Danish Acalypterate Flies. 3. Sciomyzidae (Diptera).

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Abstract.

The abundant Sciomyzid fauna of Denmark is essentially central European but includes a few typically northern species. Descriptive keys, distributional and seasonal data, and diagnostic illustrations are given for the 23 genera and 66 species known to occur in Denmark. Inclusion of all genera and species known from the British Isles and Ireland makes the keys usable also there.

Contents.

Morphology.

The Sciomyzidae is one of about 60 families (44 in Denmark) belonging to the large section Acalyptratae of the order Diptera. In his extensive review of the higher classification of the Diptera Schizophora, Hennig (1958) placed the Sciomyzidae with the Helcomyzidae, Rhopalomeridae, Coelopidae, Dryomyzidae, and Sepsidae in the superfamily Sciomyzoidea.

The Sciomyzidae are small to medium-sized flies, usually of a greyish or yellowish-brown coloration. The eyes of both sexes are broadly separated and are always devoid of hairs. The vertical plates are short and provided with 2 (or only 1) strong, reclinate, upper frontorbital setae (ors). Postvertical setae (pvt) are strong and divergent. Two vertical setae (vti and vte) and ocellar setae (oc) are present (oc absent in *Sepedon*). There are no vibrissae. The antennae of many species are elongate and porrect. The second antennal joint often is thickened and elongate, and the third joint is triangular or oval with the upper margin usually more or less concave. The arista varies from bare to plumose.

The thorax is about twice as long as wide. The mesonotum has at most 2 (pairs) of dorsocentral setae (dc) behind the suture, and 1 (pair) of prescutellar setae. The propleuron is with or without a strong seta, but sometimes has smaller hairs. Moreover, setae are present on the humerus and notopleuron, and on the supra-alar and postalar areas. The mesopleuron, pteropleuron, and sternopleuron also occasionally bear setae. Presence or absence of setae on the subalar (vallar) ridge below the wing-base is an

important character in the *Tetanocerini*. The scutellum has 1 or 2 pairs of setae.

There are 5 normal segments in the abdomen of the male. The 6th tergite is absent, and the 7th and 8th tergites are fused. The epandrium (9th tergite) is more or less swollen. The surstyli (forceps, paralobi) are approximate on the posterior margin of the epandrium, and are the most diagnostic elements of the genitalia of many species. The inner copulatory apparatus is very complex and often provides good specific characters. The abdomen of the female is simple in most genera. It consists of 5 normal segments, followed by 3 pairs of short tergites and sternites which apparently represent the 6th to 8th segments. The abdomen terminates in a pair of small cerci surrounded by two small plates, one dorsally and one ventrally. In *Tetanura,* the abdomen terminates in a flat ovipositor.

The legs are simple, long, and rather robust. The well-developed femora often are provided with rows of ventral setae or spines, and sometimes also with setae on the dorsal surface near the apex. The tibiae have dorsal setae near the apex, and in the *Phaeomyinae* there are also setae on the middle section.

The wings have an unbroken costa. The subcosta is well-developed, distinctly separated from r_1, and ends in the costa well before r_1. The anal-vein (a_1) usually extends to the wing-margin. The anal-cell (Cu_2) always is distinct, though rather short, and most often convex apically. The wings of many species have spots or a reticulate pattern.

Geographical Distribution and Biology.

Although no single species of Sciomyzidae is cosmopolitan, this family of about 450 species is represented on all continents, and extends from Tierra del Fuego to the Franz-Joseph Islands. The greatest number of species and genera is found in the Northern Hemisphere. There are about 150 species in 26 genera in the Palearctic Region. Of these, 20 species in 6 genera are Holarctic.

The Sciomyzidae are especially interesting in regard to their natural history, particularly the feeding behaviour of the larvae. Until recently the biology had been even more neglected than had the taxonomy. Although a few earlier authors had speculated on the basis of circumstantial evidence that there is a "parasitic" relationship between a few Sciomyzidae and gastropod molluscs,

none had seen larvae kill and feed in snails. Lundbeck (1923) wrote the most detailed of earlier papers touching on the biology of Sciomyzidae. He obtained adults of three species of *Colobaea* from puparia found floating shells, but he could say only, "When we now, therefore, suppose that the larvae have lived on the content of the shells, then there is the question whether they are parasitical or saprophagous, devouring only the dead snails. To this question I can at present give no answer, but it would seem to me rather probable that the larvae attack the living snails, in this connection I also pay attention to Mercier's observation on *Salticella fasciata*."

Lundbeck was apparently the only person to take note of this small and somewhat confusing record (Mercier, 1921). Other writers (*e.g.* Dufour, 1847; Gerke, 1876; Bertrand, 1954), had completely erroneous ideas that the larvae are saprophagous, phytophagous, or catholic in their feeding habits. After observing snail killing by larvae of several genera, Berg (1953) suggested that the Sciomyzidae, ". . . may be integrated biologically by the common food preferences of their larvae." Over 140 Sciomyzidae have been reared to date by Berg and his associates, and all species developed from hatching to pupation solely on gastropod molluscs (cf. Foote, 1959; Foote, Neff, and Berg, 1960; Berg, 1962, 1964; Neff and Berg, 1961, 1962; Knutson and Berg, 1963, 1964; Knutson, Stephenson and Berg, 1965). The life cycles of 53 of the 73 species known or presumed to occur in Denmark have been worked out completely or in part.

The food getting habits of the larvae and correlated behavioral and morphological features present throughout the life cycle and in all immature stages are of exceptional diversity and complexity. One sees an almost continual range from predaceous to parasitoid in the methods of attacking, killing and feeding on the prey or host. At one end of the behavioral continuum are a few highly specialized parasitoid species, all of which are terrestrial and members of one major taxonomic category, the *Sciomyzini*. (The term parasitoid refers to a general type of feeding behavior displayed by insect larvae which is intermediate between that of the better-known types, parasitic and predaceous. Unlike parasites but similar to predators, parasitoid larvae predictably kill the host and consume major proportions of its tissues. However, unlike predaceous larvae, they do not kill the host immediately but feed

in a subtle manner within it for a relatively long period before ultimately causing its death.) In Denmark, *Colobaea bifasciella* Fallén is representative of a species with highly developed parasitoid behavior. Emerging from puparia in the spring, *C. bifasciella* females lay one or two eggs across the sutures of *Lymnaea palustris* Müll. or *L. truncatula* Müll. snails which are stranded, foraging amongst leaf litter, aestivating, or otherwise exposed. The egg hatches after a three- to five-day incubation period and the larva penetrates, between the mantle and foot, into the respiratory chamber. There the larva remains, apparently feeding on mucus, extra-pallial fluid, or the less vital tissues. About ten days after the larva entered, the host ceases its normal activity and the posterior spiracles of the air breathing larva are exposed between the foot and the mantle. The larva then feeds vigorously and consumes large quantities of tissue. This results in the death of the host, but the larva continues to feed in the decaying tissues. The larva consumes most of the soft parts in about 25 days and then pupates within the shell. After a pupal period of two to three weeks the adult emerges and a second or even third generation may be produced before overwintering begins in the pupal stage at the end of the warm season. The general biological features and degree of specialization of *P.s. schoenherri* Fallén are rather similar to that outlined above for *C. bifasciella,* although the hosts are restricted to the genus *Succinea,* the microhabitat is distinct, and the duration of stadia and manner of overwintering are quite different.

At the other end of the behavioral continuum there are many predaceous species, all of which are aquatic and belong to the other major taxonomic group, the *Tetanocerini.* Behaviorally, this is a rather stereotyped assemblage. All reared species oviposit onto vegetation in the microhabitats of the prey. Eggs hatch after a 3- to 10-day incubation period, and the young larvae crawl into the water and actively seek out the prey. Larvae of all species, except the truly aquatic first instar larvae of two species of *Knutsonia,* are air-breathers; the posterior spiracles must occasionally penetrate above the surface film. The larvae crawl about the bases of emergent plants, on *Lemna* mats, or even hang from the surface film and vigorously attack *Lymnaeidae, Physidae,* or *Planorbidae* snails which they encounter. The larva quickly ruptures the snail's haemocoele, killing the prey within 10 to 20 minutes, and consumes part of the fresh tissues during the subsequent hour or

two. After feeding to repletion, the larva leaves the partially eaten snail, remains quiescent, and attacks another snail when it becomes hungry again. As many as 23 snails, 1 to 13 mm in diameter for planorbiform species, may be killed and eaten during the 2 to 3 weeks required to develop through the three larval stadia. Puparium formation takes place in the water, and the puparia, with the posterior and sometimes also the anterior spiracles uplifted, obviously are adapted for flotation. Most of the reared species seem to be multivoltine, and although many species pass the winter within the puparium others overwinter as adults, eggs, or larvae. In Denmark, the reared species of aquatic, predaceous Tetanocerini are: *Dictya umbrarum* L., *Elgiva cucularia* L., *E. rufa* Panz., *Hydromya dorsalis* F., *Knutsonia albiseta* Scop., *K. lineata* Fall., *Pherbina coryleti* Scop., *P. intermedia* Verb., *Psacadina punctata* F., *P. zernyi* May., *Sepedon sphegea* F., *S.s. spinipes* Scop., *Tetanocera ferruginea* Fall., *T. hyalipennis* v. Ros., *T. montana* Day, *T. robusta* Lw., and *T. unicolor* Lw.

Many species of both Sciomyzini and Tetanocerini have intermediate and mixed behavior. Larvae of some show more parasitoid tendencies, others have more predaceous tendencies. The parasitoid relationships of these intermediate species characteristically occur in the earlier immature stages, whereas the predaceous features dominate in later development. *Antichaeta analis* Meig. and *Hemitelopteryx brevipennis* Zett. (*Tetanocerini*) oviposit onto egg masses of *Lymnaea palustris* and *Succinea* spp., and the larvae feed predaceously on snail embryos. *Tetanocera elata* F. (*Tetanocerini*) feeds on mucus under the mantle of a single, living *Agriolimax* slug during most of the first two larval stadia, but then preys on several genera of slugs during the third stadium. *Limnia unguicornis* Scop. (*Tetanocerini*) eats dead *Lymnaea* and *Physa* during the first instar but attacks and kills living individuals of these snails during the second and third stadia. Many of the intermediates, especially of the Sciomyzini, are species which lack obvious structural adaptations for an aquatic existence but feed on hygrophilous snails or on aquatic snails that are stranded, aestivating, foraging out of the water or otherwise somewhat removed from their normal microhobitat. *Colobaea pectoralis* Zett., *C. punctata* Lundb., *Pherbellia griseola* Fall., *P. grisescens* Meig., *P. mixta* Elberg, *P. obtusa* Fall., *P. ventralis* Fall., all four species of *Pteromicra,* and *Sciomyza simplex* Fall. (all *Sciomyzini*) show

varying adaptations for this way of life. Other species, such as *Pherbellia albocostata* Fall., *P. annulipes* Zett., *P. cinerella* Fall., *P. dubia* Fall., *P. lichtwardti* Hend. (*Sciomyzini*), *Tetanocera arrogans* Meig., *T. freyi* Stack., *T. phyllophora* Mel., and *T. silvatica* Meig. (*Tetanocerini*) show more terrestrial, parasitoid tendencies. A greater degree of host specificity is generally displayed by the intermediates than by the aquatic predators, but none of these oviposit onto the shell of the host. Some pupate within the shell of the host, but the puparia of others are formed outside the shell.

Taxonomy.

The Palearctic Sciomyzidae were revised by Hendel (1902) and by Sack (1939), and the Nearctic fauna was treated extensively by Melander (1920) and Cresson (1920). These earlier works are now completely superseded, mainly by the studies of G. C. Steyskal on the New World and Australian Sciomyzidae and by those of J. Verbeke on the Palearctic and Ethiopian species. Following the indications given by Melander (1920), the first generic revision of a modern nature in which the male genitalia were examined was done by Frey (1924) on the northern Palearctic species of *Tetanocera*. Verbeke studied the Belgian Sciomyzidae (1948), and (1950) reviewed the supra-generic classification of the family. Mayer (1953) described new genera and species and presented a few keys to certain groups. Ringdahl (1948) treated the northern species of *Pherbellia*. Collin (1960) presented a key to the British species of *Tetanocera* and attempted to clarify the status of certain specific names. Stackelberg (1963) gave a key to the *Tetanocera* fauna of European USSR and described three new species. Rozkosny (1959) reviewed the historical development of the taxonomy of the Palearctic Sciomyzidae, and (1964) published on the difficult problem of the infrageneric groups within *Pherbellia*. Verbeke (1960) remarked, "Au point du vue taxonomique, les Sciomyzidae paléarctiques demandent une révision complète" and his excellent revisions and descriptions are most importantly advancing the knowledge of European Sciomyzidae (Verbeke, 1960, 1964a, 1964b).

The suprageneric classification of the Sciomyzidae and the relationships to other families in the Sciomyzoidea has become a subject of renewed interest (*e.g.* McAlpine, 1963). The higher classification followed here is that of Steyskal (1965). The present faunistic work is the first devoted exclusively to the

Danish fauna. The keys are designed to permit identification of the British as well as the Danish species.

Key to subfamilies and tribes.

1. Anal cell (Cu_2) with triangular extension ventro-apically; r_{4-5} and m_{1-2} strongly converging apically ..... **Salticellinae** (p. 68)
—. Anal cell without triangular extension ventro-apically; r_{4-5} and m_{1-2} parallel or only slightly converging apically ..... 2.
2. Middle and hind tibiae with median setae .... **Phaeomyinae** (p. 68)
—. Middle and hind tibiae without median setae (**Sciomyzinae**) .... 3.
3. Propleuron with strong seta above base of coxa (figs. 1-2) .... **Sciomyzini** (p. 69)
—. Propleuron without strong seta above base of coxa, but often with fine hairs (fig. 3-6) ..... **Tetanocerini** (p. 76)

Salticellinae.

