

**Revision of Palaearctic species of the genus
Tachydromia Meig. (= Tachista Loew)
(Diptera, Empididae)**

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Contents

I. Introduction	415
II. Acknowledgments	416
III. Systematic treatment	417
1. <i>terricola</i> -group	424
2. <i>ornatipes</i> -group	438
3. <i>arrogans</i> -group	446
4. <i>interrupta</i> -group	459
5. <i>connexa</i> -group	472
6. <i>calcanea</i> -group	490
7. <i>annulimana</i> -group	497
IV. Summary	521
V. References	522
VI. Alphabetic index of names	523

I. Introduction

The species treated in this paper are small Empidids from 1 to 3 mm. in length, shining black or blackish brown, with wings usually brown banded or clouded. Nothing is known on immature stages but the adults are well known, due to their typical predacious activity. They are often to be found, usually in large numbers, running about very quickly on tree-trunks, logs, stones, sand, or leaves of lower herbage. The ecology of all these species is very interesting and, as is also seen from this paper, usually specifically determined. The adults are not so predacious as *Platypalpus* species, they usually attack small Diptera (e. g. Sciaridae, Cecidomyiidae) but never each other. Also in captivity, in contradistinction to the genus *Platypalpus*, they never attack other insects.

The species of the genus *Tachydromia* Meigen, 1803 (syn. *Sicodus* Rafinesque, 1815, *Phoneutisca* Loew, 1863, *Tachista* Loew, 1864) belong to the Empidid subfamily Tachydromiinae and, on the basis of well differentiated humeri and head being not closely set upon thorax, to the tribe Tachydromiini. They may be easily distinguished from all other genera by absence of anal cell and,

from the very closely allied genus *Tachypeza* Meig., by absence also of lower branch of postical vein, usually closing this cell. By contrast to the large genus *Platypalpus* Macq., the *Tachydromia* species do not have flattened palpi, but they are slender, usually with terminal bristle, the fore legs stout; middle legs only slender, with only more or less developed apical projection to middle tibiae, not so stout and with typical apical spur as is usual in *Platypalpus* species.

The genus *Tachydromia* Meig. is mainly distributed in the Palaearctic region (45 known species) but occurs also in Africa, Formosa and both North and South America. The number of species is far from certain, e. g. from the whole Palaearctic region the fauna is fairly well known maybe only in England and northern and central parts of Europe but the other regions await further study and many other species probably await discovery.

The present study is based on the revision of all obtainable type material and this has enabled necessary redescriptions of the majority of older species, except for those included by Collin in "British Flies" in 1961 and some few others. Nearly all species are figured, in male genitalia the scale line represents 0.1 mm., in all other cases (wings, legs) 0.3 mm.

The last complete elaboration of this genus, in Lindner, *Die Fliegen der palaearktischen Region*, published by Engel in 1938, comprises on the whole 29 species, of which only 16 are keyed.

II. Acknowledgments

For the loan of documentary or type material I thank Dr. H. Andersson of the Zoological Institute University, Lund (coll. Lund), Dr. R. Bankowska of the Instytut Zoologiczny PAN, Warszawa (coll. Warszawa), Dr. W. Götz of the Staatliches Museum für Tierkunde, Dresden (coll. Dresden), Dr. A. Kaltenbach of the Naturhistorisches Museum, Wien (coll. Wien), Dr. F. Köhlhorn of the Zoologische Staatssammlung, München (coll. München), Prof. Dr. E. Lindner of the Staatliches Museum für Naturkunde, Ludwigsburg bei Stuttgart (coll. Stuttgart), Dr. L. Lyneborg of the Universitetets Zoologiske Museum, København (coll. København), Dr. habil. G. Morge of the Deutsches Entomologisches Institut, Eberswalde bei Berlin (coll. DEI), Dr. J. Moucha of the Národní Museum, Praha (coll. Praha), Dr. H. Schumann of the Zoologisches Museum der Humboldt-Universität, Berlin (coll. Berlin), Mr. K. G. V. Smith of the British Museum, Natural History, London (coll. Brit. Mus.), and Dr. J. Stehlík of the Moravské Museum, Brno (coll. Brno). The abbreviations in brackets are used in the paragraph "Material Examined".

