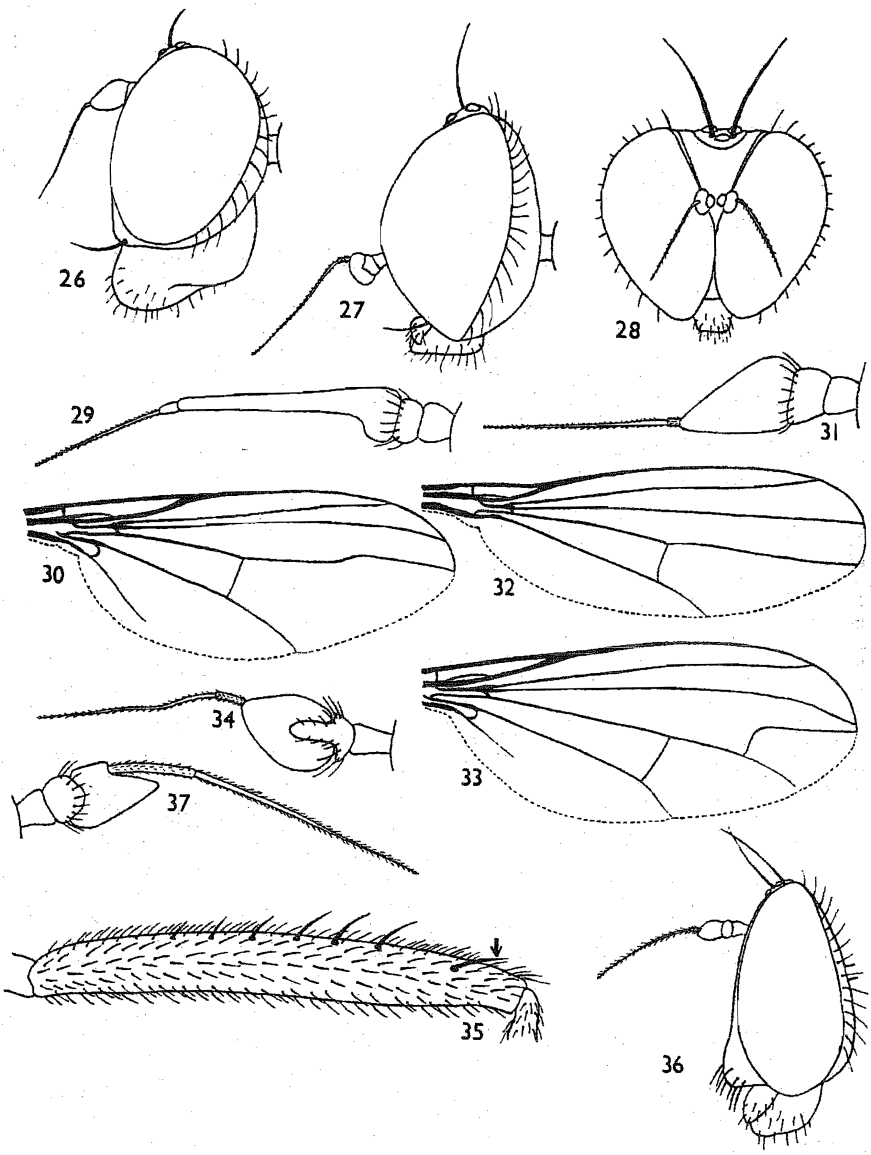
FIGS 6–14. 6, 12–13, ♂ wings. 6, *Sciapus heteropygus* Par. 12, *Teucophorus signatus* Zett. 13, *Teucophorus simplex* Mik. 7, 10, ♂ antennae. 7, *Syntormon denticulatus* Zett. 10, *Anepsiomyia flaviventris* Mg. 8, 11 ♂ faces. 8, *Thinophilus flavipalpis* Zett. 11, *Campsicnemus curvipes* Fall. 9, R. hind femur of *Campsicnemus curvipes* Fall. ♂. 14, L. front femur of *Hydrophorus bipunctatus* Lehm. ♂.

9 Hind femur without a preapical bristle....10
– Hind femur with preapical (see fig. 9)....11
10 1st antennal segment hairy on dorsal surface, 3rd segment more than twice as long as wide, tapering to a rounded tip (fig. 10). Arista almost basal. Front femur and tibia finely spinose beneath....**ANEPSIOMYIA** (p. 80)
— 1st antennal segment bare, 3rd segment not longer than wide. Arista subapical. Front leg not as above. Hind metatarsus less than half as long as 2nd segment **ACROPSILUS** (p. 78)
11 3rd antennal segment roundish-triangular, conspicuously wider than long, arista practically apical. Apical section of discal vein with a brownish spot before middle and outer crossvein broadly infuscated. (These dark markings tend to become indistinct with age) ....**SCHOENOPHILUS** (p. 42)
— 3rd antennal segment more distinctly triangular, arista distinctly dorsal. Wing not as above 12
12 Face narrowed below antennae then widening out to mouthedge (fig. 11). Arista almost basal .... **CAMPSICNEMUS** (p. 74)
— Face narrowing more or less uniformly from antennae to mouthedge. Arista well removed from base of 3rd antennal segment....13
13 Costa of wing with a conspicuous long tapered thickening in basal half (figs 12, 13). Middle femur remarkably bristled beneath near base, except in *simplex* **TEUCOPHORUS** (p. 78)
— Costa without the above thickening. Middle femur not markedly bristled beneath..14
14 Body shining metallic green, hairs and bristles yellow. Face metallic green, rather densely dusted greyish-white. Arista inserted at about middle of 3rd antennal segment .... **CHRYSOTIMUS** (p. 81)
— Body not metallic green, quite dull, hairs and bristles dark. Epistoma black. Arista almost basal .... **MICROMORPHUS** (p. 80)
15 Acrostichal bristles uniserial, at least in front....16
— Acrostichals strictly biserial....27
16 Body shining metallic green, hairs and bristles yellow....**CHRYSOTIMUS** (p. 81)
— Not as above....17
17 1st antennal segment hairy on dorsal surface. Abdomen mainly yellow, apical segments more or less darkened.... **BATHYCRANIUM** (p. 65)
— 1st antennal segment bare....18
18 Outer crossvein distinctly longer than apical section of postical vein (measured to wing-margin), or if not longer then wing with numerous dark spots (fig. 122). A pair of well-developed postvertical bristles present....19
— Outer crossvein shorter than apical section of postical vein (measured to wing-margin). Wing without numerous dark spots. No distinct postverticals 22
19 Front femur, and often also tibia, with more or less regular rows of spines beneath (figs 14, 15) 20
— Front legs not as above....21
20 Front tibia, beneath before middle, with a stout hook-like process bearing a coarse blunt flattened black spine. 2 scutellar bristles. Wing with considerable dark markings **SCELLUS** (p. 41)
— Front tibia without such process beneath. 4 scutellar bristles, or if only 2 then wing quite clear.... **HYDROPHORUS** (p. 38)
21 6 equally strong scutellar bristles. 6 dorsocentral bristles. Outer crossvein very oblique. Bends of discal very obtuse and smoothly rounded.. **LIANCALUS** (p. 41)
— 4 scutellar bristles, unequal. 7 dorsocentral bristles. Outer crossvein not oblique. First bend of discal vein almost rectangular (fig. 16)....**ORTHOCERATIUM** (p. 41)
22 Face narrowed below antennae, then widening out towards mouthedge (fig. 11). Arista almost basal.... **CAMPSICNEMUS** (p. 74)
— Face narrowing more or less uniformly from antennae to mouthedge, eyes sometimes almost touching below....23
23 4 dorsocentral bristles. Arista with the pubescence much increased in density at apex, appearing like an apical thickening (fig. 17). Front metatarsus strongly dilated at middle beneath (fig. 18).... **TELMATURGUS** (p. 80)
— At least 5 dorsocentral bristles. Arista not as above. Front metatarsus simple....24
24 Hind femur with a preapical bristle (see fig. 9)....25
— Hind femur without preapical bristle....26



FIGS 15–25. 15, L. front leg of *Hydrophorus balticus* Mg. ♂. 16, Wing of *Orthoceratium lacustre* Scop. ♂. 17–18, *Telmaturgus tumidulus* Radd. ♂. 17, Antenna. 18, R. front tarsus. 19–20, ♂ L. hind coxae of *Argyra*. 19, *diaphana* F., 20, *perplexa* Beck. 21, Arista of *Poecilobothrus nobilitatus* L. ♂. 22, L. hind femur of *Tachytrechus insignis* Stann. ♂. 23–24, ♂ hypopygia. 23, *Hypopyllus obscurellus* Fall. 24, *Hercostomus nigriplantis* Stann. 25, Head of *Medetera flavipes* Mg. ♂.

25 Costa of wing with a conspicuous long tapered thickening in basal half (figs 12, 13). 5 dorsocentral bristles. Middle femur remarkably bristled beneath near base (except in *simplex*) ..... **TEUCOPHORUS** (p. 78)
— Costa without the above thickening. 6 dorsocentral bristles. Middle femur without bristles beneath ..... **SYMPYCNUS** (p. 77)
26 Body largely yellow, with yellow or brownish-yellow bristles. Legs, including coxae and tarsi, entirely yellow ..... **XANTHOCHLORUS** (p. 81)
— Body colour dark metallic, with dark bristles. Legs mainly black. Hypopygium with 4 erect anal bristles ..... **MELANOSTOLUS** (p. 71)
27 Costa of wing with a conspicuous, long, tapered thickening in basal half (figs 12, 13) **TEUCOPHORUS** (p. 78)
— Costa without the above thickening 28
28 1st antennal segment hairy on dorsal surface 29
— 1st antennal segment bare 34
29 Hind coxa, on outer face, with an evenly spaced vertical row of 3 or more erect fine bristles, uppermost one the strongest and placed towards base of coxa, others becoming progressively weaker (figs 19, 20). Hind femur without preapical bristle (except in *elongata*, in which abdomen is partly translucent yellow at base). Hypopygium usually almost hidden ..... **ARGYRA** (p. 72)
— Hind coxa, on outer face, with one strong erect bristle at or about middle, often also with one or more short setulae. Hind femur with one or more well-developed preapical bristles. Abdomen nowhere translucent yellow. Hypopygium free, quite visible and with well-developed processes 30
30 Arista with hairs at least 1.5 times as long as its basal thickness (fig. 21). Thorax with a purplish-black patch in notopleural area. Hind metatarsus and 2nd segment about equal in length ..... **POECILOBOTHRUS** (p. 37)
— Without the above combination of characters 31
31 Hind metatarsus with one or more strong dorsal bristles ..... **DOLICHOPUS** (p. 17)
— Hind metatarsus without bristles dorsally 32
32 Hind femur with 1 or 2 true preapical bristles (slightly more dorsal than normal), accompanied by a row of almost dorsal bristles (fig. 22). Clypeus free at sides and extending to, or below, level of lower eye-margin. Face somewhat narrowed to just below antennae, then widening out towards mouthedge **TACHYTRECHUS** (p. 37)
— Hind femur with only one true preapical bristle, without additional near-dorsal bristles. Clypeus united with eye-margins at sides, not reaching lower level of eyes. Hind metatarsus decidedly shorter than 2nd segment 33
33 Hypopygium very elongate, longly petiolate, internal processes long and bearing fans of long hairs (fig. 23). Apical abdominal segments much lengthened. Legs rather long ..... **HYPOPHYLLUS** (p. 35)
— Hypopygium normal, sessile or shortly petiolate, usually with short internal processes, but if these are long then not as above (fig. 24). Abdomen and legs normal **HERCOSTOMUS** (p. 31)
34 Eyes bare. Transverse division of face usually distinct and complete. Occiput concave. Hind coxa with the strong erect outer bristle (or upper one if 2) at about middle of coxa 35
— Eyes hairy. Facial division at most only a trace at sides 36
35 Proboscis stout, broadly triangular in frontal view (figs 25, 26). Hind coxa, on outer face, with only one erect bristle. Anal vein present. Cubital and discal veins more or less strongly convergent in apical half ..... **MEDETERA** (p. 44)
— Proboscis normal. Hind coxa with 2 erect bristles on outer face. Anal vein absent. Cubital and discal veins at most only slightly convergent .... **THRYPTICUS** (p. 48)
36 Eyes touching, or very closely approximated, on frons. Viewed in profile, antennae inserted at or below middle of head (fig. 27). Hind coxa with the outer bristle placed very near to base ..... **DIAPHORUS** (p. 66)
— Eyes well separated on frons. Antennae inserted distinctly above middle of head .. 37
37 Eyes touching, or very closely approximated, about and below middle of face (fig. 28). Hind coxa with the outer bristle placed practically at base. Body short and squat **CHRYSOTUS** (p. 67)
— Facial margins well separated throughout their length. Except in *Melanostolus* hind coxa with the outer bristle, when present (or upper one when 2), further from base, at least no nearer than basal fifth 38
38 3rd antennal segment very elongate, bulbous at base and abruptly narrowed to a long slender projection (fig. 29) ..... **MACHAERIUM** (p. 63)
— 3rd antennal segment not as above 39



FIGS 26–37. 26–28, 36, Heads. 26, *Medetera jacula* Fall. ♂. 27, *Diaphorus oculatus* Fall. ♂. 28, *Chrysotus cupreus* Macq. ♂. 36, *Acropsilus niger* Lw ♀. 29, 31, 34, 37, Antennae. 29, *Machaerium maritimae* Hal. ♂. 31, *Achalcus cinereus* Hal. ♂. 34, *Syntormon denticulatus* Zett. ♀. 37, *Anepsiomyia flaviventris* Mg. ♀. 30, 32–33, Wings. 30, *Nematoproctus distendens* Mg. ♂. 32, *Achalcus cinereus* Hal. ♂. 33, *Sciapus platypterus* F. ♀. 35, L. hind femur of *Thinophilus flavipalpis* Zett. ♀.

39 Abdomen, seen obliquely from in front, with 2nd to 5th tergites entirely covered with a silvery gloss. Hind coxa, on outer face, with 2 erect black bristles; coxa otherwise entirely bare on outer surface.....**ARGYRA** (p. 72)
— Abdomen not as above. Hind coxa without or with only one erect bristle on outer face, or if with more than one then accompanied by some long hairs.....40
40 Arista distinctly dorsal, even though sometimes close to apex of 3rd antennal segment 41
— Arista strictly apical 46
41 Hind femur without preapical bristle 42
— Hind femur with preapical bristle (see fig. 9).....45
42 Body largely yellow. Thorax with distinct, even though shallow, prescutellar depression. Hypopygium free 43
— Body colour green or dark metallic. No prescutellar depression. Hypopygium sessile, though appendages are sometimes conspicuous.....44
43 Thoracic bristles black. Face distinctly widening out towards mouthedge. Hypopygium shining black.....**NEURIGONA** (p. 65)
— Thoracic bristles yellow or brownish yellow. Face uniformly narrowing from antennae to mouthedge. Hypopygium dull yellow.....**XANTHOCHLORUS** (p. 81)
44 Long, more slender species. Haltere yellow. Apical section of discal vein markedly sinuous (fig. 30). Genital appendages conspicuous **NEMATOPROCTUS** (p. 65)
— Short, rather stocky species. Haltere black. Apical section of discal vein not at all sinuous. Genital appendages mainly hidden.....**MELANOSTOLUS** (p. 71)
45 4 dorsocentral bristles. Thorax with a large velvet-black patch just above each wing-base. Frons shining metallic .....**LAMPROCHROMUS** (p. 81)
— 6 dorsocentral bristles. Thorax without velvet-black patches. Frons entirely dulled by dust.....**SYMPYCNUS** (p. 77)
46 Hind metatarsus at most half the length of 2nd segment. Hind femur without preapical bristle .....**SYSTENUS** (p. 63)
— Hind metatarsus about equal in length to, or at most only slightly shorter than, 2nd segment. Hind femur with or without preapical bristle.....47
47 3rd antennal segment not symmetrical in profile, lower margin noticeably shorter than upper (fig. 31). Radial, cubital and discal veins all more or less straight and slightly divergent from near wing-base to apex (fig. 32). Anal vein absent. Hind coxa, apart from the erect bristle, entirely bare on outer face .....**ACHALCUS** (p. 64)
— 3rd antennal segment symmetrical in profile. At least cubital and discal veins distinctly convergent in apical half. Anal vein present. Hind coxa, in addition to erect bristle or bristles (when present), always with more or less long pale or brownish pubescence .....**RHAPHIUM** (p. 50)

Females

1 Discal vein forked, anterior branch reaching wing-margin close to cubital vein, posterior branch usually incomplete (fig. 33). Greatest distance between cubital and discal veins 5–6 times their separation at tips.....**SCIAPUS** (p. 83)
– Discal vein not forked, or when apparently so (some *Dolichopus*) then greatest distance between cubital and discal veins less than twice their separation at tips.....2
2 2nd antennal segment forming a more or less long thumb-like projection into 3rd segment, best seen on inside face (fig. 34). Clypeus strongly protruding **SYNTORMON** (p. 61)
– 2nd antennal segment not as above.....3
3 Acrostichal bristles absent. [*Medetera micacea*, in which the acrostichals are occasionally absent, has only 3 dorsocentrals and belongs to next section. *Scellus*, *Campsicnemus*, *Chrysotimus*, *Teucophorus* and *Xanthochlorus*, about which there may be some doubt as to acrostichals, are included in both sections.].....4
– Acrostichals distinct.....18
4 Proboscis stout, with a slightly curved short strong spine beneath at apex. Front coxa and trochanter spinose.....**APHROSYLUS** (p. 43)
– Proboscis without the above spine. Front coxa and trochanter not spinose.....5
5 Hind femur without a preapical bristle.....6
– Hind femur with preapical bristle (see fig. 9), sometimes (*Thinophilus*) placed more dorsally in position (fig. 35).....12
6 Hind metatarsus about two-fifths the length of 2nd segment. Clypeus armed with coarse bristles (fig. 36).....**ACROPSILUS** (p. 78)
– Hind metatarsus about the same length as 2nd segment. Clypeus bare.....7

7 Hairs and bristles of thorax pale. Cubital and discal veins distinctly convergent in apical half. Wing quite clear....8
– Hairs and bristles of thorax dark. Cubital and discal veins parallel or only faintly convergent in apical half, or if somewhat strongly convergent then wing with considerable dark markings....9
8 Body mainly yellow, with yellow or brownish-yellow bristles. Arista dorsal. Occiput convex. Species about 3 mm.... **XANTHOCHLORUS** (p. 81)
– Body colour entirely metallic. Bristles white. Arista apical. Occiput concave. Very small species, about 1 mm....**CYRTURELLA** (p. 50)
9 1st antennal segment hairy on dorsal surface, 3rd segment almost sharply triangular (fig. 37). Thorax shining black. Cubital and discal veins straight and parallel in apical half. Lower postocular cilia uniserial....**ANEPSIOMYIA** (p. 80)
– 1st antennal segment bare, 3rd rounded or bluntly triangular. Thorax dulled by dust. Lower postocular cilia pluriserial....10
10 Thorax with 8 to 12 dorsocentral bristles. Front femur with a row of long spines beneath .... **SCELLUS** (p. 41)
— Not more than 6 dorsocentral bristles. Front femur without spines beneath....11
11 4 dorsocentral bristles. Arista subapical. Cubital and discal veins almost straight and parallel in apical half. Antenna entirely dark....**SCHOENOPHILUS** (p. 42)
— 5 to 6 dorsocentral bristles. Arista distinctly dorsal. Cubital and discal veins somewhat curved and slightly converging in apical half. Antenna partly reddish **THINOPHILUS** (p. 42)
12 3 to 5 dorsocentral bristles....13
— At least 6 dorsocentral bristles....17
13 Face narrowed below antennae, then widening out to mouthedge (see fig. 11). Arista inserted near base of 3rd antennal segment....**CAMPSICNEMUS** (p. 76)
— Face not as above, or if apparently so then arista apical or subapical....14
14 Thorax shining metallic green, all hairs and bristles clear yellow. Abdomen almost entirely yellow .... **CHRYSOTIMUS** (p. 81)
— Body colour entirely metallic or dark. Hairs and bristles dark....15
15 3rd antennal segment almost circular, arista apical or subapical Apical section of discal vein with a brownish spot and outer crossvein broadly infuscated (these dark markings tend to become indistinct with age)....**SCHOENOPHILUS** (p.42)
— 3rd antennal segment more or less triangular, arista more distinctly dorsal. Wing not as above 16
16 Wing with the outer crossvein more or less strongly sloping outwards towards hindmargin, so that anterior angle of cell is obviously greater than 90° (fig. 38). No prothoracic bristle ....**TEUCOPHORUS** (p. 80)
— Outer crossvein not sloping outwards, anterior angle of cell slightly less than 90°. Prothoracic bristle present....**MICROMORPHUS** (p. 80)
17 Front femur with a row of long spines beneath. 8 to 12 dorsocentral bristles **SCELLUS** (p. 41)
— Front femur without long spines beneath. Not more than 6 dorsocentrals **THINOPHILUS** (p. 42)
18 Acrostichal bristles uniserial, at least in front....19
— Acrostichals strictly biserial....31
19 Thorax shining metallic green with clear yellow bristles. Abdomen dull yellow, black at apex .... **CHRYSOTIMUS** (p. 81)
— Not as above 20
20 Arista apical or subapical. Thoracic bristles black. Abdomen yellow with dark foremarginal bands to tergites ....**BATHYCRANIUM** (p. 65)
— Arista distinctly dorsal (in doubtful cases body colour entirely dark metallic)....21
21 Outer crossvein at least as long as apical section of postical vein (measured to wingmargin), or if somewhat shorter then wing with numerous dark spots (see fig. 122) 22
— Outer crossvein distinctly shorter than apical section of postical vein (measured to wingmargin). Wing without dark spots....25
22 Front femur (often also tibia) with more or less numerous spines beneath....23
— Front legs not as above....24
23 Only 2 scutellar bristles. Wing with considerable dark markings. Spines beneath front femur and tibia long and strong....**SCELLUS** (p. 41)

— 4 scutellar bristles (only 2 in *oceanus* in which wing is quite clear). Spines beneath front tibia short, sometimes reduced to minute points. . **HYDROPHORUS** (p. 40)

24 6 scutellar bristles, all equally strong. No prothoracic bristle. Outer crossvein very oblique ..... **LIANCALUS** (p. 41)

— 4 scutellar bristles, unequal. A prothoracic bristle present. Outer crossvein not oblique (see fig. 16). 7 dorsocentral bristles..... **ORTHOCERATIUM** (p. 41)

25 Hind femur without a preapical bristle.....26

— Hind femur with preapical bristle (see fig. 9).....27

26 Thoracic bristles yellow or brownish yellow. Abdomen mainly yellow. Legs, including coxae and tarsi, entirely yellow..... **XANTHOCHLORUS** (p. 81)

— Thoracic bristles black. Body colour entirely dark metallic. Legs entirely dark **MELANOSTOLUS** (p. 71)

27 1st antennal segment hairy on dorsal surface. Abdomen yellow with dark fore-marginal bands to tergites..... **BATHYCRANIUM** (p. 65)

— 1st antennal segment bare. Abdomen not yellow.....28

28 6 dorsocentral bristles. Clypeus not produced forwards. Outer crossvein not oblique, anterior angle of cell not greater than 90°. Facial margins either parallel or very slightly converging from antennae to mouthedge. Frons entirely dulled by more or less dense dusting..... **SYMPYCNUS** (p. 78)

— 3 to 5 dorsocentral bristles.....29

29 Clypeus strongly produced forwards in front of epistoma (fig. 39). Arista very distinctly pubescent ..... **TELMATURGUS** (p. 80)

— Clypeus at most only slightly prominent, lying almost flat with epistoma. Arista practically bare 30

30 Face more or less uniformly narrowing from antennae to mouthedge. Abdomen laterally compressed ..... **TEUCOPHORUS** (p. 80)

— Face narrowed below antennae, then widening out towards mouthedge (see fig. 11). Abdomen dorsoventrally flattened..... **CAMPSICNEMUS** (p. 76)

31 1st antennal segment hairy on dorsal surface.....32

— 1st antennal segment bare.....36

32 Hind coxa, on outer face, with an evenly spaced vertical row of 3 or more erect fine bristles, uppermost one the strongest and placed at basal fourth to third of coxa, the others becoming progressively weaker (see figs 19, 20). Hind femur without a preapical bristle (except in *elongata*, in which the abdomen is partly translucent yellow at base)..... **ARGYRA** (p. 73)

— Hind coxa with only one strong erect outer bristle at or about middle, sometimes with one or more small setulae in addition. Hind femur with one or more well-developed preapicals. Abdomen nowhere translucent yellow.....33

33 Arista with hairs at least 1.5 times as long as its basal thickness (see fig. 21). Thorax with a purplish-black patch on notopleural area. Not more than apical fourth of hind tibia black. First two segments of hind tarsus subequal in length. (*Hercostomus chrysozygos*, which also has the notopleural purplish-black patch, rather long aristal hairs and similar wing-venation, has hind tibia black on apical half and hind metatarsus obviously shorter than 2nd segment.)..... **POECILOBOTHRUS** (p. 37)

— Without the above combination of characters.....34

34 Hind metatarsus with one or more strong dorsal bristles.... **DOLICHOPUS** (p. 25)

— Hind metatarsus without bristles dorsally.....35

35 Hind femur with 1 or 2 true preapical bristles (rather more dorsal than normal), accompanied by a row of almost dorsal bristles (see fig. 22). Clypeus free at sides with apical margin more or less triangular..... **TACHYTRECHUS** (p. 38)

— Hind femur with a single true preapical bristle, without additional near-dorsal bristles. Clypeus united with eye-margins at sides, apical margin straight or slightly curved **HERCOSTOMUS** (p. 34)

36 Eyes bare. Transverse division of face usually distinct and complete. Hind coxa with the strong outer bristle (or upper one if 2) at about middle.....37

— Eyes hairy. Facial division usually at most only visible at extreme sides.....38

37 Proboscis stout, broadly triangular seen from front (see figs 25, 26). Anal vein present. Cubital and discal veins usually smoothly curved and distinctly convergent **MEDETERA** (p. 44)

— Proboscis normal. Anal vein absent. Cutibal and discal veins at most very slightly convergent ..... **THRYPTICUS** (p. 49)

38 3rd antennal segment very elongate, bulbous at base and abruptly narrowed to a long slender projection (see fig. 29). Hind coxa with 2 erect black bristles on outer face **MACHAERIUM** (p. 63)

— 3rd antennal segment not as above....39

39 Hind coxa, on outer face, with 2 (rarely 3) strongish erect bristles, lower one somewhat weaker, coxa otherwise entirely bare on outer surface. Occiput concave **ARGYRA** (p. 73)

— Hind coxa without, or with only one erect bristle on outer face, or if with more than one then accompanied by some longish pale or dark hairs....40

40 Viewed in profile, antennae inserted at or below middle of eye (fig. 40). Eye-margins on frons and face parallel. Wing usually somewhat wedge-shaped, with greatest width before middle. Outer bristle on hind coxa placed rather near to base **DIAPHORUS** (p. 67)

— Antennae inserted distinctly above middle of eye....41

41 Hind coxa, on outer face, with the erect bristle placed extremely near to base....42

— Hind coxa with the outer bristle (or upper one if 2), when present, placed at some distance from base, at least not nearer than basal fifth....43

42 Haltere yellow. Arista more nearly apical. Wing with the radial, cubital and discal veins somewhat crowded towards costa (fig. 41)....**CHRYSOTUS** (p. 69)

— Haltere black. Arista distinctly dorsal....**MELANOSTOLUS** (p. 71)

43 Arista distinctly dorsal, though sometimes very near to apex....44

— Arista strictly apical....52

44 Body largely yellow. Thorax with distinct prescutellar depression....45

— Body colour dark metallic. Thorax without prescutellar depression....47

45 Face uniformly narrowing from antennae to mouthedge. Thorax dull, with yellow or brownish-yellow bristles. Hind femur without a preapical bristle **XANTHOCHLORUS** (p. 81)

— Facial margins, at least from middle to mouthedge, parallel or slightly divergent. Thoracic bristles black, or if yellow then hind femur with preapical bristle (see fig. 9) 46

46 Thorax shining metallic green, with yellow bristles. Abdomen entirely yellow except for black tip....**CHRYSOTIMUS** (p. 81)

— Thorax not metallic green, dull, with black bristles. Abdomen largely darkened, or if yellow then without black tip. Hind femur without preapical bristle **NEURIGONA** (p. 66)

47 Arista, though distinctly dorsal, inserted very close to apex of 3rd antennal segment **RHAPHIUM** (p. 55)

— Arista inserted nearer to middle of 3rd antennal segment, or sometimes near to base..48

48 Hind femur without a preapical bristle....**NEMATOPROCTUS** (p. 65)

— Hind femur with preapical bristle (see fig. 9)....49

49 Thorax with a large velvet-black patch just above each wing-base. Frons shining. Face more or less uniformly narrowing from antennae to mouthedge **LAMPROCHROMUS** (p. 81)

— Thorax without these velvet-black patches....50

50 Face narrowed below antennae, then widening out towards mouthedge (see fig. 11). Frons more or less distinctly shining....**CAMPSICNEMUS** (p. 76)

— Face uniformly narrowing from antennae to mouthedge, or sometimes parallel-sided in lower half....51

51 Wing with outer crossvein oblique, anterior angle of cell distinctly greater than 90° (fig. 38). Frons distinctly shining metallic at least in part..**TEUCOPHORUS** (p. 80)

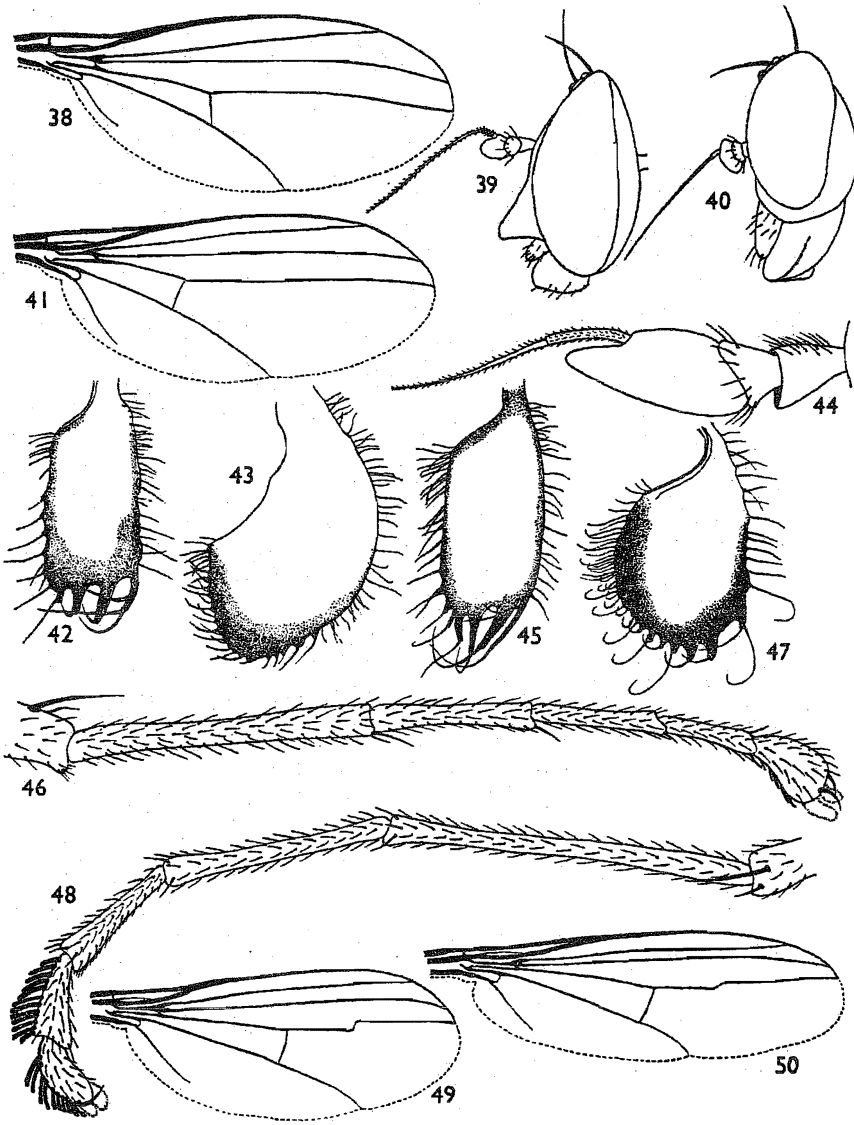
— Wing not as above. Frons entirely dulled by more or less dense dusting **SYMPYCNUS** (p. 78)

52 Anal vein absent. Radial, cubital and discal veins all more or less straight and distinctly divergent from near wing-base to apex (see fig. 32). Thorax with a distinct, even though shallow, prescutellar depression....**ACHALCUS** (p. 64)

— Anal vein well developed. Cubital and discal veins, at least in apical half, not divergent. No prescutellar depression....53

53 Hind metatarsus not more than half as long as 2nd segment. Palpi clear yellow with one or more yellow bristles at apex. Hind coxa, apart from the erect bristle, entirely bare on outer face....**SYSTENUS** (p. 64)

— Hind metatarsus hardly shorter than 2nd segment. Palpi entirely or mainly black in ground-colour, with the stronger bristles black, or if palpi mainly yellow then entirely black-haired. Hind coxa with or without a strong erect bristle on outer face, but always with more or less long pale or brownish hairs....**RHAPHIUM** (p. 55)



FIGS 38–50. 38, 41, ♀ wings. 38, *Teucophorus signatus* Zett. 41, *Chrysotus gramineus* Fall. 39–40, ♀ heads. 39, *Telmaturgus tumidulus* Radd. 40, *Diaphorus oculatus* Fall. 42–50, *Dolichopus* ♂. 42–43, 45, 47, Genital lamellae. 42, *phaeopus* Hal. 43, *atripes* Mg. 45, *nigripes* Fall. 47, *melanopus* Mg. 44, Antenna of *planitarsis* Fall. 46, 48, L. front tarsi. 46, *melanopus* Mg. 48, *plumitarsis* Fall. 49–50, Wings. 49, *migrans* Zett. 50, *discifer* Stann.

Genus **DOLICHOPUS** Latreille, 1796

The largest genus in the family consisting of large to medium-sized species. Many of the males have beautifully decorated legs, which play an important part in their courtship behaviour.

KEY TO SPECIES

Males

1 Femora entirely or largely black, or at least one pair completely encircled with black on at least part of their length....2
– Femora yellow, or if partly black then none completely encircled with black....3
2 Lower postocular cilia pale....4
– Lower postocular cilia black....10
3 Lower postocular cilia pale....19
– Lower postocular cilia black....59
4 Femora all entirely black, at most pale at extreme base and tip....5
– Femora variegated black and yellow, or some at least partly black and others yellow..8
5 Hind femur with a ventral fringe of long pale yellow setulose hairs or bristles. 4–4.5 mm (= *fuscipes* Haliday).... **clavipes** Haliday
Scotland: Ross & Cromarty, Aberdeens. & E. Lothian. England & Wales: Westmorland, Lancs., Yorks., Caernarvons., Lincs., Merioneths., Norfolk, Suffolk, Pembs., Glamorgan, Somerset, Kent & Dorset. Ireland: Down & Louth. Infrequent. vi–viii.
– Hind femur without this ventral fringe....6
6 Front and middle tibiae yellow. Face glistening white. 4–4.25 mm **vitripennis** Meigen
Fairly common in marshy localities from Sutherland in Scotland to s. coast of England. Ireland: Down, W. Mayo, W. Galway & S. Kerry. vi–vii.
– Front and middle tibiae black or dark brown....7
7 Face glistening white. Genital lamella with straight hindmargin, apical margin with rectangular teeth bearing longish claw-like bristles (fig. 42). 4–4.75 mm **phaeopus** Haliday
Scotland: Morays., Aberdeens. & Dunbartons. England & Wales: Yorks., Anglesey, Cheshire, Hunts., Pembs., Carmarthens., Glamorgan, Kent, Devon, Dorset & Hants. Ireland: Dublin. Uncommon and local. vii–ix.
– Face ochreous-yellow to brownish. Genital lamella with strongly rounded hindmargin, apical margin hardly dentate and bearing simple short bristles (fig. 43). 4.5–5.5 mm .... **atripes** Meigen
Frequent in suitable localities from Inverness-shire in Scotland to s. coast of England & Channel Is. Well distributed over most of Ireland. vi–viii.
8 Hind metatarsus with at least 2 dorsal bristles. Hind femur without a long ventral fringe. Face hairy. 4.5–5.5 mm (= *scotti* Verrall).... **andalusiacus** Strobl
Recorded from Hunts. (Little Paxton gravel pit), Berks. (Reading), Devon (Slapton Ley), Dorset (Studland & Parkstone) & Hants. (Highcliffe, Denny Bog & Hatchet Pond.) Scarce & very local. vii–ix.
– Hind metatarsus with only one dorsal bristle. Hind femur with a ventral fringe of long setulose hairs. Face bare....9
9 Ventral fringe on hind femur black. Hind tibia simple. Wing darkened at tip. 4.5–5 mm .... **signifer** Haliday
Only localities known: Pembs. (St. Davids), 1949 (H. W. Andrews), Glamorgan (Llangennith), vi. 1972 (Sir Christopher Andrewes & E. A. Fonseca), Cornwall (Padstow & St. Merryn), 1903–4 (C. G. Lamb). Ireland: W. Galway (Roundstone Bay), 1838 (A. H. Haliday). Rare & very local. v–vi, ix.
– Ventral fringe on hind femur pale yellow. Hind tibia somewhat swollen about middle, spindle-shaped. 4–4.5 mm (See above)....**clavipes** Haliday
10 Tarsi with one or more segments enlarged....11
— All tarsi simple....13
11 Apical segment of middle tarsus enlarged. 3rd antennal segment at least twice as long as wide (fig. 44). 4.75–5.75 mm....**planitarsis** Fallén
Scotland: Sutherland, Ross & Cromarty, Inverness., Aberdeens. & Fifes. England: Westmorland, Yorks., Suffolk, Somerset & Hants. Ireland: Down & Clare, Uncommon & local. iv–vi.

— Apical segment of front tarsus enlarged. 3rd antennal segment at most little more than 1.5 times as long as wide.....12

12 Apical segment of front tarsus dorsoventrally flattened, previous three segments all pale. Genital lamella more or less rectangular, whitish, the dark border narrow (fig 45). Both middle and hind femora with a patch of longer pale hairs at base beneath. 5–5.5 mm (= *falleni* Loew) .....**nigripes** Fallén
At present known only from Bure Nature Reserve (Norfolk) & Glanvilles Wootton (Dorset). Uncommon & very local. vi–viii.