One genus **Salticella** Robineau-Desvoidy, 1830, with one European species: **fasciata** Meigen, 1830 (Syn. **maculipes** Rondani, 1868). It has not been found in Denmark.

Phaeomyinae.

Only one genus **Pelidnoptera** Rondani, 1856.
(Syn. **Phaeomyia** Schiner, 1862)

1. r_1 bare on dorsal surface (fig. 38). — Head in profile triangular, yellowish-brown. Thorax, abdomen and legs brownish. Wings uniformly dark brownish. 8-11 mm. — Very rare. A single male specimen has been taken at Horsens in East Jutland by O. G. Jensen ..... **nigripennis** Fabricius, 1794
—. r_1 hairy on dorsal surface (fig. 37) ..... 2.
2. Mid-frontal triangle extending only to middle of frons. Middle tibia with 1-2 setae on anterior surface. — Not yet recorded from Denmark ..... (**fumipennis** Zetterstedt, 1846)
—. Mid-frontal triangle extending beyond middle of frons. Middle tibia without strong setae on anterior surface. — Head in profile with frons slightly convex and face concave. Colour yellowish-brown, mesonotum darkest. Wings brownish. 3-7 mm. — Uncommon, known only from eastern and southern Jutland: Skamling, 2 ♂♂, 22.VII.1919 (Lundbeck); Hejls, 2 ♀♀, 26.VII.1919 (Lundbeck); Sottrup skov, ♂, 31.VII.1897 (Wüstnei); Sønderhav, ♂, 6.VII.1894 (Wüstnei); and from the island of Als: Sønderborg, ♀, 23.VI.1889; ♂, 27.VII.1903; ♂, 13.VII.1905; ♀, 7.VIII. 1905 (Wüstnei) ..... **fuscipennis** Meigen, 1830

Sciomyzinae.

Sciomyzini

Key to genera

1. Arista subapical (fig. 8). Female postabdomen modified into elongate, flattened ovipositor ..... 5. **Tetanura** Fall.
—. Arista basal or subbasal (figs. 11-13). Female postabdomen conical, not modified into elongate, flattened ovipositor ..... 2.
2. Fore tibia with two preapical setae ..... 4. **Sciomyza** Fall.
—. Fore tibia with one preapical seta ..... 3.
3. Anal vein (a1) not reaching margin of wing (figs. 1 and 39). Fore coxa usually with five setae ..... 1. **Colobaea** Zett.
—. Anal vein extending to margin of wing (figs. 40-43). Fore coxa with no more than three setae ..... 4.
4. Body mostly shining black. Frons entirely shining .... 3. **Pteromicra** Lioy
—. Body yellow, brown, or grey, never shining black. Frons mostly pruinose ..... 2. **Pherbellia** R.-D.

1. **Colobaea** Zetterstedt, 1838.
(Syn. **Ctenulus** Rondani, 1856).

1. Wings patterned (fig. 1). Head including frons, occiput and antennae yellowish. Thorax and abdomen mainly yellowish, with dark brownish longitudinal markings. 2-4 mm. — Known from a few localities near Copenhagen, from Suserup in central Zealand, and from Sønderborg on the island of Als. Most of the specimens are reared from *Lymnaea truncatula* (Müll.) (Lundbeck 1923, p. 104). Adults have been captured from 23.V. to VIII. Biology: see p. 65 ..... **bifasciella** Fallén, 1820
—. Wings not patterned (fig. 39). Frons and most of occiput blackish, the rest of the head yellowish. Apical part of third antennal joint blackish. At least mesonotum uniformly blackish ..... 2.
2. Whole thorax and abdomen (except sternites) blackish or brownish-black. 2-3 mm. — Rare. 2 ♂♂ and 2 ♀♀ without dates in Coll. Stæger. 1 ♂ collected by Lundbeck at Lohals on the island of Langeland 24.VII.1913 ..... **distincta** Meigen, 1830
—. Pleura of thorax and lateral margins of abdominal tergites mainly yellowish ..... 3.
3. Mesopleuron with longitudinal blackish stripe on upper margin. 2.5-3.5 mm. — Apparently common in Denmark. In the Zoological Museum, Copenhagen, there is a long series from Utterslev Mose near Copenhagen; all of these specimens were reared from *Anisus vortex* L. (Lundbeck l.c., p. 106). Moreover, the species was captured in Zealand at Hillerød and at Vollerup Mose S. of Sorø by L. V. Knutson. Also there are 2 ♂♂ 2 ♀♀ captured 11. VI.1960 in the Hansted Reservation in NW. Jutland. In the Naturhistorisk Museum, Aarhus, there are 12 specimens collected by C. R. Larsen at Utterslev Mose, Damhussø, and Amager

Fælled. All three localities are near Copenhagen. This material dates from 9.VI. to 17.IX. ..... **pectoralis** Zetterstedt, 1846

—. Mesopleuron with roundish, blackish spot below anterior notopleural seta. Antenna (fig. 11). Wing (fig. 39). 2.5-3 mm. — Lundbeck's type-series consists of 10 ♂♂ and 10 ♀♀. Most of them are without labels and were reared from various snails (Lundbeck l.c. p. 107). Only four of them bear labels with locality-names. These were taken at Donse in North Zealand and Damhusmosen near Copenhagen. Also there is a series of 10 specimens in Coll. Stæger originating from Amager and Dyrehaven; both localities are near Copenhagen. In C. R. Larsen's collection there are 6 specimens from Damhusmosen near Copenhagen (captured from 15.VI to 15.VIII). A single male speci-

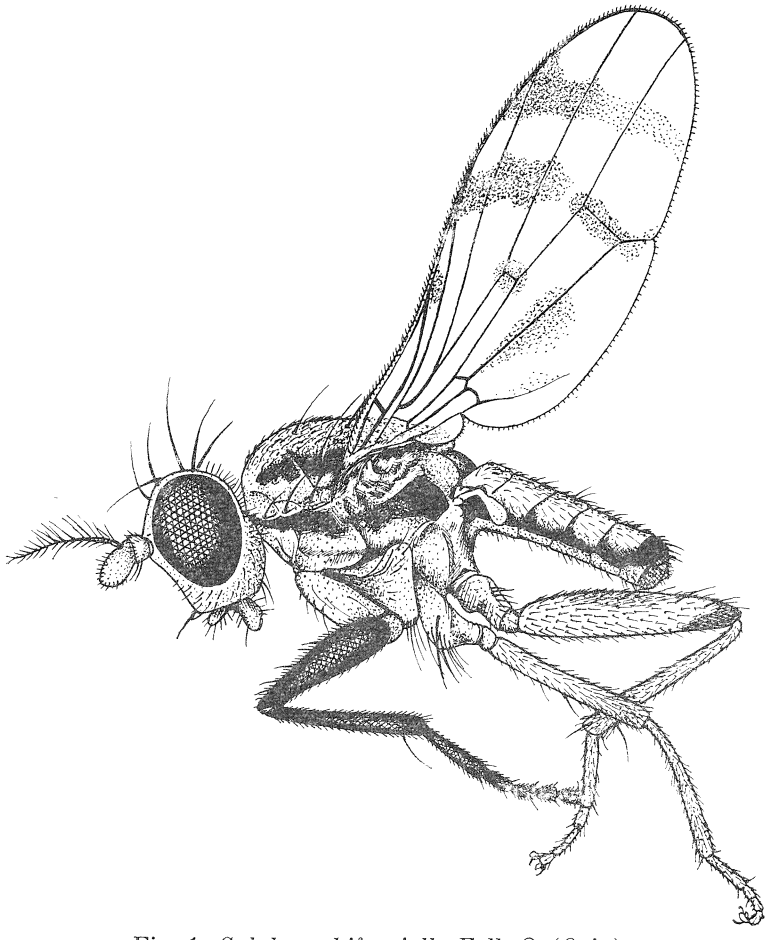


Fig. 1. *Colobaea bifasciella* Fall. ♀ (Orig).

men has been captured 31.VII.1910 at Tinbæk Mølle between Randers and Viborg in eastern Jutland .. **punctata** Lundbeck, 1923

2. **Pherbellia** Robineau-Desvoidy, 1830.

(Syn. **Melina** Robineau-Desvoidy, 1830; **Graphomyzina** Macquart, 1835; **Ditaenia** Hendel, 1902; **Ditaeniella** Sack, 1939; **Oxytaenia** Sack, 1939).

1. Mid-frontal stripe extending two-thirds or more of distance from anterior ocellus to fore margin of frons ..... 2.
—. Mid-frontal stripe shorter, extending no more than half the distance from anterior ocellus to fore margin of frons ..... 6.
2. Mesopleuron with hairs over most of surface. One frontorbital seta (ors). — Frons yellow, middle stripe darker, along eye-margins a narrow stripe with whitish pruinosity. Rest of head yellowish with whitish-grey pruinosity. Antennae yellowish-brown, third antennal joint darkened in apical part. Arista with very short hairs at base. Thorax and abdomen mainly yellowish-grey, mesonotum with four darker stripes. Legs yellowish, tip of fore tibiae and tarsi darker. Wings yellowish hyaline. 3.5-

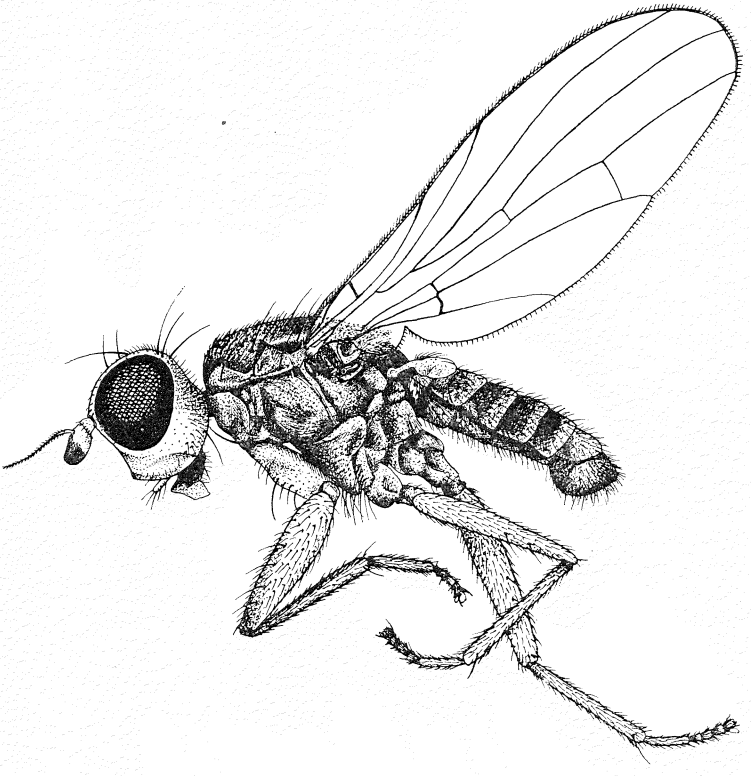


Fig. 2. *Pherbellia dubia* Fall. ♂ (Orig.).

4.5 mm. — Seems to be a rather common species in Denmark. It has been taken in North Jutland (Hulsig), West Jutland (Aargab), Funen (Hofmansgave) and Zealand (several localities near Copenhagen). Dates from 11.VI to 13.IX ..... **grisescens** Meigen, 1830

—. Mesopleuron bare. Two frontorbital setae ..... 3.

3. Wing with pattern of blackish spots (fig. 40). — Darker in coloration than the preceding species. Arista distinctly pubescent. 3-5 mm. — A common and widely distributed species. Hitherto known from North Jutland (Nors Sø and Blegsø in Hansted Reservation), West Jutland (Holstebro), East Jutland (Hundslund), Als (Sønderborg and Høruphav), Langeland (Aasø), and Zealand (Suserup, Sorø, Høed Skov, Glumsø, Damhussø, Uttershev Mose, Ordrup Mose, Holte, Hillerød). Dates from 3.V to 13.X ..... **schoenherri schoenherri** Fallén, 1826

—. Wing without pattern of blackish spots ..... 4.

4. Wing with costal margin darkened. Third antennal joint blackish. — Frons reddish-yellow. Middle stripe brownish-black and extending to fore margin. Area lateral to antennal base brownish-black. Arista distinctly pubescent. Fore legs mainly blackish, middle and hind legs mainly yellowish-brown. Wings greyish-brown with costal margin and veins darkened. 3-6 mm. — A very common and widespread species in Denmark. Known from North Jutland (Frederikshavn, Thisted, Hansted Reservation), Central Jutland (Laven), South Jutland (Sottrup skov, Sandbjerg, Gråsten, Skelde), Als (Sønderborg, Madeskov), Langeland (Lohals) and Zealand (Alindelille, Kærehave at Ringsted, Boserup, Jyderup, Rygård Dyrehave, Tudeå Mose, Suserup, and a number of localities in the environs of Copenhagen). The material dates from 13.V to 26.IX ..... **cinerella** Fallén, 1820

—. Wing with costal margin not darkened ..... 5.