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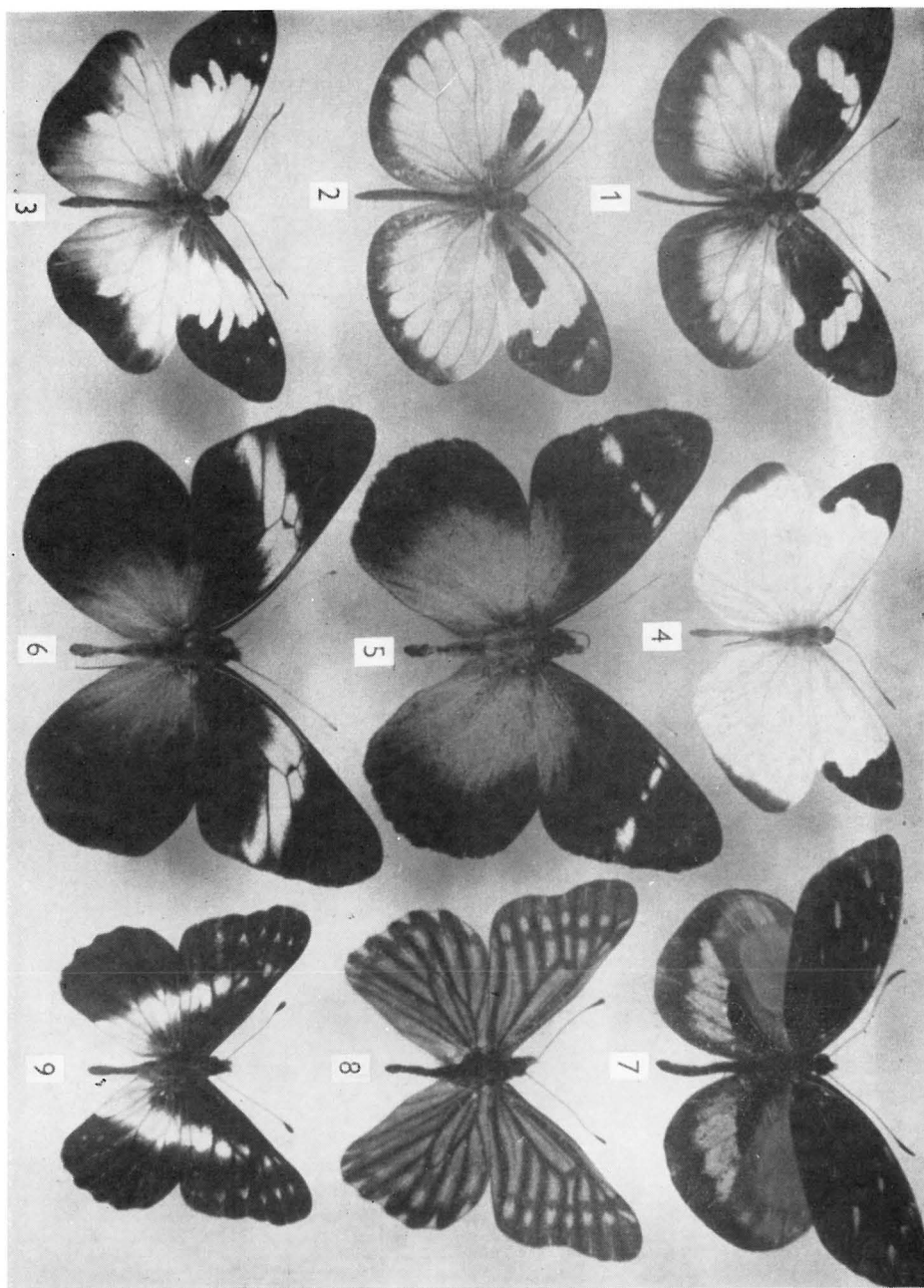
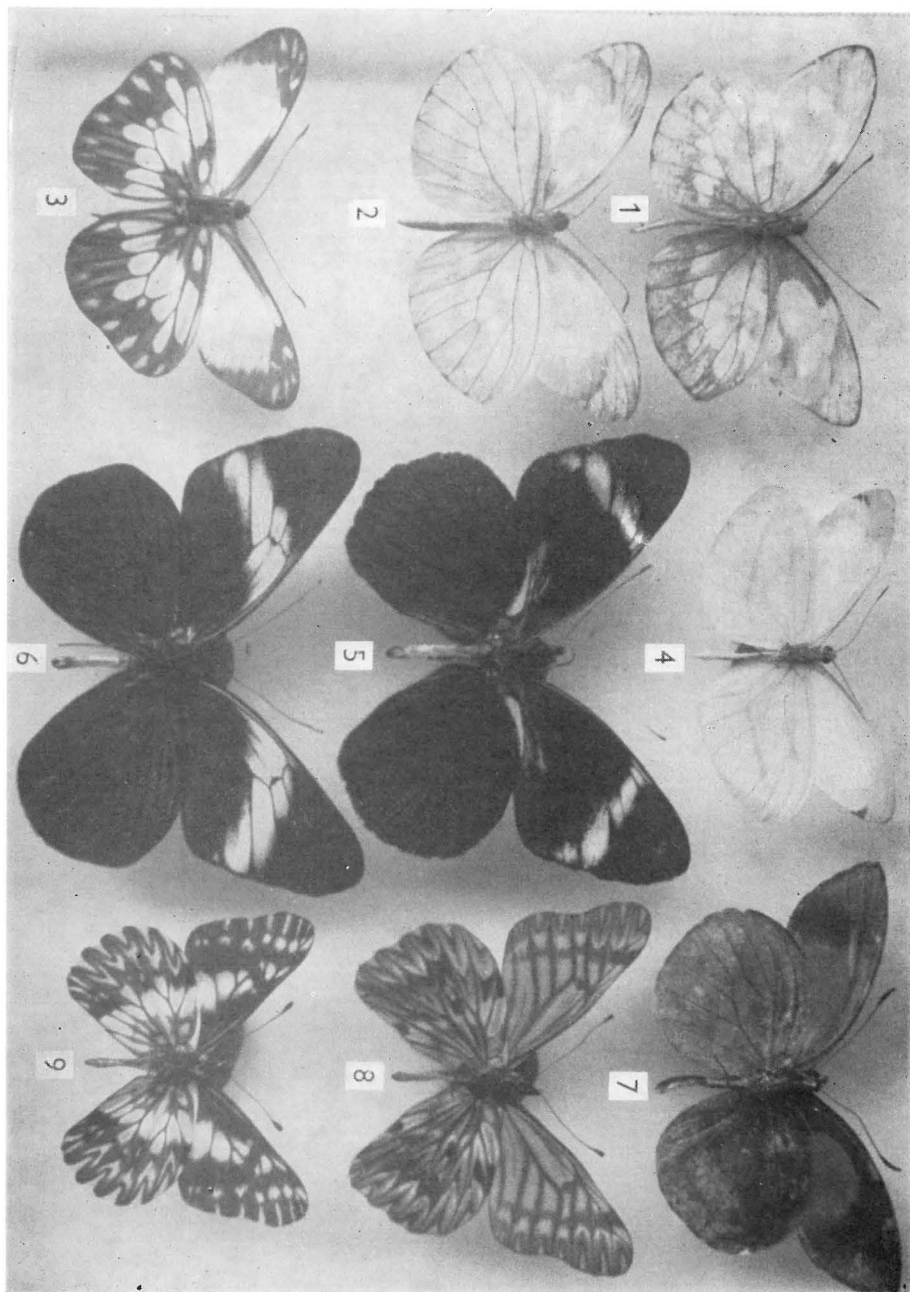


Fig. 1: *Dismorphia* (*Dism.*) *critomedia neblina*, ssp. n., Holotypus ♂, Brasilia sept., Serra Neblina, 1500 m, 24. IV. 1964, leg. Chr. Lindemann, in Zool. Staatssamml. München. Fig. 2: *Dismorphia* (*Dism.*) *critomedia interrupta* Zischka 1951, ♂, Peru, Chanchamayo, VII. 1962, in coll. m. Fig. 3: *Dismorphia* (*Dism.*) *odris*, sp. n., Holotypus ♂, Peru Huallagatal, in coll. m. Fig. 4: *Enantia versicolora eva*, ssp. n., Holotypus ♂, Peru, in coll. m. Fig. 5: *Pereute lindemannae*, sp. n., Holotypus ♂, Brasilia sept., Serra Neblina, 1250 m, 18. III. 1964, leg. Chr. Lindemann, in Zool. Stats-



samml. München. Fig. 6: *Pereute callinira vallonira*, f. ♂ *pallida*, f. n., Holotypus ♂, Peru, Tingo Maria, Huallaga, XI, 1966 — I. 1967, in coll. m. Fig. 7: *Dismorphia* (*Acmepteron*) *cinerascens christa*, ssp. n., Holotypus ♂, Brasilia sept., Serra Neblina, 1500 m, 24. IV. 1964, elg. Chr. Lindemann, in Zool. Staatssamml. München. Fig. 8: *Catasticta hanna*, sp. n., Holotypus ♂, Columbia, Muzo, 6. III. 1960, in coll. m. Fig. 9: *Catasticta tomyris barbara*, ssp. n., Holotypus ♂, Peru, in coll. m.

III. Systematic treatment

There is already known such a number of species in the genus *Tachydromia* Meig., that its subdivision into natural groups is necessary. The differentiation on the basis of the wing pattern is rather artificial, probably in some species in different phylogenetic groups nearly the same wing pattern has developed, e. g. in *T. aliterpicta* (Beck.), *T. tuberculata* (Loew), and *T. calcanea* (Meig.). The subdivision into species with or without silvery patch on prothorax, used by Engel (1938), seems to be justifiable because this character is coupled also with different venation, separating the *calcanea*- and *annulimana*-groups.