— Apical segment of front tarsus laterally compressed (fig. 46). Genital lamella roundish, rusty yellow with a broad blackish border (fig. 47). 4.5–5 mm....**melanopus** Meigen
Known as British by 2 ♂♂ taken at Lyndhurst (Hants.), 26.vi.72 (G. H. Verrall), & one or more specimens taken in Ireland, Kenmare (S. Kerry), 1914 (H. W. Andrews).

13 Hind femur mainly yellow. 4–4.5 mm.....**rupestris** Haliday
Scotland: Shetland, Orkney, Inverness, Aberdeens., Argylls., Perths. & Peebles. England & Wales: Cumberland, Westmorland, Yorks., Anglesey, Caernarvons., Merioneths. & Brecknocks. Ireland: Down & Wicklow. A mountain & northern species, fairly common in the Shetland Isles. vii–viii.

— Hind femur entirely black, at most pale at extreme tip.....14

14 Front and middle tibiae black, at most pale at extreme base.....15

— Front and middle tibiae entirely or mainly yellow or brownish yellow.....17

15 Hind metatarsus with extremely numerous (12 to 14) dorsal bristles. Wing much darkened costally and towards apex. 4.75–5.5 mm.....**atratus** Meigen
Well distributed over most of the British Isles, including Channel Is. Fairly common. vi–vii.

— Hind metatarsus dorsally with much fewer bristles.....16

16 Middle femur with at least 2 preapical bristles. Wing with a darkish patch on anterior part near tip and with outer crossvein infuscated. Face dull brownish grey. About 5 mm .....**maculipennis** Zetterstedt
Only British records: Perths. (Stuchd an Lochan, 2000–3000 ft. & Craig na Caillach, 1500–2000 ft., both near Killin), 15.vi.32 (F. W. Edwards). Very rare.

— Middle femur with only one preapical bristle. Wing clear. Face glistening white. 5.5–6 mm (= *fastuosus* Haliday).....**picipes** Meigen
Scotland: Ross & Cromarty. England & Wales: Yorks., Cheshire, Notts., Lincs., Norfolk, Suffolk, Pembs., Monmouths., Oxon, Herts., Somerset, Wilts & Hants. Ireland: Down & W. Galway. Locally common. v–vii.

17 Middle femur with 2 preapical bristles. Hind tibia yellow, at most darkened at apex. 5–5.5 mm (= *fulgidus* Haliday *nec* Fallén).....**campestris** Meigen
England & Wales: Yorks., Derbys., Notts., Hunts., Norfolk, Suffolk, Glamorgan, Glos., Herts., Somerset, Wilts., Devon & Hants. Ireland: Down. Not uncommon around lakes and pools. vi–viii.

— Middle femur with only one preapical bristle. Hind tibia black.....18

18 Hind femur with a ventral fringe of long black setulose hairs. Face brownish yellow. 5–5.5 mm .....**lepidus** Staeger
Scotland: Inverness., Argylls. & Dumfries. England & Wales: Westmorland, Yorks., Notts., Norfolk, Suffolk, Glamorgan, Herts., Somerset, Dorset, Hants. (incl. I.O.W.) & Sussex. Ireland: Waterford. Local but not uncommon. v–vii.

— Hind femur without this ventral fringe. Face glistening white. 5.25–5.75 mm
laticola Verrall
Only known localities: Ormesby Broad & Bure Nature Reserve (both Norfolk). The female was unknown until found in some numbers at Bure in 1953. vi–vii.

19 Tarsi with one or more segments enlarged, plumose (or pennate), silvered or white..20

— All tarsi simple.....31

20 Front tarsus modified.....21

— Middle tarsus modified.....24

21 Front tarsus with 4th and 5th segments enlarged, laterally compressed and coarsely fringed dorsally (fig. 48). 5.5–6.5 mm.....**plumitarsis** Fallén
Only confirmed British record: 1♂, 1♀, Shippea Hill Farm, nr. Ely (Cambs.), 9.vi.43 (Sir Guy A. K. Marshall).

— Front tarsus with only 5th segment enlarged, 4th segment cylindrical and sometimes rather long and slender.....22

22 Squamal fringe pale. Hind femur with at least 2 preapical bristles. 5.75–7 mm
claviger Stannius

Scotland: Ross & Cromarty, Inverness. & E. Lothian. England & Wales: Durham, Yorks., Anglesey, Caernarvons., Notts., Merioneths., Staffs., Hunts., Norfolk, Suffolk, Glamorgan, Glos., Oxon., Somerset, Wilts., Surrey, Kent & Dorset. Ireland: W. Mayo. Common locally. v–vii.

— Squamal fringe black. Hind femur with only one preapical bristle.....23

23 Front tarsus with 4th and 5th segments about equal in length. Middle metatarsus with a dorsal bristle. First bend of discal vein almost angular (fig. 49), often with a short hang-vein. 4.75–5.5 mm (= *confusus* Zetterstedt).....**migrans** Zetterstedt
At present known only from inland sandy areas of Norfolk & Suffolk. The author found it abundant in long grass near Barton Mills (Suffolk) in June 1974. Very local. vi–vii.

— 4th segment of front tarsus more than twice as long as 5th. Middle metatarsus without bristles dorsally. Both bends of discal vein smoothly rounded and weakly formed (fig. 50). 5.5–6.25 mm (= *nigricornis* Parent *nec* Meigen).....**discifer** Stannius
Scotland: Shetland, Ross & Cromarty, Inverness., Aberdeens., Ayrs. & Dumfries. England & Wales: Cumberland, Yorks., Notts., Merioneths., Staffs., Suffolk, Glamorgan, Glos., Herts., Somerset, Wilts., Kent, Devon, Hants. & Sussex. Ireland: much of south & west. Fairly common. v–viii.

24 Middle tarsus with basal segment pennate laterally, without white or silvered segments (figs 51, 52).....25

— Middle tarsus with basal segment simple and with one or more segments white or silvered on at least anterior face.....26

25 Middle tibia with a longitudinal narrow dark streak anterodorsally; whitish at apex. Apex of hind tibia, and whole of metatarsus, black or brownish black. 4–5 mm (= *pennitarsis* Fallén).....**plumipes** Scopoli
Very common from extreme north of Scotland (incl. Shetland & Orkney) to s. coast of England. Ireland: Down, W. Mayo, Louth, S. Kerry & Cork. v–x.

— Middle tibia without a dark streak; yellow to apex. Hind tibia entirely, and metatarsus basally, yellow. 4.5–5.5 mm.....**wahlbergi** Zetterstedt
Scotland: Inverness-shire. England & Wales: Cumberland, Yorks., Notts., Herefords., Hunts., Norfolk, Pembs., Oxon, Herts., Essex, Middx., Somerset, Wilts., Surrey, Devon, Hants. (incl. I.O.W.) & Sussex. Ireland: W. Mayo, S. Kerry, W. Cork & Waterford. Uncommon & rather local. vi–viii.

26 Middle tarsus with 3rd, 4th and 5th segments silvery white on anterior face. Segments 2 to 5 slightly laterally compressed (fig. 56). 5–5.5 mm ....**argyrotarsis** Wahlberg
Originally established as British by 1 ♀, Nairn (Nairns.), 7.vi.05 and 1 ♂, Nethybridge (Inverness.), 19.vi.05 (both Col. Yerbury); a further record of 1 ♂, Tomich (Inverness.), 13.vi.62 (P. Skidmore). The author found it in considerable numbers at numerous localities in Inverness-shire between 21.vi and 8,vii.75.

— Middle tarsus with at most only 4th and 5th segments silvery white on anterior face..27

27 4th and 5th segments of middle tarsus silvery white on anterior face. Hind tibia with a distinct swelling posteriorly on basal half. Hind femur with only one preapical bristle 28

— Only 5th segment of middle tarsus white or silvered. Hind tibia simple. Hind femur usually with 2 or more preapical bristles.....30

28 Middle tarsus without laterally compressed segments. Swelling on hind tibia rather short, oval, with a small dark tubercle at middle (fig. 57). 3rd antennal segment twice as long as wide. 4–5 mm.....**signatus** Meigen
Scotland: Sutherland, Ross & Cromarty, Inverness, Aberdeens., Argylls., Perths. & Dunbartons. England & Wales: Yorks., Notts., Merioneths., Norfolk, Suffolk, Pembs., Glamorgan, Somerset, Surrey, Devon, Hants. & Sussex. Ireland: W. Galway, Wicklow, Kerry & Waterford. Moderately common but rather local. vi–viii.

— 2nd and 3rd segments of middle tarsus distinctly laterally compressed, appearing somewhat dilated in lateral view (fig. 53). Swelling on hind tibia more extended lengthwise, without tubercle at middle (fig. 54). 3rd antennal segment not more than 1.5 times as long as wide.....29

29 Swelling on hind tibia posteriorly with a small roundish patch at middle devoid of black setulae and covered with microscopic pale yellow pile which is continued down to tip of tibia in a moderately broad posterodorsal stripe. Scutellum with rather numerous pale hairs on hind face in more than one fringe. Wing with bends of discal vein weakly formed and very obtuse. 3rd antennal segment with a more acute tip. 5–6 mm .....**pennatus** Meigen

From Outer Hebrides & Sutherland in Scotland to s. coast of England. Ireland: Down, Dublin & Waterford. Common. v–viii.

— Middle area of hind tibial swelling without pale yellow pile, but almost entirely covered with tiny black setulae, the longitudinal stripe of pale yellow pile to tip of tibia appearing extremely narrow from certain points of view. Scutellum with only a single sparse fringe of about 10 pale hairs on lower margin of hind face, sometimes 2–3 isolated hairs above. Bends of discal vein more pronounced and less obtuse. Tip of 3rd antennal segment more obtuse. 5–6.5 mm ..... **subpennatus** Fonseca

Recorded from Scotland: Sutherland, Nairns., Inverness., Dunbartons. & Midlothian. England & Wales: Yorks., Notts., Cardigans., Glamorgan, Glos., Oxon, Herts., Berks., Somerset, Wilts., Dorset & Hants. Ireland: Kerry (Ross I., Killarney). An overlooked species which will doubtless prove to be more common and widely distributed than appears at present. v–vii.

30 Middle tarsus with 3rd, 4th and 5th segments rather strongly laterally compressed, 3rd and 4th with long and coarse fringe above, 5th mainly white, much shorter than 4th (fig. 55). Hind tibia entirely, and metatarsus largely, yellow. 5–6.75 mm **popularis** Wiedemann

Common and well distributed over whole of British Isles. vi–viii.

— Middle tarsus without laterally compressed segments, 3rd and 4th segments simple, 5th entirely silvery white, as long as 4th. Hind tibia extensively darkened, metatarsus entirely black. 4.5–5 mm ..... **urbanus** Meigen

Scotland: Shetland, Sutherland, Ross & Cromarty, Inverness., Aberdeens., Argylls., Perths. & Dumfries. England & Wales: Yorks., Anglesey, Caernarvons., Merioneths., Montgomerys., Norfolk, Cambs., Suffolk, Pembs., Dorset & Hants. Ireland: Down, W. Galway, Wicklow, S. Kerry & W. Cork. Fairly frequent. vi–vii.

31 Hind femur with fringe of long setulose hairs beneath, at least some of the hairs as long as greatest depth of femur 32

— Hind femur without this fringe of long hairs, at most with hairs hardly more than half as long as greatest depth of femur 39

32 Wing with at least the first bend of discal vein rectangular, almost always bearing a short hang-vein (fig. 58). Hind metatarsus with only one dorsal bristle. 5–5.75 mm **griseipennis** Stannius

Common from E. Lothian in Scotland to s. coast of England and Is. of Scilly. Ireland: Down (nr. Holywood). v–ix.

— Both bends of discal vein normal, smoothly rounded and without trace of hang-vein 33

33 Front tibia with a long apico-ventral bristle (fig. 59 †). Hind metatarsus with only one dorsal bristle. Ventral fringe on hind femur dark 34

— Front tibia without apico-ventral bristle. Hind metatarsus with at least 2 dorsal bristles. Ventral fringe on hind femur pale 35

34 Hind tibia broadly black at apex, the metatarsus entirely black. Wing with a distinct dark patch at tip. 4.5–5 mm (See above) ..... **signifer** Haliday

— Hind tibia entirely yellow, or practically so, the metatarsus yellow on basal half. Wing uniformly faintly greyish. 5–5.75 mm (See above) ..... **griseipennis** Stannius

35 Median segments of front tarsus with a regular fringe of more or less erect, uniformly short hairs on anterior or anteroventral face. (Care must be exercised with regard to this character, as the tarsal hairs are somewhat inconspicuous in *virgultorum*) .. 36

— Front tarsus with only the normal decumbent setulae on all surfaces. Front coxa white-haired. 4.5–5 mm ..... **arbustorum** Stannius

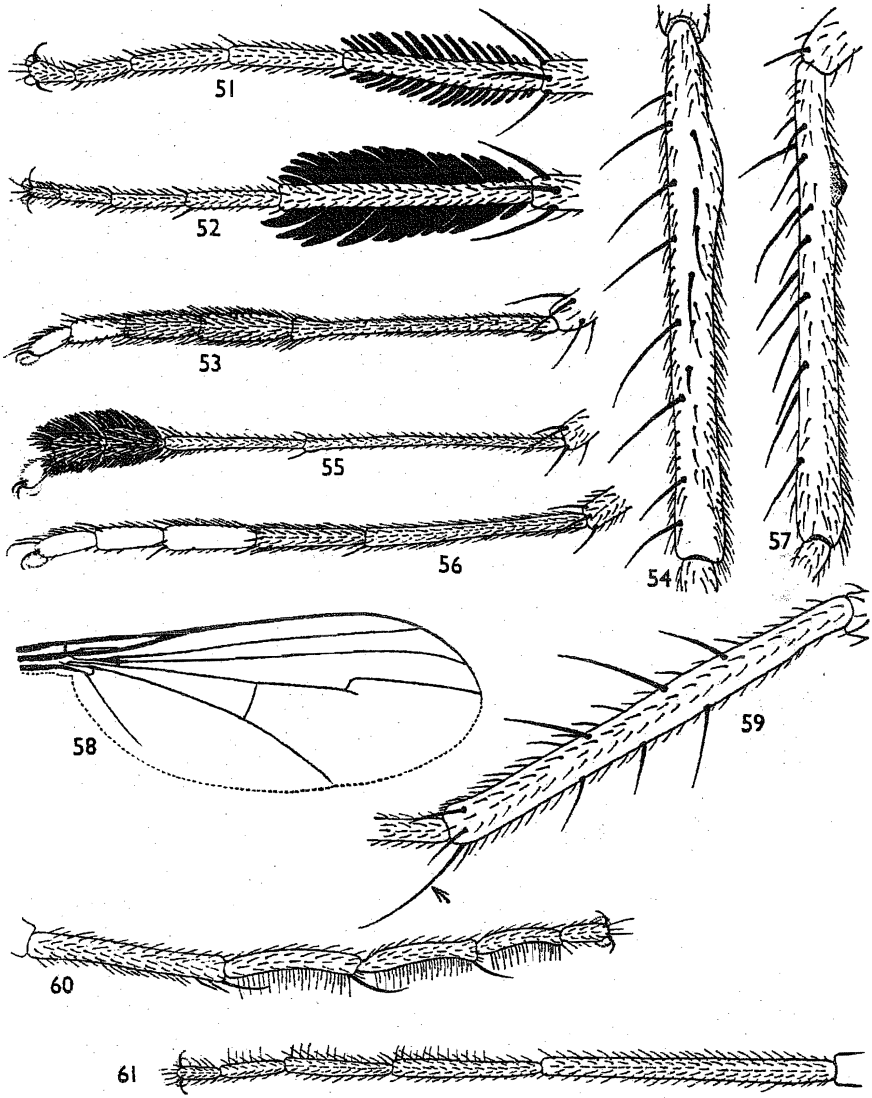
Recorded from Herefords. (Devereux Pool), Glamorgan (Nicholaston Wood), Somerset (Shepton Mallet), Kent (Eridge Green, Wadhurst & Woolwich Wood), Dorset (Studland) & Sussex (Seaford). Scarce & very restricted in habitat. vi–vii.

36 Front tarsus, in dorsal view, with 2nd, 3rd and 4th segments distinctly curved; 1st, 2nd and 3rd each with a long curved bristle at tip of anteroventral face (fig. 60). Hind metatarsus entirely black. 5–5.5 mm (=*pseudocilifemoratus* Stackelberg) **cilifemoratus** Macquart

Only known British records: 1♀, Balerno (Midlothian), 11.vii.20 (J. Waterston) and 1♂, Porthcawl (Glamorgan), 9.vii.06 (Col. Yerbury).

— All segments of front tarsus quite straight in dorsal view, 3rd segment always without the apical bristle 37

37 Wing almost without costal stigma. Front tarsus with the erect short hairs rather inconspicuous and confined to apical three-fourths or less of each segment, without anteroventral bristle at tip of any segment (fig. 61). Hind metatarsus mainly clear yellow. 4.5–5 mm ..... **virgultorum** Haliday



FIGS 51–61. *Dolichopus* ♂. 51–53, 55–56, Middle tarsi. 51, *plumipes* Scop. 52, *wahlbergi* Zett. 53, *pennatus* Mg. 55, *popularis* Wied. 56, *argyrotarsis* Wahlb. 54, 57, L. hind tibiae. 54, *pennatus* Mg. 57, *signatus* Mg. 58, Wing of *griseipennis* Stann. 59, L. front tibia of *signifer* Hal. 60–61, L. front tarsi. 60, *cilifemoratus* Macq. 61, *virgultorum* Hal.

Recorded from Glos., Berks., Somerset, Devon, Hants. (incl. I.O.W.) & Sussex. Uncommon & very local. vii–ix.

— Costal stigma well developed. Front tarsus with erect hairs along whole length of median segments; at least the metatarsus with an apical bristle. Hind metatarsus entirely black 38

38 1st and 2nd segments of front tarsus each with a strongish curved apical bristle (fig. 62). 2nd and 3rd antennal segments mainly yellow. 5.5–6.5 mm..... **festivus** Haliday
Has been taken rarely in Shetland & Dunbartons. in Scotland. England & Wales: fairly common from Merioneths. to Notts. southwards. Ireland: Down (nr Holywood) & Waterford (Stradbally). vi–ix.

— Only the basal segment of front tarsus with a shorter, more or less straight apical bristle (fig. 63). 2nd and 3rd antennal segments usually largely darkened. 4.25–5 mm. (=*cilifemoratus* auctt. *nec* Macquart)..... **trivialis** Haliday
Very common from E. Lothian in Scotland to s. coast of England. Ireland: Down, W. Mayo, Wicklow & Waterford. vi–viii.

39 Front tibia with a long apico-ventral bristle (see fig. 59 ↑)..... 40

— Front tibia without apico-ventral bristle..... 48

40 Basal antennal segments much lengthened, antenna almost twice as long as head, 3rd segment only little longer than wide (fig. 64). Hind femur with 3 or more preapical bristles. 6–6.5 mm (s.g. *Hygroceleuthus* Loew 1857)..... **latipennis** Fallén
Scotland: Caerlaverock N.N.R. (Dumfries), 17.vi.70 (J. M. Nelson) & 3.vi.75 (E. A. Fonseca). England: R. Chet & Reedham (Norfolk), vi.37 (L. Parmenter); Southwold saltmarsh (Suffolk), 5.vii.08 & Aldeburgh (Suffolk), 27 & 30.v.19 (both J. E. Collin); Goring Heath (Oxon), 29.v.64 (E. Burtt). Recorded from Ireland (without locality).

— Basal antennal segments normal, antenna not or hardly longer than head, or if much longer then 3rd segment quite 3 times as long as wide. Hind femur with only one preapical bristle 41

41 At least first bend of discal vein more or less rectangular and usually bearing a short hang-vein (fig. 65) 42

— Discal vein normal, both bends obtuse, smoothly curved and without hang-vein.... 43

42 Squamal fringe black. Hind metatarsus almost entirely yellow. Apical margin of genital lamella with strong curved bristles, which are as long as lamella (fig. 66). 4.5–5.5 mm (=*jucundus* Haliday)..... **niditus** Fallén
Scotland: Sutherland, Morays. & Inverness. England & Wales: Cumberland, Westmorland, Lincs., Herefords., Norfolk, Suffolk, Glamorgan, Somerset, Kent & Hants. Ireland: Down, W. Mayo, Louth, W. Galway, Kerry & Waterford. Rather scarce. vii–viii.

— Squamal fringe yellow. Hind metatarsus entirely black. Genital lamella with much shorter bristles on apical margin. Face extending below level of lower eye-margin. 4.75–5.5 mm (s.g. *Macrodolichopus* Stackelberg 1930)..... **diadema** Haliday
Scotland: Inverness., Argylls. & E. Lothian. England and Wales: Westmorland, Yorks., Anglesey, Lincs., Montgomerys., Norfolk, Cambs., Suffolk, Glos., Essex, Somerset, Wilts., Kent, Devon, Dorset & Hants. (incl. I.O.W.). Ireland: Down, W. Galway, Dublin & S. Kerry. Usually frequent where it occurs. vi–ix.

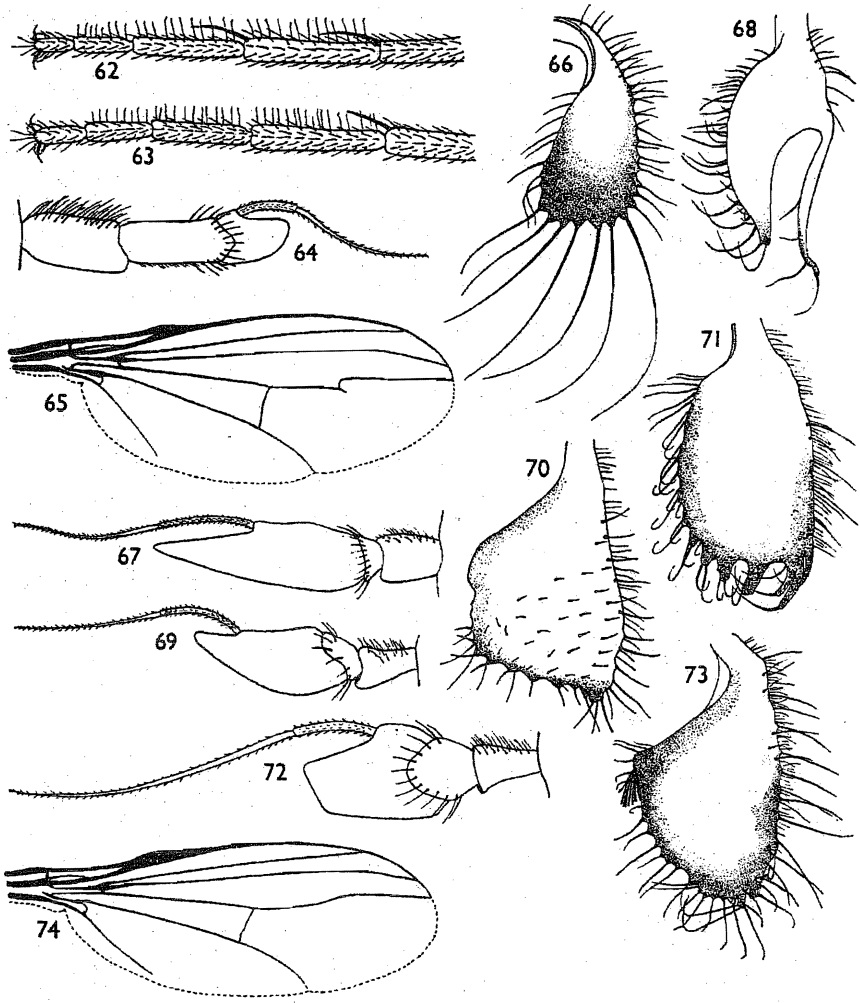
43 Squamal fringe pale. Hind coxa entirely or mainly yellow..... 44

— Squamal fringe black. (*D. linearis*, which may have pale hairs among the black ones, is included in both sections)..... 45

44 3rd antennal segment about 3 times as long as wide (fig. 67). Hind tibia entirely yellow, at least on anterior face. 3.5–4 mm..... **longicornis** Stannius
Scotland: Morays., Inverness., Aberdeens. & Fifes. England & Wales: Yorks., Caernarvons., Notts., Merioneths., Salop, Staffs., Hunts., Norfolk, Cambs., Suffolk, Glamorgan, Oxon, Berks., Wilts., Surrey, Kent, Dorset, Hants. & Sussex. Ireland: Down (nr Holywood) & N. Galway (Lettergesh). Uncommon & local. vi–viii.

— 3rd antennal segment at most 1.5 times as long as wide. Hind tibia usually darkened at apex both anteriorly and posteriorly. 4–4.5 mm ..... **linearis** Meigen
Scotland: Bonawe, nr Taynuilt (Argylls.), viii. 19 (J. Waterston); Blairgowrie (Perths.), 30.vi.13 (A. E. J. Carter). England: Doncaster (Yorks.), 3, 6.viii.75 (P. Skidmore); Upware, 14.viii.75 & Burwell, 26.vi.80 (Cambs.), Thetford (Norfolk), 26.vi.76 & Brighton (Sussex), 12.vi.99 (all G. H. Verrall); Blackheath (Kent), 17.vii.74 (A. A. Allen); Kettlethorn (N.F., Hants.), 9.vii.66 (L. Parmenter). Rare.

45 Face yellowish or brownish. Hind tibia black on apical fourth to third, somewhat dilated at apex. 4–4.5 mm (=*puncticornis* Zetterstedt)..... **notatus** Staeger



FIGS 62–74. *Dolichopus* ♂. 62–63, L. front tarsi. 62, *festivus* Hal. 63, *trivialis* Hal. 64, 67, 69, 72, Antennae. 64, *latipennis* Fall. 67, *longicornis* Stann. 69, *acuticornis* Wied. 72, *agilis* Mg. 65, 74, Wings. 65, *nitidus* Fall. 74, *acuticornis* Wied. 66, 68, 70–71, 73, Genital lamellae. 66, *nitidus* Fall. 68, *strigipes* Verr. 70, *nubilus* Mg. 71, *caligatus* Wahlb. 73, *andalusiacus* Strob.

Recorded from Morays. in Scotland & from Anglesey, Cardigans., Cambs., Suffolk, Glamorgan & Devon in England & Wales. Scarce & very local. vi–vii.

— Face glistening white. Hind tibia simple and yellow, at most more narrowly darkened at apex 46

46 Face hairy (the white hairs on the glistening white face are easily overlooked). Antenna entirely black, except for tip of 1st segment beneath. 3.75–4.5 mm
latelimbatus Macquart

Recorded from Hunts., Norfolk, Suffolk, Glos., Herts., Somerset, Wilts., Devon, Dorset, Hants. (incl. I.O.W.) & Sussex. Uncommon. v–ix.

— Face bare. At least 1st antennal segment yellow along whole length beneath.....47

47 Hind metatarsus yellow or brownish yellow on about basal half. Hind coxa black on at least basal two-thirds of outer face. Costal half of wing darkened on apical third. 3.5–4 mm ..... **sabinus** Haliday

Scotland: E. Lothian (Aberlady). England & Wales: Lancs., Yorks., Anglesey, Lincs., Merioneths., Norfolk, Suffolk, Glamorgan, Essex, Somerset, Kent, Devon, Dorset & Hants. (incl. I.O.W.). Ireland: Dublin & N. Kerry (Tarbert & Killarney). Not uncommon on sea coast. vii–viii.

— Hind metatarsus entirely black, paler sometimes at extreme base. Hind coxa entirely or mainly yellow. Wing clear, at most slightly tinged with yellow. 4–4.5 mm (See above) ..... **linearis** Meigen

48 Squamal fringe pale. (A few black hairs may be present about middle of squama)..49

— Squamal fringe entirely black.....52

49 Genital lamella entirely yellow, very deeply incised near hindmargin (fig. 68). Hind femur with a dark posteroventral streak, and usually with a fringe of pale fine hairs beneath, which are little more than half as long as greatest depth of femur. Hind tibia entirely yellow. 4.5–5 mm..... **strigipes** Verrall

Suffolk (Woodbridge, Ipswich & Orford), Essex (Flatford & Fingeringhoe), Kent (Pegwell Bay & Faversham Creek), Dorset (Arne & Holton Heath) & Hants. (Fawley, Bucklers Hard & Yarmouth & Shalfleet in I.O.W.). Uncommon and extremely local. vi–viii.

— Genital lamella not as above. Hind tibia darkened at apex.....50

50 3rd antennal segment at least twice as long as wide (fig. 69). Hind coxa almost entirely yellow. 3.5–4 mm..... **acuticornis** Wiedemann

Scotland: Inverness., Morays. & Aberdeens. England & Wales: Lancs., Yorks., Merioneths., Suffolk, Carmarthens., Glamorgan & Kent. Ireland: N. Galway (Lettergesh) & S. Kerry (Waterville). Sea coast species; uncommon. vi–viii.

— 3rd antennal segment only little longer than wide. Hind coxa mainly black.....51

51 Face hairy. Antenna black, at most reddish at tip of 1st segment beneath. Genital lamella without rectangular teeth or claw-like bristles (fig. 70). Hind femur without ventral fringe. 3.75–4.5 mm (=*acteus* Haliday = *inquinatus* Haliday) **nubilus** Meigen

Common from Sutherland in Scotland to s. coast of England & Channel Is. Occurs sparingly in Shetland Isles. Ireland: Down, W. Mayo, Louth, Meath, W. Galway, Wexford & S. Kerry. v–ix.

— Face bare. At least 1st antennal segment yellow along whole length beneath. Genital lamella with rectangular teeth and claw-like bristles on apical margin (fig. 71). Hind femur with a complete fringe of short fine pale hairs beneath. 4.5–5 mm (=*flavipes* Parent *nec* Stannius)..... **caligatus** Wahlberg

Only British records known: Forres (Morays.), 27.viii.04 (J. J. F. X. King); Loch Pityoulish, 17.viii.52 & Aviemore, 12.vii.56 (Inverness.) (both Sir Christopher Andrewes); Aberfoyle, 21.viii.06 & Blairgowrie, 8.vii.13 (Perths.) (both A. E. J. Carter).

52 Hind metatarsus with only one dorsal bristle. Arista inserted at about basal third of 3rd antennal segment (fig. 72). 3.5–4 mm..... **agilis** Meigen

Only authentic British records known: 1♂, Allerthorpe (Yorks.), 2.vii.27 (C. A. Cheetham); 2♂♂, Shippea Hill Farm, nr Ely (Cambs.), 9.vi.43 (Sir Guy A. K. Marshall); 1♂, Marcham (Berks.), 8.vii.70 (P. J. Chandler).

— Hind metatarsus with at least 2 dorsal bristles.....53

53 Antenna black, at most reddish at tip of 1st segment beneath.....54

— At least 1st antennal segment yellow along whole length beneath.....55

54 Face hairy. Hind femur without a ventral fringe of pale hairs. Genital lamella more or less triangular (fig. 73). 4.5–5.5 mm (See above)..... **andalusiacus** Strobl

— Face bare. Hind femur with a complete fringe of short pale hairs beneath. Genital lamella oval (fig. 71). 4.5–5 mm (See above)..... **caligatus** Wahlberg

55 Costal stigma of wing about twice as long as outer crossvein (fig. 74). 3rd antennal segment at least twice as long as wide. 3.5–4 mm (See above) **acuticornis** Wiedemann

— Costal stigma quite short.....56

56 Hind tibia posteriorly with a distinct swelling in basal half, the swelling occupying about one-third length of tibia and quite devoid of setulae on posterior face (fig. 75).

Face golden-yellow to ochreous. Antenna black, except 1st segment beneath. About 5 mm ..... **lineatocornis** Zetterstedt
Only British records known: 2♂♂, Cambridge (Cambs.), 15.vii.01 (F. Jenkinson) & 1♂, Lyndhurst (Hants.), 26.vi.72 (G. H. Verrall).

— Hind tibia without trace of swelling in basal half 57

57 Arista inserted at about apical third of 3rd antennal segment, latter unusually large, more than 1.5 times as long as wide (fig. 76). 2nd antennal segment partly yellow, at least on inside face, and 1st segment broadly black along whole length dorsally. 3.5–4 mm ..... **mediicornis** Verrall
Only British records known: Lyndhurst (Hants.), 26.vi.72 & Fawley (Hants.), 21.vi.75 (both G. H. Verrall); East Parley Common (Hants.), 21.vi.53 (J. Cowley); Llandeloy (Pembs.), 20.vi.73 (E. A. Fonseca).

— Arista inserted practically at middle of 3rd antennal segment, latter smaller, not or hardly longer than wide. Basal antennal segments without above combination of characters 58

58 2nd antennal segment at least partly, and 1st segment entirely, yellow. Face pale yellowish. Middle metatarsus entirely black or dark brown. Front coxa entirely yellow. Hind tibia with the normal clothing of decumbent black setulae on at least posterior face. 4–5 mm (=*thalassinus* Haliday *nec* Mik) ..... **simplex** Meigen
Not uncommon from Sutherland in Scotland to s. coast of England & Is. of Scilly. Ireland: Down, Galway, Mayo, Wicklow & Kerry. v–ix.

— 2nd antennal segment entirely black, 1st segment only narrowly yellow beneath. Face glistening white. Middle metatarsus mainly yellow. Front coxa blackish at base. Hind tibia devoid of normal small setulae on a large part of dorsal and posterior surfaces. 4.5–5 mm (See above) ..... **caligatus** Wahlberg

59 Middle metatarsus with a dorsal bristle. Middle tibia with 2 or more bristles beneath 60

— Middle metatarsus without bristles dorsally. Middle tibia with only one bristle beneath 61

60 Middle and hind femora each with 2–5 preapical bristles. Front tarsus simple. 6–7 mm (=*aeneus* Degeer) ..... **ungulatus** Linné
Very common over whole of British Isles. v–viii.

— Middle and hind femora each with only one preapical bristle. Apical segment of front tarsus strongly enlarged. 6–7 mm ..... **brevipennis** Meigen
Scotland: Shetland, Sutherland, Ross & Cromarty, Inverness. & E. Lothian. England & Wales: Durham, Yorks., Anglesey, Caernarvons., Cheshire, Derbys., Merioneths., Hunts., Norfolk, Cambs., Suffolk, Pembs., Glamorgan, Somerset, Wilts., Kent & Dorset. Ireland: Down & W. Mayo. Not uncommon but local. vi–vii.

61 Face brownish or ochreous yellow. Genital lamella entirely brown with darker apical margin. 3rd antennal segment about 1.5 times as long as wide. Front tarsus simple. 4–4.5 mm (See above). ..... **rupestris** Haliday

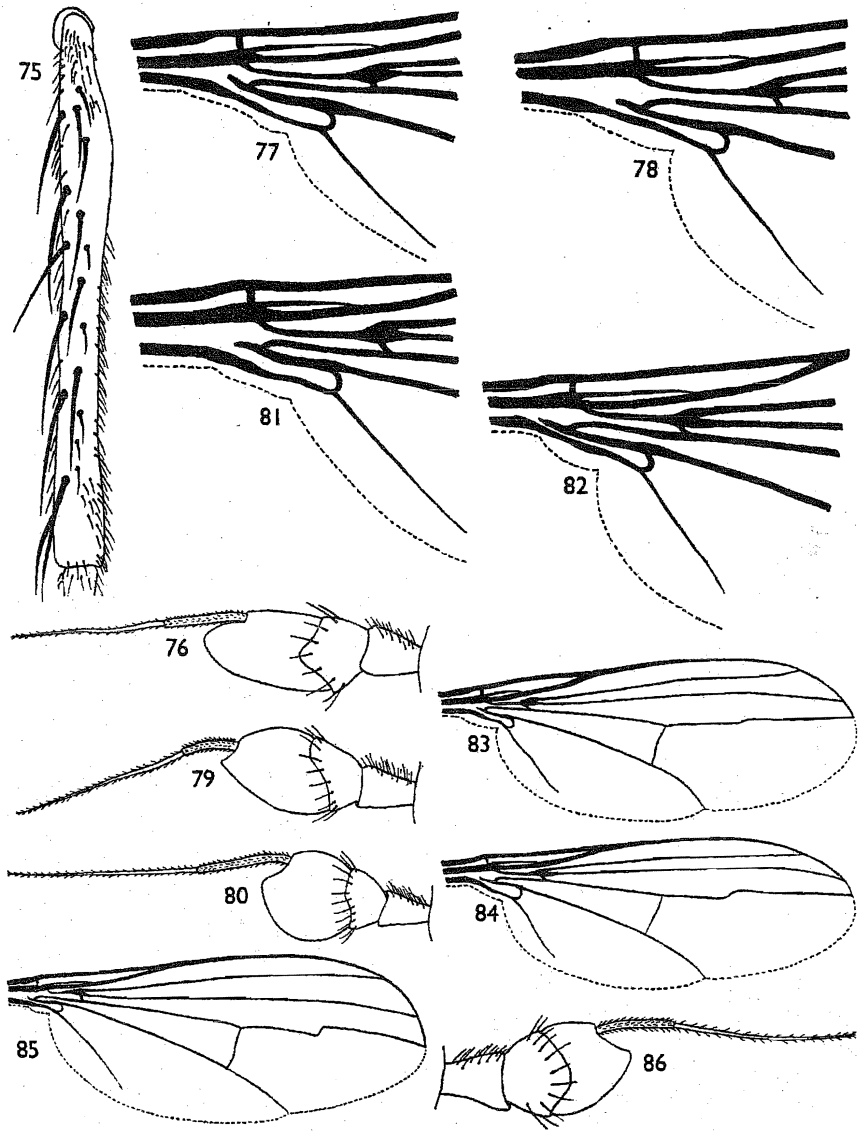
— Face glistening white. Genital lamella mainly white with blackish apical margin. 3rd antennal segment hardly longer than wide. Front tarsus with apical segment slightly enlarged, laterally compressed. 4.5–5 mm (=*equestris* Haliday) **longitarsis** Stannius
Scotland: Perths. (Pitlochry). England & Wales: Westmorland (Shap), Herefords. (Pembridge), Norfolk (Bure N.R., Repton & Fowlmere), Cambs. (Chippenham & Wicken Fens), Glamorgan (Oxwich & Porthcawl), Somerset (Sharpham), Dorset (The Moors, Wool) & Hants. (Woolmer Forest). Ireland: Down (nr Holywood) & W. Mayo (Westport & Clare I.). Uncommon. vi–viii.