5. Fore legs and thorax greyish-blue, parafrontalia bluish-white. 3-4 mm. — Rare. North Jutland: Nors Sø, ♂, 3.VI.1963 (Knutson); Klitmøller, 2 adults, 20. VI. 1953 (Ardö); East Jutland: Randers, 2 adults emerged from puparia collected 27.I.1921; Als: Mjelsmark, ♂, 15.V.1893 (Wüstnei); Sønderborg, ♂ (Wüstnei); and Zealand: Charlottenlund, ♂ (Coll. Stæger); Valby Fælled, ♀, 26.IX.1906 (C. R. Larsen) ..... **brunnipes** Meigen, 1838

—. Fore legs yellowish-brown, thorax greyish-brown, parafrontalia yellowish. — Not yet recorded from Denmark ..... (**lichtwardti** Hendel, 1902)

6. Mesopleuron with hairs on posterior part ..... 7.

—. Mesopleuron bare ..... 10.

7. Veins sc, r_1 and r_{2-3} pale yellowish (fig. 41). Pteropleuron with hairs, but without strong setae. — A mainly reddish-yellow to reddish-brown species. Arista short plumose. r_{4-5} and medialveins brown and broadly infuscated. 4-7 mm. — Common and widely distributed in Denmark. North Jutland (Hou), West Jutland (Vinderup), Als (Madeskov, Stevning), Funen (Veflinge),

Zealand (Ringsted and nine localities in North Zealand) and Lolland (Aalholm). 27.V to 30.VII ..... **albocostata** Fallén, 1820

—. All veins brown. Pteropleuron with 2-3 strong setae in addition to hairs ..... 8.

8. Arista short plumose, hairs on upper side about as long as half of the width of third antennal joint (fig. 13). Fore femur and tibia blackish. — Colour darker than in preceding species. Wings brownish-hyaline with cross-veins darkened. 3-5 mm. — Common and widely distributed. North Jutland (Tved pl.), West Jutland (Holstebro), South Jutland (Sottrup skov, Gråsten), Als (Sønderborg, Madeskov, Mjelsmark, Høruphav), Zealand (Sorø, Suserup, Tudeå Mose, Boserup, Ordrup, Ryget, København, Hillerød, Vemmetofte) and Bornholm (Almindingen). Dates from 10.V to 13.IX ..... **griseola** Fallén, 1820

—. Arista long plumose, some hairs on upper side nearly as long as width of third antennal joint (fig. 12). Fore femur and tibia yellowish-brown. — Larger species (4-6 mm) of paler colour .. 9.

9. Male genitalia as in fig. 24. Known from Zealand (Suserup, Tudeå Mose, Vollerup Mose, Alindelille Skov, Lejre, Damhusmosen, Holte, Donse, Hillerød, Liseleje). Dates from 25.V to 9.X ..... **dorsata** Zetterstedt, 1846

—. Male genitalia as in fig. 23. — The species often occurs with *P. dorsata* but is not nearly as common. Zealand: Sorø, ♂, 1840—50 (F. Jacobsen); Vollerup Mose S. of Sorø, 9-21.VIII.1960 (Knutson); Holte, 30.VIII.1960 (Berg, Knutson); Hillerød, 21. VII.1959 (Berg) ..... **mixta** Elberg, 1965

10. Middle and hind femora and tibiae with brownish-black rings before apexes ..... 11.

—. Middle and hind femora and tibiae without such rings ..... 12.

11. Wings greyish-hyaline with pattern of brownish markings (fig. 42). Jowls wider than width of third antennal joint. — Arista pubescent. Colour of thorax and abdomen greyish and brownish. 2.5-3.5 mm. — Not common, but seems widely distributed in Denmark. Known from North Jutland (Frederikshavn), South Jutland (Sandager), Als (Sønderborg, Høruphav), Zealand (Suserup, Boserup, Damhusmosen, Utterslev Mose) and Amager. Dates from 10.V to 31.X ..... **nana** Fallén, 1820

—. Wings greyish-brown with foremargin and cross-veins darkened. Jowls narrower than or as wide as width of third antennal joint. — Arista pubescent. Colour similar to preceding species. 4.5-5 mm. — Hitherto only known from Zealand (Suserup, Holte, Dyrehaven, Geel Skov, Egebæksvang, Hillerød, Gadevang) and Lolland (Hardenberg). Dates from 4.VI to 13.VIII .... **annulipes** Zetterstedt, 1846

12. Third antennal joint reddish-yellow at base, black in apical half or more. — Arista pubescent. Thorax and abdomen mainly yellowish-brown, mesonotum greyish. Wings greyish-brown. Habitus: see fig. 2. 4-6 mm. — Common and widespread in Den-

mark. West Jutland (Gudum), East Jutland (Rold Kilde, Als), South Jutland (Sottrup Skov, Sandager), Als (Sønderborg, Madeskov, Høruphav), Zealand (Sorø, Suserup, Kærehave at Ringsted, Boserup, Ermelund, Ørholm, Holte, Præstevang, Frerslev Hegn, Strødam, Hillerød), Lolland (Strandby at Nysted) and Bornholm (Rø). 5.V to 20.VIII ..... **dubia** Fallén, 1820

—. Third antennal joint entirely reddish-yellow to brown. If darker in apical part than at base, then the two parts are not sharply contrasting ..... 13.

13. Fore legs bluish-grey. Pleura and abdomen strongly contrasting, pleura bluish-grey and abdomen yellowish. 3-4 mm. — Not common. North Jutland: Hanstholm, ♀, 10.VI.1960 (Zoologisk Museum leg.); East Jutland: Skillingsbro near Rold, 4.VI.1963; Lundergårds Bæk near Rold, 4.VI.1963; Mastrup Bæk, 4.VI.1963 (Thorup, Knutson); Zealand: Ermelund, ♀, 8.V.1913 (Lundbeck), Funkedam at Hillerød (Knutson) ..... **ventralis** Fallén, 1820

—. Fore legs yellowish-brown. Pleura and abdomen yellowish to greyish, not strongly contrasting ..... 14.

14. Thorax yellowish. — Arista short pubescent. Apical parts of fore tibiae and tarsi darkened. Wings greyish hyaline. 5-6 mm. — Known from South Jutland: Sottrup Skov, ♂♀, 9.VII.1892 (Wüstnei); ♂, 8.VI.1894 (Wüstnei); Als: Sønderborg, ♀, VII.1895 (Wüstnei); Zealand: Tystrup, 12.VIII.1964 (Knutson); Suserup, 12-15.VIII.1964 (Knutson) ..... **pallidicarpa** Rondani, 1868 (**bezzii** Hendel, 1902)

—. At least mesonotum greyish or brownish ..... 15.

15. Arista moderately short plumose, the longest hairs nearly as long as half the width of third antennal joint. Fore part of frons in male with silvery-white pruinosity, in female with whitish-yellow pruinosity. Thorax and abdomen greyish and brownish. 4-6 mm. — The species is known from North Jutland (Nors Sø, Sæby), East Jutland (Nebsager near Horsens), South Jutland (Sottrup Skov), Als (Mjelsmark), Zealand (Vollerup Mose, Suserup, Tudeå, Ringsted Å, Kærehave, Bromme, Sorø, Bagsværd, Jonstrup Vang, Damhusmosen, Utterslev Mose, Holte, Donse, Hillerød) and Amager. The material dates from 23.III to 25.IX ..... **obtusa** Fallén, 1820

—. Arista pubescent, the longest hairs much shorter than half the width of third antennal joint. Fore part of frons without pale pruinosity. Abdomen mainly yellowish ..... 16.

16. Frons strongly narrowed anteriorly, especially in the male. Hind tibia with a more or less distinct dark ring basally. Hind femur without dark spots at apex. Male with normal pubescence on hind trochanter and underside of hind femur. 3-4 mm. — Widely distributed in Denmark. North Jutland (Hanstholm), East Jutland (Skørping, Odde S. of Als), Central Jutland (Silkeborg), West Jutland (Herning, Skallingen), Funen (Strib), Zealand (Sorø, Lersø, Charlottenlund), and Bornholm (Rønne). Dates

from 2.VI to 19.VIII ..... **pallidiventris** Fallén, 1820

—. Frons less strongly narrowed anteriorly. Hind tibia without dark ring basally. Apex of hind femur with two dark spots, one anteriorly and one posteriorly. Male with very dense pubescence on hind trochanter and underside of hind femur. 4.5-6 mm. — Only four specimens known from Denmark. Als: Sønderborg, ♂, VIII.1893 (Wüstnei); and Zealand: Teglstrup Hegn, ♀, 8.IX.1903 (C. R. Larsen); Bøllemose, ♀, 18.IX.1904 (Lundbeck); Ermelund, ♀, 18.X.1913 (Lundbeck) ..... **scutellaris** von Roser, 1840

3. **Pteromicra** Lioy, 1864.
(Syn. **Dichrochira** Hendel, 1902).

1. Two frontorbital setae ..... 2.
—. One frontorbital seta ..... 3.
2. Hypopleuron blackish. Frons mostly yellowish. Last tarsal joint of fore legs white or blackish. Thorax and abdomen shining brownish-black. Wings brownish tinged and narrow, especially in male. 2.5-4 mm. — Known only from South Jutland (Hejls), Als (Sønderborg) and Zealand (Vollerup Mose, Suså at Skelby, Suserup, Lersø, Damhusmosen, Lyngby Mose, Rudehegn, Holte, Skovrøddam, Hillerød and Strødam). 25.V to 2.IX .... **glabricula** Fallén, 1820
—. Hypopleuron yellowish. Only fore part of frons yellowish. Last two or three tarsal joints of fore legs whitish. Wings broader than in preceding species. 2.5-4 mm. — East Jutland (Randers), South Jutland (Sandager) and Zealand (Vollerup Mose, Suserup, Glumsø, Lersø, Utterslev Mose, Damhussø and Hillerød). Most of the specimens were reared from puparia. Adults were captured from 27.V to 21.IX ..... **leucopeza** Meigen, 1838
3. Thorax brownish-black, sternopleuron and hypopleuron with whitish pruinosity. Apical third of fore femur blackish. — Fore tibia and tarsus blackish, last or last two tarsal joints whitish. Abdomen shining black. Wings yellowish-grey (fig. 43). Middle and hind legs yellowish. 2.5-4 mm. — A rather common species. North Jutland (Nors Sø); Langeland (Lohals); Zealand (Vollerup Mose, Suserup, Glumsø, Lersø, Holte, Hillerød); Bornholm (Hasle). 17.V to 27.VII ..... **nigrimana** Meigen, 1830
—. Thorax mainly brownish-black, sternopleuron and hypopleuron and also lower parts of upper pleura yellowish. Apical half (♂) or more (♀) of fore femora blackish. — Fore tibiae and tarsi blackish, the last two or three tarsal joints whitish. Wings darker than in preceding species. Abdomen and middle and hind legs as in this species. 3-3.5 mm. — Rare. North Jutland: Klitmøller, ♀, 12.VI.1960 (Zool. Mus. leg.); Zealand: Suserup, 20.V.1964, 25.VIII.1964 (Knutson); Utterslev Mose, ♀♂, reared from puparia collected 12.VI.1906 (Lundbeck); Lersø, ♂ (Coll. Stæger); and ♀ in Coll. Stæger labelled "Kyst." ..... **pectorosa** Hendel, 1902

4. **Sciomyza** Fallén, 1820.
(Syn. **Bischoffia** Hendel, 1902).

1. Mesopleuron with a row of setae and hairs before posterior margin. Central part of mesonotum covered by greyish-green pruinosity. — Head, rest of thorax, and abdomen yellowish-brown. Arista with long plumosity. Legs yellowish, tarsi a little darkened. Wings yellowish-grey (fig. 44). 5-6 mm. — Rather common and widely distributed in Denmark. The following localities can be given: North Jutland (Frederikshavn), West Jutland (Holstebro), East Jutland (Aarhus, Horsens), Zealand (Vollerup Mose, Glumsø, Damhusmosen, Utterslev Mose, Furesø, Holte, Donse, Egebæksvang, Hillerød) and Amager. Dates from 17.V to 2.X ..... **simplex** Fallén, 1820
—. Mesopleuron bare or with only fine hairs. Mesonotum entirely reddish-yellow ..... 2.
2. Third antennal joint blackish. Fore tibia and tarsus of male blackish only in apical part. — Not yet recorded from Denmark ..... (**testacea** Macquart, 1835)
—. Third antennal joint reddish-yellow. Fore tibia and tarsus of male entirely black. — Abdomen blackish-brown. Wings brownish-grey. 5-7 mm. — Rare. Known only from Als: Sønderborg, ♂, 15.V.1894 (Wüstnei) ..... **dryomyzina** Zetterstedt, 1846

5. **Tetanura** Fallén, 1820.

Upper part of frons and occiput, and middle of face dark brownish, the rest of the head yellowish. Antenna: see fig. 8. Thorax and abdomen more or less dark brownish. Legs long and thin, yellowish, fore tibiae and tarsi blackish. 3-4.5 mm. — Rare in Denmark. Hitherto only known from Zealand: Suserup Skov, 22.VI.1964 (Knutson); Ermelund, ♀, 30.VI.1918 (Lundbeck), and Stenholts Indelukke at Hillerød, 19.VI.1964 (Knutson) .... **pallidiventris** Fallén, 1820

Tetanocerini.

Key to genera.

1. Ocellar setae absent ..... 15. **Sepedon** Latr.
—. Ocellar setae present ..... 2.
2. Hind tibia with two dorsal, preapical setae, of which one is anterodorsal and one more or less true dorsal ..... 3.
—. Hind tibia with one anterodorsal, preapical seta ..... 5.
3. Only one pair of dorsocentral setae. Wings short and narrow, r1 ending in costa before level of first cross vein (r-m). Jowls narrower than width of third antennal joint. Only one pair of frontorbital setae (fig. 3) ..... 8. **Hemitelopteryx** Cres.
—. Two pairs of dorsocentral setae. Wings longer and broader, r1 ending in costa above or after level of r-m. Most often two pairs of frontorbital setae ..... 4.
4. Second antennal joint at most only one third as long as third

joint (fig. 17). Jowls not wider than third antennal joint. Thorax often blackish ..... 1. **Antichaeta** Hal.