I am convinced that the shape and coloration of palpi, as well as pubescence of legs, are the best characters for separating natural groups. The different structure of the male genitalia supports this opinion. Classification of such groups should be in this genus as follows:

- 1 (10) Silvery patch on prothorax present, radial vein straight along costal margin or very indistinctly arched at middle.
- 2 (5) Palpi pale yellow, only one notopleural bristle; antennal arista long, at least 2.5 times as long as antenna. Fore femora with only fine pale hairs beneath, wings usually only faintly clouded or entirely hyaline.
- 3 (4) Legs pale, yellowish or with dark design. Genitalia in male of very complicated structure. 1. *terricola*-group
- 4 (3) Legs dark brown or entirely blackish. Genitalia in male of simple structure. 2. *ornatipes*-group
- 5 (2) Palpi dark brown to blackish; one or two notopleural bristles; antennal arista of different length. Fore femora either fine hairy or with distinct bristles beneath. Wings distinctly banded or clouded.
- 6 (9) One notopleural bristle. Arista very long (except in *T. monserratis* [Str.]), at least 3 times as long as antenna. Palpi long and slender. Male genitalia rather small, with only strip-like dorsal process to right lamella. Wings rather long and somewhat pointed at apex.
- 7 (8) Fore femora with distinct dark bristles or bristly hairs at least on apical two-thirds beneath. Wings with two separate bands. ... 3. *arrogans*-group
- 8 (7) Fore femora microscopically whitish pubescent beneath and armed with only fine whitish anteroventral hairs. Brown bands on wing connected in first posterior cell. 4. *interrupta*-group
- 9 (6) Two notopleural bristles (except in *T. catalonica* [Str.]). Arista very short, at most twice as long as antenna; palpi very small. Male genitalia usually large and globular, with complicated foot-like dorsal process to right lamella. Wings wider and blunt ended. 5. *connexa*-group
- 10 (1) Thorax entirely shining black, no silvery patch on prothorax. Radial vein more or less arched towards costa or somewhat undulating.
- 11 (12) Palpi pale yellowish, at least on basal half, or brownish (sexual dichroism), clothed with pale or greyish hairs. Radial vein nearly straight, only slightly arched at middle or somewhat undulating, marginal cell at most slightly narrower than submarginal. 6. *calcanea*-group

- 12 (11) Palpi dark brown, clothed with long silvery hairs. Radial vein very arched towards costa at middle, marginal cell much narrower than submarginal. 7. *annulimana*-group

It is possible, however, that the subdivision into 7 natural groups of Palaearctic species will call for some minor changes when other new species are discovered. Not even the arrangement of all known species is quite accurate and some intermediate species should be noticed. In the *terricola*-group *T. sabulosa* Meig. shows some affinity to the *connexa*-group and *T. aliterpicta* (Beck.) to both *connexa*- and *arrogans*-groups. *T. monserratisensis* (Str.) of the *arrogans*-group has apparently short arista and *T. catalonica* (Str.) possessing only one notopleural bristle and having mesonotum distinctly greyish dusted, resembles somewhat *T. sabulosa* Meig. Finally the position of *T. calcarata* (Str.), having only small genitalia but two notopleural bristles in addition to unknown antennae and palpi, is still not clear.

Table of Palaearctic species

- | | | |
|---|---|------------------------------|
| 1 | Prothorax between humeri and fore coxae silvery dusted. Radial vein straight along costal margin or very indistinctly arched at middle, one or two notopleural bristles | 2 |
| — | No silvery patch on prothorax. Radial vein more or less arched towards costa, or somewhat undulating. One notopleural bristle | 30 |
| 2 | (1) Palpi pale yellow, clothed with pale or silvery hairs. One notopleural bristle. Fore femora short haired or with only fine pale hairs beneath | 3 |
| — | Palpi dark brown to blackish, clothed with dark or silvery hairs. One or two notopleural bristles, fore femora either with pale hairs beneath or with dark bristles | 13 |
| 3 | (2) Legs yellowish to yellowish brown | 4 |
| — | Legs extensively blackish, at most fore coxae, knees or metatarsi paler ... | 9 |
| 4 | (3) Wings entirely hyaline without any pattern. Legs yellow, only fore tibiae in male brownish at tip; middle femora in male with rather deep excision near base beneath (Alps) | <i>denticulata</i> (Oldenb.) |
| — | Wings clouded, even though only very faintly | 5 |
| 5 | (4) Wings uniformly very faintly tinged with brownish, leaving only base, apex and very small patch at the end of postical vein, hyaline. Middle femora simple, only short pointed projection to middle tibiae at tip (Palestine) ... | <i>simplicissima</i> (Engel) |
| — | Wings somewhat brownish along longitudinal veins or with distinct brown pattern | 6 |
| 6 | (5) Wings faintly clouded at apex and along longitudinal veins, leaving costal margin to the end of radial vein and all the hind margin, hyaline. Middle femora in male with shallow excision near base beneath and short apical projection to middle tibiae (N. and C. Europe) | <i>terricola</i> Zett. |
- Here belong also the Siberian *fuscinervis* (Frey), *minima* (Beck.), and the East Asiatic *mucronata* (Coll.), *preapicalis* (Coll.) and *occipitalis* (Coll.).

- Not as above7
- 7 (6) Mesonotum entirely dulled with greyish dust, wings on apical two-thirds inclusive of apex brown, basal third to half milk-white. Fore femora yellow with distinct dark ring at middle (N. C. and E. Europe) *sabulosa* Meig.
- Mesonotum shining black, apex of wing always hyaline8
- 8 (7) Palpi with black terminal bristle; wings with two distinct brown bands broadly connected along costa. Fore femora yellow (S. Europe, Palestine) .. *aliterpicta* (Beck.)
- Palpi without terminal bristle; wings with two faint brown bands separated along the whole length, distinct only on upper half of wing above cubital vein. Fore femora with dark ring before tip, and with brown streak above (Siberia) ♀ *incompleta* (Beck.)
- 9 (3) Mesonotum entirely dulled with greyish dust, wings on apical two-thirds inclusive of apex brown. Extensively darkened specimens of *sabulosa* Meig.
- Mesonotum shining black, wings with two more or less distinct brown bands which are only very faint on lower half10
- 10 (9) Large species, more than 2 mm. in length11
- Small species, about 1.5 mm. in length12
- 11 (10) Palpi without terminal bristle; wings with distinct brown patch at the end of radial vein and slightly clouded along cubital and postical veins. Wings somewhat milk-white with distinct dark veins, crossveins close together. Legs entirely blackish brown (N. Europe, Siberia) ♀ *punctifera* (Beck.)
- Palpi with dark terminal bristle. Female: Brown bands on wing faint, outer band narrower; wings not milk-white in colour, crossveins wide apart. Male: Apical third of wing undeveloped and milk-white, a large preapical spur to middle tibiae beneath, middle legs with long hairs. Fore coxae and anterior four femora yellowish beneath (Alps) *ornatipes* (Beck.)
- 12 (10) Last pair of dorsocentrals in front of scutellum long and dark. Anterior four femora with longer pale and dark hairs beneath and very short but sharp apical projection to middle tibiae in male. Wings somewhat milk-white with distinct dark veins (C. Europe) *parva*, sp. n.
- All dorsocentrals only pale and very minute. Anterior four femora only short haired, no apical projection to middle tibiae in male. Wings hyaline with only narrowly separated faint brownish bands (England) *halidayi* (Coll.)
- 13 (2) Wings with two brown bands either separated along the whole length or connected in first posterior cell only. If narrowly joined along costal margin (*styriaca*), then always only one notopleural bristle, palpi long and slender and long antennal arista (except in *monserratisensis*), at least 3 times as long as rest of antenna14
- Wings with brown bands broadly connected along costal margin, or wings brownish on the upper half as far as and including apex. Wings broader and more rounded at apex. Two notopleural bristles (if only one, then meso-