Females

(For synonymy and distribution see key to males)

1 Femora entirely or largely black, at least one pair completely encircled with black on at least part of their length 2
– Femora yellow, or if partly black then none completely encircled with black 3
2 Lower postocular cilia pale 4
– Lower postocular cilia black 10
3 Lower postocular cilia pale 19
– Lower postocular cilia black 54

4 Femora all entirely black, at most pale at extreme base and tip.....5
– Femora variegated black and yellow, or some at least partly black and others yellow. Hind metatarsus with only one dorsal bristle.....9
5 Front and middle tibiae black or dark brown, sometimes paler dorsally.....6
– Front and middle tibiae yellow.....7
6 Face glistening white. Basal segment of arista slightly more than half as long as apical segment. Stem of haltere usually distinctly brownish, at least on basal half, in contrast with the clear yellow knob. Anal lobe of wing less well developed, anal angle decidedly greater than 90° (fig. 77). 3.75–4.25 mm.....**phaeopus** Haliday
– Face distinctly greyish, sometimes faintly yellowish above. Basal segment of arista obviously less than half as long as apical segment. Stem of haltere unicolorous with the yellow knob. Anal lobe better developed, anal angle only little more than 90° (fig. 78). 4.5–5.75 mm.....**atripes** Meigen
7 Hind metatarsus with only one dorsal bristle. 1st antennal segment yellow along whole length beneath. Hind tibia yellow, darkened only at apex. 4–4.75 mm **clavipes** Haliday
– Hind metatarsus with at least 2 dorsal bristles. Antenna entirely black. Hind tibia more extensively darkened.....8
8 Hind tibia black, in palest specimens at most somewhat brownish at base. Basal segment of arista more than half as long as apical segment. 3.75–4.25 mm **phaeopus** Haliday
– Hind tibia mainly yellow, darkened at apex and usually also along posterior face. Basal segment of arista less than half as long as apical segment. 3.5–4.5 mm **vitripennis** Meigen
9 Both front and hind femora mainly or largely black. Basal segment of arista quite short. Middle tibia with the ventral bristle distinctly before the adjacent posterodorsal. 4.–4.75 mm..... **clavipes** Haliday
– Hind femur only narrowly black along whole length dorsally, and ventrally at base. Basal segment of arista more than half as long as apical segment. Middle tibia with the ventral bristle distinctly beyond adjacent posterodorsal. 4.25–5 mm **signifer** Haliday
10 Middle femur yellow, at most black at extreme base or on ventral surface. 3.75–4.5 mm **rupestris** Haliday
— Middle femur black, at most yellowish at apex.....11
11 Middle tibia with 2 or more median bristles beneath.....12
— Middle tibia with only one median bristle beneath.....13
12 Arista almost subapical (fig. 79). Middle and hind femora each with only one preapical bristle. Front and middle tibiae yellowish. 4.75–5.75 mm **planitarsis** Fallén
— Arista inserted at about apical third of 3rd antennal segment (fig. 80). Middle and hind femora each with 2 or 3 preapical bristles. Legs black; at most the knees yellowish. 5.75–6 mm .....**maculipennis** Zetterstedt
13 Front and middle tibiae black or dark brown, at most yellowish at base.....14
— Front and middle tibiae entirely or mainly yellow.....17
14 Middle femur, beneath at base, with a patch of rather longer pale yellow hairs. 4.5–5.5 mm .....**nigripes** Fallén
— Middle femur without this patch of pale hairs.....15
15 Wing distinctly darkened on costal half, anal lobe not well developed, anal angle very obtuse (fig. 81). Face entirely bare. Middle metatarsus entirely black. Knee of middle leg not markedly yellow. 4.75–5.25 mm.....**atratus** Meigen
— Wing clear, or more usually uniformly faintly tinted.....16
16 Clypeus bare, face above sometimes with a vertical line of hairs. Anal lobe well developed, anal angle not much greater than 90° (fig. 82). Middle metatarsus distinctly yellow or brownish yellow at base. All knees rather broadly yellow. 5.5–6.5 mm ..... **picipes** Meigen
— Clypeus hairy, at least on sides and near mouthedge. Middle metatarsus entirely black. 4.25–4.75 mm .....**melanopus** Meigen
17 Middle femur with 2 preapical bristles. Hind tibia yellow, at most narrowly darkened at apex. 5–5.5 mm .....**campestris** Meigen
— Middle femur with only one preapical bristle. Hind tibia at least darkened posteriorly and more broadly black at apex.....18
18 Hind tibia black, at most yellowish at extreme base. Wing with bends in discal vein hardly formed (fig. 83). Frons steel-blue to aeneous black. 5–6 mm **aticola** Verrall



FIGS 75–86. *Dolichopus*. 75, L. hind tibia of *lineatocornis* Zett. ♂. 76, 79–80, 86, Antennae. 76, *medicornis* Verr. ♂. 79, *plantitarsis* Fall. ♀. 80, *maculipennis* Zett. ♀. 86, *plumitarsis* Fall. ♀. 77–78, 81–82, ♀ wing-bases. 77, *phaeopus* Hal 78, *atripes* Mg. 81, *atratus* Mg. 82, *picipes* Mg. 83–85, ♀ wings. 83, *laticola* Verr. 84, *lepidus* Staeg. 85, *plumitarsis* Fall.

— Hind tibia largely yellowish, at least on dorsal face. Discal vein with more pronounced bends (fig. 84). Frons bronze-green. 5.5–6.25 mm.... **lepidus** Staeger

19 Face uniformly hairy. Antenna entirely or almost entirely black. Hind femur with only one preapical bristle. Hind metatarsus black.....20

— Face bare, or at most with hairs on clypeus and a few isolated hairs above, but in this case either hind femur with 2 or 3 preapical bristles, or hind metatarsus yellow basally 22

20 Hind tibia entirely yellow. Front femur, often also middle femur, slightly but distinctly darkened in part, at least not uniformly yellow like the tibiae. Numerous (7 or 8) black bristles immediately in front of prothoracic spiracle. 5–5.5 mm **andalusiacus** Strobl

— Hind tibia distinctly darkened at apex, especially on posterior face. All femora equally pale. Fewer (usually not more than 5) black bristles in front of prothoracic spiracle.....21

21 Hind tibia only brownish at apex, even on posterior face. Middle tibia with ventral bristle almost level with the adjacent posterodorsal, latter close to the adjacent anterodorsal. 4th section of costa (between radial and cubital veins) about 2.5 times as long as 5th section. 4–4.75 mm.....**latelimbatus** Macquart

— Hind tibia distinctly blackish posteriorly at apex, slightly less so on anterior face. Middle tibia with ventral, posterodorsal and anterodorsal bristles not forming such a close group, latter pair usually separated by about width of tibia. 4th section of costa not more than twice as long as 5th. 4.25–5.25 mm.....**nubilus** Meigen

22 Hind metatarsus with only one dorsal bristle.....23

— Hind metatarsus with at least 2 dorsal bristles.....25

23 Discal vein with the first bend rectangular and bearing a short hang-vein (see fig. 58). 4.75–5.5 mm.....**griseipennis** Stannius

— Discal vein normal, both bends smoothly rounded and without trace of hang-vein..24

24 Front coxa black, at least on basal half. Femora, especially front, with more or less extensive black markings. Arista inserted at apical third of 3rd antennal segment. 4.25–5 mm ..... **signifer** Haliday

— Front coxa yellow. Femora entirely yellow. Arista inserted at about middle of 3rd antennal segment. About 4 mm.....**agilis** Meigen

25 Middle metatarsus with one or more dorsal bristles. Middle tibia with 2 or more bristles beneath 26

— Middle metatarsus without dorsal bristles.....33

26 3rd antennal segment entirely black. *Either* hind femur with 2–3 preapical bristles, *or* 2nd antennal segment entirely black, *or* at least first bend of discal vein distinctly angular.....27

— 3rd antennal segment usually partly yellow, even if only at base of outer face, but if entirely black then none of the other characters as above.....29

27 Hind femur with 2 or 3 preapical bristles. Squamal fringe consisting of mixed black and yellow hairs. Discal vein normal. 6–7.25 mm.....**claviger** Stannius

— Hind femur with only one preapical. Squamal fringe all black. At least first bend of discal vein more or less distinctly angular, even though obtuse.....28

28 Front coxa entirely black-haired. 3rd antennal segment distinctly longer than wide. Angle of both bends of discal vein more than 90°, 2nd bend distinctly rounded. 4.75–5.5 mm .....**migrans** Zetterstedt

— Front coxa largely pale-haired. 3rd antennal segment somewhat wider than long (fig. 86). Both bends of discal vein practically rectangular (fig. 85). 5.5–6 mm **plumitarsis** Fallén

29 Front coxa entirely or mainly white-haired.....30

— Front coxa entirely or mainly black-haired.....31

30 Hind metatarsus, even on posterior face, yellow on basal two-thirds or more, where it is as pale as the tibia. 4th costal section (between radial and cubital veins) about 1.75 times as long as 5th section. 5–5.75 mm .....**virgultorum** Haliday

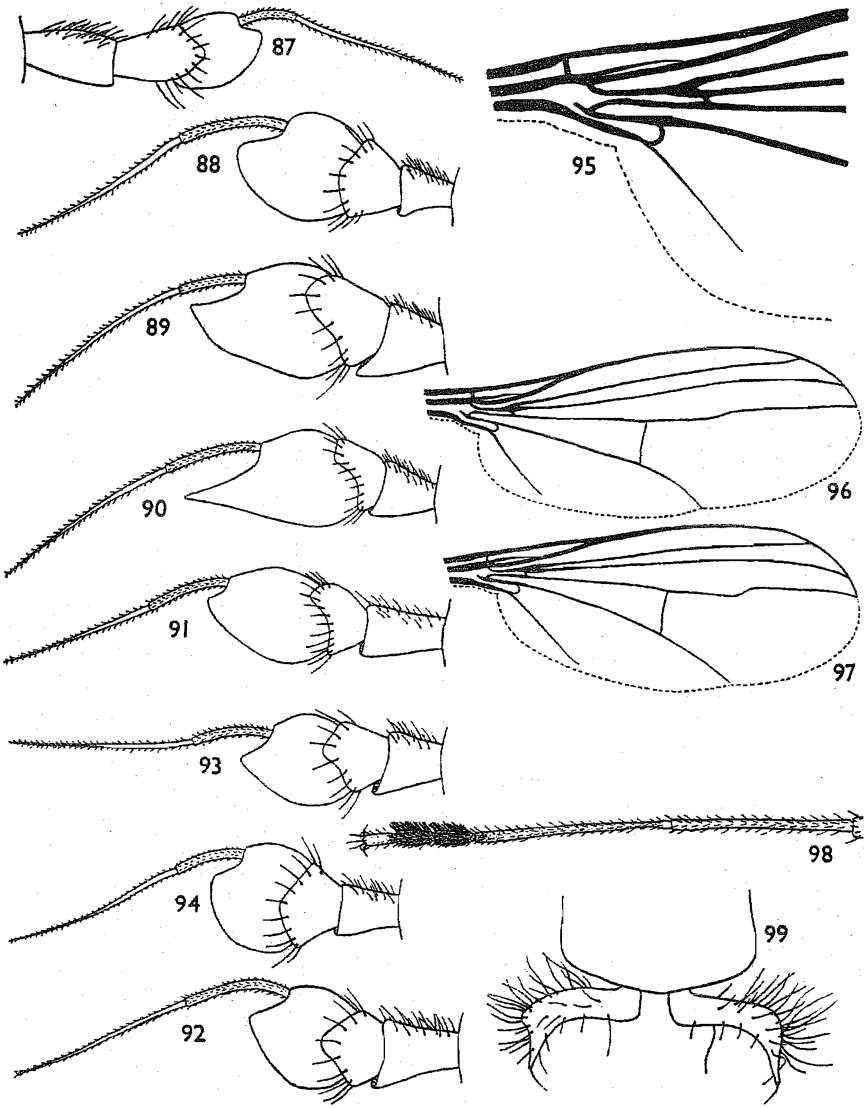
— Hind metatarsus black at least on posterior face, at most slightly paler at base, but still darker than tibia. 4th costal section quite twice as long as 5th. About 5.5 mm **arbustorum** Stannius

31 1st and 2nd antennal segments broadly black dorsally, 3rd segment rather narrowly yellow at base, usually entirely black on inner face. 4.75–5.25 mm **trivialis** Haliday

— Basal antennal segments entirely yellow, 3rd segment largely yellow at base on both inner and outer faces.....**32**

32 Hind tibia distinctly blackish at apex, especially on posterior face. Bends of discal vein very obtuse and weakly formed. Basal segment of arista less than one-third length of apical segment. 5–6 mm ..... **festivus** Haliday
— Hind tibia entirely yellow. Bends of discal vein less obtuse and more pronounced. Basal segment of arista more than one-third length of apical segment. 5–5.5 mm **cilifemoratus** Macquart
33 Middle tibia with 2 or more median bristles beneath. 3rd antennal segment entirely black. 5.25–6.5 mm ..... **discifer** Stannius
— Middle tibia with only one median bristle beneath 34
34 Hind tibia entirely or mainly black or dark brown, sometimes paler dorsally. Bends in discal vein little marked and extremely obtuse. 4.75–5.75 mm .... **urbanus** Meigen
— Hind tibia yellow, at most darkened at apex 35
35 Wing with at least first bend of discal vein quite or almost rectangular and bearing a shorter or longer hang-vein (see fig. 65) 36
— Both bends of discal vein normal, obtuse, smoothly rounded and without trace of hang-vein 37
36 Face extending down to or below level of lower eye-margin. Antenna entirely black. 5.5–6.25 mm (s.g. *Macrodolichopus* Stackelberg, 1930) ..... **diadema** Haliday
— Face not nearly reaching to level of lower eye-margin. All antennal segments yellow at least ventrally. 5.5–6 mm ..... **niditus** Fallén
37 Basal antennal segments remarkably lengthened, antenna entirely black, 2nd segment longer than 3rd, latter only little longer than wide (fig. 87). Hind femur with 2 or more preapical bristles. 6–6.5 mm (s.g. *Hygroceleuthus* Loew, 1857) **latipennis** Fallén
— Basal antennal segments normal, 2nd segment distinctly shorter than 3rd. Hind femur with only one preapical bristle, or if with more than one then antenna largely yellow 38
38 Hind femur with 2 or 3 preapical bristles. Basal antennal segments entirely, and 3rd segment largely, yellow. 5.25–6.25 mm ..... **popularis** Wiedemann
— Hind femur with only one preapical bristle 39
39 Hind femur narrowly darkened along almost whole length posteroventrally. Frons thinly dusted, the steel-blue ground-colour entirely visible. 3.75–5 mm **strigipes** Verrall
— Hind femur without this dark posteroventral streak 40
40 Hind coxa entirely or mainly yellow 41
— Hind coxa mainly dark, yellow only at apex 43
41 Middle coxa yellow, darkened only on outer impressed area. 3rd antennal segment not much longer than wide, with rounded tip (fig. 88). 3.5–4 mm .... **linearis** Meigen
— Middle coxa mainly black. 3rd antennal segment at least almost 1.5 times as long as wide, with pointed tip (see figs 89, 90) 42
42 Antenna black, only 1st segment yellow beneath, 3rd segment almost 1.5 times as long as wide (fig. 89). Middle metatarsus largely darkened. 3.75–4.25 mm **acuticornis** Wiedemann
— Antenna mainly yellow, black dorsally on all segments and towards tip of 3rd segment, latter distinctly more than 1.5 times as long as wide (fig. 90). Middle metatarsus entirely yellow. 3.5–4 mm ..... **longicornis** Stannius
43 1st antennal segment entirely yellow, or at most dark at tip of dorsal surface. (Care must be exercised here, lest the dense clothing of black hairs on dorsal surface be mistaken for black coloration) 44
— 1st antennal segment at least narrowly darkened along whole length dorsally 47
44 2nd antennal segment at least partly, and 3rd segment entirely, black 45
— 2nd antennal segment entirely, or almost entirely, and 3rd segment partly, yellow 46
45 Middle metatarsus entirely dark, at least always distinctly darker than tibia. 2nd antennal segment, on inside face, broadly black on apical margin. 4.5–5 mm **simplex** Meigen
— Middle metatarsus almost entirely yellow. 2nd antennal segment, on inside face, only narrowly black on apical margin. 5.75–6.75 mm ..... **subpennatus** Fonseca
46 Hind tibia distinctly blackish at apex, the metatarsus entirely black. Clypeus bare. Lower postocular cilia pale golden yellow. 4.25–5.5 mm ..... **plumipes** Scopoli
— Hind tibia entirely yellow, the metatarsus yellow on at least basal third. Clypeus hairy. Lower postocular cilia whitish yellow. 4.25–5.75 mm **wahlbergi** Zetterstedt

47 Middle metatarsus entirely black or brownish black. Arista inserted at apical fourth to third of 3rd antennal segment (fig. 91). About 4.5 mm..... **mediicornis** Verrall
— Middle metatarsus yellow on basal half or more.....48
48 Antenna black, yellow only along whole length of 1st segment beneath.....49
— 2nd antennal segment partly yellow, at least on inner face about base.....50



FIGS 87–99. 87–97, *Dolichopus* ♀. 87–94, Antennae. 87, *latipennis* Fall. 88, *linearis* Mg. 89, *acuticornis* Wied. 90, *longicornis* Stann. 91, *mediicornis* Verr. 92, *lineatocornis* Zett. 93, *notatus* Staeg. 94, *caligatus* Wahlb. 95, Wing-base of *sabinus* Hal. 96–97, Wings. 96, *pennatus* Mg. 97, *signatus* Mg. 98–99, *Hercostomus* ♂. 98, L. front tarsus of *chetifer* Walk. 99, Genital lamellae of *nanus* Macq.

49 3rd antennal segment slightly longer than wide, distinctly pointed at tip (fig. 93). Middle tibia with the ventral bristle well beyond the adjacent anterodorsal bristle. 4–4.5 mm ..... **notatus** Staeger
— 3rd antennal segment wider than long, broadly rounded at tip (fig. 94). Middle tibia with the ventral bristle about level with adjacent anterodorsal bristle. About 4.5 mm **caligatus** Wahlberg
50 3rd antennal segment broadly yellow on lower margin. Hind metatarsus yellow on basal third or more. Anal lobe of wing little developed, anal angle very obtuse (fig. 95). 3–4.5 mm ..... **sabinus** Haliday
— 3rd antennal segment entirely black. Hind metatarsus entirely black. Anal lobe well developed, anal angle at greatest not much more than 90°.....51
51 Scutellum with a multiple fringe of numerous pale hairs on hind face. Wing with bends of discal vein weakly formed and very obtuse (fig. 96). Hind tibia usually entirely yellow on anterior face somewhat brownish at tip of posterior face. 5–6.5 mm .....**pennatus** Meigen
— Scutellum with a single fringe of much fewer (about 10) pale hairs on lower margin of hind face, 2 or 3 isolated hairs sometimes present above.....52
52 Hind tibia broadly black at apex on both anterior and posterior faces. Face, seen from above and illuminated from in front, with a distinct pale golden yellow tinge, especially on upper part. Frons dusted golden yellow to brownish. Wing with anal lobe more developed, anal angle less than 90°. 5–5.75 mm **argyrotarsis** Wahlberg
— Hind tibia usually less broadly darkened at apex, on anterior face more brownish. Face, seen as above, greyish white. Frons dusted yellowish grey. Anal lobe less developed, anal angle not less than 90°.....53
53 Arista inserted at about apical third of 3rd antennal segment. Bends of discal vein well marked (fig. 97). 5.25–5.75 mm.....**signatus** Meigen
— Arista inserted at middle of 3rd antennal segment (fig. 92). Bends of discal vein more as in *pennatus*, weakly marked and very obtuse (see fig. 96). 5–5.5 mm **lineatocornis** Zetterstedt
54 Middle and hind femora each with 2 to 5 preapical bristles. 5.5–7 mm **ungulatus** Linné
— Middle and hind femora each with only one preapical bristle.....55
55 Middle metatarsus with a dorsal bristle. Middle tibia with 2 or more median bristles beneath. 5.5–7 mm .....**brevipennis** Meigen
— Middle metatarsus without bristles dorsally. Middle tibia with only one median bristle beneath.....56
56 Face bare. Anal lobe of wing well developed, anal angle about 90°. Frons dusted brownish. 3.75–4.5 mm .....**rupestris** Haliday
— Face hairy, at least on lower part. Anal lobe little developed, anal angle much greater than 90°. Frons metallic green. 4–4.5 mm.....**longitarsis** Stannius

Genus HERCOSTOMUS Loew, 1857

Medium large to small species closely allied to *Dolichopus*, but easily distinguished by the absence of dorsal bristles on hind metatarsus, the latter being distinctly shorter than 2nd segment.

KEY TO SPECIES

Males

1 Femora entirely yellow, or at most only front and hind femora somewhat darkened dorsally..... 2
– Femora all mainly or largely black.....15
2 Front tarsus with 1st and 2nd segments yellow, long and slender; 3rd, 4th and 5th dorsoventrally flattened; 3rd and 4th short, black and laterally fringed; 5th mainly whitish (fig. 98). 3–3.5 mm. (=*alutifer* Haliday = *cretifer* auctt.)..**chetifer** Walker
Scotland: Inverness-shire. England & Wales: Westmorland, Anglesey, Suffolk, Glamorgan, Glos., Bucks., Somerset, Devon & Cornwall. Not uncommon near streams. vi–viii.
– Front tarsus simple, at most with one or more segments annulated.....3
3 Hypopygium unusually short, almost spherical, genital lamella yellow, long and

ribbon-like (fig. 99). Scutellum sparsely hairy on disc. Antenna entirely black. 2.5–3 mm ..... **nanus** Macquart
Recorded from Yorks., Notts., Hunts., Norfolk, Cambs., Suffolk, Glamorgan, Glos., Somerset, Wilts., Surrey, Kent, Hants. & Sussex. Uncommon, favouring banks of streams. vi–vii, ix.

– Hypopygium normal, rather longly ovoid, lamella not as above 4
4 Lower postocular cilia pale 5
– Lower postocular cilia black 10
5 3rd antennal segment partly yellow 6
– 3rd antennal segment entirely black 8
6 1st and 2nd segments of front tarsus annulated. Scutellum sparsely hairy on disc. 4–5 mm ..... **chrysozygos** Wiedemann
Recorded from Hunts., Cambs., Norfolk, Suffolk, Bucks., Berks., Somerset, Wilts., Devon & Hants. Very local, but not uncommon in suitable habitats. vi–viii.
– Front tarsus not annulated. Scutellum bare on disc 7
7 Squamal fringe pale. Hypopygium mainly yellow. 2.5–3.5 mm **fulvicaudis** Haliday
According to Verrall, originally described from a ♂ found near Bristol (Glos.) in 1804, but present whereabouts of this specimen not known. Only other British records known: 1♂, Fowlmere (Norfolk), 26.vii.33 (J. E. Collin), 1♂, estuary of River Eden at Rockcliffe (Cumberland), 17.vii.74 (P. J. Chandler) & 1♀, Earith gravel pits (Hunts.), 21.vii.74 (J. H. Cole).
– Squamal fringe black. Hypopygium black. 3–3.5 mm ..... **plagiatus** Loew
Recorded from Cambs. (Upware & Chippenham Fen), Suffolk (Tuddenham & Butley), Somerset (Berrow saltmarsh), Kent (Abbey Wood) & Devon (Putsborough). Scarce & very local. vi–viii.
8 Abdomen broad, dorsoventrally flattened, muscid-like. Front coxa black. 4.5–5 mm (s.g. *Muscidideicus* Becker, 1917, =*Muscideicus* auctt.) ..... **praetextatus** Haliday
Scotland: Argylls. (Ballachulish). England & Wales: Norfolk (Holkham & Blakeney Pt.), Pembs. (Newport), Carmarthens. (Kidwelly saltmarsh), Devon (Dawlish Warren), Dorset (Arne), Hants. (St. Helens, I.O.W.) & Sussex (West Wittering). Ireland: S. Kerry (Rossbeigh Pt.). Very scarce. vi–vii.
– Abdomen normal, laterally compressed. Front coxa entirely yellow 9
9 Front coxa white-haired. Hind tibia entirely, and metatarsus largely, yellow. 4–5.5 mm. (=*bicolor* Parent *nec* Macquart) ..... **gracilis** Stannius
Recorded from Cumberland, Notts., Norfolk, Cambs., Suffolk, Pembs., Glamorgan, Somerset, Devon, Hants. (incl. I.O.W.) & Cornwall. Not uncommon locally. vi–viii.
– Front coxa black-haired. Hind tibia at least broadly black at apex, metatarsus entirely black. 3.5–4.25 mm ..... **germanus** Wiedemann
Scotland: Sutherland & E. Lothian. England & Wales: Yorks., Anglesey, Derbys., Notts., Herefords., Suffolk, Brecknocks., Glamorgan, Glos., Bucks., Essex, Somerset, Wilts., Hants., Sussex & Is. of Scilly. Not uncommon on heathland; often found feeding on flowers of Umbelliferae. vi–ix.
10 1st antennal segment (often also 2nd segment) partly yellow. Front tibia with a strong apico-ventral bristle (see fig. 59). Thorax shining blue-black. 4–4.5 mm **chalybeus** Wiedemann
Recorded from Notts. (Attenborough), Hunts. (Brampton), Norfolk (Bure N.R., Ormesby Broad & Martham), Berks. (Old Windsor Wood & Virginia Water), Somerset (Sharpham Moor), Wilts. (Chilton Foliat), Dorset (Studland), Hants. (Lymington & Leckford Abbas N.R.) & Sussex (Hassocks). Ireland: Meath (nr Hays). Uncommon & very local. vi–viii.
— Antenna entirely black. Front tibia without apico-ventral bristle. Thorax metalic green or blackish green 11
11 Wing with costa strongly thickened between humeral crossvein and tip of subcostal vein (figs 100, 101) 12
— Above section of costa not thickened, distinctly thinner than next section 13
12 Genital lamella yellow. Hind metatarsus yellow almost to apex. 3.25–3.75 mm (=*sarus* Haliday) ..... **celer** Meigen
Scotland: Inverness. & Stirlings. England & Wales: Yorks., Notts., Merioneths., Hunts., Norfolk, Suffolk, Glamorgan, Glos., Oxon, Somerset, Surrey, Kent, Devon & Hants. Ireland: Down & S. Kerry. Not uncommon in north, becoming scarcer southwards. vi–viii.

— Genital lamella brownish black. Hind metatarsus usually black or brownish black, sometimes paler on basal half. 2.75–3.25 mm.....**brevicornis** Staeger
Scotland: Inverness-shire. England: Glos., Somerset, Wilts., Devon, Hants. & Sussex. Very common locally in south; found in great abundance at Failand (Somerset). v–viii.

13 Apical section of discal vein shorter than basal section measured from root. Apical section of postical vein less than half as long as basal section measured from anal cell. Basal segment of arista less than half as long as apical segment. Face, seen from in front and above, greyish white. 3.25–4.5 mm .....**metallicus** Stannius
Scotland: Inverness-shire. England & Wales: from Caernarvons. to Yorks. southwards to Is. of Scilly. Ireland: Kerry & Waterford. Common. v–ix.

— Apical section of discal vein longer than basal section, measured as above. Apical section of postical vein more than half as long as basal section, measured as above. Basal segment of arista more than half as long as apical segment.....14

14 Face, viewed from in front and above, velvet-black. Arista thickened almost to tip, with shorter pubescence (fig. 102). Cubital and discal veins almost parallel in apical half. 2.75–3.75 mm (=*dahlbomi* Zetterstedt).....**aerosus** Fallén
Very common over whole of British Isles. v–x.

— Face, viewed as above, greyish white. Arista uniformly tapering from end of basal segment, with somewhat longer pubescence (fig. 103). Cubital and discal veins distinctly convergent in apical half. 2.75–3.25 mm.....**assimilis** Staeger
Scotland: Nairns. & Perths. England & Wales: Norfolk, Cambs., Suffolk, Glamorgan, Glos., Somerset, Kent, Hants. & Sussex. Ireland: Waterford. Uncommon. vi–viii.

15 Lower postocular cilia pale..... 16

— Lower postocular cilia black.....19

16 Proboscis at least half as long as head is deep.....17

— Proboscis distinctly less than half depth of head.....18

17 Proboscis not as long as head is deep (fig. 104). Greatest distance between cubital and discal veins less than twice that at their tips. Face yellowish grey. 3–3.5 mm **nigripennis** Fallén
Well distributed, but not especially frequent, over whole of British Isles including Channel Is. vi–ix.

— Proboscis more than 1.5 times as long as head is deep (fig. 105). Greatest distance between cubital and discal veins more than 3 times that at their tips. Face silvery grey. 2.75–3 mm. (s.g. *Orthochile* Latreille, 1809)....**nigrocoerulea** Latreille
Recorded from Cambs. (Cambridge & Wicken Fen), Essex (Leigh, Walton-on-Naze and Frinton-on-Sea), Kent (Gravesend), Devon (Lee), Dorset (Southwell, Kingston, Chapman's Pool & Portland Bill). Usually frequent where it occurs. vi–vii.

18 Middle metatarsus with numerous long bristles beneath (fig. 106). Scutellum hairy on disc. 5.5–6 mm .....**sahlbergi** Zetterstedt
Only British record known: Grantown (Morays.), 16.vii.38 (J. E. Collin).

— Middle metatarsus without bristles. Scutellum bare on disc. 4.5–6 mm (=*subsimplicipes* Verrall) .....**nigriplantis** Stannius
Recorded from Merioneths., Cambs., Glamorgan, Glos., Oxon, Somerset, Devon, Dorset & Hants. (incl. I.O.W.). Uncommon & local. vi–ix.

19 Legs black, at most knees yellow. Front tibia with an apico-ventral bristle (see fig. 59). 5.25–5.75 mm. (=*atrovirens* Loew)..... **nigrilamellatus** Macquart
Scotland: Inverness. (Glen Feshie), England: Herefords. (Stoke & Pentelow), Hunts. (Monks Wood), Wilts. (Freshford), Kent (Footscray & Woolwich Wood) & Hants. (Brockenhurst & elsewhere in New Forest). Scarce. vi–vii.

— Legs partly yellow in addition to knees. Front tibia without apico-ventral bristle..20

20 Middle tibia swollen, somewhat curved and armed ventrally with 3 to 4 short spine-like bristles which arise from small tubercles (fig. 107). Costa of wing conspicuously thickened after end of subcostal vein. 3.5–4.75 mm.....**cupreus** Fallén
Scotland: Ross & Cromarty, Inverness. & Aberdeens. England & Wales: from Lancs. to Yorks. southwards. Ireland: Down, Mayo, Galway, Kerry & W. Cork. Channel Is. Generally frequent where it occurs. v–vii.

— Middle tibia simple. Costa not thickened as above.....21

21 Scutellum hairy on disc. Genital lamella roundish and dark brown or black. Cubital and discal veins practically parallel in apical half. Face glistening silvery grey. 2.5–3 mm .....**angustifrons** Staeger
Only British records known: Cliburn Moss (Westmorland), 3.vii.22 (H. Britten, Snr.);

Moccas Park (*Herefords.*), *24.ix.10* (*J. H. Wood*); *Bricket Wood* (*Herts.*), *16.vi.52* (*Sir Christopher Andrewes*).

— Scutellum bare on disc. Genital lamella yellowish, rather long and narrow. Cubital and discal veins strongly convergent in apical half. Face brownish, paler below. 2.5–3 mm ..... **parvilamellatus** Macquart
Scotland: Inverness. England: Notts., Hunts., Cambs., Glos., Berks., Somerset, Kent, Hants. (*incl. I.O.W.*) *& Sussex. Scarce. v–vi.*

Females (including *Hypophyllus*)
(For synonymy and distribution see key to males)

1 Femora entirely yellow, or front and/or hind femora sometimes darkened dorsally....2
– Femora all mainly or largely black.....19
2 Palpi and proboscis entirely yellow. Antenna black, 3rd segment markedly small, wider than long. Abdomen entirely dark in ground-colour. 3.75–4.75 mm **chetifer** Walker
– Either proboscis or palpi dark, or base of abdomen and antenna extensively yellow ..3
3 Lower postocular cilia pale.....4
– Lower postocular cilia black.....13
4 3rd antennal segment partly yellow.....5
– 3rd antennal segment entirely black.....7
5 Abdomen translucent yellow about base 2.5–3 mm..... **fulvicaudis** Haliday
– Abdomen entirely dark in ground-colour.....6
6 Frons shining metallic green. Scutellum more or less sparsely hairy on disc. Hind femur darkened dorsally at tip. 4.5–5.5 mm..... **chrysozygos** Wiedemann
– Frons dulled by greyish dusting. Scutellum bare on disc. Hind femur entirely yellow. 3–3.5 mm ..... **plagiatus** Loew
7 Front tibia without a median posteroventral bristle.....8
– Front tibia with one or more distinct, even though rather small, posteroventrals....11
8 Scutellum more or less sparsely, but uniformly, hairy on disc. Hind tibia darkened on about apical third, the metatarsus entirely black. 3–3.5 mm..... **nanus** Macquart
– Scutellum practically bare on disc, at most with an isolated hair or two. Hind tibia entirely yellow..... 9
9 Pleural sclerite, connecting hind coxa to base of abdomen, black. 4–4.5 mm **Hypophyllus crinipes** Staeger
– The above sclerite yellow.....10
10 Middle tarsus distinctly less than 1.5 times as long as tibia. Greatest distance between cubital and discal veins less than 3 times that at their tips (fig. 108). Proboscis dark. 3.5–4 mm..... **Hypophyllus obscurellus** Fallén
— Middle tarsus quite 1.5 times as long as tibia. Greatest distance between cubital and discal veins more than 3 times that at their tips (fig. 109). Proboscis brownish yellow. 4–4.75 mm ..... **Hypophyllus discipes** Ahrens
[*Note:* for distribution of above three species, see key to males of *Hypophyllus*.]
11 Squamal fringe black. 3.5–4 mm..... **germanus** Wiedemann
— Squamal fringe pale, or mainly so.....12
12 All coxae black. Body colour coppery, thinly dusted yellowish grey. Abdomen broad, dorsoventrally flattened, muscid-like. 4–5.5 mm (s.g. *Muscidideicus* Becker, 1917) ..... **praetextatus** Haliday
— Front coxa yellow. Body bright metallic green. Abdomen normal, laterally compressed. 5–6 mm ..... **gracilis** Stannius
13 1st antennal segment (sometimes also 2nd) partly yellow. Middle tibia with 2 ventral bristles. Frons shining steel-blue. 4.25–5 mm ..... **chalybeus** Wiedemann
— Antenna entirely black. Middle tibia with not more than one ventral bristle. Frons green, often pale-dusted.....14
14 Costa of wing with a distinct, even if only slight, thickening between humeral crossvein and end of subcostal vein, at thickest part (at middle of section) at least as thick as next section of costa (fig. 110).....15
— Costa without the above thickening, this section distinctly and uniformly thinner than next section (fig. 111).....16
15 Aristal pubescence shorter and denser, longest hairs not or hardly longer than basal thickness of arista (fig. 112). Face usually with longish dark hairs. 2.75–3.5 mm **brevicornis** Staeger

— Aristal pubescence longer and sparser, longest hairs at least 1.5 times as long as basal thickness of arista (fig. 113). Face usually with shorter paler hairs. 3–3.25 mm **celer** Meigen

16 Cubital and discal veins strongly convergent in apical half. Front coxa yellow except at base. Hind femur brownish at apex. Hind tibia darkened up to apical third, tarsus entirely dark. 3–3.5 mm ..... **nanus** Macquart

— Cubital and discal veins almost parallel in apical half, at most only slightly convergent. Front coxa black, yellow at apex. Hind femur and tibia entirely yellow, latter sometimes brownish at extreme apex. Hind metatarsus often partly or entirely yellow 17

17 Apical section of discal vein shorter than basal section measured from root. Apical section of postical vein less than half as long as basal section measured from anal cell. 3.75–4.75 mm ..... **metallicus** Stannius

— Apical section of discal vein longer than basal section, measured as above. Apical section of postical vein more than half as long as basal section, measured as above 18

18 Cubital and discal veins slightly but distinctly convergent from shortly beyond outer crossvein to tip. 3–3.5 mm ..... **assimilis** Staeger

— Cubital and discal veins parallel from outer crossvein to about apical third of last section of discal vein, thence faintly convergent. 2.75–3.5 mm..... **aerosus** Fallén

19 Lower postocular cilia pale..... 20

— Lower postocular cilia black..... 23

20 All femora entirely black. Hind tibia blackish at each end. Front tibia with 8 to 10 bristles on shaft. About 5.5 mm..... **sahlbergi** Zetterstedt

— At least front and middle femora yellowish apically. Hind tibia either entirely black, or black at apex only. Front tibia with 5 to 6 bristles on shaft..... 21

21 Proboscis much less than half as long as head is deep. Hind tibia yellow; blackish at apex. 4.75–5.5 mm ..... **nigriplantis** Stannius

— Proboscis at least half as long as head is deep. Hind tibia entirely or mainly dark. . 22

22 Proboscis not as long as head is deep (see fig. 104). Greatest distance between cubital and discal veins obviously less than twice that at their tips. 3.25–4 mm **nigripennis** Fallén

— Proboscis quite 1.5 times as long as head is deep (see fig. 105). Greatest distance between cubital and discal veins more than twice that at their tips. 3.5–4 mm (s.g. *Orthochile* Latreille, 1809) ..... **nigrocoerulea** Latreille

23 Scutellum hairy on disc. Cubital and discal veins almost parallel in apical half.... 24

— Scutellum bare on disc. Cubital and discal veins strongly convergent..... 25

24 Clypeus bare. Face about twice as wide as 3rd antennal segment. Middle tibia with several bristles beneath. 3.75–4.5 mm..... **cupreus** Fallén

— Clypeus hairy. Face distinctly narrower. Middle tibia with only one bristle beneath. About 2.75 mm ..... **angustifrons** Staeger

25 Legs entirely black. 5.5–6 mm ..... **nigrilamellatus** Macquart

— Tibiae yellow. About 3.25 mm ..... **parvilamellatus** Macquart

Genus HYPOPHYLLUS Haliday, 1832

KEY TO SPECIES

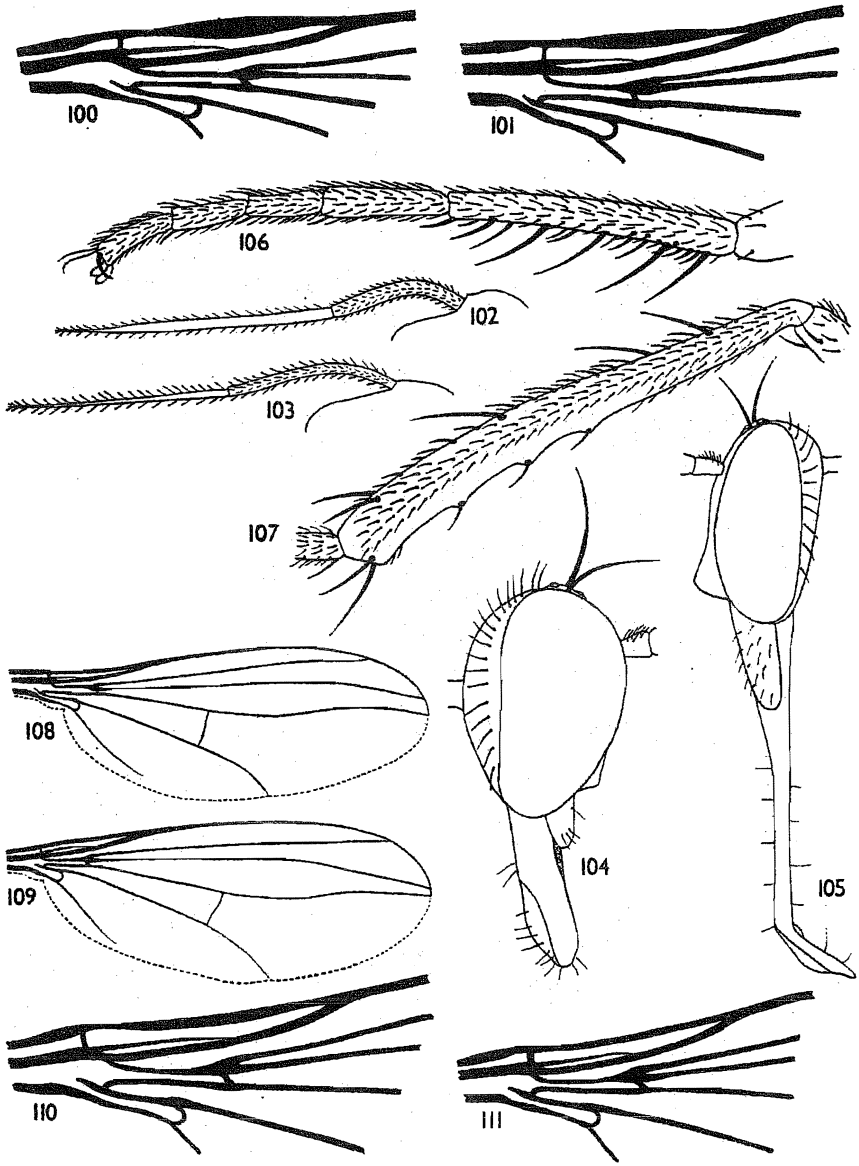
Males

1 3rd antennal segment not longer than wide. Arista of uniform thickness throughout, apical segment 5 to 6 times as long as basal. Apical segment of front tarsus enlarged, laterally compressed. 3.75–4.75 mm ..... **crinipes** Staeger
Scotland: Midlothian. England & Wales: Yorks., Anglesey, Notts., Herefords., Glos., Oxon, Middx., Somerset, Hants. (incl. I.O.W.) & Cornwall. Uncommon. v–vii.