—. Second antennal joint more than one-third as long as third joint (fig. 6). Jowls distinctly wider than third antennal joint. Thorax never blackish ..... 16. **Tetanocera** Dum.

5. Subalar (vallar) setae present. Inner hind margin of hind coxa with hairs (fig. 4) ..... 6.

—. Subalar setae absent.*) Inner hind margin of hind coxa with or without hairs ..... 9.

6. Wings without reticulate pattern. Cross-veins infuscated, with small isolated, dark spots (figs. 4 and 50). Arista with short, whitish pubescence (figs. 19-20) ..... 10. **Knutsonia** Verb.

—. Wings with more or less distinct, reticulate pattern (figs. 51, 52 and 56) ..... 7.

7. Second antennal joint higher than long (fig. 7). Mesonotum with rounded, brownish spots ..... 17. **Trypetoptera** Hend.

—. Second antennal joint longer than high (fig. 15). Mesonotum with longitudinal stripes ..... 8.

8. Mesopleuron with a few setae and pteropleuron with a single seta in addition to hairs. Arista with rather long, dark hairs .... 12. **Pherbina** R.-D.

—. Mesopleuron and pteropleuron with hairs only. Arista with shorter and whitish hairs (fig. 15) ..... 11. **Limnia** R.-D.

9. Inner hind margin of hind coxa with hairs ..... 10.

—. Inner hind margin of hind coxa without hairs ..... 13.

10. Scutellum with only two setae. Mesopleuron bare .... 3. **Dichetophora** Rond.

—. Scutellum with four setae. Mesopleuron with hairs and sometimes also a single seta ..... 11.

11. Only one pair of frontorbital setae. Face with small, blackish, central spot. Mesonotum greyish with brownish spots .... 4. **Dictya** Meig.

—. Two pairs of frontorbital setae. Face without central spot. Mesonotum with greyish and brownish longitudinal stripes ..... 12.

12. Second antennal joint of about same length as third. Arista with very short, whitish hairs. Wings with a few, brownish spots (figs. 47-48) ..... 6. **Elgiva** Meig.

—. Second antennal joint distinctly shorter than third. Arista with long, blackish hairs. Wings with numerous, brownish spots (fig. 5) ..... 13. **Psacadina** End.

13. Wings with reticulate pattern (fig. 46) ..... 14.

—. Wings without reticulate pattern ..... 15.

14. Third antennal joint with tuft of long, black hairs at apex (fig. 16). Mesonotum grey with numerous, small, brownish spots .... 2. **Coremacera** Rond.

—. Third antennal joint without tuft of long, black hairs. Mesono-

*) In *Dictya* Meig. there are some setae present on a ridge just below and behind subalar (vallar) ridge.

tum with brownish and greyish longitudinal stripes .... 7. **Euthycera** Latr.

15. Third antennal joint long and narrow (fig. 18). Arista with very short, whitish hairs. Head, thorax and abdomen mainly blackish. Wings without dark spots ..... 5. **Ectinocera** Zett.

—. Third antennal joint normal. Head, thorax, and abdomen brownish, greyish, and yellowish ..... 16.

16. Second antennal joint more than half as long as third joint. Arista with very short, blackish hairs, at base practically bare. Wings with 5-7 brownish spots (fig. 49). Anterior margin of fourth sternite of male abdomen with a pair of elongate processes ..... 9. **Hydromya** R.-D.

—. Second antennal joint more than half as long as third joint. Arista with short to long, blackish hairs. Wings without brownish spots, only cross-veins infuscated. Anterior margin of fourth sternite of male abdomen without processes .. 14. **Renocera** Hend.

1. **Antichaeta** Haliday, 1838.

(Syn. **Parantichaeta** Enderlein, 1936; **Lioya** Enderlein, 1939).

1. One frontorbital seta. Lateral parts of frons velvety-black. — Mid-frontal stripe broad and shiny-brown. Antennae (fig. 17) yellow, darkened around base of arista. Arista blackish and with dense, rather long, blackish hairs. Thorax and abdomen black, lower pleura with whitish pruinosity. Fore legs mainly blackish, basal two-thirds of femora and coxae yellow. Middle and hind legs mainly yellow. Wings greyish-hyaline (fig. 45). 4-6 mm. — Rare. — Zealand: Boserup, ♂, 26.V.1912; Skovrøddam in Rudeskov, ♂ emerged 4.IV from puparium collected 13.III.1910 (Coll. Lundbeck); Frederikslund at Holte, ♀, 23.V.1964; ♀, 28.V.1964; 2 ♀♀, 30.V.1963 (Knutson) ..... **atriseta** Loew, 1849

—. Two frontorbital setae. Lateral parts of frons yellowish ..... 2.

2. Mid-frontal stripe brownish. Third antennal joint darkened on upper margin only. Aristal hairs short. Thorax and abdomen blackish. Fore femora blackish. 4-5 mm. — Rare. Als: Sønderborg, ♀, VI.1908 (Coll. Wüstnei); Zealand: Skovrøddam in Rudeskov, ♀ emerged 25.IV from puparium collected 17.I.1910 (Coll. Lundbeck); Frederikslund at Holte, ♀, 28.V.1963; ♀, 30.V.1963 (Knutson) ..... **obliviosa** Enderlein, 1939

—. Mid-frontal stripe yellowish. Third antennal joint blackish. Aristal hairs longer. Thorax and abdomen yellowish-brown. Fore femora yellowish. 4-5 mm. — Rare. East Jutland: Aarhus, ♂ reared from puparium collected III.1883 (Schlick); Zealand: Tudeå Mose, ♀, 19.VIII.1964 (Knutson); Damhusmosen, ♀ reared from puparium collected IV.1881 (Schlick); Frederikslund at Holte, eggs collected 9 to 30.VI.1964 (Knutson) **analis** Meigen, 1830

2. **Coremacera** Rondani, 1856.

Frons brownish with two velvety-black spots laterally. Two

frontorbital setae. Second and third antennal joints of nearly equal length (fig. 16). Arista with rather short, dense pubescence of whitish hairs. Mesonotum greyish with numerous brownish spots. Abdomen blackish-grey. Legs mainly dark brownish, paler in apical parts of femora and proximal parts of tibiae and tarsi. Wings dark brownish with numerous hyaline spots (fig. 46). 7-10 mm. — One of the most common and widely distributed species in Denmark. Material is present from the following parts of the country: North, West, East and South Jutland, Als, Fænø, Æbelø, Funen, Zealand, Lolland, Falster, Møn and Bornholm. Dates from 9.VI to 20.IX ..... **marginata** Fabricius, 1781

3. **Dichetophora** Rondani, 1868.

1. Apical part of third antennal joint short and with rounded apex (fig. 9). Two postalar setae on each side. Anterior frontorbital seta short and weak. 7-8 mm. Not known from Denmark .... (**obliterata** Fabricius, 1805 (nec Sack, 1939; **gracilis** Loew, 1845)

—. Apical part of third antennal joint longer and with more pointed apex (fig. 10). Only one postalar seta on each side. Anterior frontorbital seta longer and stronger. 4.5-6 mm. — A single male labelled "Danm?". Its occurence in Denmark must be held doubtful, until more material has been collected .... **finlandica** Verbeke, 1964 (**obliterata** Sack, 1939; nec F.)

4. **Dictya** Meigen, 1803.

Frons yellowish grey with brownish spots. Face whitish with small, black central spot. Antennae yellowish. Arista with long, black hairs. Thorax mainly greyish, mesonotum as well as pleura with brownish spots. Mesopleuron with hairs and a strong seta. Pteropleuron with a strong seta at anterior margin and a few short setae on a ridge in upper hind part. Abdomen greyish with brownish spots. Femora yellowish-grey with brownish spots and rings. Tibiae and tarsi yellowish with tips brownish. Wings with blurred reticulate pattern. 4-6 mm. — Rare in Denmark. Læsø, ♂, VII.1880 (H. J. Hansen); West Jutland: Holstebro, ♂, VIII. 1882 (H. J. Hansen); East Jutland: Elbæk, ♂, 22.VII.1911; Amager, 2 ♂♂ 3 ♀♀ (Jacobsen) ..... **umbrarum** Linné, 1761

5. **Ectinocera** Zetterstedt, 1846.

Mid-frontal stripe broad and mainly shining-brown. Lateral parts of frons velvety-black, vertical plates shiny-brown. Fore part of frons yellow. Face shiny-brown. Cheeks and jowls yellowish. Antennae (fig. 18) yellowish, apical two-thirds of third joint darkened. Arista with short, whitish pubescence. Thorax blackish-brown, mesonotum and lower parts of pleura with greyish pruinosity. Mesopleuron and pteropleuron bare.

Abdomen brownish. Legs mainly yellow, apex of fore femur, most of fore tibia, and whole fore tarsus brown. Also hind legs darkened in apical parts. Wings without pattern, but slightly yellowish-brown. 4-5 mm. — Rare. East Jutland: Odde S. of Als, ♂, 2.VI.1963 (Knutson); South Jutland: Stensbæk plantage, ♀, 29.V.1952 (Worm-Hansen) ..... **borealis** Zetterstedt, 1836

6. **Elgiva** Meigen, 1838.
(Syn. **Hedroneura** Hendel, 1902).

1. Thorax bluish-grey, mesonotum with brownish spots laterally. Mesopleuron with brown spots and at least one strong seta near posterior margin. — Frons yellowish with brownish mid-frontal stripe and three blackish spots laterally. Antennae yellowish-brown, third joint darkened in apical part. Arista very short pubescent. Abdomen and legs yellowish-brown. Hind femur with

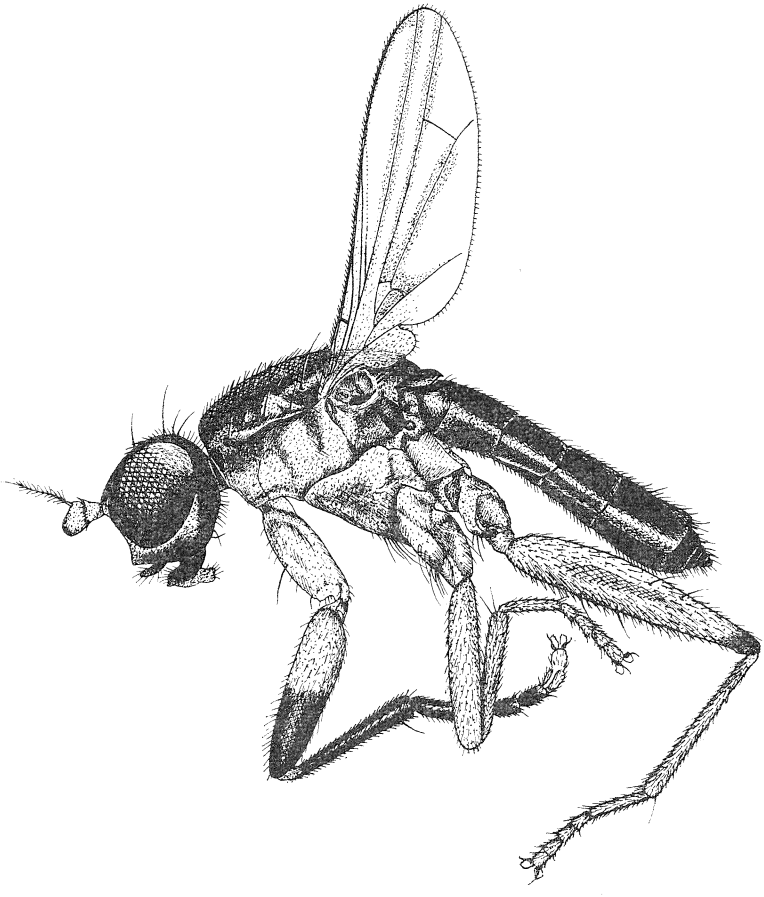


Fig. 3. *Hemitelopteryx brevipennis* Zett. ♀ (Orig.).

anteroventral and posteroventral setae in apical part. Wings yellowish in fore part, more hyaline in hind part, strongly infuscated around first and upper part of middle cross-vein; apex of wing with more indistinct spots. 6-8 mm. — A rather common species in Denmark. Known from East Jutland (Als); Als (Sønderborg, Hardeshøj), Zealand (Sorø, Suserup, Rygård Dyrehave, Nordlund Gaard, Vr. Broby, Kærehave, Boserup, Holte, Damhusmosen, Lyngby Mose, Præstevang and more localities near Hillerød), and Lolland (Ulriksdal). Dates from 17.IV to 18.X .... **cucularia** Linné, 1767

—. Thorax brownish. Mesopleuron without brown spot and only with hairs, no strong seta near posterior margin ..... 2.

2. Wing with infuscated area at apex of r_{2-3} (fig. 47). Frontal margin of eye with narrower band of whitish pruinosity. Fore femur with well-developed anteroventral and posteroventral setae in apical part. 6-8 mm. — A common and widely distributed species in Denmark. Known from North Jutland (Nors Sø), West Jutland (Holstebro), East Jutland (Als, Randers, Horsens), Als (Høruphav, Mjelsmark), Zealand (19 localities), Amager and Lolland (Aalholm). 30.III to 22.X ..... **rufa** Panzer, 1798

—. Wing without infuscated area at apex of r_{2-3} (fig. 48). Frontal margin of eye with broader band of whitish pruinosity. Fore femur without well developed ventral setae. — Not recorded from Denmark ..... (**divisa** Loew, 1845)

7. **Euthycera** Latreille, 1829.