- notum greyish dusted), palpi very small and short, only very short antennal arista, at most twice as long as rest of antenna 23
- 14 (13) Brown bands on wing separated along the whole length; fore femora with double row of black bristles beneath or at least dark bristly hairs on apical two-thirds beneath 15
- Brown bands on wing connected in first posterior cell (or rarely also in marginal cell), sometimes only very indistinctly but fore femora always microscopically whitish pubescent beneath or with additional row of fine pale anteroventral hairs; no black bristles 19
- 15 (14) Occiput entirely silvery grey dusted, only just above mouth opening shining. A large apical projection to middle tibiae at tip in male 16
- Occiput extensively shining black, somewhat silvery grey dusted on the upper half just behind vertex or at most at sides right to eye-margin. No apical projection to middle tibiae in male or only very small one 17
- 16 (15) Palpi densely clothed with very long silvery hairs, dark terminal bristle present. Postvertical bristles wide apart, antennal arista long, about 3 times as long as antenna. Hind femora yellowish at base and with long whitish posteroventral hairs on basal half. Brown bands on wing only very faint on lower half beyond cubital vein (Alps) ♂ *productipes* (Str.)
- Palpi with sparse silvery hairs, no terminal bristle. Postvertical bristles close, antennal arista short, about 1.5 times as long as antenna. Hind femora all brownish and only short haired. Brown bands distinct along the whole length (Spain) ♂ *monserratensis* (Str.)
- 17 (15) Legs blackish brown, only knees and metatarsi paler; anterior four femora with double row of strong black bristles along the whole length beneath. Brown bands on wing only faint on lower part beyond cubital vein, radial vein with short appendix before end. Large species, 3 mm. in length (N. Europe, Ural) *lundstroemi* (Frey)
- Legs not so extensively darkened, anterior four femora more yellowish and with only dark bristly hairs on apical two-thirds beneath. Brown bands distinct on hind wing-margin, no appendix to radial vein. Smaller species, at most 2.5 mm. 18
- 18 (17) Wings rather large and broader, somewhat rounded at tip, radial vein sharply upturned to costa. Legs darker, posterior two pairs predominantly blackish, hind femora all dark. Occiput covered with greyish dust on the upper part behind vertex and at sides right to eye-margin (Europe, Near East) *arrogans* (L.)
- Wings small and narrow, with pointed apex. Radial vein ending at costa in obtuse angle. Legs predominantly yellow, hind femora yellow at base. Occiput entirely shining, only behind vertex somewhat dulled by greyish dust (Europe) *aemula* (Loew)
- 19 (14) Wings somewhat milk-white with distinct dark veins and very inconspicuous wing pattern. Wings not so long but somewhat egg-shaped. Legs entirely blackish; acrostichals uniserial, dorsocentrals irregularly biserial, pale and minute. Smaller species, 2,3—2.5 mm. (Alps) *obsoleta* (Str.)
- Not as above 20

- 20 (19) Halteres blackish brown. Anterior four femora of about the same width, middle femora in male with round tubercle near base beneath and short apical projection to middle tibiae. Brown bands on wing only faint on the lower part beyond cubital vein. Larger species, 2.5—3 mm. (Alps) *nigerrima* (Bezzi)
- Halteres whitish yellow. Fore femora distinctly stouter than middle femora, no tubercle on middle femora near base beneath in male and no apical projection to middle tibiae 21
- 21 (20) Postvertical bristles short and fine, inserted at hind margin of vertex. Legs blackish, fore coxae and first segment of all tarsi yellow. Length 2.1—2.8 mm. (Canary Isl.) ♀ *pseudointerrupta*, sp. n.
- Postvertical bristles long and strong, inserted much lower, at about the middle of upper part of occiput. Legs entirely blackish, only first tarsal segments sometimes brownish 22
- 22 (21) Wings rather broad and somewhat rounded at tip, brown bands much enlarged, leaving only extreme apex hyaline (or extended to apex), sometimes connected also in marginal cell. Male: Silvery hairs on palpi apparently erect, postverticals only slightly upcurved, fore femora only short haired beneath but with long white hairs above. Larger species, 2.8—3.5 mm. (Alps) *styriaca* (Str.)
- Wings distinctly narrower and more pointed at tip, brown bands not so enlarged and apex of wing more hyaline. Male: Silvery hairs on palpi adpressed, postverticals very long and apparently upcurved towards vertex, anterior four femora with long white anteroventral hairs. Smaller species, 2.3—3 mm (Mountains of C. and S. Europe) *interrupta* (Loew)
- 23 (13) Only 1 notopleural bristle, mesonotum coated by greyish dust, leaving only mid-stripe shining. Wings milk-white at base, marginal and submarginal cells brownish, leaving apex of wing hyaline. Middle tarsi and hind tibiae with long dark hairs. Length 2.1 mm. (Spain) ♂ *catalonica* (Str.)
- 2 notopleural bristles, mesonotum entirely shining black 24
- 24 (23) Halteres dark brown, wings with darkened outer two-thirds on costal half, inclusive of apex. Fore femora black, on basal third yellow. Length 1.6—2.2 mm. (W. and C. Europe, Ural) *halterata* (Coll.)
- Halteres whitish yellow, wings with two brown bands broadly connected along costal margin, apex always hyaline 25
- 25 (24) Brown bands on wing more broadly connected along costa, hyaline mid-stripe reaches upwards only to first posterior cell, costal clouding without hyaline patch in submarginal cell 26
- Hyaline mid-stripe reaches upwards as far as to submarginal cell, costal clouding at least with small hyaline patch in submarginal cell 29
- 26 (25) Male: Genitalia small and rather conical; middle femora neither with tubercle nor excision near base beneath and only small but pointed apical projection to middle tibiae. Legs dark brown, fore femora microscopically pubescent beneath and with black bristly anteroventral hairs. Length over 2 mm. (C. Europe) ♂ *calcarata* (Str.)

- Male: Genitalia large and globular, middle femora either with tubercle or excision near base beneath 27
- 27 (26) Legs rather long and more slender, anterior four femora yellowish brown, dark brown above. Fore femora with longer black anteroventral bristly hairs. Middle femora in male with round tubercle near base beneath, fore tibiae and metatarsi only short haired and only very small rim-like apical projection to middle tibiae. Larger species about 2.5 mm. (C. Europe) *tuberculata* (Loew)
- Legs short and stout, fore femora with either short black anteroventral bristles or long pale hairs. Middle femora in male with shallow excision near base beneath, fore tibiae and metatarsi long haired beneath and distinct shovel-like apical projection to middle tibiae. Smaller species about 2 mm. 28
- 28 (27) Legs more yellowish, hind femora yellowish at base. Fore femora with small black anteroventral bristles. Brown bands on wing distinct along the whole length. Abdominal tergites entirely dull in male; greyish pollinose in female (W. C. and S. Europe) *costalis* (v. Ros.)
- Legs somewhat darker, especially in female, hind femora all black. Fore femora with fine yellowish anteroventral hairs. Brown bands on wing distinct on costal half only, below faint; all hyaline areas rather milk-white. Abdominal tergites densely silvery grey dusted, leaving hind margins narrowly shining black (Caucasus) *elbrusensis*, sp. n.
- 29 (25) Legs more yellowish, hind femora yellow at base. Fore femora with fine pale hairs. Hind margin of sixth tergite in male with long dark hairs at middle only; 2nd segment of middle tarsi slightly longer than half of metatarsus. Length about 2 mm. (Europe) *connexa* Meig.
- Legs blackish brown, hind femora all black. Fore femora with small black anteroventral bristles. Hind margin of sixth tergite in male with long dark hairs in each corner; 2nd segment of middle tarsi nearly as long as metatarsus. Length about 2 mm. (W. N. and C. Europe) *morio* (Zett.)
- 30 (1) Radial vein only very slightly arched, nearly straight or somewhat undulating. Palpi pale yellowish, at least on basal half, or brownish. Wings nearly all clouded or with two very faint bands 31
- Radial vein distinctly arched towards costa at middle, marginal cell much narrower than submarginal. Palpi dark brown. Wings with two distinct brown bands 32
- 31 (30) Wings nearly all greyish brown clouded, leaving only base, apex and small patch at the end of postical vein, hyaline. Legs nearly all blackish. Palpi pale and very slender, with short terminal bristle, brownish in female. Larger species about 3 mm. (C. and S. Europe) *calcanea* (Meig.)
- Wings with two narrow faintly brownish bands. Legs yellowish with dark brown pattern. Palpi long and somewhat flattened, without terminal bristle, yellow at base and black on apical half in male, entirely pale yellow in female. Smaller species about 2.5 mm. (N. Europe, Transbaikalia) ... *anderssoni*, sp. n.