– 3rd antennal segment at least 1.5 times as long as wide. Arista normal, tapering, apical segment at most 2.5 times as long as basal..... 2

2 Front tarsus simple. 3.75–4 mm ..... **obscurellus** Fallén
Well distributed from Sutherland in Scotland to s. coast of England & Is. of Scilly. Ireland: Down, Mayo, Galway & Kerry. Very common. vi–ix.

– Front tarsus with 4th segment short and broad, 5th greatly enlarged, flattened and black. 5–5.5 mm ..... **discipes** Ahrens
Recorded from Cumberland (Bowness), Lancs. (Grange-over-Sands), Yorks. (Crag Wood and Ripon), Salop (Oswestry), Herefords. (Pentelow), Cambs. (Snailwell &



FIGS 100–111. 100–107, 110–111, *Hercostomus*. 100–101, 110–111, Wing-bases: 100, *celer* Mg. ♂. 101, *brevicornis* Staeg. ♂. 110, *celer* Mg. ♀. 111, *nanus* Macq. ♀. 102–103, ♂ aristas. 102, *aerosus* Fall. 103, *assimilis* Staeg. 104–105, ♂ heads. 104, *nigripennis* Fall. 105, *nigrocoerulea* Lat. 106, R. middle tarsus of *sahlbergi* Zett. ♂. 107, L. middle tibia of *cupreus* Fall. ♂. 108–109, ♀ wings of *Hypophyllus*. 108, *obscurellus* Fall. 109, *discipes* Ahr.

Kirtling), Suffolk (Newmarket), Glos. (Chalford), Oxon (Newton), Berks. (Wytham Wood), Somerset (Failand & Edington), Devon (Walreddon), Dorset (Glanvilles Wootton) & Hants. (Brockenhurst). Ireland: W. Mayo (Westport). Very scarce, usually isolated specimens only. v–viii.

[*Note:* The females of *Hypophyllus* will be found included in the key to *Hercostomus*.]

Genus POECILOBOTHRUS Mik, 1878

Large to medium large species, distinguished by the rather long-haired arista, the patches of purplish black on notopleural areas of thorax and the jagged and strongly 'clawed' genital lamella of the males.

Key to Species

Males

1 Wing strongly darkened on apical half, with conspicuous white spot at apex. 5.5–6 mm (=*joco* Harris) ..... **nobilitatus** Linné
From Glamorgan to Salop to Yorks. southwards. Very common in south of England. Recorded from Ireland without locality. vi–viii.
– Wing not as above 2
2 2nd antennal segment entirely, and 3rd segment largely, yellow. Face glistening white, sometimes yellowish just below antennae. 5.5–6 mm. (=*fumipennis* Parent *nec* Stannius) ..... **principalis** Loew
Recorded from Durham (Hamsterley), Lincs. (Gibraltar Pt.), Suffolk (Aldeburgh), Carmarthens. (Kidwelly saltmarsh), Essex (Walton-on-Naze), Somerset (Blagdon), Wilts. (Limpley Stoke), Kent (Reculver & Pegwell Bay), Devon (Croyde & Dawlish), Hants. (Bournemouth & Bucklers Hard). Sussex (Seaford) & Channel Is. Uncommon. vii–viii.
– 2nd and 3rd antennal segments entirely black 3
3 Face ochreous or golden yellow. Hind tibia black on about apical fourth, the tarsus entirely black. Middle metatarsus darkened towards apex. 5.75–6 mm (=*comitalis* Verrall *nec* Kowarz) ..... **ducalis** Loew
Recorded from only Essex (Walton-on-Naze), Somerset (Chilton Trinity & Burnham), Kent (Westbere & Oare) and Sussex (Seaford). vii–viii.
– Face greyish white. Hind tibia, entirely yellow, the metatarsus mainly brownish yellow. Middle metatarsus entirely yellow. 4.5 mm ..... **majesticus** Fonseca
A single ♂ taken at Walton-on-Naze (Essex), 10.viii.07 (Col. Yerbury).

Females

(For synonymy and distribution see key to males)

1 Antenna reddish yellow, 3rd segment darkened apically. 5–6.75 mm .. **principalis** Loew
– Antenna mainly or entirely black 2
2 1st antennal segment (often also 2nd segment) with a brownish-yellow spot on anterior face. Front coxa mainly greyish green on outer face. Hind tibia broadly black at apex. 5–6.25 mm ..... **ducalis** Loew
– Antenna entirely black. Front coxa yellow, at most narrowly darkened at base. Hind tibia more narrowly black at apex. 5.5–6.5 mm ..... **nobilitatus** Linné

Genus TACHYTRECHUS Haliday 1851

All fairly large species of a metallic greenish-bronze colour, with characteristic wing-vein pattern, the cubital and discal veins strongly converging from the infuscated outer crossvein to wing-tip. The modified front tarsus of the males affords useful diagnostic characters.

Key to Species

Males

1 Front metatarsus normal, not especially slender, apical segment appearing whitish in dorsal view (fig. 114). Middle femur yellow on apical fourth only. 5–5.5 mm (=*litoreus* Haliday) ..... **notatus** Stannius
Scotland: Sutherland, Ross & Cromarty, Inverness & Aberdeens. England & Wales: Yorks., Caernarvons., Glamorgan, Devon, Dorset, Hants. (incl. I.O.W.) & Cornwall. Usually frequent where it occurs. vi–viii.
– Front metatarsus conspicuously slender. Middle femur yellow on apical half..... 2
2 Front metatarsus almost twice as long as last four segments combined (fig. 115). Face golden yellow. 5–5.5 mm ..... **insignis** Stannius
Scotland: Sutherland, Nairns, Morays. & Inverness. England & Wales: Lancs., Anglesey, Caernarvons., Merioneths., Glamorgan, Kent, Devon, Dorset, Hants. (incl. I.OW.) & Cornwall. Ireland (without locality). Not uncommon on coastal sand near fresh water. v–viii.
– Front metatarsus about equal in length to last four segments combined (fig. 116). Face pale yellow or white..... 3
3 Face pale yellow, lower edge about level with lower eye-margin. Genital lamella large and triangular, with long strong bristles on outer face of disc (fig. 117). 5–5.5 mm ..... **ripicola** Loew
Recorded from only Anglesey, Merioneths., Glamorgan, Devon & Dorset. Habitat as previous species, but less common. v–vi.
– Face glistening white, extending well below lower eye-margin. Genital lamella small and roundish, short-haired on disc (fig. 118). 4.5–5 mm (=*plumipes* Haliday *nec* Scopoli) ..... **consobrinus** Haliday
Scotland: Inverness. & Aberdeens. England: Somerset, Devon, Dorset & Hants. Ireland: Down, Wicklow & Kerry. Not uncommon on inland sandy areas, but rather local. v–viii.

Females

(For synonymy and distribution see key to males)

1 All femora black except at apex. 1st antennal segment black on at least dorsal half. 4.75–6 mm ..... **notatus** Stannius
– Middle femur yellow on at least apical third. 1st antennal segment entirely yellow..2
2 Upper humeral bristle about twice as long as lower. Middle femur anteroventrally with only short setulae, which are not half as long as greatest depth of femur. 4–5.75 mm ..... **consobrinus** Haliday
– Upper humeral bristle much less than twice as long as lower. Middle femur anteroventrally with stronger bristles, which are not much shorter than greatest depth of femur 3
3 The two humeral bristles about equal in length. Front tibia slightly shorter than tarsus (measured). 5–6 mm ..... **insignis** Stannius
– Lower humeral bristle about 0.75 the length of upper. Front tibia slightly longer than tarsus (measured). 5.5–6 mm ..... **ripicola** Loew

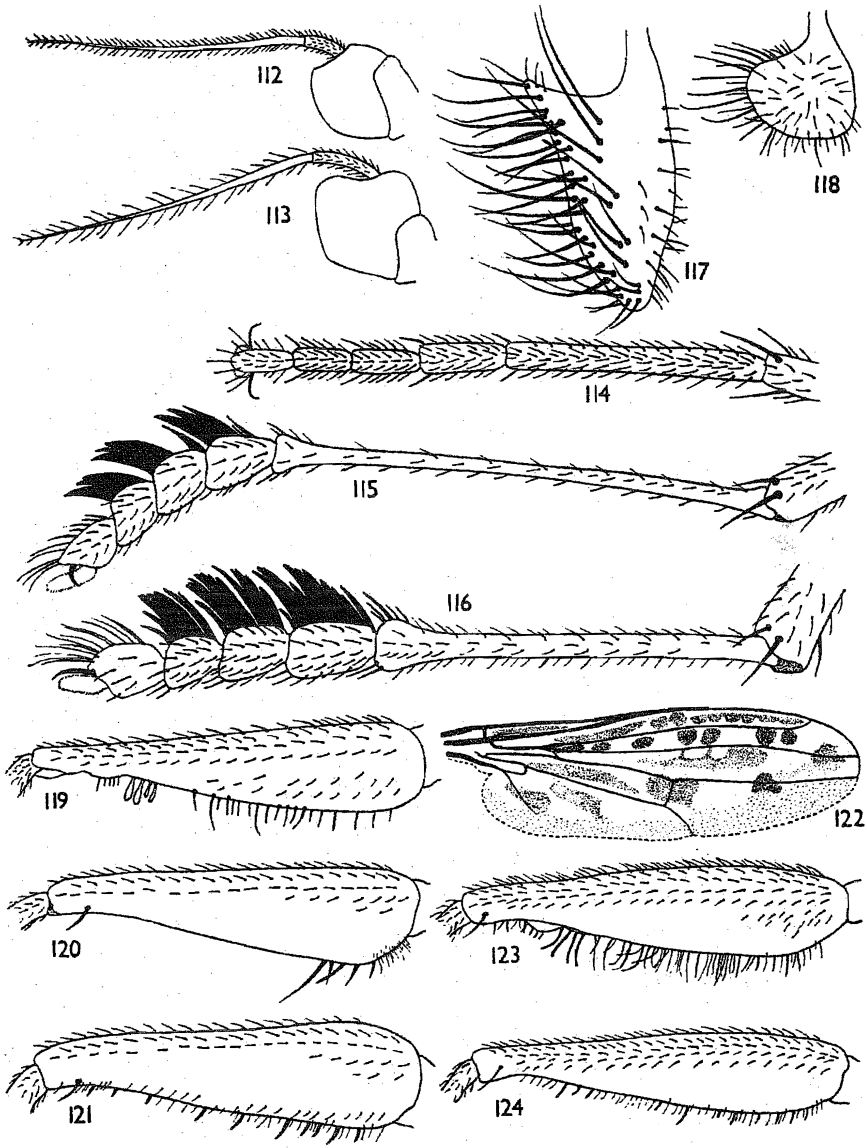
Genus HYDROPHORUS Fallen, 1823

Medium sized to small species, pale grey to almost black in colour. Both sexes have strongly spined front femora and sometimes also the tibiae, a few species with more or less maculated wings. Seldom, if ever, found far from fresh water or semi-liquid mud.

Key to Species

Males

1 Wing quite clear..... 2
– Wing with 2 or more dark spots, though these may sometimes be faint..... 6
2 Scutellum with only 2 bristles, the apical pair. 2.5–3 mm (=*bisetus* Loew) **oceanus** Macquart



FIGS 112–124. 112–113, ♀ aristas of *Hercostomus*. 112, *brevicornis* Staeg. 113, *celer* Mg. 114–118, *Tachytrechus* ♂. 114–116, L. front tarsi. 114, *notatus* Stann. 115, *insignis* Stann. 116, *ripicola* Lw. 117–118, Genital lamellae. 117, *ripicola* Stann. 118, *consobrinus* Hal. 119–124, *Hydrophorus*. 119–121, 123–124, L. front femora. 119, *litoreus* Fall. ♂. 120, *viridis* Mg. ♂. 121, *praecox* Lehm. ♂. 123, *albiceps* Frey ♂. 124, *litoreus* Fall. ♀. 122, Wing of *nebulosus* Fall. ♂.

Scotland: Sutherland, Ross & Cromarty and E. Lothian. England & Wales: Cumberland to Durham southwards. Ireland: Louth & Dublin. Fairly common. vi–ix.

– Scutellum with 4 bristles.....3

3 Jowl not visible below eye. Front femur, beneath at apical third, with 3 or 4 flattened yellow bristles (fig. 119). Cubital vein remarkably thickened in basal half. Face entirely and densely dusted whitish. 3.5–4 mm.....**litoreus** Fallén
Recorded from Yorks., Notts., Hunts., Norfolk, Suffolk, Glos., Herts., Middx., Somerset, Kent & Sussex. Not uncommon, but often difficult to catch due to habit of resting on surface of water. iii, vi–x.

– Jowl quite distinct below eye. Front femur without the above flattened bristles. Cubital vein not thickened.....4

4 Abdomen black-haired on disc. Epistoma with metallic green or bronze-green reflections, clypeus white-dusted. 2.5–3.25 mm.....**balticus** Meigen
Scotland: Nairns., Dunbartons. & E. Lothian. England & Wales: Anglesey, Merioneths., Cambs., Norfolk, Suffolk, Glamorgan, Devon, Hants. & Cornwall. Ireland: Down & Wicklow. Not uncommon, but rather local. v–viii.

– Abdomen pale-haired on disc. Whole of face uniformly dusted.....5

5 Face somewhat yellowish grey. Front femur with a short row of 3 to 5 ventral bristles at base, most of which are distinctly longer than apical depth of tibia (fig. 120). Front tibia, ventrally on apical half, with a uniform row of short spines. 3–3.5 mm.....**viridis** Meigen
Recorded from only Norfolk (Ormesby Broad), Middx. (Hendon), Somerset (Berrow), Kent (Sandwich Bay). Scarce, in restricted habitats. vii–ix.

– Face glistening white. Front femur with the row of ventral bristles at base distinctly shorter than tibia is deep (fig. 121). Ventral row of spines on front tibia with the apical one distinctly better developed than the rest. 2.5–3 mm....**praecox** Lehmann
Well distributed, though not especially common, from Sutherland in Scotland to s. coast of England and Is. of Scilly. Ireland: Down & Kerry. iv–x.

6 Wing with numerous dark spots (fig. 122). 2.25–2.75 mm (=*conspersus* Haliday) **nebulosus** Fallén
From Sutherland in Scotland to s. coast of England. Ireland: Down, Galway & Kerry. Fairly common. ix–vii, ix.

– Wing with only 2 spots; one on outer crossvein, the other on apical section of discal vein.....7

7 Front femur with an isolated group of spines beneath at apex (fig. 123). Face, seen from slightly above, glistening white, brassy-tinged just below antennae. 4–4.5 mm (=*borealis* Verrall *nec* Loew = *binotatus* auctt. *nec* Fallén).....**albiceps** Frey
Scotland: Sutherland, Ross & Cromarty, Nairns., Inverness., Aberdeens. & Perths. England: Yorks. & Salop. Recorded from Ireland without locality. An uncommon northern species. vi–ix.

– Front femur without spines at apex, but with a number on basal half beneath. Face not glistening white.....8

8 Front femur with a row of 8 to 14 spines beneath, occupying at least basal half. Epistoma with metallic green reflections, thinly dusted brown. 3.75–5 mm **bipunctatus** Lehmann
Fairly well distributed from Inverness-shire in Scotland to s. coast of England. Ireland: Down. iii–x.

– Front femur with a row of 7 or 8 spines beneath on about basal third. Face entirely and densely dusted brownish. 4–4.5 mm.....**rufibarbis** Gerstaecker
Only British records known: Braemar (Aberdeens.), 20.vii.73 (G. H. Verrall); Pools of Dee (Aberdeens.), 2.vi.34 (J. E. Collin); Meall Ghaordie (Perths.), vi.32 (collector not known).

Females

(For synonymy and distribution see key to males)

1 Wing clear, at most outer crossvein narrowly clouded.....2
– Wing with 2 or more dark spots.....6
2 Scutellum with only 2 bristles. 3.25–4 mm.....**oceanus** Macquart
– Scutellum with 4 bristles.....3
3 Jowl not, or only narrowly, visible below eye. Knob of haltere brownish black. Front femur, at apical third beneath, with an isolated group of 2 or 3 bristles (fig. 124). Abdomen black-haired on disc. 3.5–4.5 mm.....**litoreus** Fallén

- Jowl quite distinct and broadly visible below eye. Haltere with pale knob. Front femur without this isolated group of bristles at apical third 4
4 Epistoma with greenish gold reflections, clypeus usually brown, rarely white. Abdomen black-haired on disc. Front coxa with black bristles at apex. 2.75–3.5 mm **balticus** Meigen
- Face entirely and densely dusted. Abdomen pale-haired on disc. Front coxa often without black bristles at apex.....5
5 Front coxa with 2 black bristles anteriorly at base. Front femur with 3 to 5 ventral bristles at base, which are longer than tibia is deep (fig. 125). Wing-veins all dark. 3–4 mm .....**viridis** Meigen
- Front coxa without black bristles at base. Bristles beneath front femur more numerous, those towards base shorter than tibia is deep (fig. 126). Wing with part of costal and subcostal veins yellow. 2.75–4 mm.....**praecox** Lehmann
6 Wing with numberous dark spots (see fig. 122). 3–3.5 mm.....**nebulosus** Fallén
- Wing with only 2 dark spots, one on outer crossvein, the other on apical section of discal vein.....7
7 Front coxa entirely black-haired. 4–5.5 mm .....**albiceps** Frey
- Front coxa pale-haired except at extreme apex.....8
8 Whole of epistoma with strong metallic shine. 4–5 mm..**bipunctatus** Lehmann
- Face entirely and densely dusted brownish. 4.5 mm .....**rufibarbis** Gerstaecker

Genus SCELLUS Loew, 1857

One British species

Male abdomen with a pair of conspicuous densely fringed yellow processes near tip. Both sexes with a row of long strong spines beneath front femur, longer and stronger in the female, in which the tibia is also spined. 5–6 mm.....**notatus** Fabricius
Scotland: Inverness-shire. England & Wales: Cumberland to Durham southwards. Ireland: Down. Fairly common. v–ix.

Genus LIANCALUS Loew, 1857

One British species

A large species with long slender, rather sparsely and weakly bristled legs, and conspicuously long wings, which are somewhat variably brownish-marked. 6–7 mm (=*regius* Fabricius).....**virens** Scopoli
Occurs fairly commonly, from Sutherland in Scotland to s. coast of England, wherever fresh water is trickling down a vertical rock-face. Ireland: Mayo, Galway, Wicklow & Waterford. ii–x.

Genus ORTHOCERATIUM Schrank, 1803 (= *Alloeoneurus* Mik, 1878)

One British species

Whole body, and greater part of legs, a beautiful metallic green with faint golden reflections. 5–6.5 mm (=*formosum* Haliday).....**lacustre** Scopoli
Recorded from Merioneths., Norfolk, Suffolk, Glamorgan, Somerset, Kent, Dorset, Hants. & Sussex. Ireland: Kerry. Mr J. M. Nelson writes that Mr J. Goldsmith found it occurring in some numbers, together with Hydrophorus oceanus *Macq., on the rotting corpse of a porpoise at East Fleet on the north Norfolk coast. It is not known whether the flies were feeding on the corpse or preying on smaller insects. vi–x.*

Genus THINOPHILUS Wahlberg, 1844

KEY TO SPECIES

Males

1 Front tibia at apex beneath with a close-set group of 3 long curved bristles. Front metatarsus notched at base beneath, 3rd and 4th segments strongly bristled dorsally (fig. 127). Femora brownish black except at apex. 5.5–6 mm **flavipalpis** Zetterstedt

Recorded from Yorks., Norfolk, Suffolk, Glamorgan, Glos., Essex, Somerset, Dorset, Hants. (incl. I.O.W.) & Sussex. Not uncommon on saltmarshes. vi–vii.

– Front legs simple. Femora entirely yellow. 3–3.5 mm.....**ruficornis** Haliday
Recorded from only Anglesey, Caernarvons., Carmarthens., Glamorgan, Essex, Somerset, Dorset & Hants. in England & Wales; from Galway & Kerry in Ireland. Habitat as for previous species, but less common. vi–vii.

Females
(For distribution see key to males)

1 Humerus with 12 to 14 bristles. Front coxa black. Middle and hind femora with the preapical bristle rather more dorsal in position than normal 5.5–6.5 mm **flavipalpis** Zetterstedt

– Humerus with only 2 to 4 bristles. Front coxa yellow. Middle and hind femora with normal preapical bristle. 3.5–4 mm .....**ruficornis** Haliday

Genus SCHOENOPHILUS Mik, 1878

One British species

A small stocky species closely allied to, and considered by some to be a subgenus of, *Thinophilus*. 2–2.5 mm (=*maculipennis* Strobl).....**versutus** Haliday
Only British records known: Gristhorpe Bay (Yorks.) (C. A. Cheetham), Malham Tarn (Yorks.) (C. H. W. Pugh), Lyndhurst (Hants.) & Seaford (Sussex) (G. H. Verrall) & St. Merryn (Cornwall), 12.vi.12 (J. E. Collin). Ireland: Knappagh (W. Mayo), 1912 (P. H. Grimshaw) & Ferry Bank (Wicklow), 1857 (A. H. Haliday). vi–viii.

Genus APHROSYLUS Haliday, 1951

Fairly large to extremely small species, breeding in intertidal habitats around the coast. In the males the spatulate palpi are 'silvered' on one face; the male flies thus appear to be manipulating a pair of tiny signal lamps as they run across the wet rocks and cause the silvered face to catch the light intermittently.

KEY TO SPECIES
Males

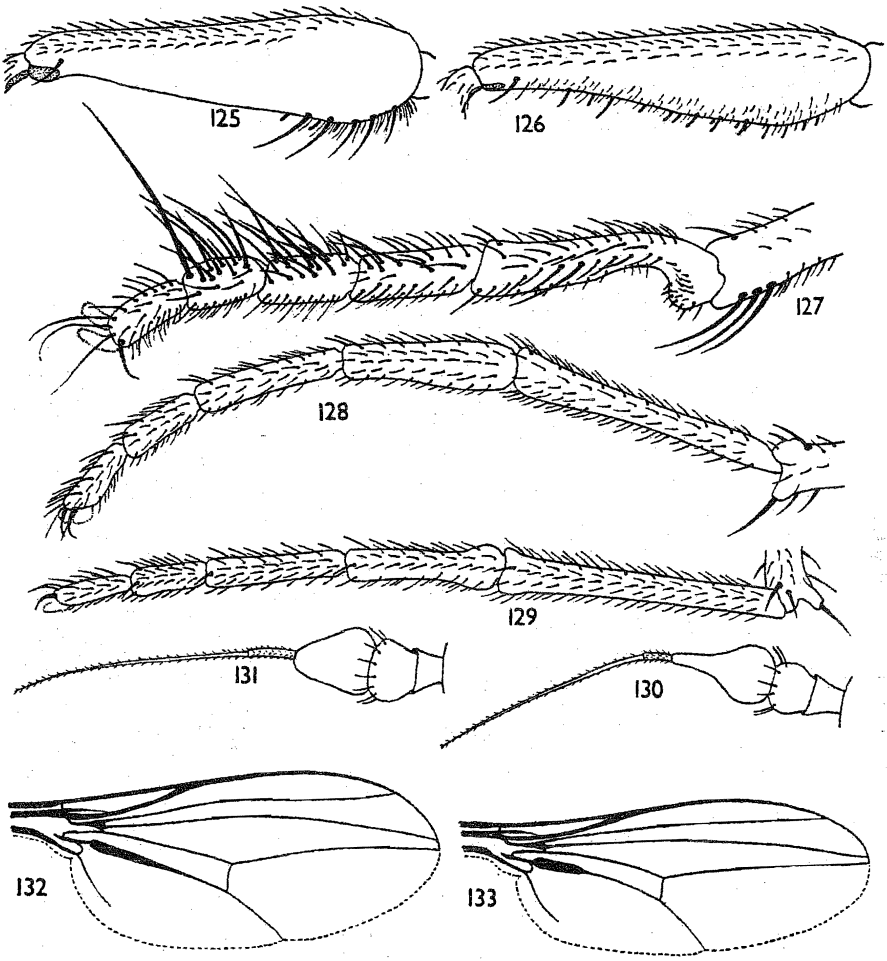
1 Large species, 3.5 mm or more, with costa spinose at base only.....2
– Much smaller species, less than 2 mm, with costa spinose along whole length.....3

2 2nd segment of front tarsus dilated in basal half to two-thirds (fig. 128). Middle tibia, at extreme apex beneath, with 2 or 3 small flattened hooks curved towards base of tibia. Hind femur with a series of about 5 strong bristles anterodorsally on basal fourth. Usually 6 dorsocentral bristles. 3.5–4.5 mm.....**celtiber** Haliday
England & Wales: recorded from only Pembs. (incl. Skokholm I.), Glamorgan, Devon, Hants. (I.O.W.) & Cornwall. Ireland: Mayo, Galway, Kerry, Cork & Waterford. This & next species may be found on flat intertidal rocks. Fairly common. v–viii.

– 2nd segment of front tarsus swollen at base only (fig. 129). Middle tibia without these flattened hooks. Hind femur without anterodorsal bristles at base. Usually only 5 dorsocentral bristles. 4–6 mm..... **raptor** Haliday
England & Wales: recorded from only Yorks., Pembs., Glamorgan, Kent, Devon, Dorset & Cornwall. Ireland: Down. Less common than previous species. vii–viii, x.

3 3rd antennal segment bulbous, rounded at base then somewhat abruptly attenuated before tapering to apex (fig. 130). Hind metatarsus not remarkably bristled. About 1.5 mm .....**mitis** Verrall
Recorded from only: River Deben (Suffolk), 30.vi.07 & Walton-on-Naze (Essex), 5.vi.08 (both G. H. Verrall); Lepe (Hants.), 28.vii.53 (C. N. Colyer); Bucklers Hard (Hants.), 23.vii.54 (J. E. Collin). Scarce.

– 3rd antennal segment conical, slightly rounded at base then uniformly tapering to apex (fig. 131). Hind metatarsus, dorsally on apical two-thirds, with a series of 4 or 5 curved fine bristles. About 1.25 mm.....**ferox** Haliday
Scotland: Inverness. (Arisaig). England and Wales: Westmorland, Yorks., Pembs., Essex, Kent, Devon, Hants. & Cornwall. Ireland: W. Galway, S. Kerry & Waterford. Usually abundant where it occurs. v–vii, ix.



FIGS 125–133a. 125–126, ♀ L. front femora of *Hydrophorus*. 125, *viridis* Mg. 126, *praecox* Lehm. 127, L. front tarsus of *Thinophilus flavipalpis* Zett. ♂. 128–131, *Aphrosylus* ♂. 128–129, L. front tarsi: 128, *celtiber* Hal. 129, *raptor* Hal. 130–131, Antennae. 130, *mitis* Verr. 131, *ferox* Hal. 132–133, ♂ wings of *Medetera*. 132, *excellens* Frey. 133, *inspissata* Coll.

Females

(For distribution see key to males)

1 Large species, 4 mm. or more, with costa spinose at base only.....2
– Much smaller species, not much more than 2 mm., with costa spinose along whole length 3
2 Hind femur with a row of 4 or 5 dorsal bristles on basal fourth. Usually 6 dorsocentral bristles. 4–5 mm .....**celtiber** Haliday

– Hind femur without dorsal bristles on basal fourth. Usually only 5 dorsocentral bristles. 4.5–6 mm ..... **raptor** Haliday

3 3rd antennal segment rounded at base, then somewhat abruptly attenuated before tapering to apex (see fig. 130). Front tibia simple. About 1.5 mm..... **mitis** Verrall

– 3rd antennal segment conical, slightly rounded at base and uniformly tapering to apex (see fig. 131). Front tibia with a prolongation at apex beneath bearing a black spur at tip. 1.75–2.25 mm ..... **ferox** Haliday

Genus MEDETERA Fischer, 1819
(= *Taechobates* Haliday, 1832 = *Oligochaetus* Mik, 1878)

Medium small to very small flies, generally to be found on vertical surfaces such as smooth tree-trunks, walls or fences. They appear to be the most predatory group of the family, catching and feeding on a variety of minute insects, their extraordinary ability to run at lightning speed forwards, sideways or backwards, ensuring easy capture of their prey.

KEY TO SPECIES

Both sexes

1 Middle tibia without bristles dorsally near base. Postocular cilia dark. About 1.5 mm **muralis** Meigen
England & Wales: Westmorland, Yorks., Notts., Montgomerys., Hunts., Suffolk, Glos., Devon, Hants. & Sussex. Ireland: Down & S. Kerry. Uncommon. vi–vii.

– Middle tibia with at least a posterodorsal bristle near base. Species more than 1.5 mm 2

2 Scutellum with only 2 bristles. Legs partly pale. Frons and epistoma dusted brownish. 1.75–2 mm ..... **micacea** Loew
Scotland: Argylls. England and Wales: Lancs., Caernarvons., Norfolk, Suffolk, Herts., Middx., Somerset, Wilts., Surrey, Kent, Hants. & Sussex. Channel Is. Not uncommon. vii–viii.

– Scutellum with 4 bristles 3

3 Dorsocentral bristles not decreasing in size towards front, the anterior (presutural) one very strong and rarely (*jacula* and *petrophila*) with a shorter strong bristle in front of it; otherwise contrast between this presutural dorsocentral bristle and any tiny hairs in front of it very great. Thorax distinctly striped 4

– Dorsocentral bristles decreasing in length towards front, usually with no strong presutural dorsocentral; if, however, there is a small presutural bristle of dorsocentral row it is close to suture and there are other still smaller bristles in front of it 10

4 Legs (including femora) almost entirely yellow. 3rd antennal segment longer than wide. Face entirely grey-dusted. 3.25–3.5 mm..... **flavipes** Meigen
Caernarvons. (Portmadoc), Cambs. (Wicken Fen & Upware), Norfolk (Blakeney Pt.), Suffolk (Yarmouth), Glos. (Bristol), Berks. (Reading), Middx. (Edgware & Finchley), Kent (Blackheath & Sandwich Bay), Hants. (Lyndhurst) & Cornwall (Padstow). Uncommon. vii–viii.

– Legs black, at most knees yellowish 5

5 3 pairs of dorsocentral bristles equally long, or when 4 pairs the 2nd pair shorter than rest 6

– 4 pairs of dorsocentral bristles all equally long or practically so, or when 5 pairs the front one is shorter than rest. Outer crossvein longer than apical section of postical vein 8

6 Outer crossvein not longer than apical section of postical vein. Frons, and face below antennae, dusted brownish. ♂: hypopygium slender, epandrium not as deep as 5th tergite is long. 2–2.5 mm..... **truncorum** Meigen
Very common throughout the British Isles, including Channel Is. vi–ix.

– Outer crossvein longer than apical section of postical vein. ♂: hypopygium stout, epandrium distinctly deeper than 5th tergite is long 7

7 1st posterior cell at outer crossvein about 3 times as wide as at apex (fig. 137). Frons and upper part of epistoma dusted pale grey. 3rd antennal segment more triangular. Anteroventral bristles at tip of hind femur short. Clypeus only narrowly dusted at sides. 2.5–3 mm ..... **dendrobaena** Kowarz
England: Notts. (Hickling), Hunts. (Monks Wood), Norfolk (Sheringham & Blickling), Suffolk (Barton Mills), Grassholm I., Glos. (Cirencester and Filton), Herts. (Harpenden), Berks. (Marcham), Somerset (West Town & Barrow Gurney), Wilts. (Salisbury), Kent (Seal & Knole Park), Hants. (Lyndhurst), Sussex (Greatham) and Is. of Scilly (St. Mary's). Ireland: W. Mayo (Westport & Clare I.). Uncommon. vi–viii.

– 1st posterior cell at outer crossvein only twice as wide as at apex (fig. 138). Frons and upper part of epistoma dusted brownish. 3rd antennal segment with rounded tip. Anteroventral bristles at tip of hind femur conspicuous and as long as femur is deep at tip. Clypeus dusted to one-third of its width each side. 2.5–2.75 mm **saxatilis** Collin
Scotland: Ross & Cromarty. England & Wales: Anglesey, Merioneths., Hunts., Pembs., Glamorgan, Glos., Bucks., Essex, Middx., Wilts., Kent, Hants & Is. of Scilly, Ireland: Clare. Fairly common but rather local. vi–ix.

8 Only one presutural dorsocentral bristle. Thorax very distinctly striped. ♂: hypopygium slender as in *truncorum*. 2.5–3.5 mm ..... **petrophiloides** Parent
Scotland: Sutherland. England & Wales: Yorks., Norfolk, Suffolk, Glamorgan, Somerset, Wilts., Kent, Devon, Dorset & Hants. (incl. I.O.W.). Ireland: Galway & Dublin. Channel Is. Fairly common. vi–viii.

– 2 presutural dorsocentral bristles; front one smaller. Thorax less distinctly striped. ♂: hypopygium stout as in *saxatilis* 9

9 Face, including clypeus, entirely covered with greyish dusting. Arista subapical. Anteroventral bristles at tip of hind femur longish. Apical section of postical vein very short. 3.5–4 mm ..... **jacula** Fallén
[*Note:* If dust partly rubbed off face, see note under *petrophila*, which it otherwise closely resembles, for differences.]
Scotland: Inverness-shire. England & Wales: Yorks., Notts., Hunts., Norfolk, Cambs., Suffolk, Glamorgan, Glos., Oxon, Herts., Berks., Somerset, Kent, Dorset, Hants. (incl. I.O.W.) & Cornwall. Ireland: Kerry. Fairly common, especially in southern half of England. vi–viii.

– Clypeus at least partly shining metallic. Arista apical. Anteroventral bristles at tip of hind femur short. 3.5–3.75 mm ..... **petrophila** Kowarz
[*Note:* This species very closely resembles *jacula*, but the angle at lower corner of discal cell is greater, and the cubital and discal veins do not converge so much (figs 135, 136). The thorax is also rather more densely dusted.]
At present known only from Scotland: Sutherland (Golspie, Skelbo Sands, Inveraver & Dornoch), Nairns. (Nairn), Morays. (Forres & Elgin), Kincardins. (Muchalls) & Ayrs. (Gailes). Scarce. vi–vii.

10 ♂♂ *only:* postical vein with a strong thickening at base (figs 132, 133). 11

— *Both sexes:* postical vein not or only slightly thickened at base 12

11 Abdomen pale-haired. Greyer species with pale tibiae. Squamal margin yellow. Thickening of postical vein tapered and more than half as long as discal cell (fig. 132). 2–2.5 mm ..... **excellens** Frey ♂
Recorded from only Scotland: Ben Eighe (Ross & Cromarty), 30.vi.53 (O.W. Richards); Nethybridge (Inverness.), vi.05 (C. G. Lamb) and 3.ix.11 (Col. Yerbury).