1. Arista with yellowish-white hairs much longer than width of arista at base. — Frons yellowish, a blackish streak in front of vertical plates. Also fore part of mid-frontal stripe brownish. Face yellowish-white. Antennae yellowish. Thorax and abdomen yellowish-brown, mesonotum with four narrow, dark stripes. Abdomen with dark mid-dorsal stripe. Legs yellowish. Wings with coarse reticulate pattern. 7-11 mm. — A common and widespread species in Denmark. Known from East Jutland (Rebild, Buderupholm, Skørping), Central Jutland (Silkeborg, Haarup, Torsø Sø, Funder), Als (Sønderborg, Høruphav), Fanø, Funen (Strib, Odense), Zealand (Holmegårds Mose, Jyderup, Høed Skov, Kværkeby, Ordrup Mose, Dyrehaven, Sandbjerg, Donse, Strødam, Frerslev Hegn, Gurrevang, Ll. Esbønderup). Dates from 10.VI to 6.IX ..... **chaerophylli** Fabricius, 1798

—. Arista with whitish hairs not much longer than width of arista at base (fig. 14). — Mesonotum and pleurae more greyish-brown. Wings with fine reticulate pattern. 7-9 mm. — In Jutland it has been collected only in the southern part (Skelde, Sottrup Skov). Known also from Als (Sønderborg, Augustenborg), Zealand (about 20 localities), Lolland (Aalholm), and Falster (Hannenov). Dates from 15.VI to 28.IX ..... **fumigata** Scopoli, 1763

8. **Hemitelopteryx** Cresson, 1920.
(Syn. **Heteropteryx** Hendel, 1902).

Mid-frontal stripe broad and shiny-brown. Lateral parts of frons velvety-black. Only one frontorbital seta. Face mainly shiny-brown, narrow stripe along eye-margin with greyish pruinosity. Antennae yellowish. Third joint less than twice as long as second joint. Arista with rather long, pale or dark hairs. Mesonotum brownish-black, slightly greyish-pruinose. Pleura mainly yellowish, abdomen brownish-black. Legs yellowish, apex of fore femur, fore tibia and tarsus brownish. Two last joints of tarsi whitish. Hind femur a little darkened at apex, in male with many small setae on ventral surface. Wings narrow and short, slightly brownish, especially along the veins (fig. 3). 3-5 mm. — East Jutland: Randers, 2 ♀♀ reared from puparia collected V.1881 (Schlick); Hald near Viborg, ♀, 25.VI.1910 (Coll. Lundbeck); Zealand: Tjustrup, ♂ (H. J. Hansen), Vollerup Mose and Suserup (Knutson), Svenstrup, ♀ (H. J. Hansen), Charlottenlund, ♀ (Coll. Stæger), Frederikslund at Holte, adults emerged from puparia (Knutson), Hillerød (Knutson); Møn, ♂ (Coll. Schiødte) ..... **brevipennis** Zetterstedt, 1846

9. **Hydromya** Robineau-Desvoidy, 1830.

Frons yellowish, mid-frontal stripe darker and shining. Third antennal joint a little longer than second joint. Antennae yellowish, third joint darkened dorso-apically. Arista practically bare. Central part of mesonotum bluish-grey with two reddish-brown longitudinal stripes. Lateral parts of mesonotum and pleura brownish-yellow, most of pleura with whitish-grey pruinosity. Mesopleuron and pteropleuron bare. Abdomen mainly yellowish-brown. Femora reddish-yellow, tibiae and tarsi yellowish, last tarsal joints darkened. Wings greyish-hyaline, fore margin brownish. Vein m_{1-2} with four brownish spots and an isolated spot at lower end of m-m (fig. 49). 7-8.5 mm. — Common and widely distributed in Denmark. Known from all parts of Jutland, Als, Funen, Langeland, Zealand, Amager and Bornholm. The material dates from 23.III to 13.XI .. **dorsalis** Fabricius, 1798

10. **Knutsonia** Verbeke, 1964.
(Syn. **Elgiva** auct., nec Rondani, 1856).

1. Last section of m_{1-2} (from cross-vein m-m to wing-margin) with blackish spot (fig. 4). — Frons yellowish, with two brown spots at base of frontorbital setae. Second and third antennal joints of nearly equal length; colour yellowish, third joint darkened in apical part. Arista with very short pubescence. Thorax yellowish-brown and yellowish-grey in longitudinal streaks. Abdomen more greyish. Legs mainly yellow, hind femora in male with two rows of setae on ventral surface. Wings almost as described for *H. dorsalis* F., but more yellowish. 8-10 mm. — Common and

widely distributed in Denmark. Collected on Læsø, in all parts of Jutland, and on Als, Funen, Zealand, and Amager. Dates from 12.VI to 8.X ..... **albiseta** Scopoli, 1763

—. Last section of m_{1-2} without blackish spot (fig. 50) ..... 2.

2. Third antennal joint strongly concave dorsally, apical part with almost parallel sides (fig. 19). Middle stripe of mesonotum golden. — No records from Denmark ..... (**rossica** Mayer, 1953)

—. Third antennal joint less concave dorsally, apical part with more converging sides (fig. 20). Middle stripe of mesonotum yellow. 6-8 mm. — Not common but seems widespread in Denmark. There exists material from Læsø, North Jutland (Frederikshavn, Nors Sø), Central Jutland (Silkeborg), Als (Mjelsmark), Zealand (Sorø, Suserup, Utterslev Mose, Holte). Dates from 22.VI to 14.X ..... **lineata** Fallén, 1820

11. **Limnia** Robineau-Desvoidy, 1830.

Third antennal joint pointed and more or less darkened in apical part (fig. 15). Frons yellowish, a small brownish spot around base of anterior frontorbital seta. Midfrontal stripe also darker. Frons in profile strongly protruding. Second antennal joint longer than third. Arista with whitish pubescence. Subalar ridge with one or a few short setae. Mesopleuron as well as pteropleuron with hairs. Thorax with yellowish-brown and yellowish-grey longitudinal streaks, mesonotum with two bluish-grey stripes. Abdomen brownish with blackish-grey middle stripe.

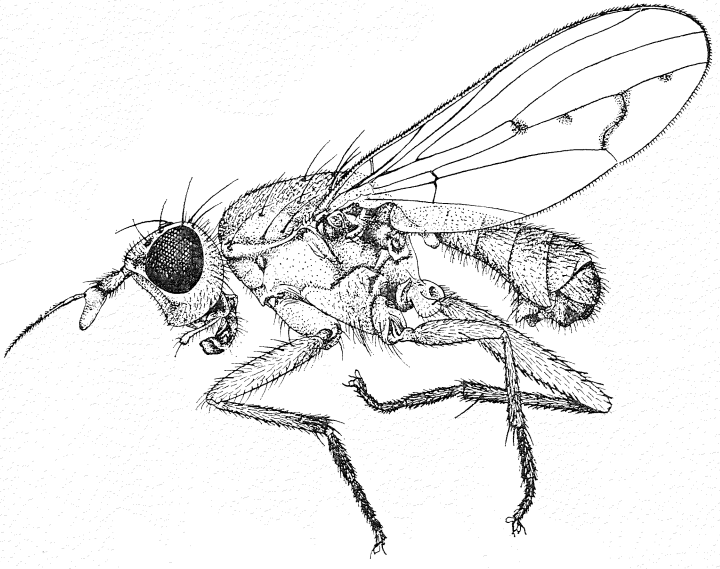


Fig. 4. *Knutsonia albiseta Scop.* ♂ (Orig.).

Legs mainly yellowish. Wings with fore margin brownish and blurred, reticulate pattern in remaining part. 6-7.5 mm. — A very common and widely distributed species which has been captured in all parts of Jutland and on Als, Langeland, Zealand, Lolland, and Bornholm. Dates from 2.VI to 1.IX .... **unguicornis** Scopoli, 1763

12. **Pherbina** Robineau-Desvoidy, 1830.

1. Middle cross-vein (m-m) strongly S-curved. Reticulations in last hindmarginal cell (M_4) not joined (fig. 51). Surstylus of male genitalia with large tuft of black setae on posterior part (fig. 30). — Frons yellowish; brownish spots around bases of frontorbital setae and hairs on fore part of frons. Face whitish. Second and third antennal joints of nearly equal length; colour yellowish, third joint darkened in apical part. Arista with rather long, blackish hairs. Thorax with yellowish-brown and yellowish-grey longitudinal streaks. Mesopleuron with hairs and three stronger setae, pteropleuron with one strong seta, subalar ridge with two or three setae. Abdomen yellowish-brown with greyish pruinosity, especially along fore margin. Legs yellowish, hind femora of male with strong ventral setae. Wings yellowish-grey with very blurred, reticulate pattern (fig. 51). 6-10 mm. — A very common and widely distributed species in Denmark. Known from all parts of Jutland, and from Als, Zealand, Amager, Lolland, and Bornholm. About 150 specimens are known from Denmark and have been taken from 10.V to 13.IX .... **coryleti** Scopoli, 1763 (**reticulata** Fabricius, 1781; **obsoleta** Fallén, 1820; **chaerophylli** Meigen, 1830)

—. Middle cross-vein (m-m) less strongly curved. Reticulations in last hindmarginal cell (M_4) more or less distinctly joined (fig. 52). Surstylus of male genitalia without large tuft of black setae on posterior part (fig. 29). — Thorax less distinctly striped. Wings with more distinct, reticulate pattern (fig. 52). 6-8 mm. — Scarce, only 8 specimens known from Denmark. West Jutland: Vr. Starup, Holme å, ♂, 23.VI.1960 (A. Michelsen); Zealand: Lersø, ♂ (Coll. Stæger); Boserup, ♀, 24.VI.1902 (C. R. Larsen); Kongens Enghave, ♂, 9.IX.1909 (C. R. Larsen); Lyngby, ♂♀, 22.VII.1929 (Coll. Lundbeck); Stenholtsvang, ♂, 12.VI.1904 (C. R. Larsen); Gadevang at Hillerød, ♀, 27.VIII.1960 (Berg, Knutson) ..... **intermedia** Verbeke, 1948

13. **Psacadina** Enderlein, 1939.

1. Mid-frontal stripe faintly white and pruinose, poorly developed in male, more distinct in female. Not known from Denmark .... (**vittigera** Schiner, 1864)

—. Mid-frontal stripe moderately shiny in both sexes ..... 2.

2. Ventral setae of hind femora less numerous. Pubescence of hind

trochanters short and sparse. Mid-frontal stripe of same width, rounded apically. Brownish spots on wings less numerous and less well defined. Surstylus of male genitalia as in figs. 25-26. 7-8 mm. — A rather common species in the eastern part of Denmark, but has not yet been collected in Jutland. Funen (Odense); Zealand (Holmegårds Mose, Tystrup, Vollerup Mose, Tudeå Mose, Ringsted Åmose, Suserup, Dyrehaven, Hillerød, Strødam). Dates from 7.V to 24.IX ..... **zernyi** Mayer, 1953

—. Ventral setae of hind femora more numerous. Pubescence of hind trochanters longer and more dense. Mid-frontal stripe a little broader toward apex. Brownish spots on wing more numerous and well-defined (fig. 5). Surstylus of male genitalia as in figs. 27-28. 6-8 mm. — Common and widespread in Denmark. Known from North Jutland (Nors Sø), South Jutland (Sottrup Skov, Gråsten), Als (Sønderborg), Funen (Brænderup), Zealand (Vollerup Mose, Kværkeby, Utterslev Mose, Fedtmosen at Bagsværd, Kirke Værløse, Malmmose at Holte, Præstevang, Hillerød, Ramløse Sand). Dates from 30.III to 2.X .. **punctata** Fabricius, 1794

14. **Renocera** Hendel, 1900.

1. One frontorbital seta. Third antennal joint blackish in apical

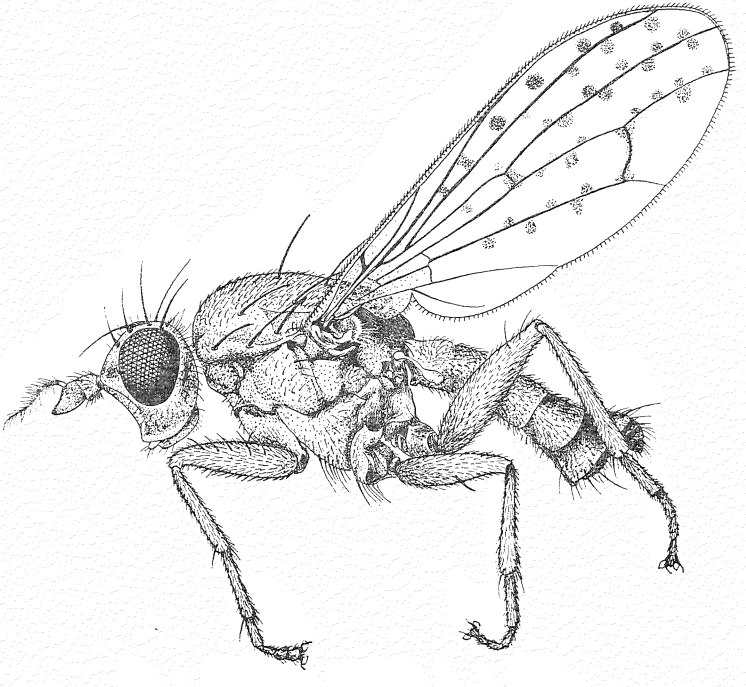


Fig. 5. *Psacadina punctata* F., ♀ (Orig.).

part. — Frons yellow; mid-frontal stripe, fore and lateral parts of frons shining. First, second and basal third of third antennal joint yellowish. Arista with long, blackish hairs. Face and jowls with whitish pruinosity. Thorax and abdomen reddish-brown, mesonotum more or less greyish-pruinose. Meso- and pteropleuron bare. Legs yellowish, hind femora without strong ventral setae. Wings uniformly greyish-brown, cross veins slightly darkened. 5-7 mm. — Known from East Jutland (Lindenborg Å, Rold Kilde), South Jutland (Gråsten, Sottrup Skov), Als (Sønderborg, Madeskov, Høruphav), Funen (Odense), Zealand (Vollerup Mose, Suserup, Glumsø, Bagsværd, Lyngby Mose, Holte, Ermelunden, Dyrehaven, Geel Skov, Hillerød, Liseleje). Dates from 7.V to 25.VIII ..... **pallida** Fallén, 1820

—. Two frontorbital setae. Third antennal joint entirely yellowish or at most slightly brownish in apical part ..... 2.