- 32 (30) Wings very shortened, small and narrow, not longer than abdomen, often with irregular venation. Length 2—2.8 mm. (C. and S. Europe) *brevipennis* (v. Ros.)
— Wings normally developed, much longer than abdomen 33
- 33 (32) Meso- and metasternum between posterior four coxae with long yellowish bristles. Hind part of thorax and scutellum with strong black spinose bristles. A large shovel-like projection to middle tibiae at tip in male. Medium-sized species, 2—2.5 mm 34
— Meso- and metasternum bare, without any bristles. Hind part of thorax and scutellum with only ordinary bristles. A small pointed projection to middle tibiae in male. Larger or smaller species 37
- 34 (33) Last two pairs of dorsocentrals in front of scutellum large and strong, 4 to 8 strong scutellar bristles of the same length as dorsocentrals. Anterior four femora usually with long yellow anteroventral hairs, middle metatarsus very long or at least longer than half of tibia. Genitalia in male small and somewhat conical 35
— Only last pair of dorsocentrals large and only two strong scutellar bristles of equal length. Anterior four femora without long anteroventral hairs, middle metatarsus short, about half as long as tibia. Genitalia in male large or small 36
- 35 (34) Middle metatarsus very long, nearly as long as tibia, hind femora short haired. Male: Fore femora blackish, yellowish at tip only, anterior four femora with long yellow anteroventral hairs. Female: Fore femora dark, yellowish on basal third, all femora only short haired (England, N. and C. Europe to Ural) *umbrarum* Hal.
— Middle metatarsus shorter, only slightly longer than half of tibia, hind femora with very long whitish posteroventral hairs on basal half. Male: Fore femora yellow, dark on basal third and with long yellowish anteroventral hairs. Female: Fore femora uniformly yellowish brown and also with anteroventral hairs (Caucasus) *caucasica*, sp. n.
- 36 (34) Male: Fore femora blackish with distinct yellow ring at middle; genitalia very large and globular. Female: Fore femora yellow, blackish on apical third (C. and S. Europe) *annulimana* Meig.
— Male: Fore femora blackish brown with indistinct yellowish ring anteriorly and below or more yellowish towards base below; genitalia small and conical as in *umbrarum* Hal. Female: Fore femora blackish brown along the whole length above, somewhat yellowish below or with indistinct yellowish ring at middle (C. and S. Europe) *smithi* Chv.
- 37 (33) Legs blackish brown; larger species about 2.5 mm. or more 38
— Legs predominantly yellowish; smaller species about 2 mm. 40
- 38 (37) Fore femora with two yellow spots anteriorly near base or distinctly yellowish at base. Middle femora with longer dark bristly hairs on apical fourth beneath, all legs clothed with long fine greyish hairs. Length 2.1—2.8 mm. (India) *latifascipennis* Brun.
— Fore femora entirely blackish without any yellow, middle femora with only pale hairs beneath 39

- 39 (38) Brown bands on wing enlarged and very distinct, usually connected along costa in marginal cell and very faintly along hind wing-margin. Last pair of dorsocentrals in front of scutellum dark and longer. Smaller species, about 2.5 mm. (C. and S. Europe)..... *undulata* (Str.)
- Brown bands on wing not so enlarged, wings with apparently large rounded tip and very narrow at base. All dorsocentrals only minute. Fore tibiae in male somewhat curved and stouter on basal half, with very long whitish posteroventral hairs. Larger species, 3 mm. (C. Europe, N. Africa) *excisa* (Loew)
- 40 (37) Vertex shining black, upper part of occiput and sides right to eye-margin silvery grey dusted. Fore femora rather slender, yellow, somewhat brownish above and at tip. Last pair of dorsocentrals black and longer; two pairs of scutellar bristles, inner pair fine and very long, longer than scutellum is deep. Apical projection to middle tibiae in male very small. (C. Europe) *carpathica* Chv.
- Vertex and upper part of occiput silvery grey dusted, the sides right to eye-margin shining black. Fore femora stouter with dark ring before tip in male. All dorsocentrals pale and very minute; scutellar bristles very short, usually one pair only. Apical projection to middle tibiae in male larger (W. N. and C. Europe) *woodi* (Coll.)

1. *Tachydromia terricola*-group

1. *Tachydromia denticulata* (Oldenberg, 1912) **comb. nov.**

Tachista denticulata Oldenberg, 1912, Ent. Mitt., 1 : 212

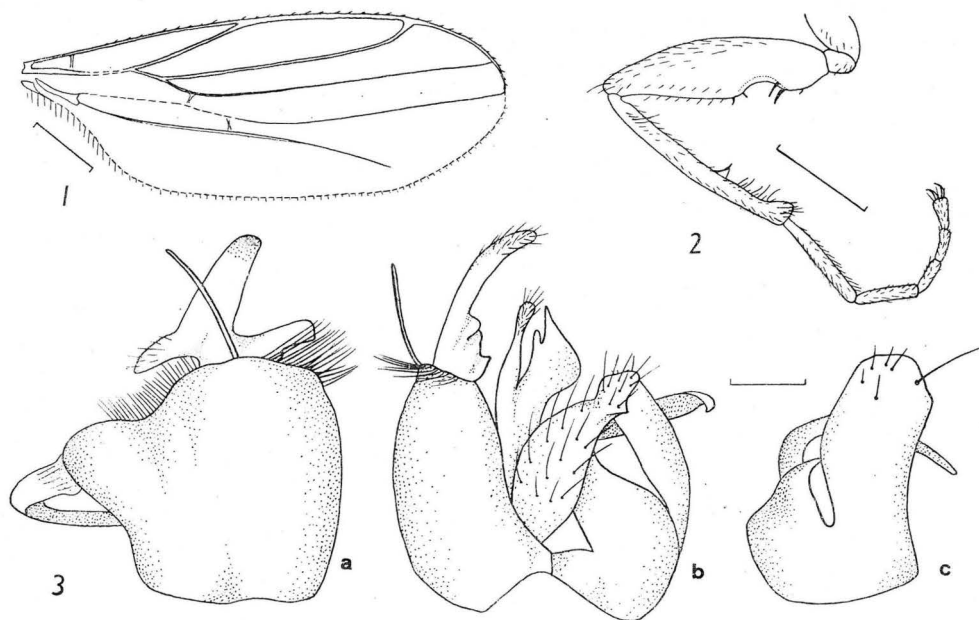
Male. Frons shining black, nearly parallel-sided, only a little widened towards shining vertex. Occiput only slightly covered with greyish dust on the upper part above neck, shining black at sides right to eye-margin and on lower part, not entirely grey dusted as given by Engel (1938). Two short dark ocellar bristles, two long and wide apart postverticals, the lower part of occiput with only scattered whitish hairs. Antennae yellow, 3rd segment somewhat brownish at tip, nearly rounded and with long dark terminal arista which is about two and one half times as long as antenna. Palpi yellowish, short and very slender, shorter than proboscis, clothed with only fine pale hairs and with short dark terminal bristle.