— Abdomen black-haired. Darker species with dark tibiae. Squamal margin brownish. Thickening of postical vein more uniform in width and not more than one-third length of discal cell (fig. 133). 2.5–3 mm ..... **inspissata** Collin ♂
Only British records known: Nethybridge (Inverness.), vi.05 (C. G. Lamb); Newmarket (Suffolk), v.20 (J. E. Collin); Loxley Wood (Som. N.), 29.vi.48 (J. Cowley).

12 1st antennal segment (often also 2nd segment) yellow 13

— Antenna entirely black 16

13 Haltere dark, at least distinctly brownish. Apical section of discal vein practically straight. 2nd segment of hind tarsus about 1.5 times as long as metatarsus. 2nd antennal segment very short. Arista short, not more than 1.5 times as long as antenna. ♀: 4th abdominal tergite much abbreviated. 3–3.25 mm . . **striata** Parent
Only British records known: Nethybridge (Inverness.), vi.05 & 06 (C. G. Lamb).

— Haltere yellow. Apical section of discal vein distinctly curved. ♀: 4th tergite normal 14

14 Anteroventral bristles on hind femur long and black. Abdomen shining black and almost without dusting except at base. Propleural bristles in more than a single row. Arista about 3 times as long as antenna. ♂: hind tibia with a short strong curved spine anteriorly at tip. 3.75–4.5 mm..... **nitida** Macquart
Recorded from only Cambs. (Cambridge & Kirtling), Suffolk (Ampton), Herefords. (Tarrington), Glamorgan (Oxwich sand-dunes), Glos. (Blaise Woods), Somerset (Leigh Woods) and Kent (Blackheath). Uncommon. vi–viii.

— Anteroventral bristles on hind femur quite short and in *pinicola* whitish. Abdomen more extensively dusted, shining only towards tip. Propleural bristles in a single row. Arista about twice as long as antenna.....15

15 Acrostichal bristles, presutural dorsocentral bristles and bristles on posthumeral patch, all longer than usual. Lower postocular cilia whitish. ♂: hypopygium very large, and hind tibia with 3 or 4 strong brownish dorsal bristles near tip. ♀: hind tibia with a long dorsal preapical bristle, and posteroventral spur to middle tibia two-thirds the length of anteroventral spur. 3.5–4.25 mm..... **obscura** Zetterstedt
Scotland: Inverness. (Nethybridge), Perths. (Rannoch). England: Suffolk (Barton Mills), Berks. (bred from elm-log debris, Windsor Park), v.29 (O. W. Richards) (& from pupae beneath pine bark, Windsor Forest), 13.iv.31 (J. C. Robins). Scarce. vi–viii.

— Acrostichal and other bristles on front part of thorax normal and small. Postocular cilia yellowish white. ♂: hypopygium smaller and hind tibia without distinctive bristles above near tip. ♀: hind tibia with only a very small dorsal preapical bristle, the posteroventral spur to middle tibia very short. 2.5–3 mm..... **pinicola** Kowarz
Only British records known: Ben Eighe (Ross & Cromarty), 7.vii.50 (O. W. Richards); Nethybridge (Inverness.), vi.05 and 06 (C. G. Lamb) & 24.vii.05 (Col. Yerbury); Newmarket (Suffolk), 16.vi.40 (J. E. Collin).

16 Apical section of postical vein more than 1.5 times as long as outer crossvein.....17

— Apical section of postical vein not more than 1.5 times as long as outer crossvein....26

17 At least front and middle tibiae yellow or pale brownish. Abdomen pale-haired....18

— Legs, including tibiae, blackish or dark brown.....19

18 ♀ *only*. Coxal and femoral hairs and bristles, and abdominal pubescence, conspicuously whitish. Apical section of postical vein twice as long as outer crossvein. Postical vein about base of discal cell markedly thicker than cubital vein from radio-cubital node outwards (see fig. 134). About 2.25 mm. (See above)..... **excellens** Frey ♀

— *Both sexes*. Coxal and femoral hairs and bristles more pale brownish. Abdominal pubescence yellowish. Apical section of postical vein at least 2.5 times as long as outer crossvein. Postical vein about base not obviously thicker than cubital vein. 1.75–2.25 mm..... **pallipes** Zetterstedt
Recorded from Notts., Hunts., Norfolk, Suffolk, Glos., Oxon, Somerset, Kent, Hants. & Sussex. Uncommon. vi–viii.

19 Haltere dark. Arista short, hardly longer than face. Lower postocular cilia dark. About 2.25 mm..... **tristis** Zetterstedt
Scotland: Ross and Cromarty, Inverness. & Perths. England: Yorks., Herefords., Hunts., Glos., Bucks., Somerset, Wilts., Kent, Hants., Sussex & Cornwall. Uncommon & local. iv–vi.

— Haltere yellow. Arista decidedly longer than face.....20

20 ♀♀ *only*. Anteroventral bristles on middle femur short, sometimes longer ones at tip 21

— *Both sexes*. Middle femur with rather long anteroventral bristles, the longest more than half as long as femur is deep.....22

21 Anteroventral bristles at tip of hind femur long and pale. Arista apical. Epistoma not longer than clypeus. Postical vein about base of discal cell markedly thicker than cubital vein from radio-cubital node outwards (fig. 134). 2.75–3 mm. (See above) ..... **inspissata** Collin ♀

— Anteroventral bristles at tip of hind femur short and dark. Arista subapical. Epistoma longer than clypeus, finely rugulose and weakly shining. Postical vein about base not obviously thicker than cubital vein. Abdomen dark-haired. 2.25–2.75 mm. (See below) ..... **impigra** Collin ♀

22 ♂ *only*. Hind femur with short and inconspicuous anteroventral bristles. Postocular cilia dirty yellow. Arista subapical. Abdomen dark-haired. 2.25–2.75 mm **impigra** Collin ♂
Scotland: Caithness, Ross & Cromarty, Perths. & Dumfries. England & Wales: Yorks., Caernarvons., Herefords., Cambs., Suffolk, Glamorgan, Glos., Bucks., Essex, Berks., Somerset, Wilts., Surrey, Kent, Hants., Sussex & Cornwall. Common. v–viii.

— *Both sexes*. Hind femur with long anteroventral bristles at least at tip 23

23 Abdomen dark-haired.....24
— Abdomen pale-haired. Lower postocular cilia pale.....25
24 Lower postocular cilia dark. Epistoma coarsely rugulose. 3rd antennal segment longer than wide with distinctly dorsal arista. 2.5–3 mm. (=*apicalis* Coll. *nec* Zett.) ..... **abstrusa** Thuneberg
Scotland: Bute & Ayrs. England & Wales: Westmorland, Lancs., Notts., Cambs., Suffolk, Glamorgan, Glos., Oxon, Bucks., Somerset, Wilts., Surrey, Dorset, Hants., Sussex & Cornwall. Fairly common. iv–vii.
— Lower postocular cilia pale. Epistoma finely rugulose. 3rd antennal segment not longer than wide, arista subapical. 2–2.5 mm..... **borealis** Thuneberg
Only British records known: Braemar (Aberdeens.), 24.vi and 13.vii.51 (R. L. Coe).
25 Apical section of postical vein quite or more than twice as long as outer crossvein. 3rd antennal segment distinctly wider than long. Abdominal pubescence almost whitish. 2.25–2.75 mm ..... **jugalis** Collin
Recorded from only Cambs. (Kirtling), Norfolk (Carrow), Suffolk (Barton Mills), Somerset (E. Clevedon & Edington), Wilts. (Salisbury) & Kent (Abbey Wood). Uncommon. vi–vii.
— Apical section of postical vein less than 1.75 times as long as outer crossvein. 3rd antennal segment as long as wide. Abdominal pubescence yellowish. 3.25–3.75 mm ..... **oscillans** Allen
So far recorded only from W. Kent (Blackheath, Charlton and Abbey Wood, mainly on Poplar trunks), 9.vi–7.viii, 1971–75 (all A. A. Allen).
26 Middle tibia with only one (posterodorsal) bristle near base. Face entirely dusted silvery grey. Acrostichal bristles rather long and few in number (4 or 5 pairs). About 2.25 mm ..... **unisetosa** Collin
Recorded from only Inverness. (Arisaig) in Scotland & from Wilts. (Wishford) & Hants. (Lyndhurst & Brockenhurst) in England. Scarce. vi–vii.
— Middle tibia with the usual pair of dorsal bristles near base.....27
27 Propleuron with one long strong bristle and 2 or 3 short hairs above.....28
— Propleural bristles all about equally long and strong.....29
28 Haltere dark. Arista not longer than face. Thorax dusted brownish grey. Coxal bristles black. ♀: ovipositor with very long sensory hairs. About 2.25 mm **cuspidata** Collin
Only British records known: Bonhill (Dunbartons.), v.06 (J. J. F. X. King); Loch Garten (Inverness.), 13.vi.71 (O. M. White).
— Haltere yellow. Arista distinctly longer than face. Thorax dusted greyish white. Coxal bristles light brown. 3.25–3.75 mm. (See above)..... **oscillans** Allen
29 Tibiae yellow to darkish brown. Clypeus strongly shining metallic green, undusted except sometimes narrowly at sides. 2nd segment of hind tarsus more than twice as long as metatarsus. Thorax boldly and broadly striped. Acrostichal bristles very small and extremely numerous. 4.25–4.5 mm..... **diadema** Linné
Recorded from Yorks. (Hatfield & Doncaster), Hunts. (Brampton & Alconbury), Cambs. (Wicken Fen), Norfolk (Thetford), Suffolk (Barton Mills, Brandon & Yarmouth), Somerset (Sharpham Moor), Wilts. (Coombe Bissett) & Kent (Bromley, Blackheath & Deal). Rather uncommon. vii–viii.
— Legs black, at most knees narrowly yellowish. General colouring dark, thorax not boldly marked. Acrostichal bristles less numerous, though sometimes very small. Clypeus not brilliantly polished metallic green. Smaller species, 2–3.5 mm.....30
30 Acrostichal bristles long, hindermost as long as or longer than distance between rows. Haltere dirty yellowish. Epistoma shining dark green. Arista short, not more than 1.5 times as long as antenna. Apical section of discal vein strongly curved. 3–3.5 mm ..... **melancholica** Lundbeck
Only British records known: Nethybridge (Inverness.), vi.05 (J. E. Collin) & Rannoch (Perths.), 19.iv.70 (G. H. Verrall).
— Acrostichals very short to microscopic. Haltere dark, blackish or brown. Epistoma either dulled by dusting or shining deep blue. Arista much more than 1.5 times as long as antenna. Apical section of discal vein at most only slightly curved.....31
31 Frons moderately shining in male, less so in female. Whole face shining deep blue, becoming more purplish blue on lower half of clypeus. 3rd antennal segment ovate, quite as long as first two segments together. Apical section of discal vein slightly but distinctly curved. 2.5–3.5 mm..... **ambigua** Zetterstedt
Recorded from Ross & Cromarty (Achilty) in Scotland & from Suffolk (Newmarket, Barton Mills and Butley Thicks), Glos. (Forest of Dean), Herts. (Harpenden), Kent

(*Blackheath & Tunbridge Wells*), *Hants.* (*Farley Mount*) & *Sussex* (*Ashdown Forest*) *in England. Uncommon. vi–viii.*

– Frons and epistoma entirely dulled by dark brownish dusting, clypeus shining blue-black. 3rd antennal segment small and short. Apical section of discal vein practically straight. 2–2.5 m. ..... **infumata** Loew
Only British records known: Nethybridge (*Inverness.*), *vi & vii. 05* (*Col. Yerbury*) & *Bonhill* (*Dunbartons.*), *1905* (*J. J. F. X. King*).

Genus **THRYPTICUS** Gerstaecker, 1864
(= *Submedetera* Becker, 1917)

Small to very small flies, mainly shining metallic green in colour. The life-history of the species differs from that of all other members of the family, the larvae being plant-miners and developing in the stems of Monocotyledons.

KEY TO SPECIES

Males

1 Wing with the anal lobe quite undeveloped, narrow at base and widening out to a broadly rounded tip (fig. 139). Apical section of discal vein shorter than basal section measured from the small basal crossvein. Cubital and discal veins slightly divergent in apical half, then converging at apex. 2–2.25 mm. (=*Submedetera* Becker, 1917) **cuneatus** Becker
Only British record: 1♂, Aviemore (*Inverness.*), *12.vii.13* (*J. J. F. X. King*).

– Wing of normal shape, with distinct anal lobe. Apical section of discal vein longer than basal section measured as above. Cubital and discal veins either parallel or slightly converging in at least the greater part of apical half, though sometimes diverging at apex 2

2 Scutellum with 4 bristles, 2 strong and 2 much weaker. Front and middle tibiae clear yellow. 1.75–2 mm ..... **pollinosus** Verrall
Recorded from only Inverness. (*Aviemore*) & *Nairns.* (*Nairn*) *in Scotland & from Herefords.* (*Devereux Pool*), *Norfolk* (*Fowlmere*), *Hants.* (*Lyndhurst*) & *Cornwall* (*St. Merryn*) *in England. Scarce. vii.*

– Only 2 scutellar bristles, strong. Tibiae darkened, at least brownish 3

3 Middle tibia without an anterior bristle at basal third. Arista long and slender. Apical section of postical vein 2.5 times as long as outer crossvein. 2–2.25 mm **nigricauda** Wood
Only British records known: Ormesby Broad (*Norfolk*), *22.vi.81* (*G. H. Verrall*) & *Moccas Pool* (*Herefords.*), *22.vii.12* (*J. H Wood*).

– Middle tibia with an anterior bristle at basal third. Apical section of postical vein either twice or three times as long as outer crossvein 4

4 Arista distinctly pubescent, strongly thickened and almost uniformly thick throughout. Palpi short and broad. Cubital and discal veins practically parallel in apical half, curving rearwards in apical third (fig. 140). Hind metatarsus about 0.75 times length of 2nd segment. 2–2.5 mm ..... **divisus** Strobl
Recorded from only Norfolk (*Bure N.R., Fowlmere & Ringmere*) & *Surrey* (*Weybridge*). *Rather scarce. vi–viii.*

– Arista practically bare and more slender 5

5 Palpi short, hardly longer than 3rd antennal segment. Arista very slender and tapering to a fine tip. Middle tibia entirely brownish. 1.75–2 mm ..... **tarsalis** Parent
Recorded from only Cambs. (*Chippenham Fen, Kirtling & Woodditton Wood*), *Norfolk* (*Fowlmere*) & *Hants.* (*Denny Bog*). *Scarce. vi.*

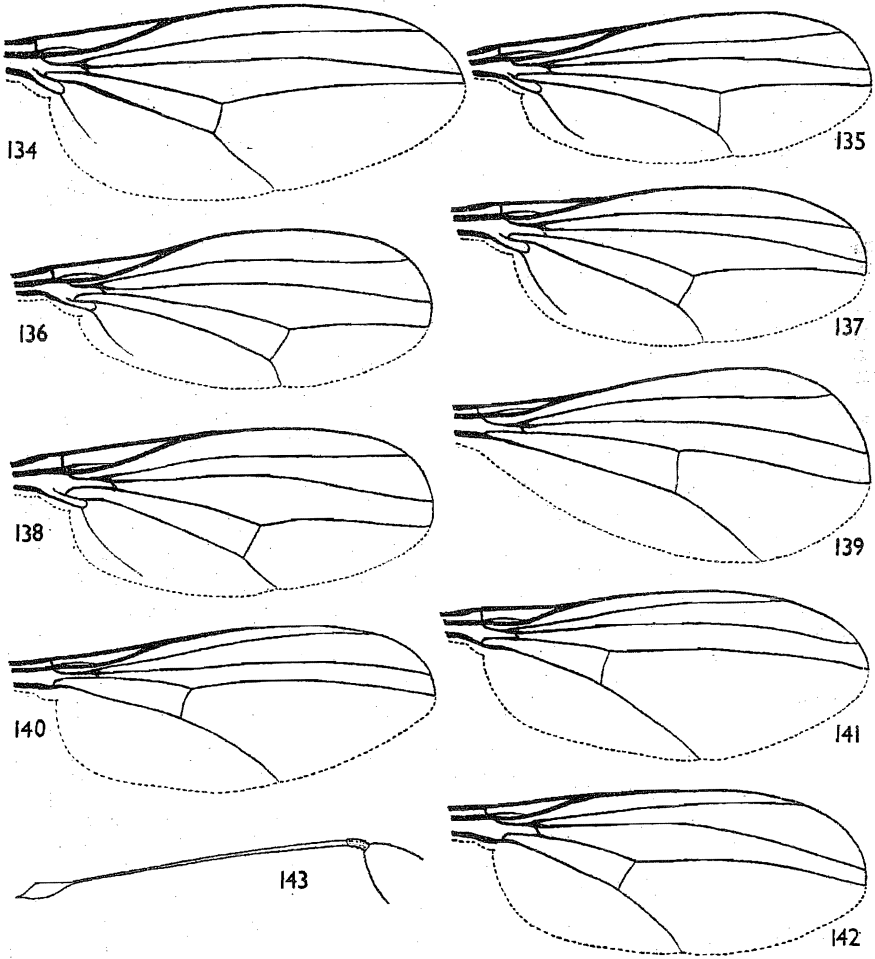
– Palpi decidedly longer than 3rd antennal segment. Arista distinctly thicker and less tapering. Middle tibia paler (more yellowish) posteriorly 6

6 Cubital and discal veins distinctly divergent at apex (fig. 141). Arista uniformly somewhat thickened throughout. About 2 mm ..... **laetus** Verrall
Recorded from Herefords. (*Moccas Pool*), *Norfolk* (*Fowlmere & Ringmere*), *Glamorgan* (*Porthcawl*), *Middx.* (*Scratch Wood*), *Somerset* (*Hinton Charterhouse*), *Surrey* (*Weybridge*) & *Cornwall* (*St. Merryn*). *Not uncommon in suitable habitats. vii–viii.*

– Cubital and discal veins not divergent at apex (fig. 142). Arista rather more slender and somewhat tapering. 1.5–1.75 mm.....**bellus** Loew
Scotland: Inverness-shire. England & Wales: Herefords., Hunts., Norfolk, Cambs., Suffolk, Brecknocks., Surrey, Dorset, Hants., Sussex & Cornwall. Fairly common. vii–viii.

Females
(For distribution see key to males)

1 Middle tibia without an anterior bristle at basal third. Arista long, slender and tapering 2
– Middle tibia with an anterior bristle at basal third..... 4



FIGS 134–143. 134–138, Wings of *Medetera*. 134, *inspissata* Coll. ♀. 135, *jacula* Fall. ♂. 136, *petrophila* Kow. ♂. 137, *dendrobaena* Kow. ♂. 138, *saxatilis* Coll. ♂. 139–142, ♂ wings of *Thrypticus*. 139, *cuneatus* Beck. 140, *divisus* Strob. 141, *laetus* Verr. 142, *bellus* Lw. 143, Arista of *Rhaphium antennatum* Carl. ♂.

2 Legs entirely black, or partly metallic blackish green, at most knees and hind tibia sometimes rusty yellow. 2.75–3 mm ..... **cuneatus** Becker
– All tibiae brownish yellow 3
3 Apical abdominal tergite with a small raised hump on hindmargin. Front metatarsus decidedly more than half as long as tibia. Apical section of postical vein more than 2.5 times as long as outer crossvein. 2.25–2.5 mm ..... **nigricauda** Wood
– Apical abdominal tergite not as above. Front metatarsus hardly half as long as tibia. Apical section of postical vein not more than twice as long as outer crossvein. About 2 mm ..... **tarsalis** Parent
4 Cubital and discal veins divergent at apex (see fig. 141). Arista almost uniformly somewhat thickened throughout. 2–2.25 mm ..... **laetus** Verrall
– Cubital and discal veins not divergent at apex 5
5 Front and middle tibiae yellow. Apical section of discal vein hardly 1.5 times as long as basal section measured from small basal crossvein. 2–2.5 mm. . **pollinosus** Verrall
– Tibiae darkened, at least brownish. Apical section of discal vein quite twice as long as basal section measured as above 6
6 Strong thoracic bristles pale yellow. Cubital and discal veins distinctly, even though only slightly, convergent in apical half (see fig. 142). Middle tarsus often mainly yellow. 1.75–2 mm ..... **bellus** Loew
– Strong thoracic bristles brownish black to black. Cubital and discal veins practically parallel in apical half (see fig. 140). Middle tarsus dark. 2.5–2.75 mm **divisus** Strobl

Genus CYRTURELLA Collin, 1952
(= *Cyrtura* Parent, 1938, *nec* Jaeckel, 1904)

One British species

The smallest species of the family, its apparent scarcity probably due to its minute size. 1 mm or less ..... **albosetosa** Strobl
Only British locality known: Chippenham Fen (Cambs.). Infrequent but usually present in fine warm weather. vi–vii.

Genus RHAPHIUM Meigen, 1803
(= *Porphyrops* auctt. *nec* Meigen, 1824, = *Xiphandrium* Loew, 1857)

Large to quite small species, distinguished by the pointed 3rd antennal segment with apical or subapical arista, and the presence of longish silky pubescence on outer face of hind coxa, with or without a strong bristle.

Key to Species

Males

1 1st antennal segment distinctly stouter than 3rd segment; latter, together with the apical arista, more than twice as long as front tibia. Arista more than half as long as 3rd antennal segment, its basal segment almost one-third the length of apical segment. 5.5–6.5 mm ..... **longicorne** Fallén
Scotland: Ross & Cromarty, Inverness., Perths. & Bute. England & Wales: Westmorland, Yorks., Merioneths., Glamorgan, Berks., Surrey, Hants. & Sussex. Often abundant where it occurs. v–vii.
– 1st antennal segment narrower than 3rd segment. Without the above combination of other characters 2
2 Hind coxa without any strong erect bristle on outer face, with only some longish pale or dark hairs 3
– Hind coxa with one or more distinct strong erect bristles in addition to hairs on outer face 17
3 Arista with a terminal enlargement (fig. 143). Middle femur yellow. 3.5–4mm **antennatum** Carlier

Recorded from Yorks. (Spurn), Herefords. (Cliffords Castle & Leech Pool), Hunts. (Earith), Norfolk (Ringmere), Suffolk (Aldeburgh & Barton Mills), Essex (Frinton-on-Sea), Beds. (Felmersham), Somerset (Durleigh), Surrey (Runnymede), Kent (Blackheath) & Sussex (Seaford). Scarce. vi, ix.

– Arista simple, or if slightly enlarged at tip then middle femur almost entirely black....4

4 Whiskers and coxal hairs dark, black or dark brown. Face, seen from in front, blackish or dark brown, though sometimes appearing pale in lateral view.....5

– Whiskers and coxal hairs white. Face not appearing black or brown from any angle, more usually glistening white.....9

5 Genital lamella forked, the two branches obviously unequal.....6

– Genital lamella not forked.....7

6 Squamal fringe pale yellow. Front metatarsus dilated ventrally at apex, much shorter than remaining four segments combined, without bristles beneath. Middle coxa, anteriorly at apex, with a cluster of separated black bristles. 4.5–5 mm **nasutum** Fallén

Scotland: Inverness. (Aviemore) & Perths. (Rannoch, Blairgowrie & Dunkeld). England: Yorks. (Bubwith), Notts. (Attenborough), Salop (Melverley), Herefords. (Fownhope), Hunts. (Stibbington) & Surrey (Runnymede). Uncommon. v–viii.

– Squamal fringe black or brown. Front metatarsus not dilated, as long as remaining segments combined, with numerous short bristles beneath (fig. 144). Middle coxa with an erect apical spur consisting of a number of coalescent bristles. 5.5–6.5 mm (=*spinicoxa* Loew) ..... **commune** Meigen

Scotland: Perthshire. England: Yorks., Cheshire, Notts., Lincs., Norfolk, Cambs., Glos., Oxon, Bucks., Herts., Somerset, Wilts., Kent, Hants. & Sussex. Recorded from Ireland without locality. Common. v–viii.

7 Discal vein with a remarkable short thickening at about middle of apical section (fig. 145). 5–5.5 mm ..... **fractum** Loew

Scotland: Morays. (Brodie), Inverness. (Nethybridge, Aviemore & Glenmore). England: Salop (Melverley & Maesbrook) & Herefords. (Monnow Valley). Fairly common in Scottish Highlands, becoming less so southwards. vi–viii.

– Discal vein without this thickening.....8

8 Front metatarsus quite straight and not especially setulose beneath. Squamal fringe mainly brownish yellow or brown. Hind tibia pale yellow on basal half, changing abruptly to black thereafter, this black portion laterally compressed. 3.5–4 mm (=*insulum* Haliday) ..... **fascipes** Meigen

Scotland: Inverness. (Nethybridge). England & Wales: Glamorgan (Ryers Down, Gower), Herts. (Bricket Wood), Middx. (Edgeware), Hants. (Brook & Denny Lodge) & Sussex (W. Hoathly). Not uncommon in marshy localities. iv–vii, ix.

– Front metatarsus, in profile, distinctly convex and setulose beneath (fig. 146). Squamal fringe entirely white. Hind tibia entirely yellow, not noticeably compressed. About 5.5 mm ..... **pectinatum** Loew

Only British record: 1♂, 1♀, Richmond (Surrey), 19.vii.68 (G. H. Verrall).

9 Middle tarsus with first three segments yellow, long and slender, 4th and 5th black, former extremely short, latter very broad, dorsoventrally flattened. 5–6 mm **crassipes** Meigen

Common from Highlands of Scotland to s. coast of England. Ireland: Sligo, Clare, Wicklow, Cork & Waterford. v–vii.

– Middle tarsus without any segments enlarged by dorso-ventral flattening.....10

10 Middle coxa, anteriorly at apex, with an erect spur consisting of a number of coalescent bristles 11

— Middle coxa with at most a simple cluster of separated hairs or bristles.....14

11 First two segments of front tarsus about equal in length.....12

— Front metatarsus much longer than 2nd segment.....13

12 3rd antennal segment at least 4 times as long as wide, and twice as long as arista. Apical segment of front tarsus without dorsal fringe. About 4 mm. (=*nemorum* Meigen) **laticorne** Fallén

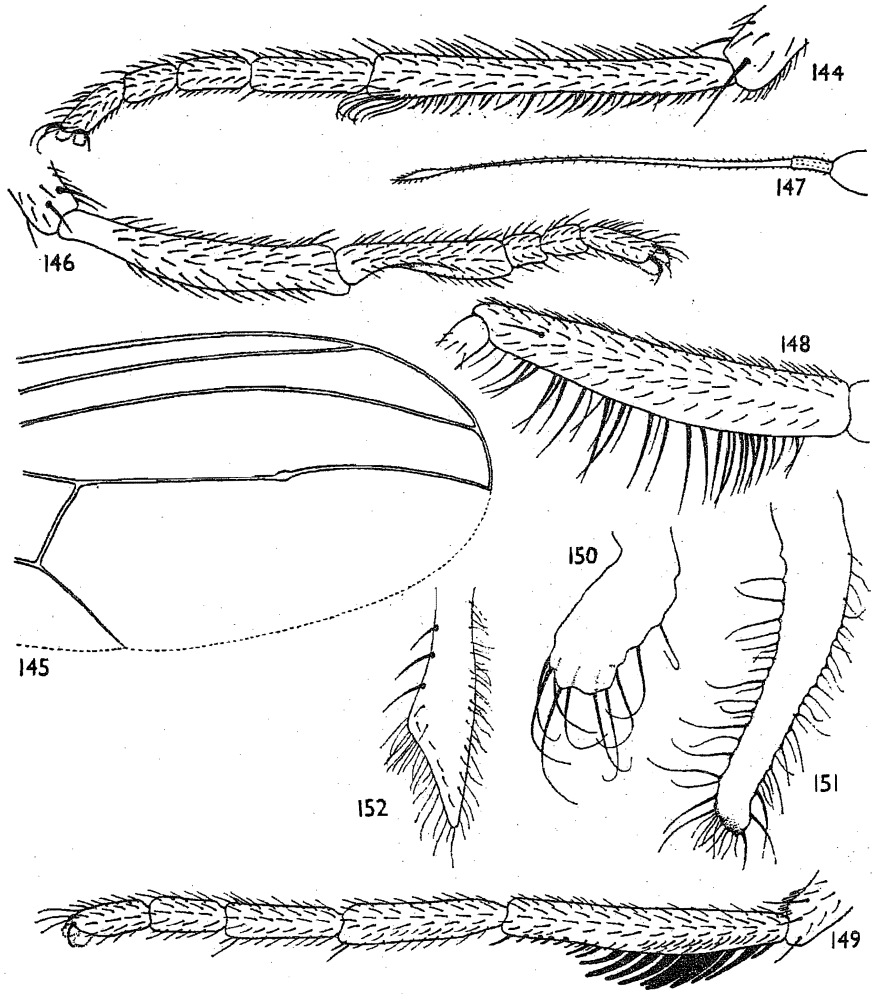
Scotland: Inverness-shire. England & Wales: Lancs., Notts., Herefords., Hunts., Norfolk, Suffolk, Glamorgan, Essex, Middx., Surrey, Hants. & Sussex. Uncommon. v, viii.

— 3rd antennal segment at most twice as long as wide, distinctly shorter than arista. Apical segment of front tarsus with a conspicuous dorsal fringe. 2.75–3 mm **rivale** Loew

Known only from Scotland: Nairns. (Nairn), Inverness. (Aviemore, Loch Morlech & Loch Laggan) & Perths. (Ben Lawers). Often very frequent where it occurs. v–vi.

13 Femora mainly black. Genital lamella very long and slender, of almost uniform width throughout. Arista often appearing dilated at tip where the pubescence is slightly longer (fig. 147). 5–5.5 mm ..... **patulum** Raddatz
Recorded from only Nairns., Morays., Inverness. & Perths. in Scotland, & from Herefords. in England. Scarce. v–viii.

— Middle and hind femora yellow, latter sometimes darkened at apex. Genital lamella shorter, somewhat stout towards base and tapering to tip. Arista simple. 6–7 mm (=*wilsoni* Curtis). ..... **elegantulum** Meigen



FIGS 144–152. *Rhaphium* ♂. 144, L. front tarsus of *commune* Mg. 145, Wing of *fractum* Lw. 146, R. front tarsus of *pectinatum* Lw. 147, Arista of *patulum* Radd. 148, R. front femur of *consobrinum* Zett. 149, R. front tarsus of *micans* Mg. 150–152, Genital lamellae. 150, *brevicorne* Curt. 151, *albomaculatum* Beck. 152, *fasciatum* Mg.

Scotland: Inverness. (*Aviemore & Loch Vaa*) *& Perths.* (*Loch Tay*). *England: Yorks.* (*Hooton Roberts*), *Lincs.* (*Moorby*), *Herefords.* (*Tarrington & Moccas Pool*), *Norfolk* (*Fowlmere and Ringmere*), *Herts.* (*Elstree & Felden*) *& Somerset* (*Blagdon & Durleigh*). *Ireland: recorded without locality. Usually not uncommon where it occurs. v–vii, ix.*

14 Genital lamella long and unforked. Front metatarsus ventrally somewhat swollen at apex. 4.5–5.5 mm ..... **gravipes** Haliday
Known only from Scotland: Ross and Cromarty (*Dingwall*), *Nairns.* (*Carnoch*) *& Inverness.* (*Nethybridge, Aviemore, Loch Vaa & Lairig Ghru*). *Often frequent where it occurs. v–vi.*

— Genital lamella short, or if long then forked 15

15 Front femur, along whole length beneath, with long black bristles (fig. 148). 4.25–5 mm. (=*riparium* Parent *nec* Meigen) ..... **consobrinum** Zetterstedt
Scotland: Nairns. & E. Lothian. England & Wales: Lancs., Yorks., Anglesey, Caernarvons., Hunts., Suffolk, Glamorgan, Glos., Essex, Somerset, Kent, Dorset & Hants. Ireland: Down, Mayo & Sligo. Not uncommon. v–vii, ix.

— Front femur without this row of black bristles beneath, at most with long white setulose hairs 16

16 Genital lamella in the form of a short ribbon of uniform width, shortly forked at apex where it bears a flat tuft of curved bristles. Front metatarsus densely setulose dorsally, the setulae semi-erect and mainly as long as metatarsus is deep. About 6 mm ..... **penicillatum** Loew
Only British records known: Monnow Valley (*Herefords.*), *17.vii.07* (*J. H. Wood*); *Porthcawl* (*Glam.*), *vi.06* (*Col. Yerbury*); *Deal?* (*E. Kent*), *16.v.1868* (*P. B. Mason*).

— Genital lamella broadening out towards apex, almost triangular, not forked and without a tuft of bristles. Front metatarsus with only short decumbent setulae dorsally. 4.75–5.5 mm (=*tenuis* Verrall=*praerosum* Parent *nec* Loew) .... **riparium** Meigen
Scotland: from Sutherland southwards to Dumfries. England & Wales: from Yorkshire to s. coast. Fairly common. v–vii.

17 Front metatarsus more or less strongly bristled ventrally, some of the bristles as long as metatarsus is deep 18

— Front metatarsus not armed as above 19

18 Front metatarsus cylindrical, with a cluster of longish, somewhat crinkled setulose hairs posteroventrally at tip; the sharp-pointed ventral bristles more or less spaced along almost whole length, longest about middle (fig. 144). Hind femur entirely black. 5.5–6.25 mm. (See above) ..... **commune** Meigen

— Front metatarsus ventrally swollen about middle, without the above cluster of hairs at tip, the short coarse, somewhat blunt ventral bristles in a close-set row occupying about basal two-thirds (fig. 149). Hind femur black on not more than apical half. 4.5–5 mm (=*simplex* Verrall) ..... **micans** Meigen
Scotland: Dunbartons. (*Bonhill*). *England: Yorks.* (*Bubwith & Blaxton Common*), *Herefords.* (*Moccas & Monnow Valley*), *Oxon* (*Eynsham*), *Herts.* (*Felden*), *Surrey* (*Boxhill & Kew*), *Devon* (*Putsborough*), *Hants.* (*Lyndhurst*), *Sussex* (*Malling & Lewes*) *& Cornwall* (*Lake Tamar*). *Scarce. vi–viii.*

19 Face, seen from in front, deep brown. Squamal fringe mainly brown or brownish yellow. Hind tibia pale yellow on basal half, changing abruptly to black thereafter, black portion laterally compressed. 3.5–4 mm. (See above) ..... **fascipes** Meigen

— Face, seen as above, glistening white or greyish. Squamal fringe white or pale yellow. Hind tibia not laterally compressed in apical half 20

20 Frons at least partly pale-dusted, so that part of metallic ground colour is completely hidden 21

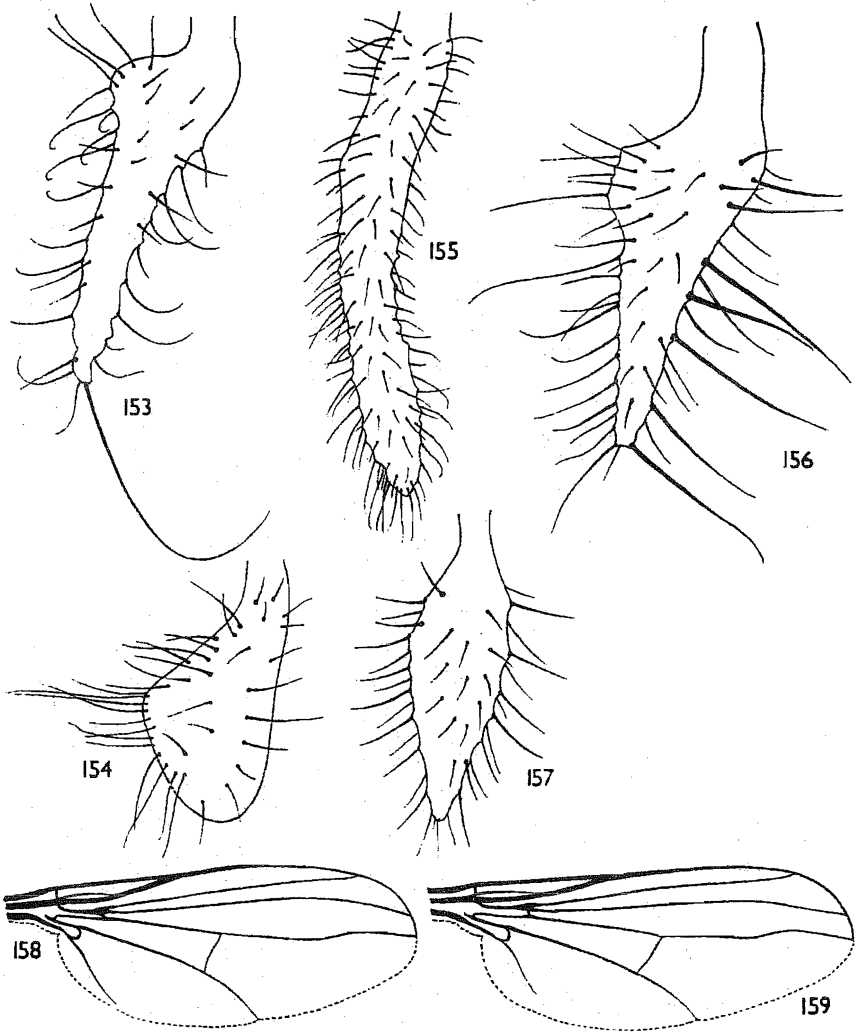
— Frons without, or with very thin dusting, so that metallic ground-colour is entirely visible 22

21 Arista quite twice as long as 3rd antennal segment is wide, and distinctly more than half 3rd segment's length. Hind tibia rather brownish yellow. Genital lamella short and more or less narrowly oval (fig. 150). 2.25–3 mm ..... **brevicorne** Curtis
Scotland: Ross & Cromarty, Inverness., Aberdeens & Bute. England & Wales: Yorks., Caernarvons., Pembs., Glos., Somerset, Kent, Devon, Hants. (*incl. I.O.W.*) *& Cornwall. Ireland: Mayo. Not uncommon. iv–vii, ix.*

— Arista hardly as long as 3rd antennal segment is wide. Hind tibia brown or brownish black. Genital lamella long and ribbon-like (fig. 151). 2.5–3 mm (=*fissum* Haliday *nec* Loew) ..... **albomaculatum** Becker
Scotland: Sutherland (*Tongue & Bettyhill*), *Inverness.* (*Coylum Bridge & Glen Feshie*) *& Perths.* (*Loch Tummel & Ben Lawers*). *England: Westmorland* (*Moor House N.R.*),

Yorks. (*Keasden*) & *Derbys.* (*Dovedale & Millers Dale*). *Ireland: recorded without locality. Morley* (*1943*) *records females* (*incorrectly identified as* fissum *Lw.*) *in swarm of some hundreds over water in New Forest* (*Hants.*) *Not uncommon, especially in Scottish Highlands. v–vii.*

22 Abdomen partly translucent yellow about base. Hind tibia entirely yellow. (Genital lamella, fig. 152). About 2.75 mm..... **fasciatum** Meigen
Scotland: Sutherland (*Tongue & The Mound*) & *Inverness.* (*Spey Bridge & Nethybridge*). *England & Wales: Westmorland* (*Moor House N.R.*), *Yorks.* (*Askham Bog & Malham Tarn*), *Hunts.* (*Woodwalton Fen*), *Cambs.* (*Chippenham Fen & Snailwell*), *Norfolk* (*Bure N.R.*), *Suffolk* (*Barton Mills*), *Glamorgan* (*Oxwich sand-dunes*) & *Hants.* (*Pamber Forest*). *Ireland: recorded without locality. Scarce. v–vi.*



FIGS 153–159. *Rhaphium.* 153–157, ♂ genital lamellae. 153, *monotrichum* Lw. 154, *caliginosum* Mg. 155, *appendiculatum* Zett. 156, *auctum* Lw. 157 *lanceolatum* Lw. 158–159, ♀ wings. 158, *nasutum* Fall. 159, *pectinatum* Lw.