2. Mid-frontal stripe dull-brown. Jowls broader than half of height of eye. Arista with long hairs. Hind femora in both sexes with strong ventral setae in apical part. 5-7 mm. — Scarce in Denmark. Central Jutland: Funderholme, ♂, 7.VII.1907 (A. Petersen); South Jutland: Sottrup Skov, ♀, 7.VII.1889; ♀, 31.V.1896 (Wüstnei); Zealand: Sorø, ♂♀, 23.VI.1912 (A. Petersen) .... **fuscinervis** Zetterstedt, 1846 (**strobli** Hendel, 1900)

—. Mid-frontal stripe shiny brownish-black. Jowls narrower than half of height of eye. Arista with short hairs. Hind femora in male with ventral setae, in female without. 4-5 mm. — Not common. North Jutland (Nors Sø), East Jutland (Lundegårds Bæk, Lindenborg Å W. of Rold, Gjerlev near Randers), Als (Mjelsmark), Zealand (Suserup, Lersø near Copenhagen). Dates from 12.V to 8.VIII ..... **striata** Meigen, 1830

15. **Sepedon** Latreille, 1804.

1. Head, thorax, and abdomen bluish-black. Antennae entirely black, second joint long and thin. Arista very short pubescent. Legs reddish-yellow. Hind femora long and thickened, and with ventral setae in apical part. Wings greyish to greyish-brown. 8-10 mm. — A common and widely distributed species in Denmark. It has been taken in North, Central, East, and South Jutland, Als, Funen, Zealand, and Amager. Dates from 30.III to 20.XII ..... **sphegea** Fabricius, 1775

—. Frons, thorax, and abdomen reddish-brown. Frons with two black spots laterally. Face and jowls yellowish, a small black spot under base of antennae. Antennae yellowish-brown, third joint blackish at apex. Legs yollowish-brown. Hind femora relatively longer and more thickened than in preceding species, ventral setae present. Wings greyish-yellow. 6-9 mm. — Less common than preceding species. Known from North Jutland (Nors Sø), East Jutland (Dokkedal), Central Jutland (Silke-

borg), South Jutland (Gråsten), Als (Sønderborg, Mjelsmark), Funen (Brænderup), Langeland (Lohals), Zealand (about 20 localities), and Amager. Dates from 21.IV to 13.XI .... **spinipes spinipes** Scopoli, 1763 (**haeffneri** Fallén, 1820)

16. **Tetanocera** Dumeril, 1800.

1. Posterior surface of middle femur with 1-3 setae near apex .... 2.
—. Posterior surface of middle femur without setae ..... 3.
2. Prosternum with one or a few hairs on each side. Hind femur with 4-6 anterodorsal setae. Epandrium (9th tergite) in male with large tubercle on right side. — Frons yellowish, only mid-frontal stripe and vertical plates shining. Second and third antennal joints of nearly equal length. Upper part of mesonotum greyish-green with two darker stripes. Other parts of thorax and abdomen mostly reddish-brown. Legs yellowish-brown. Wings yellowish-brown with distinctly infuscated cross veins. 8-11 mm. — Rather common and rather widespread in Denmark. Known from North Jutland (Svinkløv, Nors Sø), East Jutland (Als, Lindenborg Å W. of Rold, Tinbæk Mølle, Gjerlev at Randers), Central Jutland (Ry, Silkeborg), Zealand (Vollerup Mose, Suserup, Lyngby Mose, Holte, Hillerød, Liseleje), Amager, and Bornholm (Blykobbe, Ekkodalen). Dates from 12.V to 8.X .... **robusta** Loew, 1847
—. Prosternum bare. Hind femur with only 2 anterodorsal setae. Last tergite in male without tubercle. — Second antennal joint distinctly shorter than third. Thorax more greyish-pruinose. 7-9 mm. — Uncommon. West Jutland: Humlum near Struer, ♀, 8.VIII.1959 (Lyneborg); East Jutland: Gjerlev near Randers, ♂, VII.1882 (H. J. Hansen); Nebsager near Horsens, ♂, VII.1883 (H. J. Hansen); Funen: Odense, ♂ (H. J. Hansen); Zealand: Ordrup Mose, ♂, 14.VII. 1904 (Lundbeck); Amager: ♀, 25.VII.1899 (Lundbeck). Also ♂ 2 ♀♀ from Coll. Stæger without locality .. .. **punctifrons** Rondani, 1868 (**collarti** Verbeke, 1948)
3. Hind femur with 1 strong posterodorsal seta at about same level as the most apical of the 2-4 anterodorsal setae (fig. 21) ..... 4.
—. Hind femur without strong posterodorsal seta at apex, 2-5 anterodorsal setae present (fig. 22) ..... 5.
4. Second antennal joint distinctly shorter than third joint. Second joint of arista only slightly longer than thick. Middle femora nearly always with two setae on anterior surface. Middle cross-vein (m-m) arched and strongly infuscated (fig. 55). Surstylus of male genitalia as in fig. 33. — Frons yellowish, mid-frontal stripe and vertical plates shining. Antennae yellowish-brown, third joint more or less darkened. Thorax and abdomen reddish-brown. Wings more or less yellowish, around apex of r_{2-3} a more or less darkened area. 7-9 mm. — A common and wide-

spread species. There exists material from all parts of Jutland and from Als, Funen, Zealand, Amager, and Bornholm. The collections date from 11.V to 9.IX ..... **arrogans** Meigen, 1830
(**foveolata** Rondani, 1868)

—. Second antennal joint as long as or slightly longer than third joint. Second joint of arista 3-4 times longer than thick. Middle femur with 1 or 2 setae on anterior surface. Middle cross-vein S-curved and less strongly infuscated (fig. 54). Surstylus of male genitalia as in fig. 36. — Third antennal joint more distinctly yellowish. Thorax more strongly pruinose, especially in female. 8-10 mm. — Only known from the eastern part of the country. Funen: Odense, ♀ (H. J. Hansen); Langeland: Lohals, ♀, 30.VII. 1913 (Lundbeck); Zealand: Jyderup, ♀, 20.VII.1915 (C. R. Larsen); Frederikslund at Holte, 25.VIII.1960 (Berg, Knutson); Funkedam at Hillerød, 13.IX.1964 (Knutson); Holmegårds Mose, 20.VIII.1964 (Knutson); Vollerup Mose, 10.VIII.1964 (Knutson); adults reared from larvae collected at Glumsø and Suserup (Knutson). Also 2 ♂♂ without dates ..... **montana** Day, 1881
(**borealis** Frey, 1924)

5. Mid-frontal stripe not distinct-replaced by a broad, triangular, dully shining area, which reaches from fore margin of frons and to the vertical plates at level with hind ocelli. — Second antennal joint distinctly shorter than third joint. Antennae yellowish, third joint more or less darkened. Legs, especially femora, shorter and thicker than in other species. Wings greyish-yellow, costal margin not infuscated, middle cross-vein arched, both cross-veins infuscated. 5-7 mm. — A common and widely distributed species in Denmark. Known from all parts of Jutland, Als, Zealand, and Bornholm. Dates from 12.V to 4.IX .....
..... **unicolor** Loew, 1847

—. Mid-frontal stripe nearly parallel-sided, shiny, and therefore well separated from pruinose lateral parts of front (except in *hyalipennis*, where frons is entirely shining) ..... 6.

6. Frons entirely shining or fore part and most lateral parts of frons shining ..... 7.

—. Frons pruinose, except for the shining mid-frontal stripe and vertical plates ..... 9.

7. Frons entirely shining. Mid-frontal stripe a little pruinose when seen in front. — Antennae yellow, second joint much shorter than third. Body and legs yellowish. Wings brownish, fore margin darkest, and cross-veins infuscated. Middle cross-vein nearly straight (fig. 6). 6-9 mm. — Not common in Denmark, but has been taken in most parts of the country. North Jutland (Allerup), East Jutland (Horsens), South Jutland (Gråsten, Sottrup), Als (Sønderborg), Funen (Odense), Zealand (Skælskør, Suserup, Kværkeby, Furesø, Holte, Ordrup, Præstevang, Hillerød, Liseleje), Lolland (Aalholm), and Bornholm (Rø). Dates from 15.VI to 13.IX ..... **hyalipennis** von Roser, 1840
(**laevifrons** Loew, 1847)

—. Frons not entirely shining. The following parts are shining: fore part of frons, mid frontal stripe, and most lateral parts of frons ..... 8.

8. Male surstylus as in fig. 35. — Antennae reddish-yellow, darker than in those of preceding species, second joint not much shorter than third. Thorax also darker. Wings with middle cross-vein more arched. 6-8 mm. — Rather common, and apparently widely distributed in Denmark. It has been taken in North Jutland (Allerup), West Jutland (Kjærgårds Mølle, Resenborg Skov and Quistrup near Struer, Rydhave near Vinderup, Holstebro), Cen-

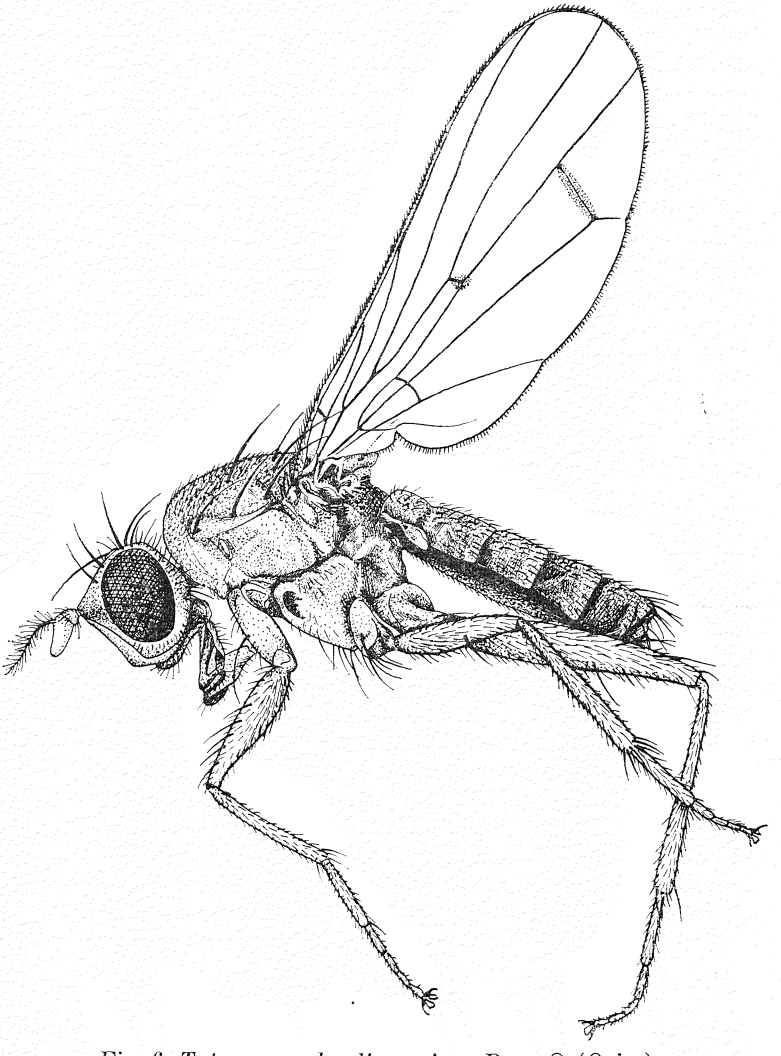


Fig. 6. *Tetanocera hyalipennis* v. Ros., ♀ (Orig.).

tral Jutland (Dollerup near Viborg, Svejbæk, Silkeborg), East Jutland (Rold Kilde, Lindenborg Å W. of Rold, Gjerlev near Randers, Horsens, Grejsdalen), South Jutland (Villebøl near Ribe, Gråsten, Sottrup), Als (Sønderborg), Funen (Bellinge, Brænderup), Zealand (Vollerup Mose, Suserup, Svenstrup, Lejre, Boserup, Sorgenfri, Holte, Præstevang, Hillerød). Dates from 10.V to 12.VIII ..... **silvatica** Meigen, 1830

—. Male surstylus as in fig. 34. — Rare in Denmark. West Jutland: Nørholm at Varde, ♂, 1.VI.1907 (A. Petersen); East Jutland: Randers, ♂ emerged from puparium collected V.1881 (Schlick); Zealand: Vollerup Mose, 5 ♂♂, 12-21.VIII.1964 (Knutson); Furesø, ♂, 7.VIII.1908 (K. L. Henriksen) and ♂ labelled "Sielland, July 1830" from Mus. Westerm. ..... **freyi** Stackelberg, 1963