Thorax shining black, only prosternum and whole prothoracic episternum silvery pollinose. Dorsocentrals uniserial, whitish and very minute, acrostichals uni- to biserial and indicated only on the front half of mesonotum. One black notopleural bristle, one postalar and two pairs of scutellar bristles, the inner pair being the longer.

Legs yellow, only fore tibiae with apical black ring, fore tarsi, with the exception of basal half of first segment, brownish and at most last two tarsal segments on posterior two pairs blackish brown. Fore femora only slightly stouter than middle femora, with row of short whitish hairs beneath, the hairs becoming longer towards base. Fore tibiae spindle-shaped dilated at apex and with black ring on the widest part. Middle femora with rather deep round

excision near base beneath and with two strong black spines before the excision. Middle tibiae with one longer and one shorter black bristle posteriorly at base, beneath before tip with hardly indicated round swelling, a distinct nearly triangular yellow spine before it and with longer dark hairs towards tip. Apical projection to middle tibiae only small and blunt (fig. 2). Hind legs long and slender, only short haired.

Wings (fig. 1) entirely hyaline without any design. Veins brownish, subcosta on the whole length and other veins at base, yellowish. Radial vein straight, marginal cell wider than submarginal. Halteres whitish yellow.



Tachydromia denticulata (Oldenb.) ♂: Fig. 1. — Wing. Fig. 2. — Middle leg. Fig. 3. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (syntype: Ratzes, Austria).

Abdomen shining dark brown, last sternite with row of long black hairs at hind margin. Genitalia (fig. 3) large, shining blackish brown and of very complicated structure. Right lamella of epandrium distinctly larger than the left one, with two dorsal processes, one being three-cornered and the second very slender; at hind margin with another process which is very long, strip-shaped and distinctly re-curved. Left lamella bilobed, a smaller frontal part with similar very narrow and back curved, strip-like process. Cerci irregular, the right one more sclerotized. The structure of hypopygium resembles that of *T. simplicissima* (Engel).

F e m a l e. No acrostichals, fore tibiae yellow, without black apical ring

and not dilated towards tip. Middle legs simple, femora without any excavation or spines, clothed with only scattered whitish hairs beneath. Abdomen shining dark brown, last three segments covered with greyish dust, cerci long and slender, about as long as last abdominal segment. Otherwise as in male.

Length: 2.5—2.8 mm. Engel (1938) gives the length erroneously from 1.75 to 2 mm.

This species is very unlikely to be confused with any other of the genus *Tachydromia* Meig., it is at the present the only known Palaearctic species with entirely hyaline wings.

Distribution: Alps.

Dates: July.

A rare species known to date only from the one locality in the Austrian Alps, all twelve specimens that I have found in various collections belong to the type series determined by Oldenberg. He took all the material from 21 to 24 July 1911 on plants in a shady wood abyss between Schlern and Seiser Alp at an altitude of 1300 to 1400 m. near baths Ratzes. All the specimens are labelled „Ratzes“ and „Typen“. I have selected one male (21. VII. 1911, coll. DEI) from the series of 12 syntypes (5 males and 7 females) and labelled it as lectotype.

Material Examined: Ratzes 21. VII. 1911 1 ♂ 1 ♀ Oldenberg (*Tachista denticulata* m., det. Oldenberg, „Typen“), 24. VII. 1911 4 ♀♀ the same data — coll. DEI. 24. VII. 1911 1 ♂ 1 ♀ the same data — coll. Duda. 23. VII. 1911 1 ♂ 1 ♀ the same data — coll. Becker. 24. VII. 1911 2 ♂♂ the same data — coll. Stuttgart.

2. *Tachydromia simplicissima* (Engel, 1938) comb. nov.

Tachista simplicissima Engel, 1938, in Lindner, Flieg. pal. Reg., IV : 33 ♂

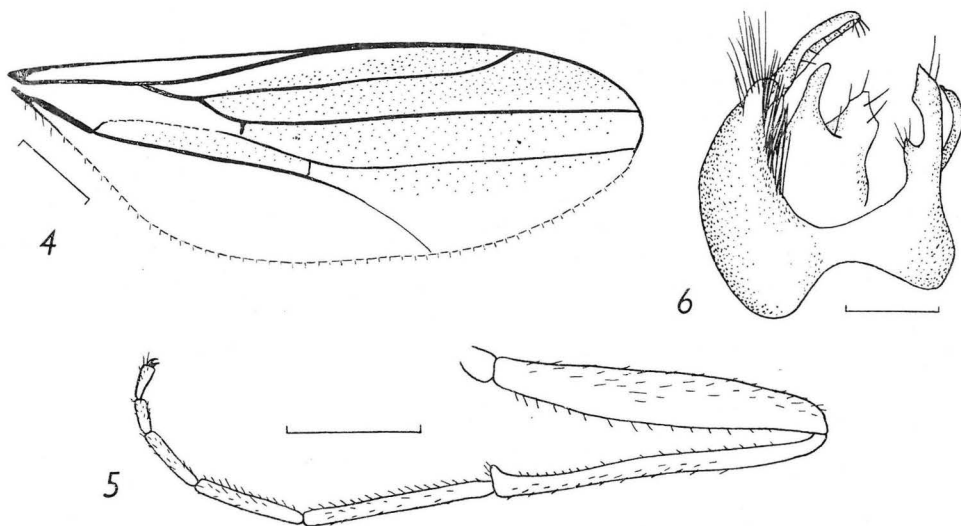
Male. Frons shining black, dusted only above antennae, slightly widened towards vertex and with large ocellar triangle with yellow ocelli. Vertex shining black, occiput dulled with greyish dust only on the upper part above neck, the lower part and at sides right to eye-margin, shining. Two long dark ocellar bristles, a pair of vertical ones very long and wide apart, occiput, especially on its lower part, with some darker and whitish hairs. Antennae yellow, 3rd segment brown with long dark arista which is nearly three times as long as antenna. Palpi yellow, covered with only scattered silvery hairs and with long dark terminal bristle.

Thorax shining black, prothorax with large silvery patch between humeri and fore coxae. Mesonotum shining and covered with minute pale hairs: uniserial acrostichals and dorsocentrals and numerous posthumeral. One long dark notopleural bristle, one smaller postalar, nearly of the same length as last pair of dorsocentrals in front of scutellum. Scutellum with two long dark scutellar bristles and entirely dulled with greyish dust.

Legs predominantly yellow, only middle femora at tip above, hind femora on apical two-thirds, all fore tibiae, hind tibiae at tip and last two or three segments of all tarsi, brownish. Fore femora slightly stouter, with row of long pale hairs beneath, fore tibiae only short haired, as well as middle femora.

Middle tibiae with row of very short dark bristly hairs beneath and with short but pointed projection at tip (fig. 5). Hind legs slender and only short haired. Middle tarsi long, distinctly longer than middle tibia, first segment slightly longer than half of middle tibia.