— Abdomen entirely dark. Hind tibia black or brownish.....23
23 Genital lamella narrowly triangular, fringed with longish fine hairs on both margins, a much longer fine bristle at apex (fig. 153). Arista about half as long as 3rd antennal segment. Hind tibia and tarsus entirely black. 3–3.5 mm....**monotrichum** Loew
Fairly common from Sutherland in Scotland to s. coast of England. Ireland: Mayo & Galway. v–viii.
— Genital lamella, if triangular, without the much longer apical bristle. Arista much less than half as long as 3rd antennal segment, or if about half as long then genital lamella diamond- or pip-shaped and hind tibia and tarsus brown.....24
24 Internal genital appendage, at lower (hinder) corner of truncated tip, with a long slender pencil of coalescent white hairs.....25
— Internal appendage not as above.....26
25 Genital lamella short and triangular (fig. 154). 3rd antennal segment less than 6 times as long as arista. 2.75–3.5 mm (=*zetterstedti* Parent).....**caliginosum** Meigen
Common from Northumberland southwards. iv–x.
— Genital lamella long and ribbon-like (fig. 155). 3rd antennal segment more than 8 times as long as arista. 3–3.75 mm (=*macrocerum* Parent)
appendiculatum Zetterstedt
Very common from Ayrshire to Peebles. southwards. Ireland: Armagh, Kerry, Cork & Waterford. iv–ix.
26 Arista about one-fourth the length of 3rd antennal segment. Genital lamella long and rather narrowly triangular, much longer than internal appendage, with a widely spaced row of 3–4 long black bristles on inner margin, those on outer margin more numerous, hair-like and pale (fig. 156). 3.75–4 mm..... **auctum** Loew
Scotland: Ross & Cromarty (Gairloch). England & Wales: Merioneths. (Arthog Bog), Herefords. (Cusop Dingle, Ledbury & Devereux Pool), Oxon (Wychwood Forest), Somerset (Failand) & Hants. (Lyndhurst, Ober Water & Linwood). Scarce. vi–viii.
— Arista quite half the length of 3rd antennal segment. Genital lamella diamond- or pip-shaped and not longer than internal appendage, with shorter and more dense cilia on both margins (fig. 157). 3.5–4 mm (=*caliginosum* Parent *nec* Meigen)
lanceolatum Loew
Scotland: Sutherland (Mound Station, Lochirver and Loch Assynt), Ross & Cromarty (Dingwall) & Inverness. (Nethybridge & Coylumbridge). Reputed to have been taken at Austwick (Yorks.), but it has not been possible to verify this record. Rare. vi.

Females

(For synonymy and distribution see key to males)

1 Antenna, excluding the terminal arista, distinctly longer than head. Propleuron with numerous short black bristles immediately in front of spiracle. 5–5.75 mm
longicorne Fallén
– Antenna, excluding arista, shorter than head. Propleuron with only pale hairs.....2
2 Hind coxa, on outer face, without a strong erect bristle, with only some longish pale or dark hairs.....3
– Hind coxa, on outer face, with a distinct strong erect bristle in addition to the hairs..18
3 Thorax, behind level of first dorsocentral bristle, with one or more small bristles or setulae lying between the dorsocentral and intra-alar rows. [In cases of doubt with regard to this character, use of the alternative key to females (p. 57) is recommended.].....4
– Thorax with the above area entirely bare.....9
4 Middle tibia with only one anteroventral bristle. Hind tibia pale yellow on rather more than basal half, black thereafter. Frons dull deep bronze with brownish dusting, in contrast with greyish-white face. 3.5–4 mm.....**fascipes** Meigen
– Middle tibia with 2 or more anteroventral bristles (*consobrinum* has occasionally only one, but has hind tibia entirely yellow).....5
5 Hind femur without preapical bristle.....6
– Hind femur with preapical bristle (see fig. 9).....7
6 Hind femur, especially in ventral view, yellow on basal half then almost abruptly black on apical half. Frons more or less densely dusted whitish, partly greenish above. Face greyish white, sometimes faintly yellowish. Arista quite twice as long as antenna. 4–5 mm..... **commune** Meigen
– Hind femur more uniformly coloured, without abrupt change from yellow to black.

Frons and face entirely brownish, with slight bronze reflections. Arista less than 1.5 times as long as antenna. 4.25–5 mm ..... **fractum** Loew

7 3rd antennal segment not longer than wide. Hind tibia distinctly darkened at each end, especially on posterior face. Outer crossvein more upright, angle at lower corner of cell less than 90° (fig. 158). About 4.5 mm..... **nasutum** Fallén

– 3rd antennal segment at least 1.5 times as long as wide. Hind tibia entirely yellow. Outer crossvein more oblique, lower angle of cell distinctly greater than 90° (figs 159, 160) 8

8 All tarsi almost entirely yellow, at most the last 2 or 3 segments slightly brownish towards tips. Apical section of postical vein decidedly less than twice as long as outer crossvein (fig. 159). About 5.5 mm ..... **pectinatum** Loew

– At least the last 2 or 3 segments of front and middle tarsi, and whole of hind tarsus, dark brown to blackish. Apical section of postical vein almost twice as long as outer crossvein (fig. 160). 3.75–4.5 mm..... **consobrinum** Zetterstedt

9 All femora entirely yellow. Hind metatarsus slightly shorter than 2nd segment. 6 dorsocentral bristles. 5.75–7 mm..... **elegantulum** Meigen

– One or more femora at least partly darkened, or if almost entirely yellow then hind metatarsus as long as, or longer than, 2nd segment..... 10

10 Thorax with 6 or more dorsocentral bristles..... 11

— Thorax with 5 dorsocentral bristles..... 15

11 Discal vein strongly sinuous in apical section, the first bend almost abrupt, first posterior cell at widest part quite twice apical width (fig. 161). Cubital vein slightly but distinctly curving forward at apex. Legs usually mainly yellow. 4.5–5.25 mm **crassipes** Meigen

— Either first posterior cell more uniform in width, discal vein being less sinuous and cubital vein without reverse curve at apex (fig. 162), or some femora largely blackish 12

12 Legs mainly yellow, hind tibia darkened at apex. Front coxa with one or more black bristles among white hairs at apex. (Wing, fig. 162). 4.25–6.5 mm **riparium** Meigen

— At least front and hind femora largely blackish. Front coxa usually without black bristles at apex..... 13

13 Front and middle femora yellow on apical fourth to half, hind femur entirely black. Frons and face entirely covered with brownish-yellow sheen. Middle coxa entirely pale-haired. Thorax blackish, thinly dusted brown and only indistinctly striped. About 6 mm..... **penicillatum** Loew

— Front and middle femora only narrowly yellow at apex. Frons and face not concolorous. Middle coxa partly black-haired or black-bristled. Thorax with a conspicuous pair of rather dull dark stripes between lines of bristles..... 14

14 Hind femur almost entirely black, at most a yellowish patch at base beneath. Face greyish white with faint yellowish reflections. Middle coxa pale-haired, with one or more black bristles near apex. 6 dorsocentral bristles. 4.5–5 mm **gravipes** Haliday

— Hind femur yellow on basal half or more. Face more dull brownish with slight bronze reflections, frons dark bronze and somewhat shining. Usually 7 dorsocentral bristles. 5.5–6 mm ..... **patulum** Raddatz

15 Hind femur entirely black. Frons and face entirely covered with brownish-yellow sheen. About 6 mm ..... **penicillatum** Loew

— Hind femur yellow on at least basal third. Frons and face not as above..... 16

16 Front coxa entirely, or almost entirely, yellow, at most darkened at extreme base. About 4 mm ..... **antennatum** Carlier

— Front coxa entirely or mainly black, at most yellowish on apical third..... 17

17 All femora entirely yellow. Front coxa yellowish on apical fifth to fourth. About 4.5 mm ..... **laticorne** Fallén

— Front and middle femora mainly, and hind femur largely, black. Front coxa entirely black. 2.75–3.25 mm ..... **rivale** Loew

18 Hind femur with preapical bristle (see fig. 9)..... 19

— Hind femur without preapical 24

19 Outer bristle on hind coxa black..... 20

— Outer bristle on hind coxa white or pale yellow. Arista strictly apical..... 23

20 Arista strictly apical..... 21

— Arista distinctly subapical..... 22

21 Frons entirely dulled by whitish dusting. Face, seen from above and illuminated from in front, glistening white. 3.75–4 mm..... **micans** Meigen

— Frons practically undusted, entirely shining steel-blue. Face, seen as above, more greyish white. 3–3.5 mm ..... **monotrichum** Loew
22 4th section of costa (between radial and cubital veins) not more than 1.5 times as long as 5th section. 3.75–4.5 mm ..... **auctum** Loew
— 4th section of costa distinctly more than 1.5 times as long as 5th section. 3–3.5 mm **lanceolatum** Loew
23 Front coxa largely black. All femora blackish, or darkened at least dorsally. Front tibia without a distinct ventral bristle. 2.5–3 mm ..... **albomaculatum** Becker
— Front coxa almost entirely yellow, black only at extreme base. At least middle and hind femora entirely yellow. Front tibia with a ventral bristle as long as depth of tibia. 2.75–3 mm ..... **brevicorne** Curtis
24 Thorax with only 4 dorsocentral bristles. Front tibia dorsally with a strongish bristle at about basal third, followed by a ciliation of shorter bristles to apex (fig. 163). 2–2.5 mm ..... **fasciatum** Meigen
— At least 5 dorsocentrals. Front tibia without the above dorsal ciliation 25
25 Front femur mainly, and hind femur on apical third to half, black or blackish. Frons rather densely dusted, obscuring most of the greenish or bronze ground-colour. Arista strictly apical 26
— All femora yellow, at most hind femur somewhat darkened dorsally at apex. Frons very thinly dusted whitish, obscuring none of the steel-blue ground-colour. Arista distinctly subapical 27
26 Middle tibia with one anteroventral bristle. Frons bronze-coloured, dusted brownish. Front metatarsus distinctly shorter than remaining four segments combined. 3.5–4 mm ..... **fascipes** Meigen
— Middle tibia with 2 or more anteroventral bristles. Frons greenish, dusted whitish. Front metatarsus as long as remaining four segments combined. 4–5 mm **commune** Meigen
27 Cubital vein gently curving rearwards from about middle to near apex, where it becomes quite straight to wing-margin (fig. 164). 3–3.75 mm **caliginosum** Meigen
— Cubital vein, after curving rearwards to near apex, slightly curving forwards to wing-margin (fig. 165). 3.25–4 mm ..... **appendiculatum** Zetterstedt

Alternative key to females (*See p. 55, couplet 3.*)

1 Antenna, excluding the terminal arista, distinctly longer than head. Propleuron with numerous short black bristles immediately in front of spiracle. 5–5.75 mm **longicorne** Fallén
– Antenna, excluding arista, shorter than head. Propleuron with only pale hairs 2
2 Hind coxa, on outer face, without a strong erect bristle, with only some longish pale or dark hairs 3
– Hind coxa, on outer face, with a distinct strong erect bristle in addition to the hairs. (Here consult first key to females at couplet 18.)
3 Front coxa, yellow, at most darkened at extreme base, entirely pale-haired and pale-bristled. About 4 mm ..... **antennatum** Carlier
– Front coxa entirely or mainly dark, often with black bristles at or near apex 4
4 Hind femur, on either ventral or anteroventral surface, entirely yellow or brownish yellow, at most darkened at tip 5
– Hind femur extensively blackish on ventral and anteroventral surfaces 13
5 Middle femur entirely yellow 6
– Middle femur partly darkened, even if only brown. Middle tibia with 2 anteroventral bristles 11
6 Hind femur with preapical bristle 7
– Hind femur without preapical bristle 9
7 3rd antennal segment almost twice as long as wide. Hind metatarsus slightly but distinctly shorter than 2nd segment, entirely black. All femora entirely yellow. Face glistening white. 5.75–7 mm ..... **elegantulum** Meigen
– 3rd antennal segment at most a little more than 1.5 times as long as wide, or if longer then front and hind femora partly dark. Hind metatarsus not shorter than 2nd segment, or if slightly shorter then mainly yellow 8
8 6 dorsocentral bristles. Hind tibia blackish at extreme base and more broadly at apex. 4.25–6.5 mm ..... **riparium** Meigen

– 5 dorsocentral bristles. Hind tibia yellow, at most faintly brownish at apex. 3.75–4.5 mm ..... **consobrinum** Zetterstedt

9 Front coxa entirely black. Discal vein strongly sinuous, so that widest part of first posterior cell is quite twice apical width (fig. 161). Hind metatarsus slightly longer than 2nd segment. 4.5–5.25 mm..... **crassipes** Meigen

– Front coxa yellowish at apex. Discal vein less sinuous, widest part of first posterior cell not more than 1.5 times apical width. Hind metatarsus not longer than 2nd segment 10

10 Hind femur entirely yellow. Hind tibia faintly darkened at base. Front coxa yellowish on apical fourth to third. 5 dorsocentral bristles. Face greyish with a brownish tinge. About 4.5 mm..... **laticorne** Fallén

— Hind femur blackish dorsally at apex. Hind tibia blackish at base and on about apical third. Front coxa less extensively yellowish. 6 dorsocentral bristles. Face glistening white. 4.25–6.5 mm..... **riparium** Meigen

11 3rd antennal segment not longer than wide. Hind tibia darkened at each end. Outer crossvein more upright, angle at lower corner of discal cell slightly less than 90° (fig. 158). About 4.5 mm..... **nasutum** Fallén

— 3rd antennal segment about 1.5 times as long as wide. Hind tibia at most faintly brownish at apex. Outer crossvein more oblique, lower angle of discal cell not less than 90° 12

12 Hind femur with preapical bristle. Hind tibia entirely yellow. Angle at lower corner of discal cell distinctly greater than 90° (fig. 159). About 5.5 mm..**pectinatum** Loew

— Hind femur without preapical bristle. Hind tibia distinctly brownish at apex. Lower angle of discal cell not greater than 90°. 4.25–5 mm..... **fractum** Loew

13 Hind femur without preapical bristle, yellowish on at least basal half..... 14

— Hind femur with preapical bristle (see fig. 9), yellow on less than basal half or entirely black 17

14 Middle tibia with 2 or more anteroventral bristles..... 15

— Middle tibia with at most one anteroventral bristle..... 16

15 Arista quite twice as long as antenna. Frons more or less densely dusted whitish. Face greyish white, sometimes faintly yellowish. 4–5 mm..... **commune** Meigen

— Arista less than 1.5 times as long as antenna. Frons and face dusted brownish with slight bronze reflections. 4.25–5 mm..... **fractum** Loew

16 Frons deep bronze, entirely dulled by brownish dusting. Face greyish white. Front coxa with 2 or 3 strong black bristles on anterior face near tip, and with numerous black setulose hairs at tip. Hind metatarsus not longer than 2nd segment. 3.5–4 mm ..... **fascipes** Meigen

— Frons deep bronze, very thinly dusted and therefore somewhat shining. Face dull brownish. Front coxa without strong bristles, at most with a few black setulose hairs at tip. Hind metatarsus slightly longer than 2nd segment. 5.5–6 mm **patulum** Raddatz

17 Hind femur yellow on basal fourth to third. Smaller species, 2.75–3.25 mm **rivale** Loew

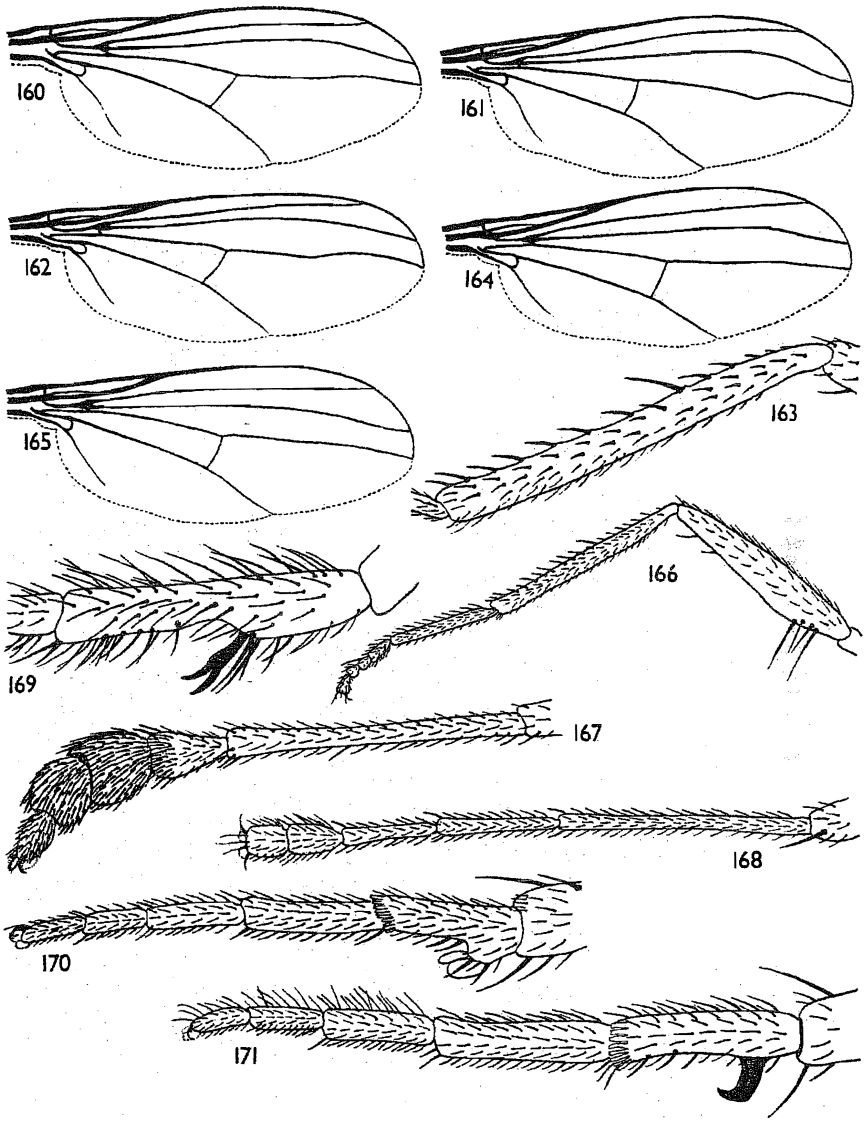
— Hind femur entirely black, except sometimes at extreme base beneath. Larger species, 4.5 mm or more 18

18 Hind tibia black on apical third or more and somewhat darkened at base. Hind metatarsus longer than 2nd segment. Front coxa with 2 or 3 black setulose hairs among the white hairs at tip. Face greyish white with faint yellowish reflections. 4.5–5 mm ..... **gravipes** Haliday

— Hind tibia entirely yellow. Hind metatarsus slightly shorter than 2nd segment. Front coxa entirely white-haired. Face with a brownish-yellow sheen. About 6 mm **penicillatum** Loew

Genus **SYNTORMON** Loew, 1857
(= *Plectropus* Haliday, 1832, preocc.)

Medium sized to small species, immediately distinguished by the peculiar joint between 2nd and 3rd antennal segments, the latter attached to the tip of, and shaped to enfold closely, the rounded thumb-like projection on the former.



FIGS 160–171. 160–165, *Rhaphium* ♀. 160–162, 164–165, Wings. 160, *consobrinum* Zett. 161, *crassipes* Mg. 162, *riparium* Mg. 164, *caliginosum* Mg. 165, *appendiculatum* Zett. 163, R. front tibia of *fasciatum* Mg. 166–171, *Syntormon* spp. ♂. 166, R. front leg of *pumilus* Mg. 167–168, L. middle tarsi. 167, *tarsatus* Fall. 168, *monilis* Hal. 169, R. hind metatarsus of *aulicus* Mg. 170–171, L. hind tarsi. 170, *zelleri* Lw. 171, *pallipes* F.

Key to Species

Males

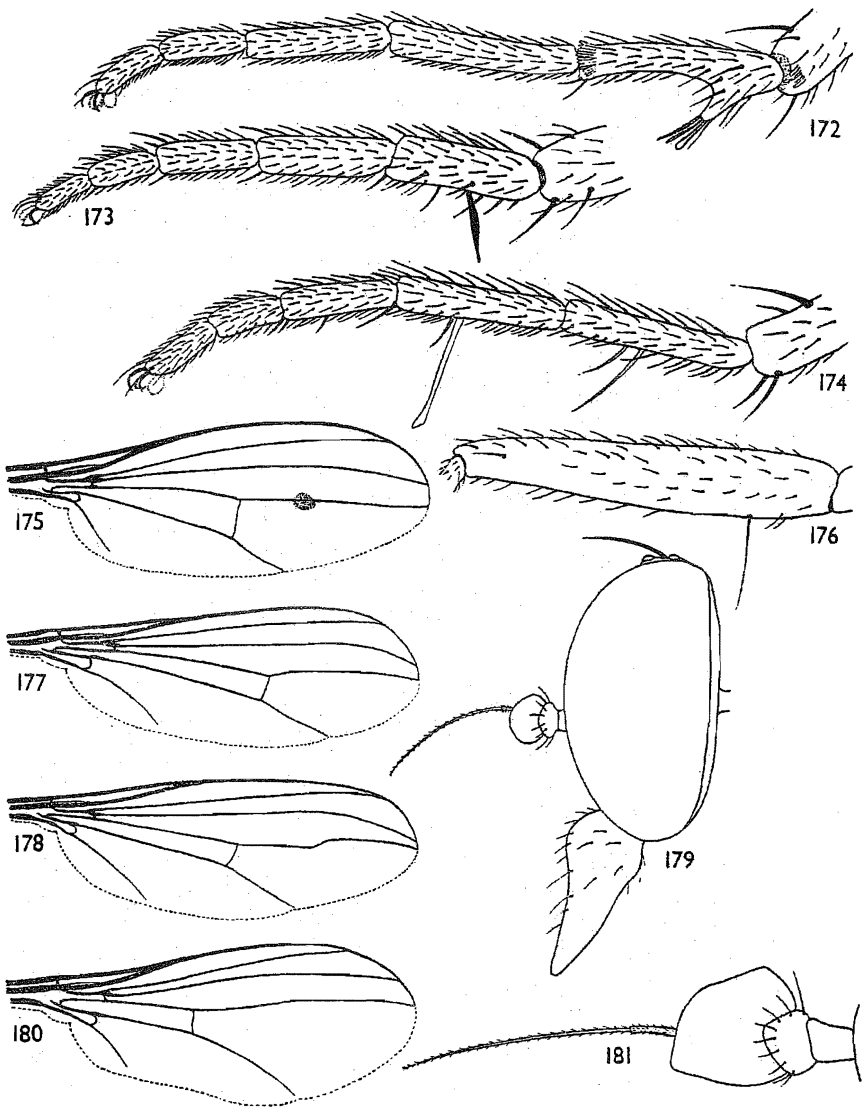
1 Hind tarsus simple, at most somewhat thickened 2
– Hind tarsus remarkable in either structure, chaetotaxy or other peculiarity 4
2 Front tarsus with segments 2 to 5 strikingly shortened, together only about as long as metatarsus. Front femur with a cluster of 3 to 5 strong bristles at base beneath (fig. 166). 2.5–2.75 mm ..... **pumilus** Meigen
Sparsely distributed from Sutherland in Scotland to s. coast of England. Ireland: Down, Mayo, Galway & Kerry. Channel Is. v–vii.
– Segments of front tarsus uniformly decreasing in length towards apex, metatarsus much shorter than combined length of remaining segments 3
3 All coxae yellow. Middle femur ventrally with 2 or 3 long bristles. Hind tarsus distinctly thickened; metatarsus, and basal half of 2nd segment, yellow. Wing clear. About 4 mm ..... **miki** Strobl
Recorded from only Hants. (Bucklers Hard and Bournemouth) & Cornwall (St. Merryn). Rare. vi–viii.
– Middle and hind coxae black, yellowish at apex. Middle femur ventrally with a fine bristle about middle, and a row of short black setulae from this bristle to base of femur. Hind tarsus not noticeably thickened, uniformly dark. Wing with a distinct brownish spot on apical section of discal vein (see fig. 175). About 3.25 mm **macula** Parent
Only British localities known: Coombe Dingle & Blaise Woods (nr Bristol, Glos.), where females emerging from hibernation were found fairly frequent during March, April and May from 1947 to 1952 inclusive, and Failand (Som. N.) where one ♀ was taken in April 1949. A ♂, hitherto unknown, was taken by the author at Blaise Woods on 1.viii.49. together with a number of freshly emerged females. iii–v, vii–viii.
4 Middle tarsus with one or more segments enlarged 5
– Middle tarsus without enlarged segments 6
5 2nd, 3rd and 4th segments of middle tarsus enlarged, laterally compressed (fig. 167). All coxae yellow. Hind tibia strongly and abruptly dilated at apex. Hind metatarsus beneath with a wavy bristle inclined forwards. 3–3.5 mm .... **tarsatus** Fallén
Scotland: Inverness. (Aviemore, Glenmore & Loch Davan) & Kirkcudbrights. (Cairnsmore of Fleet). England & Wales: Westmorland (Windermere & Shap), Yorks. (Austwick, Langsett & Malham Tarn), Glamorgan (Nicholaston), Devon (Croyde) & Hants. (Ober Water, Linwood & Hatchet Pond). Ireland: Mayo (Belclare & Aasleigh Falls) & Galway (Kylemore Abbey & R. Cuflin). Uncommon. vii–viii.
– 4th and 5th segments only of middle tarsus slightly broadened, dorsoventrally flattened (fig. 168). Middle and hind coxae entirely or mainly black. Hind metatarsus bifid at base, forming a pointed ventral spur bearing 1 or 2 flattened bristles. 2.5–2.75 mm ..... **monilis** Haliday
Scotland: Ross & Cromarty & Inverness. England: Cumberland, Yorks., Norfolk, Oxon, Berks., Kent, Hants., Sussex & Cornwall. Ireland: Mayo. Wales: Anglesey. Not uncommon but very local. vi–vii.
6 Abdomen translucent yellowish, tergites with dark hindmarginal bands. 3rd antennal segment very short, wider than long. Hind metatarsus ventrally swollen in basal half and strongly bristled (fig. 169). 4–5 mm (s.g. *Drymonaeca* Becker, 1907, =*Eutarsus* Loew, 1857, preocc.) ..... **aulicus** Meigen
Scotland: Inverness. & Midlothian. England & Wales: Yorks., Notts., Merioneths., Hunts., Cambs., Glamorgan, Glos., Essex, Somerset, Kent, Dorset, Hants. & Cornwall. Ireland: Down & Mayo. Not uncommon but somewhat local. vii–x.
– Abdomen entirely dark metallic, or if partly translucent yellow then 3rd antennal segment more than twice as long as wide 7
7 Hind metatarsus strongly swollen at base beneath, and here with a pair of yellowish oval leaf-like appendages surrounded by fine black setulose hairs (fig. 170). 3–3.5 mm ..... **zelleri** Loew
Scotland: Sutherland (Golspie, Inveran & Inchnadamph), Ross & Cromarty (Gairloch), Inverness. (Nethybridge, Bridge of Brown, Loch Garten & Aviemore) & Perths. (Aberfoyle). England: Glos. (Filton), Hants. (Wilverley Walk, N.F.) & Sussex (Landport). Ireland: recorded without locality. Scarce, especially in south. vi–vii, x.
– Hind metatarsus not as above 8
8 Hind metatarsus, at about basal third beneath, with pair of short bare black claws curved rearwards (fig, 171) 9

– Hind metatarsus without these claws beneath.....10
9 Front coxa clear yellow on apical two-thirds. 3rd antennal segment 2.5–3.5 times as long as wide. Abdomen often partly translucent yellow. 3.25–3.75 mm **pallipes** Fabricius
Very common throughout British Isles. iii–x.
— Front coxa black, at most yellowish at extreme apex. 3rd antennal segment not more than twice as long as wide. Abdomen always entirely dark. 3.25–4 mm **denticulatus** Zetterstedt
Fairly common from Merioneths. to Notts. southwards to Is. of Scilly. Ireland: Cork. i–xi.
10 Hind metatarsus bifid at base, forming a short stout ventral spur with some flattened bristles at apex (fig. 172). 3–3.25 mm..... **spicatus** Loew
Recorded from only E. Lothian (Aberlady) in Scotland & from Herefords. (Middle Park Wood & Stoke Wood), Suffolk (Kennett), Bucks. (Tingewick), Somerset (Failand) & Hants. (Ober Water, N.F.) in England. Uncommon & local. vi–vii.
— Hind metatarsus not bifid at base.....11
11 Hind metatarsus, at middle beneath, with a longish erect coarse bristle somewhat inclined forwards, and a shorter one at apical third inclined rearwards (fig. 173). Hind tibia almost entirely black, laterally compressed and markedly club-shaped in side view. 2.5–2.75 mm ..... **sulcipes** Meigen
Scotland: Ross & Cromarty, Inverness., Aberdeens. & Perths. England & Wales: Cumberland, Yorks., Caernarvons., Merioneths., Glos., Somerset, Surrey & Hants. Ireland: Wicklow. Not infrequent where it occurs. vii–viii.
— Hind metatarsus and 2nd segment each with one erect ventral bristle at about middle, that on 2nd segment longer and square-ended (fig. 174). Hind tibia yellow and simple. 2–2.5 mm (=*rufipes* auctt. *nec* Meigen)..... **filiger** Verrall
Recorded from only Dumfries (Caerlaverock N.R.) in Scotland & from Yorks. (Bentley Common, nr Doncaster), Suffolk (Woodbridge & Aldeburgh), Glamorgan (Oxwich sand-dunes), Essex (Walton-on-Naze) & Hants. (Christchurch) in England & Wales. Scarce. v–ix.

Females

(For synonymy and distribution see key to males)

1 Face with a pair of longish down-curved pale hairs.....2
– Face bare.....3
2 Front and hind coxae yellow. Abdomen partly translucent yellow. Pleural sclerite, connecting hind coxa to base of abdomen, yellow. Wing quite clear. About 4 mm **miki** Strobl
– Only front coxa yellow. Abdomen entirely dark. Above sclerite black. Wing with a brown spot on apical section of discal vein (fig. 175). 3–4 mm.... **macula** Parent
3 All coxae yellow, at most middle coxa darkened on outer face.....4
– At least middle and hind coxae mainly or entirely dark.....6
4 Abdomen yellow, tergites darkened on hindmargins. 4.5–5 mm (s.g. *Drymonaeca* Becker 1907) ..... **aulicus** Meigen
– Abdomen at most with yellow patches on 2nd and 3rd tergites.....5
5 Pleural sclerite, connecting hind coxa to base of abdomen, yellow. 2.75–3.25 mm **tarsatus** Fallén
– Above sclerite black. 2.75–3 mm ..... **spicatus** Loew
6 All coxae mainly or entirely dark in ground-colour, front one sometimes only on outer face.....7
– Front coxa clear yellow on at least apical half.....9
7 Outer crossvein not more than half as long as apical section of postical vein. Front coxa partly black-haired and with black bristles at apex. Middle coxa with a black bristle on outer face. 2.25–3 mm..... **filiger** Verrall
– Outer crossvein about equal in length to apical section of postical vein, or at least decidedly more than half as long. Front coxa entirely white-haired, at most 1–2 apical bristles black. Middle coxa without an outer black bristle.....8
8 Frons and face, seen from in front and somewhat above, greyish-white. Middle tibia with only one anteroventral bristle. About 3.25 mm..... **zelleri** Loew
– Frons and face, seen as above, brownish or bronze-coloured. Middle tibia with 2 anteroventrals. 3.5–4.5 mm ..... **denticulatus** Zetterstedt



FIGS 172–181. 172–175, *Syntormon*. 172–173, ♂ L. hind tarsi. 172, *spicatus* Lw. 173, *sulcipes* Mg. 174, R. hind tarsus of *filiger* Verr. ♂. 175, Wing of *macula* Par. ♀. 176, L. front femur of *Achalcus flavicollis* Mg. ♂. 177–178, ♂ wings of *Neurigona* spp. 177, *suturalis* Fall. 178, *quadrifasciata* F. 179–181. *Chrysotus* ♂. 179, Head of *pallidipalpus* v. Duz. 180, Wing of *neglectus* Wied. 181, Antenna of *pulchellus* Kow.

9 Outer crossvein not more than half as long as apical section of postical vein. Front coxa, in addition to black apical bristles, partly black-haired. Front femur black on basal half. 2.25–3 mm ..... **filiger** Verrall
— Outer crossvein much more than half as long as apical section of postical vein. Front coxa entirely white-haired 10
10 Front femur black at base. Front coxa yellow on apical half only. Hind trochanter black or brown 11
— Front femur entirely yellow. Front coxa yellow on more than apical half. Hind trochanter at least partly pale 12
11 Frons entirely dull, brownish or bronze-coloured. 3.5–4.5 mm **denticulatus** Zetterstedt
— Frons shining steel-blue. About 3 mm ..... **pumilus** Meigen
12 Front tibia without a posterodorsal bristle. First three segments of all tarsi yellow, at most darkened at tips. 3rd antennal segment not longer than wide. About 3 mm **monilis** Haliday
— Front tibia with a small posterodorsal bristle at about basal third. Tarsi dark from tip of metatarsus outwards 13
13 Front coxa with bristles and hairs all pale. Hind tibia entirely yellow, the metatarsus yellow on basal half. 3rd antennal segment decidedly longer than wide. Abdomen often with yellow patches on 2nd and 3rd tergites. 3.25–4 mm.... **pallipes** Fabricius
— Front coxa with the apical bristles black. Hind tibia darkened towards apex, metatarsus entirely black. 2.75–3 mm ..... **sulcipes** Meigen

Genus MACHAERIUM Haliday, 1832

One British species

Body entirely metallic green, more or less dusted whitish, frons with strong violet reflections. Legs almost entirely yellow, darkened only on last four segments of tarsi. A mainly estuarine and saltmarsh species. 4.5–5.75 mm **maritimae** Haliday

Scotland: Argylls. & E. Lothian. England & Wales: Yorks., Anglesey, Caernarvons., Merioneths., Norfolk, Suffolk, Glos., Essex, Somerset, Kent, Dorset, Hants. (incl. I.O.W.) & Is. of Scilly. Ireland: Down, Galway & Kerry. Usually frequent where it occurs. vii–ix.

Genus SYSTENUS Loew, 1857

Medium sized to rather small flies, all five British species of which have been reared from sap exudations on deciduous tree wounds; seldom taken as adults.

Key to Species

Males

1 Cubital and discal veins strongly convergent, their tips separated by not more than one-third length of outer crossvein 2
– Cubital and discal veins much less convergent, tips separated by little less than length of outer crossvein 3
2 Hindmargin of wing rather strongly concave near apex, where there is a black oval spot. Antennae reddish yellow, 3rd segment brownish apically and about 2.5 times as long as wide. All coxae yellow. About 4 mm..... **scholtzi** Loew
Recorded from only: Hunts. (Monks Wood, suction trap) (M. Service); Cambs. (Lode, reared from elm rot-hole), 25.v.75 (I. Perry); London (Bedford Park), vii.29 (J. Waterston); Wilts. (Groveley Wood), 28.vii.63 (Sir Christopher Andrewes); Kent (Blackheath), vi. & vii. 1970–74 (A. A. Allen); Hants. (New Forest, bred from beech fungus), 8.v.05 (D. Sharp). Rare.
– Wing not noticeably concave on hindmargin, without apical black spot. Antenna largely black, 3rd segment more or less reddish brown, about 4 times as long as wide. Middle and hind coxae black on basal half. 3.5–4 mm (=*adpropinquans* Loew) **pallipes** von Roser

Salop (Bridgenorth, reared from elm sap), 1903 (F. Jenkinson); Herefords. (Ledbury & Devereux Pool), vi–vii.09 (J. H. Wood); Hunts. (Monks Wood, suction trap) (M. Service); Cambs. (Snailwell) & Suffolk (Barton Mills), 1903 (G. H. Verrall); Kent (Blackheath, reared from sappy elm debris & caught at elm sap), 1970–1 (A. A. Allen); Glos. (Coombe Dingle, swept), 2.vii.49 (E. A. Fonseca) & (Coombe Dingle, reared from elm sap), 18.iv.54 (C. E. Dyte). Rare. Normal flight period vi–vii.

3 Basal segments of the rather long antenna clear yellow. About 2.5 mm. . **tener** Loew
Herefords. (Haugh Wood), 27.v.07 & vii.08 (J. H. Wood); Kent (Blackheath, at elm), 13.vii.70 (A. A. Allen); Hants. (New Forest, reared from beech rot-hole debris), vii.05 (D. Sharp). Rare. v–vii.

– Antenna entirely black 4

4 3rd antennal segment 2.5 times as long as wide. Hypopygium black, yellow at apex. 3–3.25 mm ..... **bipartitus** Loew
Herefords. (Haugh Wood), 27.v.07 (J. H. Wood); Hunts. (Monks Wood, suction trap); Cambs. (Cambridge, at elm sap), 10.vii–4.viii.10 (F. Jenkinson); Kent (Blackheath, reared from sappy elm debris), 28.vi.70 & (Charlton Pk.), 18.vii.75 (A. A. Allen). Rare. v–viii.