9. Fore margin of wing distinctly darker than rest of wing (fig. 53). Third antennal joint clear yellowish ..... 10.

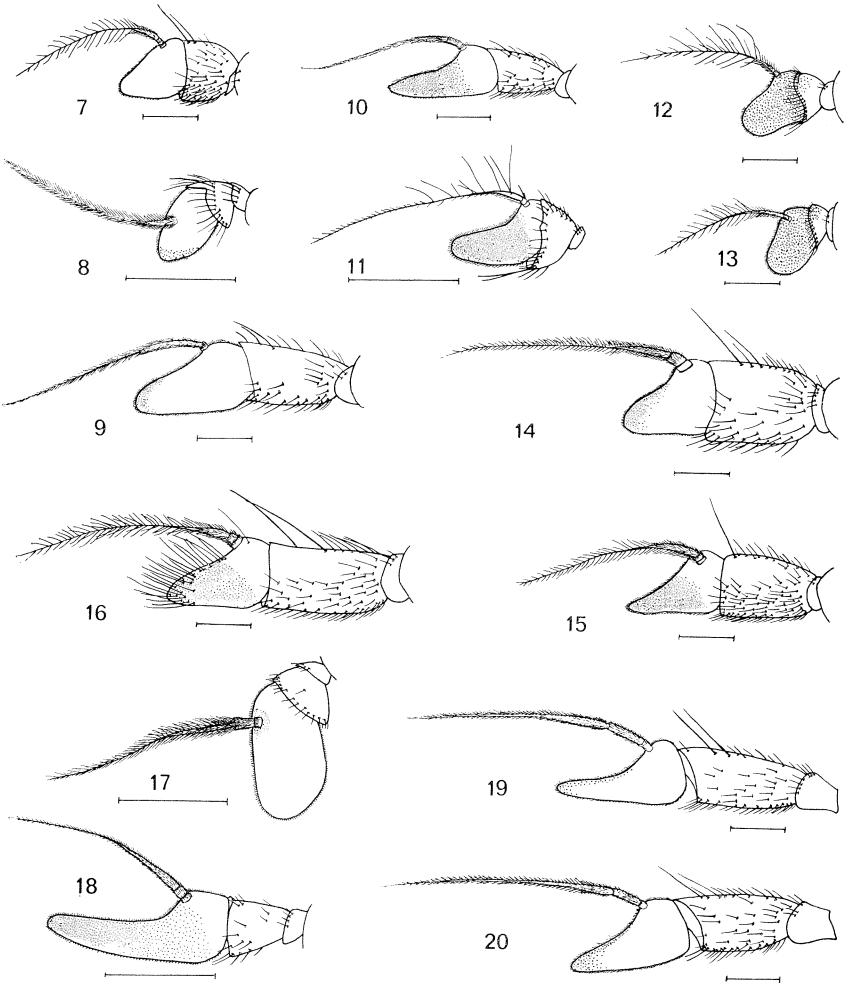
—. Fore margin of wing not distinctly darker than rest of wing. Third antennal joint more or less darkened. 7-10 mm. — Without doubt the most common species of *Tetanocera* in Denmark. It has been taken in all parts of Jutland and on Als, Funen, Zealand, and Amager. The species seems to be most widespread in Jutland, and has been captured from 7.V to 24.IX .... **ferruginea** Fallén, 1820

10. Surstylus of male genitalia slender and straight (fig. 32). Larger (6-8 mm) and darker species. — Common and widespread in Denmark. Known from all parts of Jutland, and from Læsø, Als, Funen, Zealand, Amager, and Bornholm. The material dates from 13.IV to 15.IX ..... **elata** Fabricius, 1781 (**nigricosta** Rondani, 1868, nec Séguy)

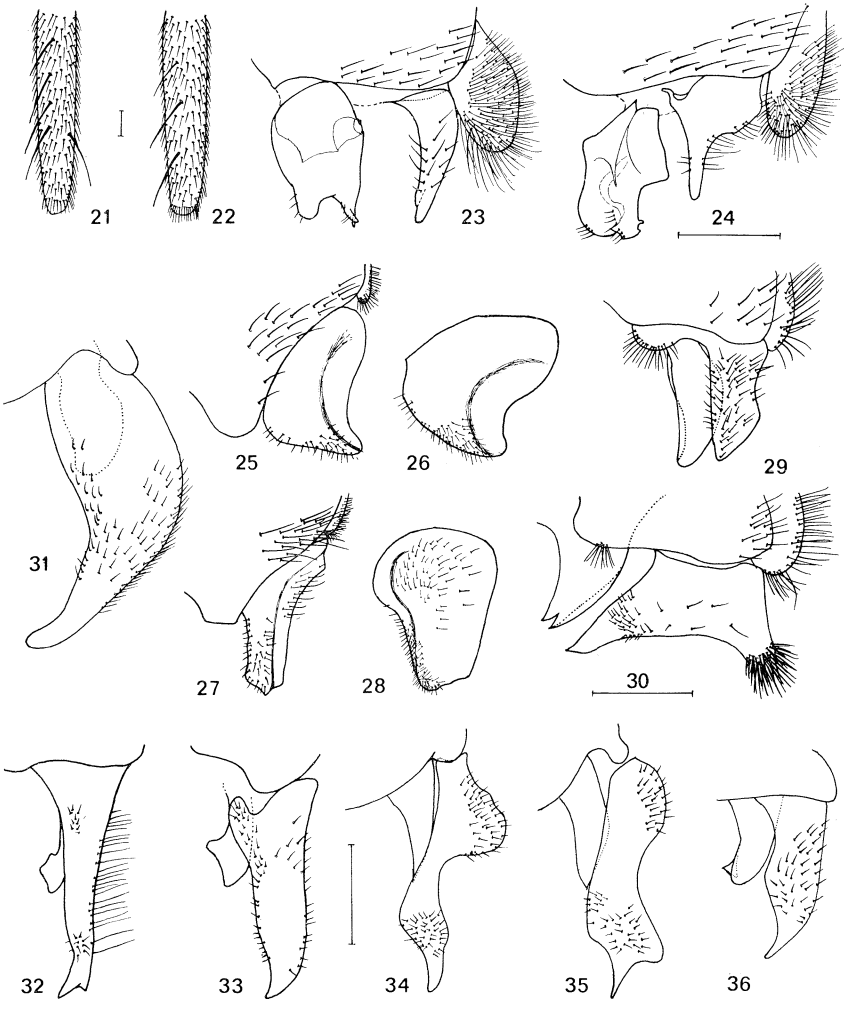
—. Surstylus of male genitalia broad and curved (fig. 31). Smaller (5-7 mm) and paler species. — Not common in Denmark, but seems widely distributed. Known from North Jutland: Svinkløv, ♂, 11.VI.1928 (Lundbeck); West Jutland: Holstebro, ♂, VIII. 1883 (H. J. Hansen); Central Jutland: Silkeborg, ♂, 28.VI.1907 (Axel Petersen); East Jutland: Rebild, ♀, 22.VII.1910 (Lundbeck), Gjerlev near Randers, ♂, VII.1882 (H. J. Hansen); South Jutland: Sottrup, ♀, 7.VII.1889 (Wüstnei); Als: Augustenborg, ♂, VI.1898 (Wüstnei); Zealand: Bognæs near Roskilde, ♂, 4.VI. 1959 (Lyneborg); Frederikssund, ♂, 20.VI.1908 (Lundbeck); Frederikslund at Holte, 1.VI.1964 (Knutson); Ermelund, ♀, 3.VII. 1909 (C. R. Larsen); Hillerød, 8.VI.1964, 26.VI.1964 (Knutson); Strødam, 5.VI.1964 (Knutson); Præstevang, ♀, 24.V.1907 (C. R. Larsen); Frerslev Hegn, ♂, 17.VIII.1902 (C. R. Larsen); Tisvilde, ♂, 10.VII.1916 (Lundbeck) ..... **phyllophora** Melander, 1920 (**nigricosta** auct., nec Rondani, 1868; **elegans** Collin, 1960)

17. **Trypetoptera** Hendel, 1900.

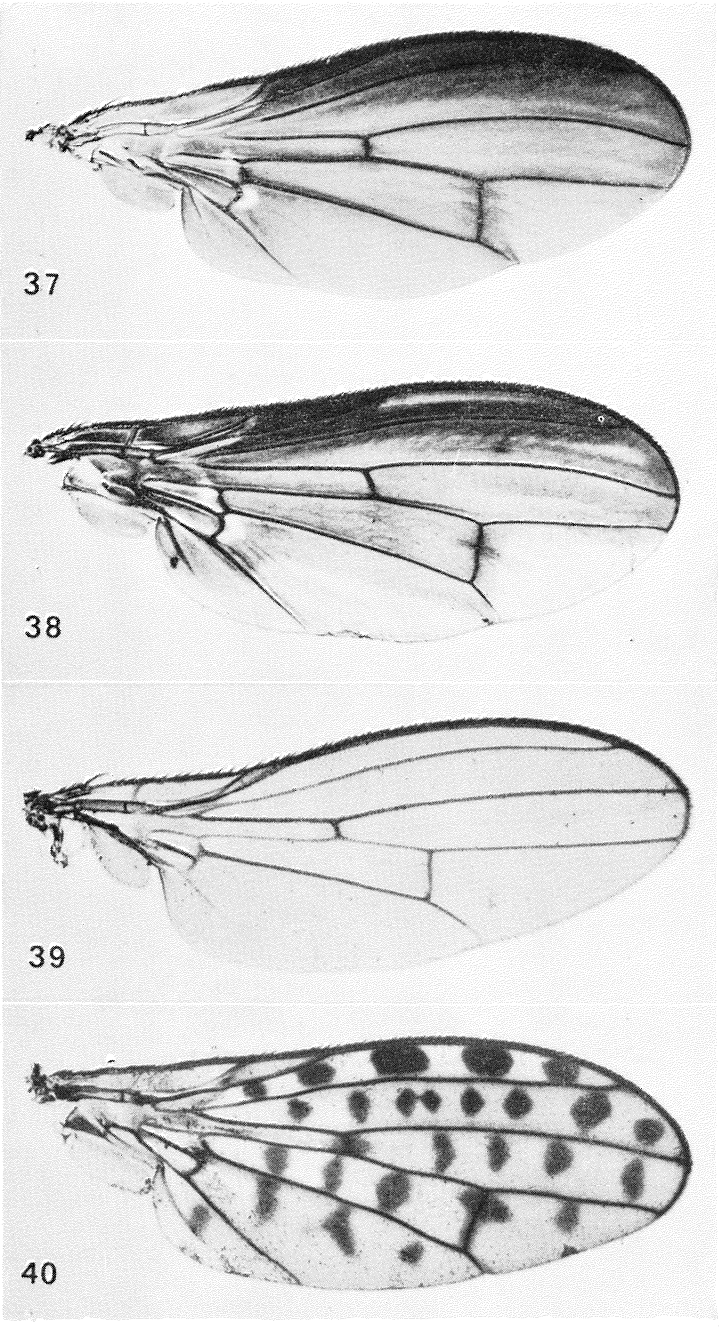
Frons waxy-yellow with brownish spots around bases of frontorbital setae. Second antennal joint short and broad, third joint



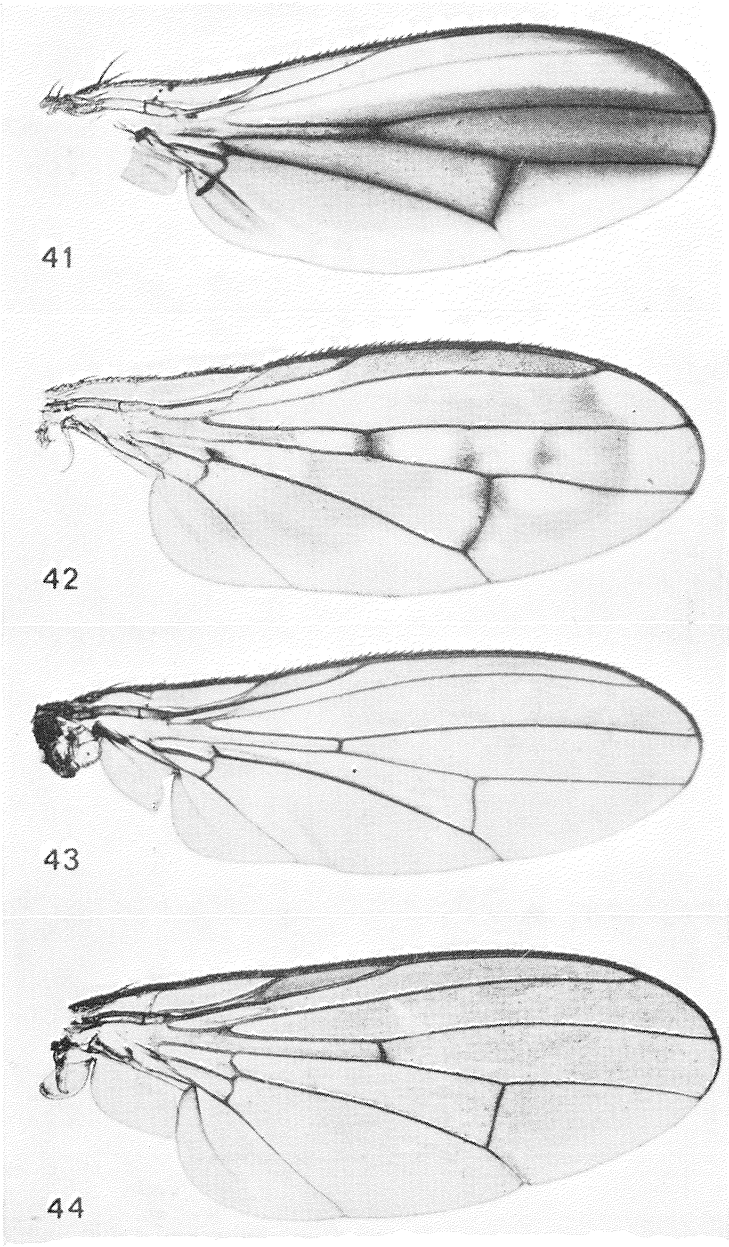
Figs. 7—20. Antennae in lateral view of 7. *Trypetoptera punctulata* Scop.; 8. *Tetanura pallidiventris* Fall.; 9. *Dichetophora obliterata* F.; 10. *D. finlandica* Verb.; 11. *Colobaea punctata* Lundb.; 12. *Pherbellia dorsata* Zett.; 13. *P. griseola* Fall.; 14. *Euthycera fumigata* Scop.; 15. *Limnia unguicornis* Scop.; 16. *Coremacera marginata* F.; 17. *Antichaeta atriseta* Lw.; 18. *Ectinocera borealis* Zett.; 19. *Knutsonia rossica* Mayer; 20. *Knutsonia lineata* Fall. — Scale: 0.25 mm. (19 and 20 partly after Verbeke (1964b); others orig.).