Wings (fig. 4) only very faintly brownish clouded, leaving base and apex hyaline and a small, scarcely visible patch at tip of postical vein. The wing pattern resembles the European *T. calcanea* (Meig.), but in *T. simplicissima* is only very faint. Radial vein straight, marginal cell about as wide as submarginal, cubital and discal veins parallel. Halteres whitish yellow.



Tachydromia simplicissima (Engel) ♂: Fig. 4. — Wing. Fig. 5. — Middle leg of holotype (Rehoboth bei Jaffa). Fig. 6. — Epandrium and cerci of paratype mounted on a slide (Jerusalem, Palestine).

Abdomen shining dark brown, last abdominal segment at sides and at hind margin ventrally, with very long dark hairs. Genitalia (fig. 6) comparatively large, right lamella of epandrium with straight strip-like dorsal process and with another very long curved process at hind margin. The structure of hypopygium shows a great resemblance to that of *T. denticulata* (Oldenb.).

Female unknown.

Length: 2.1 mm. (holotype).

This species is allied to the Alpine *T. denticulata* considering the structure of male hypopygium, wing venation and some other characters. *T. denticulata* is, however, a larger species with entirely hyaline wings and with typical structure of middle legs in male.

Distribution: Palestine.

Dates: November and December.

Engel (1938 : 34) when describing this species refers to three males deposited in Stuttgart but I have found in the material, kindly sent by Prof. Lind-

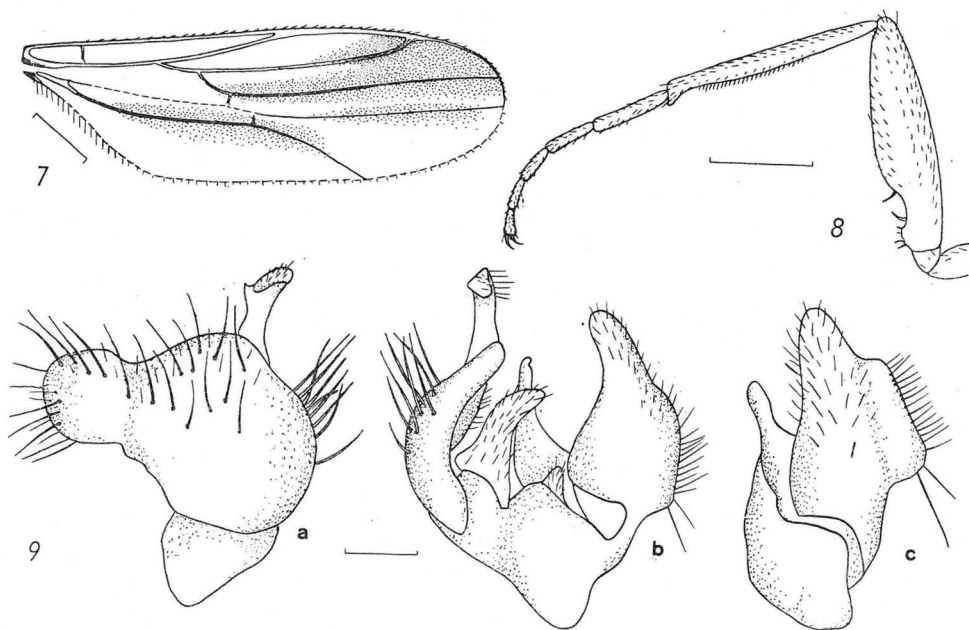
ner, only two males. One male (Rehoboth bei Jaffa) is very well preserved and designated „Type“, the second male, from Jerusalem, has lost its head and the abdomen is dissected and mounted on a slide. The above redescription of this species is based on the type specimen.

Material Examined: Rehoboth bei Jaffa 14. XI. 1933 1 ♂ J. Aharoni (*Tachista simplicissima*, Type, det. Engel), Jerusalem Scopus 3. XII. 1931 1 ♂ J. Aharoni — coll. Stuttgart.

3. *Tachydromia terricola* Zetterstedt, 1819

Tachydromia terricola Zetterstedt, 1819, Kongl. Vet. Akad. Handl., 1 : 81

Male. Frons, vertex and occiput entirely shining black, frons slightly widened towards vertex. Two long and widely separated black postvertical bristles, occiput on the upper part above neck with some fine dark hairs, the lower part very scarcely greyish hairy. Antennae yellow, 3rd segment globular and somewhat brownish at tip, with slightly supraapical dark arista which is about two and one half times as long as antenna. Palpi yellowish, fine pale hairy, shorter than proboscis but distinctly wider than in *T. denticulata* (Oldenb.), and with long dark terminal bristle, about as long as palpus.



Tachydromia terricola Zett. ♂: Fig. 7. — Wing. Fig. 8. — Middle leg. Fig. 9. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Marchegg, Austria).

Thorax shining black, prosternum, prothoracic episternum, and metathorax above hind coxae, densely covered with silvery dust. One long black notopleural bristle and 1 or 2 pairs of fine short black hairs anteriorly, one postalar and one or two pairs of scutellar bristles, the outer pair, if present, shorter. Dorsocentrals irregularly uni- to biserial, whitish and very minute.

Legs yellow, hind femora at tip and all tibiae at most on apical two-thirds brownish, last two segments of all tarsi blackish brown, basal segments sometimes brownish at tip. Fore femora distinctly stout, very short and fine whitish pubescent beneath. Middle femora slender, microscopically whitish pubescent beneath and with double row of dark bristles. A shallow excision near base beneath (fig. 8) bears one pale and one black spine and some short, stout black bristles towards base. Middle tibiae with very short apical projection and a row of short dark bristles at middle beneath. Hind legs slender, femora with a row of longer dark adpressed hairs beneath.

Wings (fig. 7) only slightly tinged with brownish at apex of wing, especially in submarginal cell, along the whole cubital vein, in apical two-thirds of discal vein and in central part along postical vein. Radial vein straight, ending only gradually to costa, marginal cell slightly wider than submarginal. Cubital and discal veins nearly parallel or somewhat diverging towards tip. Halteres whitish yellow.

Abdomen shining black, hind margin of last two sternites with very long dark hairs. Genitalia (fig. 9) large and very complicated, cerci pointed at apex and only right cercus short black hairy. Right lamella of epandrium at front margin with long and strong yellow hairs, on the upper part the hairs becoming blacker and thinner. Dorsal process to right lamella curved and pointed at tip. Left lamella bilobed, hind margin of the larger hind lobe with a row of short black hairs, below with two long black hairs directed downwards.

Female. Closely resembling male but middle femora simple, no excavation and spines beneath and no apical projection to middle tibiae. The adpressed hairs beneath hind femora pale. Abdomen only short haired, last two segments dulled with greyish dust, cerci short and distinctly round at tip.

Length: 2—2.5 mm.

This species shows some affinity to *T. denticulata* (Oldenb.) but differs, inter alia, in wings tinged with brownish, in brownish yellow tibiae in both sexes without any blackish pattern and in genitalia. *T. terricola* Zett. forms very probably a different group of closely allied species — *T. fuscinervis* (Frey), *T. minima* (Beck.), *T. mucronata* (Coll.), *T. preapicalis* (Coll.) and *T. occipitalis* (Coll.) — whose centre of distribution lies in North and East Asia.

Distribution: North, East and Central Europe.