– 3rd antennal segment 3–3.5 times as long as wide. Hypopygium entirely pale yellow. 2.75–3 mm ..... **leucurus** Loew
Herefords. Devereux Pool, reared from 'sour humus' from wych elm), 11.vi.09 (J. H. Wood); Cambs. (Snailwell, reared from chestnut debris), vi & vii.07 (G. H. Verrall) & (Lode, from elm rot-hole), 14.vi.75 (I. Perry); Essex (Epping Forest, reared from rotten beech debris), 1950 (L. Parmenter); Wilts. (Savernake Forest), 28.vi.71 (P. J. Chandler); Kent (Blackheath, reared from sappy elm debris), 3–6.vii.70 (A. A. Allen) & (Bromley), 2.ix.67 & 10.viii.69 (P. J. Chandler). Rare. vi–ix.

Females

(For synonymy and distribution see key to males)

1 Cubital and discal veins strongly convergent, tips separated by no more than one-third length of outer crossvein 2
– Cubital and discal veins almost parallel in apical half 3
2 Antenna reddish yellow, 3rd segment brownish or blackish apically. 3.5–4 mm **scholtzi** Loew
– At least basal segments of antenna black. 3.5–4 mm ..... **pallipes** von Roser
3 Antenna yellow at base. About 2.5 mm ..... **tener** Loew
– Antenna entirely black 4
4 Arista only slightly longer than 3rd antennal segment. Middle tibia dorsally with only 2 bristles at base. Hind femur broadly black at apex. 3–3.25 mm. . **bipartitus** Loew
– Arista almost twice as long as 3rd antennal segment. Middle tibia dorsally with 4 bristles, 2 at base and 2 at middle. Hind femur with only a dark dorsal streak at apex. About 3 mm ..... **lucurus** Loew

Genus ACHLACUS Loew, 1857

Very small flies, often reared from tree-hole debris, and distinguished by the characteristic wing-venation, in which the first three long veins are practically straight and divergent from one another.

Key to Species

Both sexes

1 Thorax reddish yellow. ♂: front femur with an erect ventral bristle near base (fig. 176). About 2 mm ..... **flavicollis** Meigen
Scotland: Sutherland, Dunbartons. & E. Lothian. England: Cumberland, Yorks., Hunts., Norfolk, Suffolk, Glos., Kent, Dorset, Hants. & Sussex. Ireland: Down & Kerry. Uncommon. vi–vii, xi.
– Thorax metallic black, brownish-grey dusted 2
2 Bristles of head and thorax black. ♂: front femur without an erect ventral bristle near base. About 2.5 mm ..... **melanotrichus** Mik

Hunts. (Monks Wood N.N.R.), 28.vi.72 (J. H. Cole); Cambs. (Snailwell, reared from Horse Chestnut debris), vi.06 and Suffolk (Lakenheath, reared from elm detritus), vi.07 (both G. H. Verrall); Glos. (Coombe Dingle), 29.iii.68 (E. A. Fonseca); Oxon (Bix Bottom, reared from elm detritus), 9.vii.72 (P. J. Chandler); Herts. (Rothamsted, reared from lime detritus), 1951 (B. R. Laurence); Berks. (Windsor Forest, reared from mould in elm stump), 21.vi.71 & Kent (Blackheath, on elm), 1970 (both A. A. Allen); Kent (Bromley, reared from Elm detritus), 29.vi.68 (P. J. Chandler). Scarce.

– Bristles of head and thorax yellow to bronze-coloured. ♂: front femur with an erect ventral bristle near base (see fig. 176). 2–2.25 mm..... **cinereus** Haliday
Recorded from only Yorks. (Hexthorpe), Herefords. (Tarrington); Cambs. (Chippenham Fen), Norfolk (Thetford), Glos. (Coombe Dingle), Bucks. (Stoke Poges), Berks. (Thatcham), Surrey (Chobham), Hants. (Leckford N.R.) & Sussex (Lewes). Uncommon, but with long flight period. ii–vi, viii.

Genus BATHYCRANIUM Strobl, 1892

One British species

A small species with legs, including coxae and tarsi, yellow, and abdomen mainly yellow. Found in damp woodland areas, the females usually much more in evidence than the males. 2.5–3 mm..... **bicolorellum** Zetterstedt
Recorded from Hunts. (Monks Wood), Cambs. (Chippenham & Wicken Fens), Bucks. (Wootton-under-Wood), Somerset (Sharpham Moor & Loxley Wood), Wilts. (Blackmoor Copse), Surrey (Gomshall), Kent (Orpington & Lenham), Hants. (New Forest), Sussex (Lewes & Plashett Wood) & Cornwall (Padstow). Ireland: recorded without locality. Uncommon. vii–ix.

Genus NEMATOPROCTUS Loew, 1857

One British species

A medium-sized species, clear metallic green in colour, with rather small 3rd antennal segment and obviously dorsal arista. 4.25–5 mm..... **distendens** Meigen
Known from only Glos.: Sandhurst N.R., 3.vi.75 (K. G. Preston-Mafham), & Hants: Aldridge Hill Incl., 6.vii.62 & 14.vii.63 (J. E. Collin), Mark Ash Incl., 13.vii.66 (Sir Christopher Andrewes) & Ober Water, 30.vi & 2–7.vii.74 (E. A. Fonseca). Not uncommon where it occurs.

Genus NEURIGONA Rondani, 1856 (= *Neurogona* auctt.)

Large to medium large species with long slender legs and body colour entirely or largely yellow. The habit of the males, of more than one species, in flying a zig-zag course up the trunks of trees, has been recorded.

KEY TO SPECIES
Males

1 Thorax yellow, somewhat shining, not dulled by greyish or brownish dust Middle femur, posteroventrally at base, with a short close-set row of black laminate bristles 6–7 mm ..... **pallida** Fallén
England & Wales: Yorks., Herefords., Hunts., Suffolk, Glamorgan, Glos., Herts., Berks., Somerset, Wilts., Surrey, Kent, Devon, Dorset & Hants. Ireland: Kerry. Fairly common. v–vii.

– Thorax dulled by greyish or brownish dust..... 2

2 Discal vein at most smoothly curved in apical section (fig. 177). Abdomen yellow with black foremarginal bands on 2nd to 4th tergites; 5th tergite entirely black. 4–5.5 mm ..... **suturalis** Fallén

Recorded from Lancs., Yorks., Suffolk, Glos., Somerset, Wilts., Surrey, Dorset & Hants. Less common than previous species. vi–vii.

– Discal vein with a double bend about middle of apical section (fig. 178).....3

3 Abdomen entirely yellow. Apical segment of front tarsus armed with short coarse spines. About 5 mm .....**abdominalis** Fallén
Only British records known: Kirtling (Cambs.), 16.vi.26 (J. E. Collin); Letchworth (Herts.), 12.vi.40 (F. W. Edwards). Very rare.

– Abdomen with dark transverse bands at base of tergites. 3rd and 4th segments of front tarsus pennate, 5th white. 4.75–6 mm .....**quadrifasciata** Fabricius
Scotland: Inverness-shire. England: Yorks., Hunts., Norfolk, Suffolk, Glos., Bucks., Berks., Somerset, Wilts., Middx., Surrey, Kent, Dorset & Hants. Common. v–viii.

Females

(For distribution see key to males)

1 Disc of thorax greenish grey. Strong bristles about apex of front coxa yellow.....2

– Disc of thorax yellow, at least on front half. Strong bristles about apex of front coxa black 3

2 Apical section of discal vein at most smoothly curved (see fig. 177). Outer crossvein well beyond middle of discal vein measured from root. Hind tibia more or less darkened. Apical abdominal tergite largely shining black. 4.5–5 mm
suturalis Fallén

– Apical section of discal vein with a double bend (see fig. 178). Outer crossvein just about at middle of discal vein. Hind tibia yellow. Abdomen entirely yellow. About 4.75 mm .....**abdominalis** Fallén

3 5 or 6 dorsocentral bristles. Thorax with prescutellar depression darkened. Abdominal tergites with dark foremarginal bands. 4–5.5 mm....**quadrifasciata** Fabricius

– 7 dorsocentral bristles. Thorax uniformly brownish yellow. Abdomen, including 5th tergite, entirely brownish yellow. 6–6.75 mm.....**pallida** Fallén

Genus **DIAPHORUS** Meigen, 1824

Medium to small species, in which the eyes are quite or almost touching on frons in the males, and the antennae inserted unusually low on the head in both sexes.

Key to Species

Males

1 Haltere black. Thorax deep black. Abdomen entirely black. 2.75–3 mm
nigricans Meigen
Scotland: Inverness., Dunbartons. & Kirkcudbrights. England & Wales: Yorks., Glamorgan, Herts., Somerset, Wilts., Kent, Hants. & Sussex. Ireland: Down. Usually fairly common where it occurs. vii–viii.

– Haltere yellow. Thorax not velvet-black.....2

2 Abdomen entirely dark. Eyes slightly but distinctly separated. Thorax dark metallic green, rather shining. About 3.75 mm.....**winthemi** Meigen
Only British records known: Freshwater (I.O.W., Hants.), 1946, 1 ♀ in nest of Crabronid wasp, together with Chrysotus neglectus *Wied. (K. G. Blair); Plashett (Sussex), 3.vii.1868 (?G. H. Verrall). Very rare.*

– Abdomen translucent yellow at base. Eyes touching or practically so. Thorax dulled by somewhat thick, greyish dust.....3

3 Femora yellow, only hind pair darkened at apex. Front tibia with a ventral fringe of long hairs, including at least 3 conspicuously longer ones. About 4.5 mm
hoffmannseggi Meigen
Only authentic records known: Monnow Valley (Herefords.), 3.vii.06 (J. H. Wood) & Lyndhurst (Hants.) without date (G. H. Verrall). Very rare.

– All femora black, at least on basal two-thirds. Front tibia ventrally short-haired. 3.75–4.25 mm .....**oculatus** Fallén
England & Wales: Cumberland, Lancs., Yorks., Merioneths., Hunts., Suffolk, Pembs., Herts., Berks., Somerset, Wilts., Surrey, Kent, Devon, Hants. & Sussex. Ireland: Kerry. Not uncommon. vi–viii.

Females

(For distribution see key to males)

1 Whiskers pale, whitish or yellow....2
– Whiskers black....3
2 Middle tibia with both anteroventral and posteroventral bristles. Palpi mainly yellow, dark only at base. About 3.5 mm....**winthemi** Meigen
– Middle tibia with 1 or 2 anteroventral bristles, without posteroventral bristles. Palpi mainly or largely dark, pale only towards tip. 3.5–4 mm....**oculatus** Fallén
3 Legs entirely black, at most knees narrowly yellow. Middle tibia without bristles beneath. 2.5–3 mm....**nigricans** Meigen
– Front and middle femora entirely yellow. Middle tibia with one or more bristles beneath. About 4.5 mm....**hoffmannseggi** Meigen

Genus CHRYSOTUS Meigen, 1824

Small to very small flies, stocky in build and of generally metallic green colour. The eyes of the males are touching, or very closely approximated, on the face, and in both sexes the outer bristle on hind coxa is placed extremely near to the base.

KEY TO SPECIES

Males

1 Palpi pale yellow and very large, more than two-thirds as long as eye is deep, pointed at tip (fig. 179). Legs almost entirely yellow. About 1.25 mm (=*elegans* Parent=*longipalpis* auctt. *nec* Aldrich)....**pallidipalpus** van Duzee
Recorded from only: Manchester (Lancs.), 12.vii.22, in stove-house at Alexandra Park (H. Britten Sen.); Cambridge (Cambs.), 19.ix.13, in hot-house (F. Jenkinson); Heston (Middx.), 30.x.21, in hot-house (D. S. Wilkinson); Surrey (Kew Gardens hot-houses), 20.i.12 (Col. Yerbury) & 18.vi.39 (L. Parmenter). An introduced species breeding in Britain under hot-house conditions. The above dates are no indication of flight-period under natural conditions.
– Palpi much smaller, length less than one-fourth eye-height....2
2 Front coxa with all hairs and bristles pale....3
– Front coxa with at least the apical bristles black....6
3 Front coxa yellow, with hairs and bristles pale but not strictly white. Femora mainly yellow. 1.75–2.5 mm....**cilipes** Meigen
Not uncommon from Sutherland in Scotland to s. coast of England. Ireland: Mayo, Galway, Kerry & Waterford. vi–viii.
– All coxae and femora black, hairs and bristles on front coxa white....4
4 Acrostichal bristles microscopic. Face at narrowest point as wide as ocellar tubercle. Apical section of postical vein shorter than basal section measured from anal cell. Middle tibia practically without bristles apart from preapical. About 2.5 mm
laesus Wiedemann
Recorded from Herefords. (Churchyard Dingle & Trumpet Wood), Glamorgan (Porthcawl), Oxon (Aston Rowant), Somerset (Freshford & Shepton Mallet), Wilts. (Coombe Bissett), Surrey (Reigate & Woking), Kent (Blackheath, Ashford & Hothfield N.R.) & Hants. (Brockenhurst & Totton). Rather uncommon. vi–vii.
– Acrostichal bristles well developed, their length about equal to distance between rows. Face narrower. Apical section of postical vein longer than basal section measured as above....5
5 Facial triangle prolonged forwards into an extremely narrow strip, hardly as wide as diameter of front ocellus. Palpi somewhat longer and rounded at tip, where it bears a few pale hairs. Thorax and scutellum usually with slight violet reflections. Front tibia and pubescence on legs pale yellow. 2–2.5 mm....**suavis** Loew
Recorded from only Hunts. (Earith & Little Paxton gravel pits), Glamorgan (Porthcawl, Bridgend & Oxwich), Kent (Sandwich Bay) & Devon (Braunton Burrows). Sea-coast species, scarce & very local. vi–vii.
– Prolongation of facial triangle distinctly wider than front ocellus. Palpi more tri-

angular, almost pointed at tip, where there are rather more numerous fine black bristles. Thorax and scutellum without violet reflections. Front tibia and pubescence on legs more brownish yellow. 2–2.25 mm ..... **palustris** Verrall
Recorded from Glamorgan (Porthcawl, Bridgend, Llangennith & Oxwich), Berks. (Windsor Forest), Middx. (Edgware), Wilts. (Downton), Kent (Sandwich Bay), Hants. (Yarmouth, I.O.W.) & Sussex (Seaford). Uncommon & local. v–viii.

6 Femora entirely or mainly yellow 7
– Femora entirely or mainly black 8
7 All femora entirely yellow. Front coxa usually entirely black-haired. Hindmargin of wing, between postical and anal veins, straight or even concave, then forming a distinct bulge immediately before postical vein (fig. 180). 2.75–3 mm **neglectus** Wiedemann
Generally distributed & not uncommon all over Britain. Ireland: Dublin & Kildare. (See also under Diaphorus winthemi). *vi–viii.*
– Hind femur broadly black at apex. Front coxa at least partly pale-haired. Hindmargin of wing normal, uniformly convex. 1.75–2.5 mm. (See above) **cilipes** Meigen
8 Hind trochanter, often also base of femur, clear yellow 9
– Hind trochanter black or brown, at palest never clear yellow 10
9 3rd antennal segment large, quite twice as wide as 2nd segment (fig. 181). Pulvilli of front and middle legs hardly developed. Hind tibia not remarkably ciliated on anterior face. 2–2.75 mm ..... **pulchellus** Kowarz
Scotland: Inverness. (Dorback Burn, Nethybridge, Loch Vaa, Aviemore & Loch Laggan) & Perths. (Rannoch). England & Wales: Yorks. (Allerthorpe), Merioneths. (Barmouth), Cambs. (Wicken Fen), Norfolk (Woodbastwick), Suffolk (Tuddenham), Glamorgan (Whiteford N.R. & Oxwich) & Wilts. (Coombe Bissett). Uncommon. v–vii.
– 3rd antennal segment smaller. Pulvilli of front and middle legs strongly developed. Hind tibia strongly ciliated on anterior face, seen from above the cilia twice as long as width of tibia. 2–2.5 mm ..... **femoratus** Zetterstedt
Scotland: Sutherland, Ross & Cromarty, Nairns & Inverness. England & Wales: Yorks., Staffs., Norfolk, Suffolk, Glamorgan, Glos., Berks., Somerset, Wilts., Kent, Hants. (incl. I.O.W.), Cornwall & Is. of Scilly. Ireland: Laois. Not uncommon. vi–viii.
10 Front coxa and trochanter pale 11
— At least front coxa mainly black 12
11 Front coxa mainly, and trochanter entirely, dirty white, legs otherwise black. Hind tibia very weakly bristled, without remarkable ciliation. 2.5–3 mm **cupreus** Macquart
Not uncommon from Glamorgan to Notts. southwards. vi–viii.
— Front coxa and trochanter yellow, as also front and middle tibiae. Hind tibia strongly bristled and conspicuously ciliated. 2.5–3 mm ..... **verralli** Parent
Recorded from only: Westmorland (Windermere), Lancs. (Coniston), Cambs. (Woodditton Wood), Hants. (Totland Bay, I.O.W.) & Cornwall (St. Merryn). Rare. vi.
12 Front tibia rusty brown, ciliated above and below, some cilia below distinctly longer than tibia is deep. Middle tibia brownish black. 2.5–3.25 mm **blepharosceles** Kowarz
Yorks., Herefords., Hunts., Cambs., Suffolk, Glamorgan, Glos., Oxon, Bucks., Herts., Berks., Middx., Somerset, Wilts., Surrey, Kent, Devon, Hants., Cornwall & Channel Is. Fairly common. vi–ix.
— Front tibia only shortly ciliated, or if cilia longer than normal then front and middle tibia clear yellow 13
13 3rd antennal segment large, at least twice as wide as 2nd segment 14
— 3rd antennal segment smaller 15
14 3rd antennal segment somewhat triangular. Middle tibia with only one anterodorsal bristle. Front and middle tibiae yellow. 1.75–2 mm ..... **monochaetus** Kowarz
Recorded from only Somerset (Bury & Somerton), Wilts. (Groveley Wood) & Kent (Abbey Wood). Rare. vii.
— 3rd antennal segment distinctly reniform. Middle tibia with 2 anterodorsal bristles. All tibiae black. About 2.5 mm ..... **kowarzi** Lundbeck
Scotland: Ross & Cromarty (Lochinver), Morays. (Brodie), Inverness. (Nethybridge) & Dunbartons. (Cardross). England & Wales: Westmorland (Windermere), Merioneths.

(Dolgellau), Wilts. (Wilton & Odstock), Dorset (Studland & Morden) & Hants. (Hatchet Pond). Ireland: W. Galway (R. Cuflin). Uncommon. vii.

15 Hind tibia entirely or mainly rusty brown or brownish yellow.....16
— Hind tibia entirely or mainly black.....17
16 Front pulvilli hardly developed. Frons shining, coarsely granulate. Facial triangle metallic green. Basal antennal segments sometimes reddish. About 2 mm **microcerus** Kowarz

Scotland: Inverness. (Bridge of Brown). England & Wales: Lancs. ("Wray Castle"), Anglesey, Herefords. (Monnow Valley & Devereux Pool), Worcs. (nr Broadway), Hunts. (Brampton), Cambs. (Upware & Waterbeach), Norfolk (Thetford), Suffolk (Brandon), Glos. (Bristol & Coombe Dingle), Somerset (Blagdon), Wilts. (Durnford), Surrey (Runnymede), Kent (Blackheath) & Hants. (Brook, Linwood & Ober Water). Ireland: Clare (Killinaboy & Inchiquin) & Kerry (Burren & Glen Flesk). Uncommon. v–vii.

— Front pulvilli well developed, as long as or longer than apical tarsal segment. Frons less shining, finely granulate. Facial triangle white-dusted, visible at least from side. Basal antennal segments always black. 2–2.75 mm.....**varians** Kowarz

Scotland: Perths. England & Wales: Cambs., Pembs., Glos., Oxon, Bucks., Somerset, Surrey, Kent & Hants. Ireland: Kerry & Cork. Not uncommon. vi–viii.

17 Hind tibia not ciliated.....18
— Hind tibia with a conspicuous ciliation.....19
18 Front and middle tibiae brownish black. About 2 mm.....**melampodius** Loew

Recorded from only: Perths. (Rannoch) in Scotland & Caernarvons. (Aber), Merioneths. (Dolgellau), Cambs. (Kirtling), Glamorgan (Porthcawl), Surrey (Purley), Dorset (Lulworth) & Hants. (Lyndhurst & Brockenhurst) in England & Wales. Scarce. vi–vii.

— Front and middle tibiae clear yellow. About 2 mm.....**collini** Parent

Recorded from only: Anglesey, Norfolk (Blakeney Pt.), Oxon (Wychwood Forest), Herts. (Elstree), Essex (Benfleet & Frinton-on-Sea), Wilts. (Downton, Blackmoor Copse & Farley) & Dorset (Kimmeridge). Scarce & local. vi–vii.

19 3rd antennal segment distinctly triangular, with rounded point at tip (fig. 182). About 2.25 mm .....**angulicornis** Kowarz

Recorded from Lancs. ("Wray Castle"), Cambs. (Woodditton Wood), Glamorgan (Nicholaston Wood), Glos. (Gloucester & Blaise Woods), Berks. (Silchester Common), Somerset (Failand & Portbury), Wilts. (Verndítch Chase), Devon (Lynton) & Hants. (Hatchet Pond). Uncommon. vi–viii.

— 3rd antennal segment not triangular, more reniform and without trace of point at tip 20
20 Frons shining, coarsely granulate. Face metallic green. About 2 mm. (See above) **microcerus** Kowarz
— Frons more or less dull, at most finely granulate. Face mainly whitish dusted, visible at least from side.....21
21 Front pulvilli strongly developed, as long as or longer than apical tarsal segment. Body colour dark green, disc of thorax with dark dusting. Front and middle tibiae rusty yellow, middle somewhat the darker, both darkened at base. 2–2.75 mm. (See above) .....**varians** Kowarz
— Front pulvilli small. Body light green, disc of thorax dusted whitish. Front and middle tibiae entirely clear yellow. 2–2.5 mm.....**gramineus** Fallén

Very common from Perthshire in Scotland southwards to Is. of Scilly & Channel Is. Ireland: Down, Mayo, Galway, Dublin, Kerry & Cork. vi–ix.

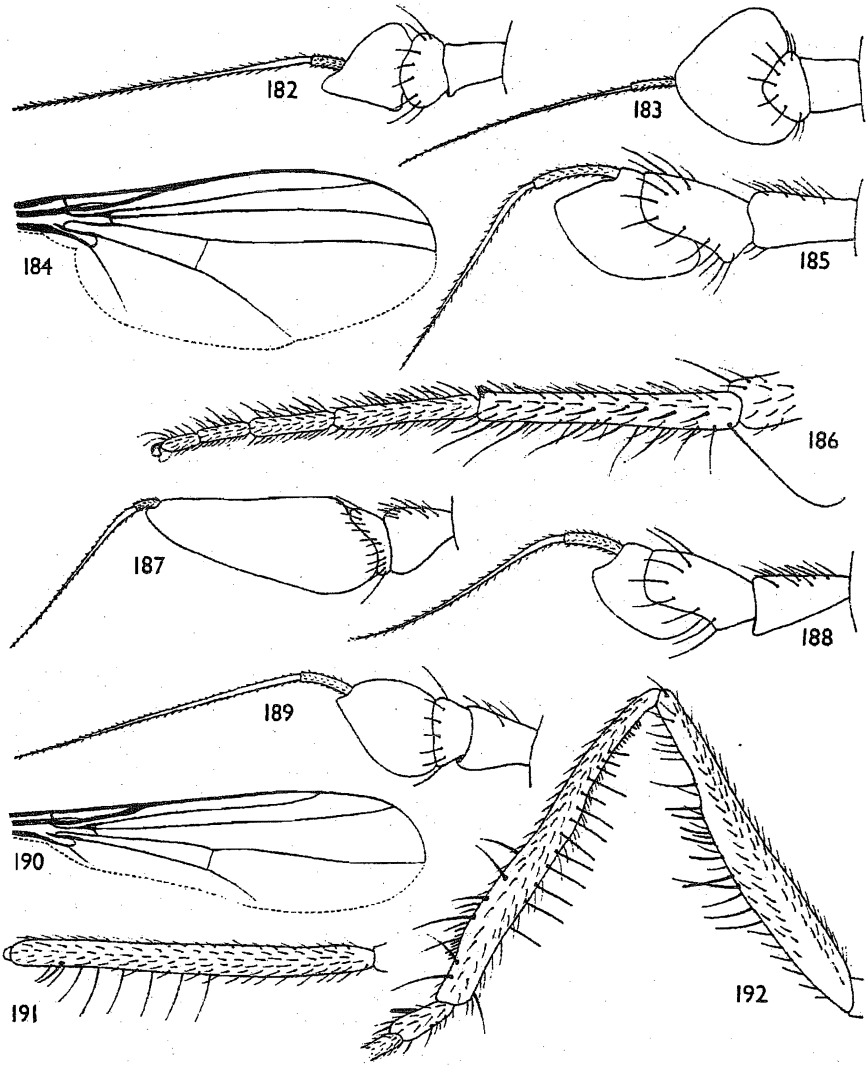
Females

(For synonymy and distribution see key to males)

1 Front coxa with pale hairs and bristles.....2
– Front coxa with at least the bristles black.....6
2 Front coxa yellow, at least on apical half. Femora entirely or mainly yellow.....3
– All coxae and femora black, hairs and bristles on front coxa white.....4
3 Femora all entirely yellow. Face very thinly dusted, so that metallic green colour is largely visible. Hind tibia with only short pale bristles. 1–1.25 mm **pallidipalpus** van Duzee
– Hind femur with a more or less broad black ring near apex. Face entirely covered with dense dusting. Hind tibia with some longish black bristles above. 2–2.5 mm **cilipes** Meigen

4 Acrostichal bristles microscopic. Apical section of postical vein shorter than basal section measured from anal cell. Middle tibia without bristles on shaft. About 2.5 mm ..... laesus Wiedemann

– Acrostichal bristles well developed, as long as or longer than distance between the rows. Apical section of postical vein longer than basal section measured as above. Middle tibia with normal bristles 5



FIGS 182–192. 182–184, *Chrysotus*. 182, Antenna of *angulicornis* Kow. ♂. 183, Antenna of *pulchellus* Kow. ♀. 184, Wing of *neglectus* Wied. ♀. 185–189, *Argyra*. 185, 187–189, Antennae. 185, *elongata* Zett. ♂. 187, *perplexa* Beck. ♂. 188, *elongata* Zett ♀. 189, *perplexa* Beck. ♀. 186, L. hind tarsus of *confinis* Zett. ♂. 190–192, *Campsicnemus* ♂. 190, Wing of *alpinus* Hal. 191, R. hind femur of *marginatus* Lw. 192, L. middle leg of *curvipes* Fall.

5 Palpi yellow, at least at apex. All tibiae clear yellow. 2.5–2.75 mm.....**suavis** Loew
– Palpi usually black. At least middle and hind tibiae brownish towards apex, latter often entirely brown. 2.25–2.5 mm .....**palustris** Verrall
6 Hind trochanter clear yellow.....7
– Hind trochanter darkened.....10
7 Front coxa at least largely yellow, partly pale-haired. All femora yellow, hind femur often black towards apex. 2–2.25 mm .....**cilipes** Meigen
– Front coxa entirely or mainly black, black-haired. Femora largely or mainly black..8
8 3rd antennal segment large, about twice as wide as 2nd segment (fig. 183). 2.75–3 mm **pulchellus** Kowarz
– 3rd antennal segment smaller.....9
9 Hindmargin of wing with a distinct (even though slight) bulge immediately before tip of postical vein (fig. 184). 2.5–3.25 mm .....**neglectus** Wiedemann
– Hindmargin of wing normal, forming a smooth curve. 2.5–2.75 mm **femoratus** Zetterstedt
10 Haltere black. Apical section of postical vein shorter than basal section measured from anal cell. 1.5–2 mm .....**Melanostolus melancholicus** Loew
— Haltere pale. Apical section of postical vein at least as long as basal section measured as above 11
11 3rd antennal segment large, at least twice as wide as 2nd segment.....12
— 3rd antennal segment smaller.....13
12 Front and middle tibiae clear yellow. Middle tibia with only one anterodorsal bristle. 3rd antennal segment rather more triangular, lower margin almost straight. About 2 mm ..... **monochaetus** Kowarz
— Tibiae brownish black. Middle tibia with 2 anterodorsal bristles. 3rd antennal segment more reniform, lower margin rounded. 2.5–2.75 mm....**kowarzi** Lundbeck
13 Hind tibia black or dark brown.....14
— Hind tibia yellow.....15
14 Front trochanter pale yellow, often also apex of front coxa. Apical section of postical vein not or hardly longer than basal section measured from anal cell. 2.5–3 mm **cupreus** Macquart
— Front coxa entirely, and trochanter largely, dark. Apical section of postical vein obviously longer than basal section measured as above. 2.5–2.75 mm **blepharosceles** Kowarz
15 Frons coarsely granulate. Basal antennal segments sometimes reddish. About 2.5 mm ..... **microcerus** Kowarz
— Frons at most finely granulate. Antennae always entirely black.....16
16 Thorax with whitish dusting.....**gramineus** Fallén
— Thorax with dark dusting .....**angulicornis** Kowarz
collini Parent
varians Kowarz

Genus MELANOSTOLUS Kowarz, 1884

One British species

A small dark species, thorax metallic blue, abdomen dark green, legs entirely black. About 2.5 mm (=*dorsalis* Verral).....**melancholicus** Loew
Only British records known: Monnow Valley (Herefords.), 10.vii (J. H. Wood); Earith gravel pit (Hunts.), 21.vii.74 (J. H. Cole); Woking (Surrey), 1.viii.75 (G. H. Verrall).

Genus ARGYRA Macquart, 1834
(= *Porphyrops* Mg., 1824, *nec* auctt. = *Leucostola* Loew, 1857)

Large to medium small flies, distinguished in all but one British species by the vertical row of 3 or more fine bristles on outer face of hind coxa, the exception (*vestita*) having only 2 bristles. The striking silvery gloss of many of the males makes them a conspicuous sight around woodland pools.

KEY TO SPECIES

Males

1 Scutellum hairy on disc. Thorax not silvery. Frons and face blackish. 6.5–7.5 mm (=*ludea* Harris = *hirtipes* Curtis)..... **diaphana** Fabricius
Scotland: Perths. & Sterlings. England & Wales: fairly common but rather local, from Cumberland southwards. Ireland: Down, Mayo, Meath, Dublin, Clare, Cork & Waterford. v–x.

– Scutellum entirely bare on disc.....2

2 Hind femur with well-developed preapical bristle (see fig. 9). Upper margin of 2nd antennal segment longer than upper margin of 3rd segment, with setulose hairs on apical half (fig. 185). A strong black propleural bristle above base of front coxa. About 4 mm ..... **elongata** Zetterstedt
Recorded from only Ross & Cromarty (Ben Eighe) & Nairns. (Nairn) in Scotland & from Norfolk (Bure N.R.), Cambs. (Wicken Fen), Somerset (Edington) & Hants. (New Forest) in England. According to Verrall, Haliday took it in Ireland. Rather scarce. v–vii.

– Hind femur without preapical bristle. Upper margin of 2nd antennal segment distinctly, usually much, shorter than upper margin of 3rd segment.....3

3 Face, viewed from in front and slightly above, obviously blackish.....4

– Face, viewed as above, silvery white..... 7

4 Abdomen, viewed from in front, without any silvery gloss and without yellow side patches. 4.5–5.25 mm ..... **atriceps** Loew
Recorded from: Derbys. (Millers Dale), Notts. (Attenborough), Herefords. (Monnow Valley & Churchyard Dingle), Glamorgan (Bridgend & Porthcawl), Glos. (Coombe Dingle, nr Bristol), Berks. (Wytham Wood), Somerset (Bath & Freshford), Surrey (Bookham Common) & Kent (Tunbridge Wells). Uncommon & very local. v–viii.

– Abdomen, viewed as above, covered with a conspicuous silvery gloss.....5

5 3rd antennal segment, measured at middle of inner face, not longer than wide. Thorax, viewed from in front, with a distinct silvery gloss, usually less conspicuous than on abdomen. 5.5–7 mm (=*fulgens* Haliday)..... **leucocephala** Meigen
Very common & generally distributed throughout British Isles. v–x.

– 3rd antennal segment, measured as above, decidedly longer than wide. Thorax, viewed as above, without any silvery gloss, though usually more or less dusted greyish 6

6 Hind metatarsus strongly bristled, especially beneath, and at extreme base beneath with a single very long setulose hair pointing forwards (fig. 186). Femora yellow, except hind femur towards tip. Abdomen with yellowish side patches. 4.25–6 mm **confinis** Zetterstedt
Scotland: Dunbartons. England & Wales: from Yorks. southwards. Fairly common, especially in the south. v–viii.

– Hind metatarsus with only the normal hairs. All femora dark. Abdomen without yellow side patches. 5.5–6 mm ..... **auricollis** Meigen
Only British records known: Glen Nant (Argylls.), 9.vii.74 (P. J. Chandler); Polton (E. Lothian), viii.06 (A. E. J. Carter); Llangammarch Wells (Brecknocks.), vii.13 (Col. Yerbury).

7 1st antennal segment bare. Hind coxa, on outer face, with only 2 erect bristles. Thorax, seen from in front, without trace of silvery gloss. 3–3.5 mm. (=*Leucostola* Loew) ..... **vestita** Wiedemann
Scotland: Ross & Cromarty, Morays. & Argylls. England & Wales: Westmorland, Yorks., Anglesey, Notts., Norfolk, Cambs., Suffolk, Carmarthens., Glamorgan, Glos., Essex, Somerset, Wilts., Dorset & Hants. Ireland: Down, Mayo, Louth, Galway, Wexford & Cork. Usually numerous where it occurs; often found on seaweed-covered rocks. vii–viii.

– 1st antennal segment hairy on dorsal surface. Hind coxa, on outer face, with 3 or more erect bristles 8

8 Thorax, viewed from in front, without any silvery gloss.....9

– Thorax, viewed as above, entirely covered with a silvery gloss.....10

9 Abdominal tergites 2, 3 and 4 each with lateral yellow patches. All femora and tibiae entirely yellow. 3.5–4 mm ..... **grata** Loew
Only British records known: Pentelow, 3.viii.09 & Mordiford, 20.vii.12 (both Herefords.) (J. H. Wood); Bridgend (Glamorgan), 11.viii.98 (Col. Yerbury); Woolwich Wood

(Kent), 11.viii.55, 3–9.viii.56 & 21–31.vii.57 (E. A. Fonseca). Occurred plentifully only in last locality, but the wood was almost completely destroyed in August, 1957.

— Abdomen without yellow patches. All femora and hind tibia black. 5.5–6 mm. (See above) ..... **auricollis** Meigen

10 Bristles of posteroventral row on middle femur longer, even at middle at least as long as greatest depth of femur. Eyes with longer hairs, on lower part almost as long as distance between hind ocelli. Either 1st antennal segment with more numerous and longer bristles, or 3rd antennal segment with upper margin shorter than arista.... 11

— Middle femur with the bristles of posteroventral row shorter than greatest depth of femur. Eye-hairs very short. 1st antennal segment with very few (2 to 4) small bristles, and upper margin of 3rd antennal segment at least as long as arista..... 12

11 Middle femur with the posteroventral bristles at middle longer than greatest depth of femur. Eye-hairs and 3rd antennal segment rather longer. Somewhat larger species with legs usually darker. 5–6.5 mm..... **argyria** Meigen
Not uncommon from Sutherland in Scotland to s. coast of England. v–x.

— Middle femur with the posteroventral bristles at middle not longer than greatest depth of femur. Eye-hairs and 3rd antennal segment shorter. Smaller species with legs usually paler. 4.5–6 mm ..... **argentella** Zetterstedt
Recorded from Northumberland, Westmorland, Hunts., Cambs., Suffolk, Glos., Bucks., Herts., Berks., Middx., Somerset, Wilts., Kent & Hants. (incl. I.O.W.). Fairly common. vi–ix.

12 3rd antennal segment longer than arista, which arises practically at tip (fig. 187). 1st antennal segment and arista shorter. 3.75–4.75 mm ..... **perplexa** Becker
Scotland: Sutherland, Ross & Cromarty, Inverness. & Argylls. England & Wales: Westmorland, Yorks., Merioneths., Norfolk, Brecknocks., Glamorgan, Glos., Bucks., Somerset, Wilts., Devon, Dorset, Hants. & Sussex. Ireland: Mayo, Galway, Wicklow & Kerry. Not uncommon. vi–ix.

— 3rd antennal segment not longer than arista, which is well removed from tip and therefore more distinctly dorsal. 1st antennal segment and arista longer, former with only 2 to 4 small externo-dorsal bristles. 4–6 mm..... **argentina** Meigen
Fairly common from Sutherland in Scotland to s. coast of England. Ireland: Wicklow. vi–ix.