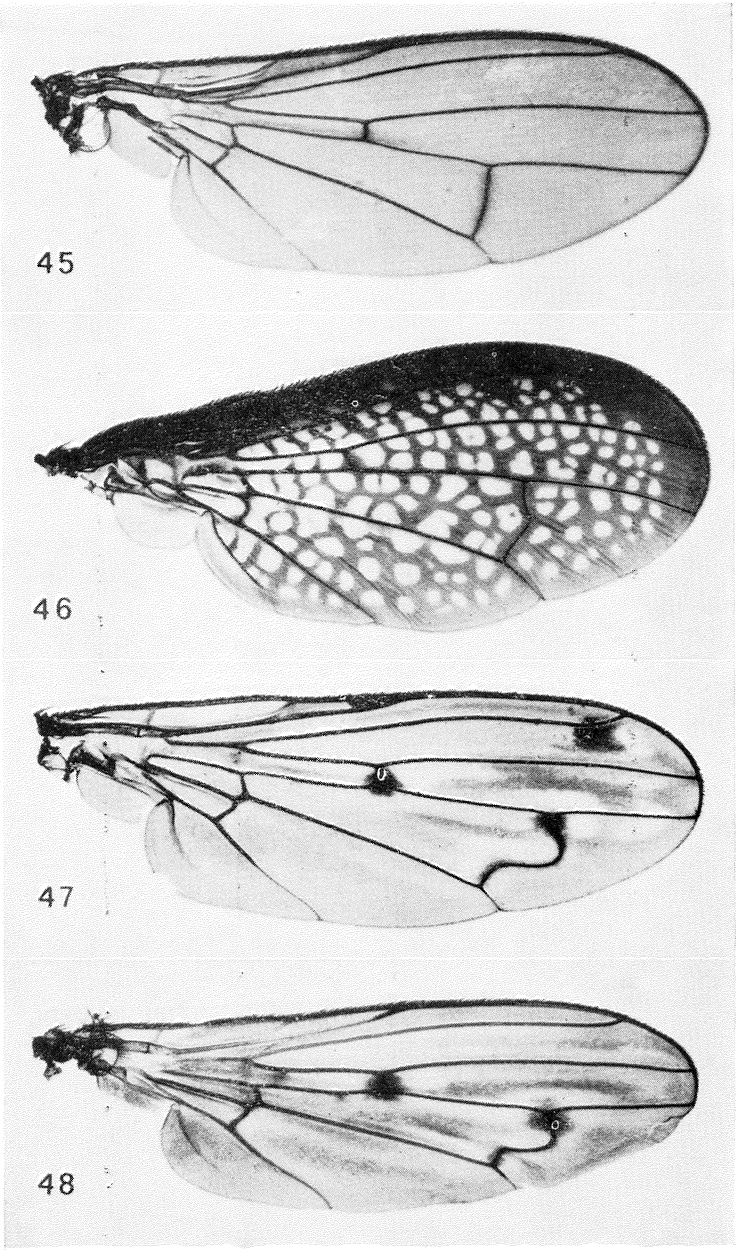
Figs. 21—36. — Figs. 21—22. Apical half of left hind femora in a dorsal view of 21. *Tetanocera arrogans* Meig. and 22. *T. ferruginea* Fall. — Figs. 23—24. Anterior and posterior surstyli, cerci, and part of epandrium in a lateral view of 23. *Pherbellia mixta* Elberg and 24. *P. dorsata* Zett. — Figs. 25—26. *Psacadina zernyi* Mayer and figs. 27—28. *P. punctata* F.; 25 and 27 showing surstylus, and parts of cerci and epandrium in a lateral view, and 26 and 28 showing surstylus in a caudal (dorsal) view. — Figs. 29—30. Surstylus, and parts of aedeagus, epandrium and cerci in a lateral view of 29. *Pherbina intermedia* Verb. and 30. *P. coryleti* Scop. — Figs. 31—36. Surstylus, and parts of aedeagus and epandrium in a lateral view of 31. *Tetanocera phyllophora* Mel., 32. *T. elata* F., 33. *T. arrogans* Meig., 34. *T. freyi* Stackbg., 35. *T. silvatica* Meig., and 36. *T. montana* Day. — Scale: 0.25 mm. (Orig.).



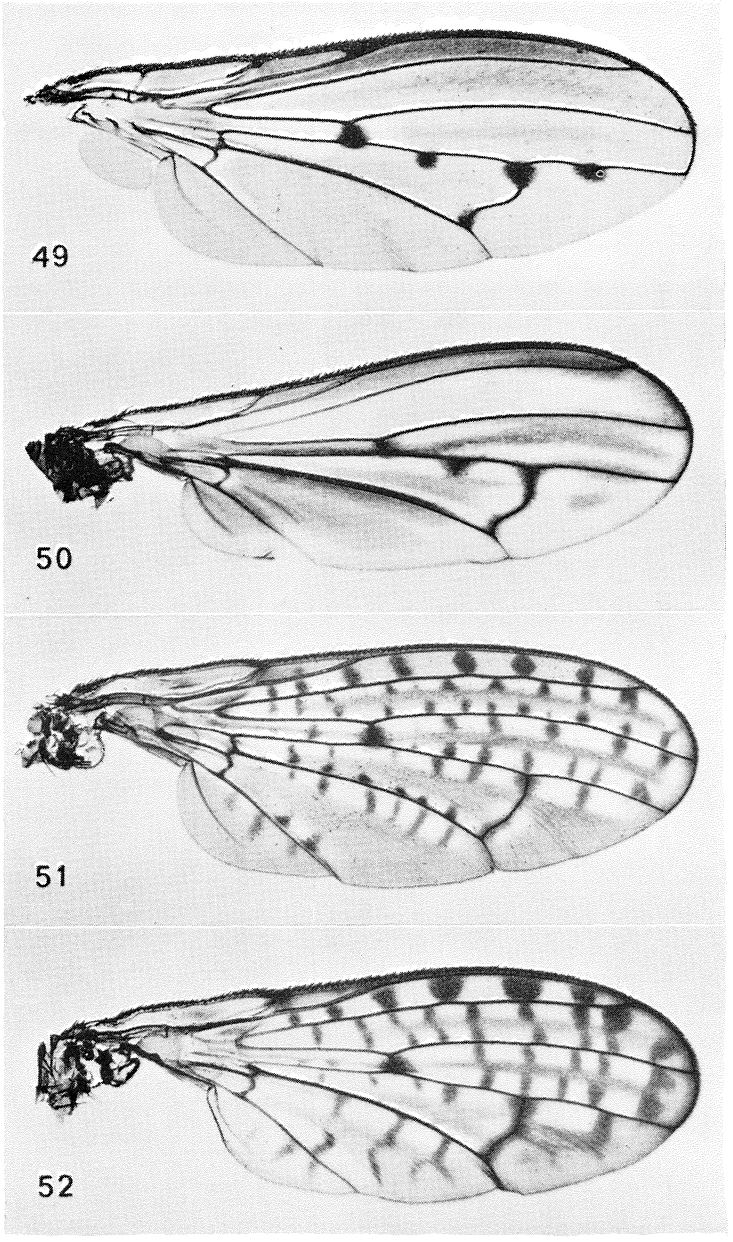
Figs. 37—40. Wings of 37. *Pelidnoptera fuscipennis* Meig., × 15; 38. *P. nigripennis* F., × 13; 39. *Colobaea punctata* Lundb., × 45; 40. *Pherbellia schoenherri* Fall., × 22. (Orig.).



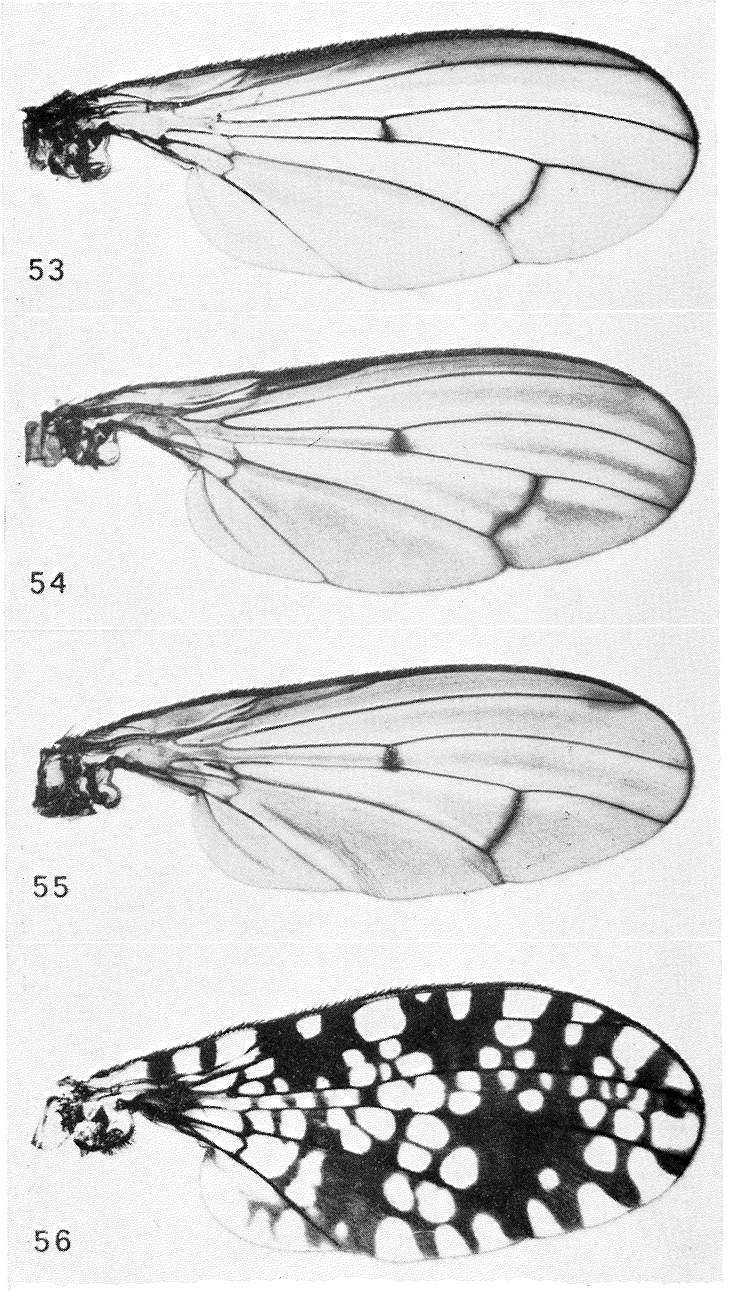
Figs. 41—44. Wings of 41. *Pherbellia albocostata* Fall., × 18; 42. *P. nana* Fall., × 36; 43. *Pteromicra nigrimana* Meig., × 24; 44. *Sciomyza simplex* Fall., × 14. (Orig.).



Figs. 45—48. Wings of 45. *Antichaeta atriseta* Lw., × 20; 46. *Coremacera marginata* F., × 13; 47. *Elgiva rufa* Panz., × 12; 48. *E. divisa* Lw., × 18. (Orig.).



Figs. 49—52. Wings of 49. *Hydromya dorsalis* F., × 16; 50. *Knutsonia lineata* Fall., × 15; 51. *Pherbina coryleti* Scop., × 11; 52. *P. intermedia* Verb., × 14. (Orig.).



Figs. 53—56. Wings of 53. *Tetanocera elata* F., × 12; 54. *T. montana* Daŋ, × 11; 55. *T. arrogans* Meig., × 11; 56. *Trypetoptera punctulata* Scop., × 17. (Orig.).

slightly larger than second (fig. 7). Antennae yellowish, third joint more or less darkened. Thorax greyish-yellow, mesonotum with roundish, brown spots; also pleura with brownish spots. Prosternum, mesopleuron, and pteropleuron with hairs. Abdomen grey with three rows of blackish spots. Legs yellowish. Wings with reticulate pattern (fig. 56). 4-7.5 mm. — A very common and widespread species in Denmark. Known from North, East, and South Jutland, and from the following islands: Anholt, Als, Funen, Æbelø, Langeland, Zealand, Bogø, Møn, Lolland and Bornholm. Dates from 4.V to 6.IX **punctulata** Scopoli, 1763

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