Females

(For synonymy and distribution see key to males)

1 Scutellum hairy on disc..... **diaphana** Fabricius

– Scutellum entirely bare on disc.....2

2 Hind femur with a preapical bristle (see fig. 9). 2nd antennal segment elongate, more than twice as long on upper as on lower margin (fig. 188). A long strong black propleural bristle above base of front coxa. About 4mm.... **elongata** Zetterstedt

– Hind femur without preapical bristle. 2nd antennal segment short and normal. Only a shorter weaker propleural bristle, or more often pale setulose hairs, above base of front coxa.....3

3 Whole of first, and side patches (becoming progressively smaller) on 2nd, 3rd and 4th abdominal tergites, yellow. 3.5–4.5 mm..... **grata** Loew

– Yellow markings on abdomen, when present, never extending to four segments.....4

4 1st antennal segment bare. Hind coxa on outer face with only 2 erect bristles. 2.75–3.5 mm ..... **vestita** Wiedemann

– 1st antennal segment hairy on dorsal surface. Hind coxa with 3 or more erect bristles on outer face.....5

5 Hind metatarsus distinctly longer than 2nd segment (best seen on posterior face)....6

– Hind metatarsus at most as long as 2nd segment, often rather shorter.....8

6 All coxae darkened, front one yellowish at apex. Some small bristles mixed with, or very near to the line of, strong dorsocentral bristles. About 5.5 mm **auricollis** Meigen

– At least hind coxa partly, and front coxa largely, yellow. Only strong bristles in dorsocentral rows 7

7 Basal segment of arista as long as 3rd antennal segment measured at middle of inner face from tip of 2nd segment. Squamal fringe black. 4th costal section (between radial and cubital veins) more than twice as long as 5th section. 3.5–4.5 mm **atriceps** Loew

– Basal segment of arista not as long as 3rd antennal segment measured as above. Squamal fringe yellow or brownish yellow. 3.75–4.75 mm..... **confinis** Zetterstedt

8 Squamal fringe blackish or dark brown. Posteroventral hairs on middle femur longer, some almost as long as apical diameter of tibia. 4th costal section (between radial and cubital veins) little more than 1.5 times as long as 5th section. 4–6 mm **leucocephala** Meigen

– Squamal fringe pale. Posteroventral hairs on middle femur shorter.....9

9 Ground colour of four posterior coxae dark, their trochanters also more or less extensively darkened 10

— Four posterior coxae partly yellowish, at least about apices, their trochanters almost entirely yellow 11

10 3rd antennal segment distinctly wider than long. Eye-hairs shorter than diameter of front ocellus. Often only 2 post-ocellar bristles. Acrostichal bristles with greater tendency to become uniserial. 4–5.25 mm..... **argentella** Zetterstedt

— 3rd antennal segment at least as long as wide. Eye-hairs as long as diameter of front ocellus. Usually more than 2 post-ocellar bristles. Acrostichal bristles more consistently biserial. 4–5.5 mm ..... **argyria** Meigen

11 Arista inserted very near to tip of 3rd antennal segment (fig. 189). Yellow colour of four posterior coxae more confined to apex. Hind metatarsus quite distinctly shorter than 2nd segment. 3.5–5 mm..... **perplexa** Becker

— Arista inserted further from tip of 3rd antennal segment. Four posterior coxae more extensively yellow, especially hind pair. First two segments of hind tarsus more equal in length. 4–6 mm ..... **argentina** Meigen

Genus CAMPSICNEMUS Haliday, 1851
(= *Camptosceles* Haliday, 1832, suppressed)

Small to very small species, the males of some having the most extraordinarily modified legs. Many of the species have a long flight period, the commonest (*curvipes* Fall.) having been recorded for every month of the year.

KEY TO SPECIES

Males

1 Wing with the cubital vein curving forward, diverging from discal vein (fig. 190). 1.75–2 mm. (s.g. *Ectomus* Mik, 1878)..... **alpinus** Haliday
Recorded from Ross & Cromary in Scotland, southward to New Forest (Hants.) in England. Ireland: Down, Mayo, Clare, Wicklow & Kerry. Not uncommon. vii–ix.

– Cubital vein not curved forward and not diverging from discal vein.....2

2 Legs simple, none remarkable for either structure or chaetotaxy. Basal antennal segments reddish yellow. 1.5–1.75 mm ..... **picticornis** Zetterstedt
Recorded from Norfolk (Ringmere, Fowlmere & Bawburgh), Cambs. (Wicken Fen), Suffolk (Chillesford), Essex (Pitsea) & Kent (Gravesend, Harty Ferry & Sandwich Bay). Scarce. vi–viii.

– At least one pair of legs modified in some way.....3

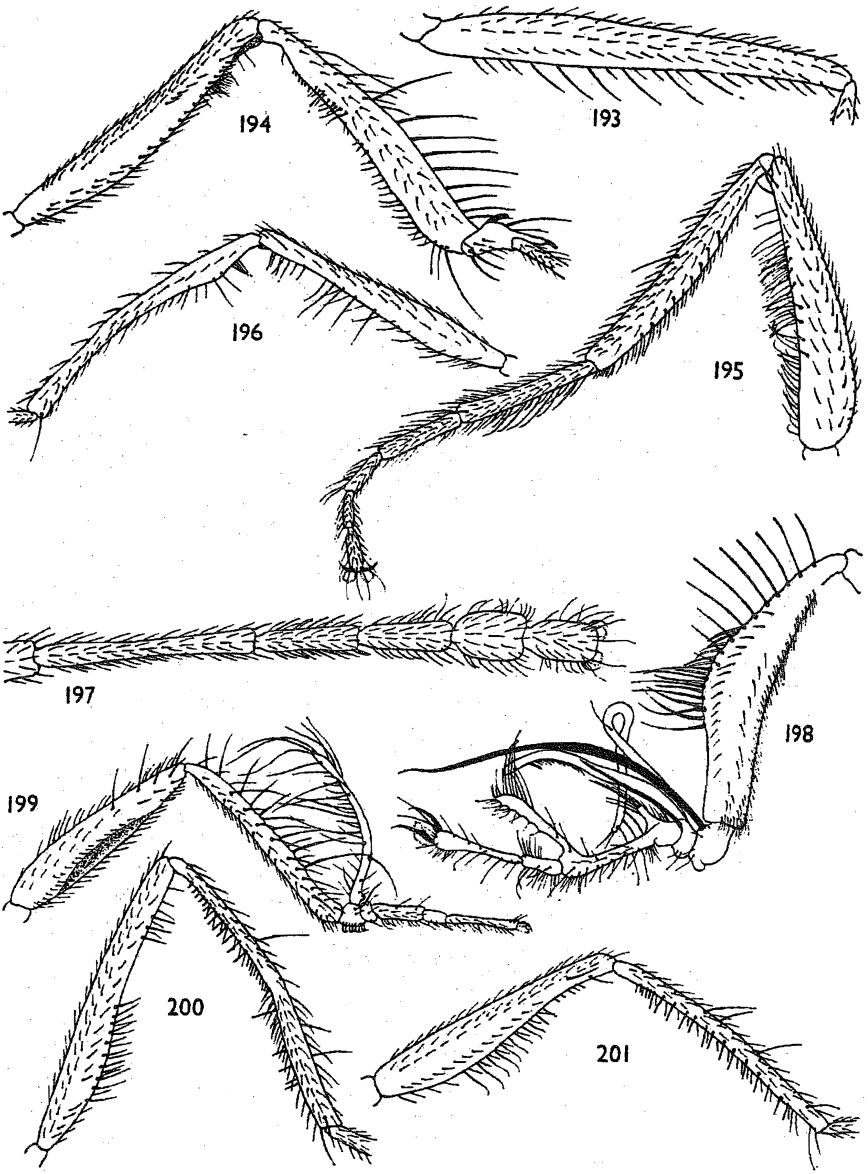
3 Legs all of normal structure, but hind femur, on apical half of anterior face, with 5 or 6 long fine erect setulose hairs (fig. 191). Wing darkened along costal margin, outer crossvein clouded. Face descending below level of lower eye-margin, where it becomes remarkably broad. 2–2.25 mm ..... **marginatus** Loew
Recorded from only Inverness. (Aviemore) in Scotland & from Salop (Melverley) & Herefords. (Monnow Valley, Moseley Mere & Churchyard Dingle) in England. Scarce. vi–ix.

– At least one pair of legs remarkable for structure, or for unusual chaetotaxy other than above 4

4 Two pairs of legs modified 5

– Only one pair of legs modified.....7

5 Middle and hind legs modified. Middle metatarsus shorter than 2nd segment, and hind femur ventrally with long spine-like bristles (figs 192, 193). Face brownish yellow. 2–2.75 mm ..... **curvipes** Fallén



FIGS 193–201. *Campsicnemus* ♂. 193, L. hind femur of *curvipes* Fall. 194, 200–201, R. middle legs. 194, *scambus* Fall. 200, *loripes* Hal. 201, *armatus* Zett. 195, L. front leg of *scambus* Fall. 196–197, *pusillus* Mg. 196, L. middle leg. 197, L. front tarsus. 198, R. front tibia and tarsus of *magius* Lw. 199, R. front leg of *compeditus* Lw.

Very common & generally distributed, in suitable habitats, throughout British Isles incl. Channel Is. All year round.

– Front and middle legs modified.....6

6 Middle tibia considerably dilated and curved, anterodorsally with a row of long bristles on apical half (fig. 194). Front tarsus without enlarged segments (fig. 195). Face ochreous yellow. 2.5–3.25 mm .....**scambus** Fallén

Fairly common & generally distributed from Aberdeenshire in Scotland to s. coast of England & Is. of Scilly. Ireland: Down & Dublin. iii–x.

– Middle tibia anterodorsally short-haired, slightly swollen in basal third and thereafter dorsoventrally flattened (fig. 196). Front tarsus with 4th and 5th segments enlarged (fig. 197). Middle femur with a comb-like row of short strong bristles at apex beneath. Face black. 2.25–2.75 mm .....**pusillus** Meigen

Recorded from only Inverness. (Arisaig) in Scotland, from Berks. (Silchester Common) & Hants. (Lyndhurst & Hatchet Pond) in England, & from Dublin (N. Bull Sands) in Ireland. Uncommon. vi–vii, xi.

7 Only front legs modified.....8

– Only middle legs modified.....9

8 Face golden yellow. Antenna entirely black. Front tibia enormously dilated and front tarsus armed with very remarkable and complicated processes (fig. 198). 2.3–3 mm .....**magius** Loew

Only British records known: Bawdsey, 9.vii.94 (G. H. Verrall) & Aldeburgh, 17.ix.01 & 29.v.10 (W. J. Fordham) (both Suffolk); East Mersea (Essex), 7.ix.60 & Sandwich Bay (Kent), 19.viii.49 (both E. A. Fonseca). Rare.

– Face white. Front tibia hardly dilated and front tarsus with only one rather less complicated process (fig. 199). About 2.25 mm.....**compeditus** Loew

Only British records known: Scotland: Loch Chealamy (Sutherland), 29.vii.72 (P. J. Chandler), Ben Eighe (Ross & Cromarty), 1.vii.53 (F. W. Edwards), Loch Einich, 28.vi.33 (J. E. Collin) & Loch Garten, 15.vi.60 (E. A. Fonseca) (both Inverness.). England: Whixall Moss (Salop), 29.vii.33 (C. H. W. Pugh) & Studland (Dorset), 9.vi.07 (Col. Yerbury). Rare.

9 Middle metatarsus shorter than 2nd segment. Middle femur ventrally with a group of longer bristles in basal half well separated from an apical group of shorter bristles. Middle tibia slender and somewhat curved, ventrally with a basal row of very short blunt bristles well separated from an apical row of slightly longer ones (fig. 200). 2–2.5 mm .....**loripes** Haliday

Fairly common & well distributed over whole of British Isles. iii–ix.

– Middle metatarsus longer than 2nd segment. Ventral chaetotaxy of middle femur and tibia not separated into basal and apical groups.....10

10 Face entirely yellow. Middle femur, ventrally along almost whole length, with a row of bristles, some of which are more than two-thirds as long as greatest depth of femur. Middle tibia, ventrally along almost whole length, with a comb-like row of blunt-ended bristles (fig. 201). 1.25–1.75 mm (=*prodromus* Haliday *nec* Meigen).
armatus Zetterstedt

Recorded from Inverness. to Nairns. to Aberdeens. southwards. Not uncommon. v–ix.

— Face black or dark brown above, ochreous yellow below. Middle femur ventrally with very short bristles. Middle tibia, posteroventrally on basal half, with a row of 6 to 8 blunt-ended bristles (fig. 202). 1.25–1.5 mm.....**pectinulatus** Loew

Recorded from only Morays. (Brodie) in Scotland & from Herefords. (Moccas Pool), Suffolk (Brandon), Glamorgan (Pyle & Porthcawl) & Hants. (Hatchet Pond & Bucklers Hard) in England & Wales. Scarce. vii–viii.

Females

(For synonymy and distribution see key to males)

1 Wing with the cubital vein curving forward, diverging from discal vein. 1.75–2 mm (s.g. *Ectomus* Mik, 1878) .....**alpinus** Haliday

– Cubital vein not curved forward and not diverging from discal vein.....2

2 Antenna reddish yellow at base.....3

– Antenna entirely black.....4

3 Face with at least the clypeus yellow. Hind metatarsus only about as long as 2nd

segment. Costal vein of wing spinulose, cubital and discal veins parallel. At least 4 dorsocentral bristles. 1.5–2 mm ..... **picticornis** Zetterstedt

– Face entirely greyish white. Hind metatarsus longer than 2nd segment. Costa not spinulose. Cubital and discal veins convergent at apex. Only 3 dorsocentral bristles. About 2.25 mm ..... **compeditus** Loew

4 Front coxa with hairs and bristles entirely white.....5

– Front coxa with at least apical bristles black.....6

5 Hind metatarsus obviously longer than 2nd segment. Femora mainly black. Wing clear. 2.5–3 mm ..... **magius** Loew

– Hind metatarsus not longer, usually shorter, than 2nd segment. Legs entirely yellow. Wing with costal area darkened and outer crossvein clouded. About 2.5 mm **marginatus** Loew

6 Front coxa with hairs and apical bristles black. Epistoma greyish white, clypeus velvet-black. 2.5–3 mm ..... **pusillus** Meigen

– Front coxa with at least the hairs mainly white or quite pale.....7

7 3rd section of costa with two kinds of setulae, coarse and fine, the coarse ones longer and more erect (fig. 203). Epistoma greyish white, clypeus reddish. 1.5–1.75 mm **pectinulatus** Loew

– 3rd section of costa not as above, with normal setulae.....8

8 Basal section of discal vein, measured from root, obviously shorter than apical section. Apical section of postical vein more than twice as long as outer crossvein. Epistoma greyish, clypeus rather pale yellow. Front coxa usually entirely or mainly yellow. 2–2.25 mm ..... **armatus** Zetterstedt

– Basal section of discal vein subequal in length to apical section. Apical section of postical vein not more than twice as long as outer crossvein.....9

9 Face brownish yellow, usually becoming rather greyish below antennae, at narrowest part not as wide as distance between ocellar bristles. 2.5–3.5 mm.... **scambus** Fallén

– Epistoma whitish, clypeus brownish yellow, at narrowest part at least as wide as distance between ocellar bristles.....10

10 Front coxa yellow, darkened at base. Clypeus somewhat paler yellow. 2.25–3 mm **loripes** Haliday

— Front coxa mainly or entirely dark. Clypeus darker yellow. 2.5–3 mm **curvipes** Fallén

Genus SYMPYCNUS Loew, 1857

Small flies of slender build and with few taxonomic characters even in the males. *S. annulipes* Mg., formerly in the British List, must for the present be assumed to be non-British, as all specimens under this name in British collections so far examined have proved to belong to *desoutteri* Par.

KEY TO SPECIES

Males

1 All coxae and femora black. 3rd and 4th segments of hind tarsus equal in length. 2.5–2.75 mm ..... **cirripes** Haliday
Scotland: Sutherland, Ross & Cromarty, Inverness., Aberdeens., Argylls. & Ayrs. England & Wales: Cumberland, Westmorland, Yorks., Caernarvons. & Merioneths. Ireland: W. Mayo, N. Galway & Kerry (incl. Puffin I.). Sparsely distributed. vii–viii.

– At least middle femur entirely, and hind femur partly, yellow. Hind tarsus with 3rd segment longer than 4th.....2

2 Hind tarsus without laterally compressed segments, 3rd segment dorsally with a coarse black spine at extreme tip (fig. 204). About 2.75 mm..... **spiculatus** Gerstaecker
Scotland: Aberdeens. (Braemar). England: Cumberland (Crosby), Westmorland (Moor House N.R.), Yorks. (Whernside, Pennyghent & Malham Tarn), Cambs. (Cambridge & Chesterton), Somerset (West Town) & Dorset (Arne). Ireland: Clare (Burren & Killinaboy) & Kerry (Killarney). Uncommon. v–ix.

– Hind tarsus with 3rd and 4th segments laterally compressed and ciliated posteriorly, 3rd segment without dorsal spine.....3

3 Front tibia dorsally without a row of strong spines. 3rd and 4th segments of hind tarsus posteriorly with short erect cilia of uniform length, not longer than width of tarsus (fig. 205). 2.5–2.75 mm ..... **aeneicoxa** Meigen
Scotland: Ross & Cromarty, Inverness., Aberdeens. & Argylls. England: Cumberland, Yorks., Derbys., Notts., Staffs., Cambs., Suffolk, Oxon & Berks. Usually numerous where it occurs. vi–vii.
– Front tibia dorsally, at least on apical half, with a row of short strong black spines (fig. 206). Hind tarsus with much longer cilia along whole length of 3rd segment and on basal third of 4th (fig. 207). 1.75–2.5 mm..... **desoutteri** Parent
Very common over whole of British Isles, including Channel Is. v–xi.

Females
(For distribution see key to males)

1 All femora black on at least basal three-fourths. Front tibia without a row of strong spines dorsally. 2.75–3 mm ..... **cirripes** Haliday
– At least middle and hind femora entirely or mainly yellow. Front tibia dorsally with a row of short strong spines on apical half (see fig. 206).....2
2 Front coxa mainly, and front femur largely, black. 2.25–2.75 mm.... **desoutteri** Parent
– Front coxa at least mainly, and front femur entirely, yellow.....3
3 Hind metatarsus distinctly longer than 2nd segment. About 3 mm **spiculatus** Gerstaecker
– Hind metatarsus not longer than 2nd segment. 2.5–2.75 mm ..... **aeneicoxa** Meigen

Genus ACROPSILUS Mik, 1878

One British species

A very small dark species, frons shining violet-black, body entirely blue-black with brownish dusting, legs brownish black, trochanters somewhat paler. About 1.75 mm **niger** Loew
Only British record known: St. Merryn (Cornwall), vii.05 (C. G. Lamb).

Genus TEUCOPHORUS Loew, 1857

Very small and delicate flies with striking specific leg characters in the males; apart from one species the females are not easy to separate. All five British species have been taken by sweeping low over shallow stony streams, suggesting that the flies rest on the partially exposed stones.

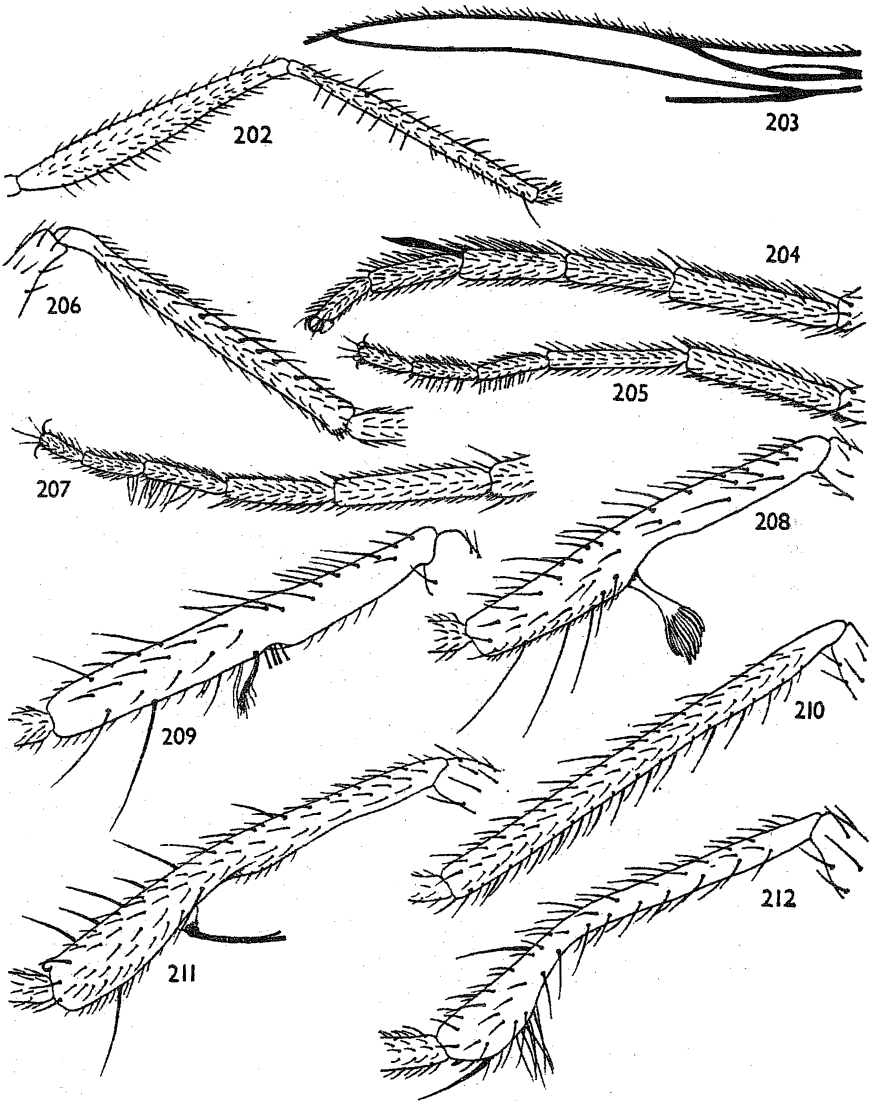
KEY TO SPECIES

Males

1 Hind tibia, ventrally near middle, with fan of flattened black bristles at the end of short stalk (fig. 208). 1.5–2 mm ..... **calcaratus** Macquart
Recorded from: Yorks. (Burley in Wharfedale), Herefords. (Monnow Valley), Hunts. (Hemingford Grey & Brampton), Cambs. (Cambridge & Snailwell), Wilts. (Wilton & Quidhampton) & Dorset (Rempstone). Scarce. vii–viii.
– Hind tibia not as above.....2
2 Hind tibia, anteroventrally near middle, with close-set row of 4 or 5 short square-ended black bristles arising from slight excavation (fig. 209). 1.75–2 mm **signatus** Staeger
Recorded from: Hunts. (Monks Wood, suction trap), Cambs. (Snailwell), Glos. (Coombe Dingle, nr Bristol), Oxon (Cothill), Berks. (Wittenham Wood), Somerset (Failand), Wilts. (Odstock, Farley & Clarendon), Kent (Blackheath) & Sussex (Tilgate Forest). Fairly common. vi–viii.
– Hind tibia not as above.....3
3 Middle femur and tibia without bristles ventrally. Hind tibia simple, straight, with a ventral ciliation (fig. 210). 1.75–2 mm..... **simplex** Mik

Recorded from: Herefords. (*Pentelow & Devereux Pool*), *Cambs.* (*Chippenham Fen*), *Somerset* (*Failand*), *Wilts.* (*Odstock, Farley & Quidhampton*), *Hants.* (*Cadnam*) & *Cornwall* (*Sheviock*). *Uncommon. vii–viii.*

– Middle femur and tibia each with 2 strong black ventral bristles placed near together, at base of femur and on apical half of tibia.....4



FIGS 202–212. 202–203, *Campsicnemus pectinulatus* Lw. 202, ♂ R. middle leg. 203, Costal vein of ♀ wing. 204–207, *Sympycnus* ♂. 204, R. hind tarsus of *spiculatus* Gerst. 205, L. hind tarsus of *aeneicoxa* Mg. 206–207, *desoutteri* Par. 206, L. front tibia. 207, L. hind tarsus. 208–212, ♂ hind tibiae of *Teucophorus* spp. 208, *calcaratus* Macq. 209, *signatus* Staeg. 210, *simplex* Mik. 211, *monacanthus* Lw. 212, *spinigerellus* Zett.

4 Hind tibia ventrally with a coarse erect black spine at about apical third, somewhat inclined towards base of tibia (fig. 211). 1.5–2 mm..... **monacanthus** Loew
Recorded from: Sutherland (Armidale Bay) & Dunbartons. (Bonhill) in Scotland & from Cumberland (Rockcliffe), Yorks. (Burley in Wharfedale), Herefords. (Longtown & Monnow Valley), Cambs. (Wisbech & Snailwell), Carmarthens. (Laugharne saltmarsh), Glamorgan (Margam), Glos. (Blaise Woods nr Bristol), Kent (Blackheath) & Hants. (Lyndhurst) in England & Wales. Usually numerous where it occurs. vii.
– Hind tibia without the above coarse spine, but ventrally with a bunch of hairs on the apical swelling (fig. 212). 1.25–1.5 mm..... **spinigerellus** Zetterstedt
Recorded from: Yorks (Burley in Wharfedale), Hunts. (Stibbington), Cambs. (Chippenham Fen), Suffolk (Orford), Glamorgan (Oxwich), Kent (Blackheath) & Hants. (Hatchet Pond) in England & Wales & from W. Mayo (Westport), W. Galway (Lettergesh) & S. Kerry (Milltown) in Ireland. Uncommon. vi–viii.

Females
(For distribution see key to males)

1 Middle tibia without a dark bristle beneath. 1.5–1.75 mm..... **simplex** Mik
– Middle tibia, beneath near middle, with a fairly strong dark bristle.....2
2 Frons, seen from behind, with at most only slight dusting, so that the metallic ground-colour is almost entirely visible..... 3
– Frons, seen from behind, broadly and densely dusted in front and on middle, completely hiding much of the ground-colour.....4
3 Frons shining steel-blue. 1.25–1.5 mm ..... **spinigerellus** Zetterstedt
– Frons metallic green in colour. 1.5–2 mm ..... **calcaratus** Macquart
4 All femora more or less extensively darkened dorsally, and tarsi entirely or almost entirely dark. [The dark colour of femora and tarsi tends to become pale with age. It is therefore advisable to determine female specimens as soon as possible after capture.] 1.5–2 mm ..... **monacanthus** Loew
– Legs, including tarsi, entirely yellow, at most hind femur slightly darkened dorsally towards tip. 1.75–2.25 mm ..... **signatus** Staeger

Genus TELMATURGUS Mik, 1874

One British species

A small dark species with mainly reddish-yellow legs, frons and face shining violet-black. 1.5–2 mm ..... **tumidulus** Raddatz
Only British records known: Rempstone Heath (Dorset), 11.viii.09 (Col. Yerbury) & Hatchet Pond (Hants.), 11.vii.74 (E. A. Fonseca). Rare.

Genus ANEPSIOMYIA Bezzi, 1902

One British species

A small shining black species, abdomen partly translucent yellow in male only. 2–2.5 mm (=*flavicoxa* Meigen) ..... **flaviventris** Meigen
England & Wales: Yorks., Caernarvons., Notts., Merioneths., Salop, Cambs., Glamorgan, Glos., Somerset, Wilts., Surrey, Hants. & Sussex. Ireland: Down, Mayo & Galway. Common. Often found in numbers on low vegetation near water. v–vii.

Genus MICROMORPHUS Mik, 1878

One British species

A very small dark species with leg-colour variable between brownish yellow and almost black. About 1.5 mm (=*bellus* Strobl) ..... **albipes** Zetterstedt
Scotland: Inverness. (St. Kilda) & E. Lothian (Aberlady). England: Hunts. (Monks Wood & Warboys), Norfolk (Blakeney Pt. & Ormesby Broad), Cambs. (Wisbech,

Wicken Fen & Woodditton Wood), Oxon (Eynsham), Essex (Walton-on-Naze), Somerset (Clevedon), Wilts. (Quidhampton), Dorset (Cranborne & Studland), Hants. (New Forest), Sussex (Cromer, Tilgate Forest & Bognor Regis) & Cornwall (Sheviock). Ireland: W. Galway (Lettergesh) & Dublin (Howth). Widely distributed, but uncommon & very local. vi–viii.

Genus CHRYSOTIMUS Loew, 1857

Very small, rather stocky species, which exhibit sexual dimorphism in body colour, the males being entirely metallic green while the females have the abdomen yellow.

Key to Species
Both sexes

1 Antenna entirely black. Apical section of postical vein shorter than basal section. 1.5–2.25 mm ..... **molliculus** Fallén
Recorded from Yorks., Norfolk, Cambs., Suffolk, Glamorgan, Somerset, Wilts., Surrey, Devon, Sussex & Cornwall. Ireland, without locality. Fairly common. vi–ix.

– Antenna yellow, only 3rd segment somewhat darkened. Apical section of postical vein longer than basal section. 1.25–2 mm..... **concinnus** Zetterstedt
Recorded from Hunts., Suffolk, Berks., Somerset, Wilts., Surrey, Kent & Hants. Less common than molliculus *Fallén. vi–ix.*

Genus LAMPROCHROMUS Mik, 1878

Very small species, both sexes having a conspicuous velvet-black patch on notopleural area of thorax, and the abdomen of the males translucent yellow at base.

Key to Species
Both sexes

1 3rd antennal segment almost sharp-pointed at tip, its pubescence about twice as long as diameter of front ocellus. About 1.5 mm..... **elegans** Meigen
Recorded from Norfolk (Bure N.R.), Cambs. (Wisbech, Wicken Fen & Snailwell), Suffolk (Butley), Kent (Blackheath), Hants. (Lyndhurst & Hatchet Pond), Sussex (Landport & Lewes) & Cornwall (St. Merryn). Scarce & local. vi–vii.

– 3rd antennal segment broadly rounded at tip, its pubescence hardly longer than diameter of front ocellus. About 1.75 mm..... **strobli** Parent
Reputedly British, but no British specimens or authentic British records have been found.

Genus XANTHOCHLORUS Loew, 1857
(= *Leptopus* Haliday 1832, preocc.)

Small rather delicate flies of almost entirely yellow colour.

Key to Species
Both sexes

1 Thorax almost entirely yellow, more or less darkened only on prescutellar depression. Scutellum usually entirely yellow. 2.5–3 mm ..... **tenellus** Wiedemann
England & Wales: Yorks., Anglesey, Caernarvons., Merioneths., Cambs., Suffolk, Glamorgan, Glos., Berks., Somerset, Wilts., Surrey, Kent, Devon & Hants. Ireland: Down. Common. vi–ix.

– Disc of thorax and scutellum darkened, entirely greenish or bronze, dusted greyish. 2.75–3 mm ..... **ornatus** Haliday

Scotland: Inverness-shire. England & Wales: Yorks., Caernarvons., Cheshire, Merioneths., Norfolk, Suffolk, Glamorgan, Glos., Somerset, Wilts., Kent & Hants. (incl. I.O.W.). Channel Is. Ireland: Clare. Common, but less so than previous species. v–viii.

Genus SCIAPUS Zeller, 1842
(= *Psilopus* Meigen, 1824, preocc.)

Medium large to small species, distinguished by the characteristic wing-venation.

KEY TO SPECIES

Males

1 One or more tarsal segments modified in structure or coloration.....2
– All tarsi simple.....4
2 Middle tarsus with 3rd and 4th segments enlarged, laterally compressed, and mainly white (fig. 213). Wing broadest well beyond middle, anal lobe quite undeveloped (fig. 214). 4.75–6 mm ..... **platypterus** Fabricius
Scotland: Ross & Cromarty & Inverness. England & Wales: from Cumberland to Durham southwards to Is. of Scilly. Ireland: Down, Mayo, Kerry, Cork & Waterford. Very common, especially in south. vi–ix.
– Front tarsus modified. Wing of normal shape.....3
3 Apical segment of front tarsus dorsoventrally flattened and somewhat enlarged, black, 4th segment simple. 4.5–5.5 mm (=*vialis* Parent *nec* Raddatz).....**loewi** Becker
Recorded from Norfolk (Bridgham Heath), Suffolk (Boyton, Scotland Fen & Ipswich), Glamorgan (Oxwich), Bedfords. (Aspley Heath), Middx (Finchley), Devon (Putsborough) & Dorset (Corfe Castle). Uncommon. vi–viii.
– 4th segment of front tarsus dorsally produced forwards into a flattened lobe projecting over apical segment (fig. 215). 4.5–5.5 mm (=*nervosus* auctt. *nec* Lehmann) **wiedemanni** Fallén
Scotland: Inverness., Perths. & E. Lothian. England & Wales: Durham, Yorks., Notts., Merioneths., Northants., Norfolk, Suffolk, Glamorgan, Glos., Somerset, Surrey, Kent & Hants. Recorded from Ireland, without locality. Fairly common. vi–viii.
4 Antenna entirely black. Almost whole insect, including frons and upper half of face, shining metallic green without trace of dusting. 3–3.5 mm.....**laetus** Meigen
Recorded from Salop (Meole Brace), Suffolk (Orford), Glamorgan (Whiteford N.R.), Devon (Braunton Burrows & Putsborough), Dorset (Arne & Poole) & Hants. (Bursledon, Fawley, Bournemouth & Shalfleet, I.O.W.). Uncommon & local. vii–viii.
– Antenna partly yellow, at most 3rd segment, and base of 1st, brownish or blackish....5
5 Abdomen yellow, with fore- and hind-margins of tergites darkened. Hypopygium entirely yellow, only apices of some processes blackish (fig. 216). About 6 mm **heteropygus** Parent
Only British records known: 1♂ on window, Bristol (Glos.), 11.vii.58 (A. C. Pont); 1♂, 1♀ in garden at Torquay (Devon), 29.vii.58 & 1♂, 1♀ at same locality, 2.vii.59 (L. H. Woollatt).
- Abdomen metallic green or bronze, though ground-colour may be mainly or entirely hidden by dense dusting.....6
6 Frons, thorax and abdomen shining metallic green, at most thinly dusted. Face glistening white. Front femur ventrally with a row of spines. 3–4 mm (=*lugens* Meigen = *obscurus* Meigen) .....**longulus** Fallén
Recorded from only Yorks., Hunts., Norfolk, Cambs., Glos., Oxon, Bucks., Somerset, Wilts., Surrey, Kent & Dorset. Uncommon. vi–viii.
– Frons, thorax and abdomen greenish or bronze coloured, entirely or mainly dulled by dust 7
7 Front femur practically bare ventrally, with only short pale hairs. Frons densely dusted white. Hind metatarsus about same length as 2nd segment. 3.75–4.5 mm (=*contristans* auctt. *nec* Wiedemann) .....**maritimus** Becker
Scotland: Inverness-shire. England & Wales: Yorks., Anglesey, Herefords., Norfolk, Suffolk, Bedfords., Surrey, Dorset, Hants. & Cornwall. Uncommon. vi–vii.

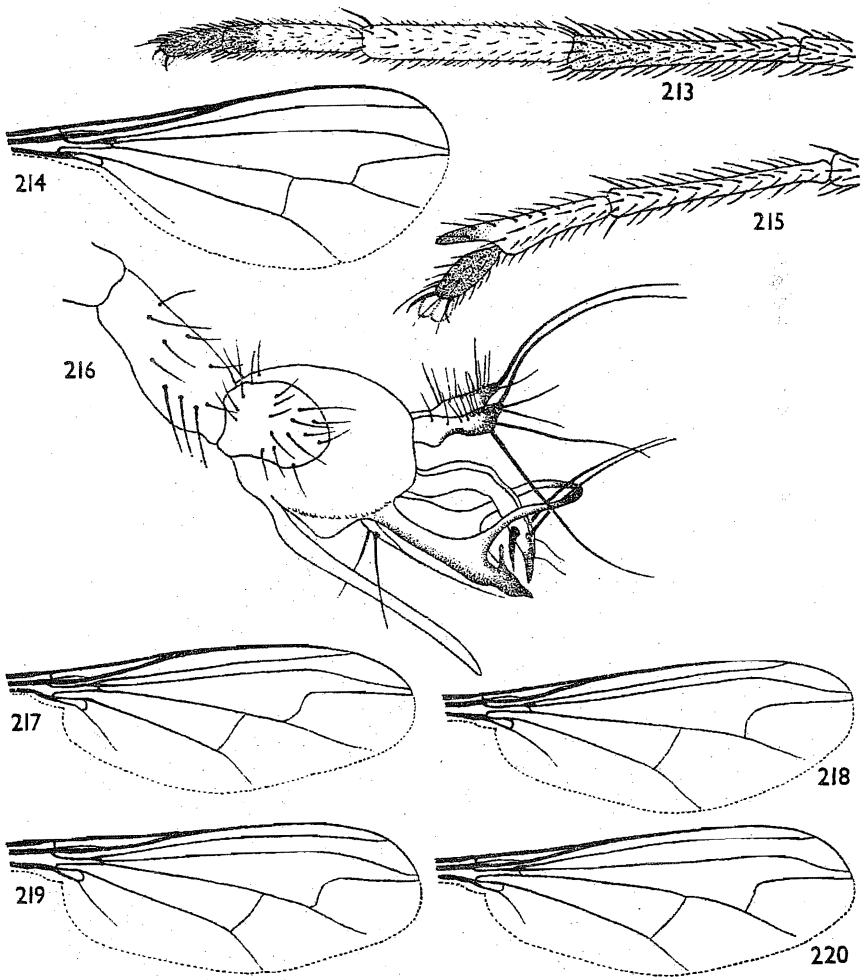
– Front femur ventrally with long erect yellow bristles. Frons dusted greyish yellow. Hind metatarsus longer than 2nd segment. 4.75–5.25 mm
contristans Wiedemann

Recorded from only Norfolk (Fowlmere), Suffolk (Barton Mills), Bedfords. (Aspley Heath), Dorset (Morden Bog) & Hants. (Matley Bog). Scarce. vi–vii.

Females

(For synonymy and distribution see key to males)

1 Antenna black, at most yellowish beneath 1st segment. Body, including frons and upper part of face, entirely shining metallic green without trace of dusting. 3–3.5 mm ..... **laetus** Meigen



FIGS 213–220. *Sciapus*. 213–214, *platypterus* F. ♂. 213, L. middle tarsus. 214, Wing. 215, L. front tarsus of *wiedemanni* Fall. ♂. 216, ♂ hypopygium of *heteropygus* Par. 217–220, ♀ wings. 217, *maritimus* Beck. 218, *contristans* Wied. 219, *loewi* Beck. 220, *wiedemanni* Fall.

– At least basal segments of antenna yellow 2
2 Abdomen largely yellow on disc. About 4 mm ..... **heteropygus** Parent
– Disc of abdomen nowhere yellow 3
3 Face narrow, 2–2.5 times as wide as 3rd antennal segment. Pleural sclerite, connecting hind coxa to base of abdomen, and all coxae, yellow. 3.5–5 mm **platypterus** Fabricius
– Face broader, 4–4.5 times as wide as 3rd antennal segment 4
4 Thorax with a distinct metallic green shine, at most quite thinly dusted. 2.75–3 mm **longulus** Fallén
– Thorax entirely dulled by dusting 5
5 Pleural sclerite, connecting hind coxa to base of abdomen, dark in ground-colour .. 6
– The above sclerite yellow 7
6 Discal vein with the posterior branch of fork, measured right to wing-margin, almost twice as long as stem (fig. 217). 3–3.5 mm ..... **maritimus** Becker
– Posterior branch of fork, measured as above, at most little longer than stem (fig. 218). 3.5–4.75 mm ..... **contristans** Wiedemann
7 Discal vein with basal part of anterior branch of fork distinctly sinuous, so that the true inner angle made with stem is obviously greater than 90° (fig. 219). 4.5–5 mm **loewi** Becker
– Basal part of anterior branch of fork straight, making a rightangle with stem (fig. 220). 4–5 mm ..... **wiedemanni** Fallén

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