This species is known up to the present time from Finland, Sweden, Denmark, Holland, Germany, Poland, USSR and Austria. Not yet found in Czechoslovakia but its occurrence here is very probable. Loew (1864) refers to this species as from North and South Europe but he means South Europe here as Central Silesia, where he took a single male at Szczawno (Salzbrunn) in Poland, in a locality at a distance of about 12 km. from Czechoslovak frontier north of Broumov. The most southern occurrence of this species is known from the village of Marchegg on the river Morava by the Austrian — Czechoslovak frontier.

D a t e s: May to July.

Up to the present time a little known species, Loew (1864) took a single male in grass, in North Europe on sandy costal localities.

M a t e r i a l E x a m i n e d: Suecia, coll. Wiedemann 1 ♀ (*terricola* Zett., det.? Meigen); sine loc., coll. Winthem 2 ♂♂ 3 ♀♀; Holland 1 ♀ (*Tachydromia fuscipennis* Fll., det.?); Marchegg 25. v. 1884 1 ♂ 2 ♀♀ Handlirsch — coll. Wien. Suecia 1 ♀ Zetterstedt; Hamburg 1 ♂ coll. Winthem; Nr. 10805 (? Silesia) 2 ♂♂ (all *terricola* Zett., det. Loew) — coll. Loew. Europe 1 ♂ 1 ♀ Purchd. from J. F. Ruthe 58—29 (*Tachista terricola*, det. Collin, 1915) — coll. Brit. Mus. Danmark, Vedbaek 6. VII. 1845 1 ♀ Staeger; Nordstrand v. Nykobing Sj. 15.—24. VII. 1943 1 ♂ Mortensen — coll. K o b e n h a v n.

4. *Tachydromia fuscinervis* (Frey, 1915) **comb. nov.**

Tachista fuscinervis Frey, 1915, Mém. Acad. d. Sc. d. Rus., 8, Phys. - Math., 19 : 10 ♀

M a l e unknown.

F e m a l e. Head shining black, occiput whitish pubescent, frons wide, shining. Antennae yellowish brown, small and short, 3rd segment oblong-oval, with moderately long brownish terminal arista. Proboscis shining black, short and stout, palpi relatively large, covered with white hairs. Thorax shining black, entirely bare, with white dusted patch on prothorax above fore coxae. Scutellum shining black. Thorax and scutellum without any bristles (maybe they are broken). Abdomen shining black, each segment with small, slightly greyish pollinose patch laterally. Legs reddish yellow, femora at middle and tibiae at apex darkish; tarsi distinctly blackish annulated. Wings faintly tinged with brownish yellow colour, without cross bands, only cubital and discal veins are stouter than the other veins and with distinct pale brownish seam. Postical vein is again very fine, whitish, at the end with brownish seam. Radial vein straight, the ending to costa is not sharply upturned as in *Phoneutisca* Loew. The common stem of cubital and discal veins longer than following section of discal vein. Postical vein stout at base. Anal cell, as well as anal and axillar veins absent. Halteres whitish. Length 2 mm., wing 2.2 mm., its width 1.1 mm. (Frey, 1915).

This species most resembles *T. terricola* Zett., but may be distinguished by darker legs and greyish dusted patches at sides of abdomen.

D i s t r i b u t i o n: Siberia.

Frey described this species on the basis of 2 females taken by M. I. Brusnew by the estuary of the river Lena (Chara-Ullach-Gebirge, 15.—17. VII.). The type material is deposited in the Zoological Museum at Leningrad. I have not seen any documentary material of this species.

5. *Tachydromia minima* (Becker, 1900) **comb. nov.**

Tachista minima Becker, 1900, Acta Soc. Sci. Fenn., 26 : 32 ♀

M a l e unknown.

F e m a l e. Shining black species with whitish dusted patch between fore coxae and humeri. Frons and face shining black. Antennae small, yellowish

brown, 3rd segment brown with long arista. Palpi large, yellow, with long black terminal bristle, otherwise covered with white hairs. Halteres pale yellowish. Legs with strongly swollen fore femora, chestnut-brown. Fore coxae and base of fore femora yellow, the former covered with white dust. First tarsal segment of hind legs yellowish brown. Wings nearly all hyaline; the basal third inclusive of basal cells entirely hyaline, rest of wing faintly and evenly yellowish brown, without dark patches. Veins yellowish brown, cubital and discal veins straight and parallel. Length 1 mm. (Becker, 1900).

According to Becker, this species closely resembles *T. terricola* Zett., but on the basis of the wing pattern it shows some affinity also to *T. sabulosa* Meig. and *T. halterata* (Coll.). Both these species have yellow legs, *sabulosa* has fore femora with blackish ring at middle and silvery grey pollinose mesonotum, *halterata* has short antennal arista, very short dark palpi and other characters of the *connexa*-group. *T. minima* is the smallest species of the genus and this distinguishes it at once from all others. *T. parva* sp. n. is a larger species (1.3—1.6 mm.) with entirely black legs and wings somewhat whitish with very dark veins and two faint brown bands.

Distribution: Siberia.

Becker described this species on the basis of a single female taken by J. Sahlberg in Siberia (Kantaika), the type female is deposited in the Zoological Museum in Helsinki. I have not seen this species.

6. *Tachydromia mucronata* (Collin, 1941) comb. nov.

Tachista mucronata Collin, 1941, Proc. R. ent. Soc. London (B), 10 : 229 ♂

Male. A small species allied to *T. terricola* Zett., but middle femora with a pointed projection at tip behind and legs darker. A detailed description is given by Collin (1941). Female unknown.

Length: about 2 mm.

Distribution: Ussuri Region.

Collin described this species on the basis of a single male taken at Tigrovaja, Sutshan District, 8. VI. 1927. The type specimen is deposited in the Zoological Museum at Leningrad.

7. *Tachydromia preapicalis* (Collin, 1941) comb. nov.

Tachista preapicalis Collin, 1941, Proc. R. ent. Soc. London (B), 10 : 229 ♂

Male. Differing from typical *mucronata* only as follows: palpi slightly longer, front femora and tibiae each with a preapical dark band, that on femora extending rearwards as a faint stripe posteroventrally to base of femur, middle tibiae with a short blunt projection at tip beneath (or anteroventrally), hind femora without the two small spines beneath near base, no paleness at base of first joint of any tarsus. There are also, apparently, slight differences in the genitalia, the left lamella (situated dorsally owing to twist of hypopygium) is longer and overlaps right lamella at tip, while it is more hairy on its left margin (Collin, 1941). Female unknown.

Length: about 2 mm.

Distribution: Ussuri Region.

This species has been described on the basis of a single male taken on the same day at the same locality as *T. mucronata* (Coll.). The type specimen is also deposited in the Zoological Museum at Leningrad.

8. *Tachydromia occipitalis* (Collin, 1941) **comb. nov.**

Tachista occipitalis Collin, 1941, Proc. R. ent. Soc. London (B), 10 : 229 ♀

Male unknown.

Female. A small species allied to *T. mucronata* (Coll.) and *T. preapicalis* (Coll.), but occiput extensively dulled by greyish dust. A detailed description is given by Collin (1941).

Length: about 1.5 mm.

Distribution: Ussuri Region.

This species is described on the basis of a single female taken at Sutshan on 14 June 1927, the type specimen is deposited in the Zoological Museum at Leningrad.

9. *Tachydromia sabulosa* Meigen, 1830

Tachydromia sabulosa Meigen, 1830, Syst. Besch., 6 : 342

Tachypeza fenestrata Zetterstedt, 1842, Dipt. Scand., 1 : 318

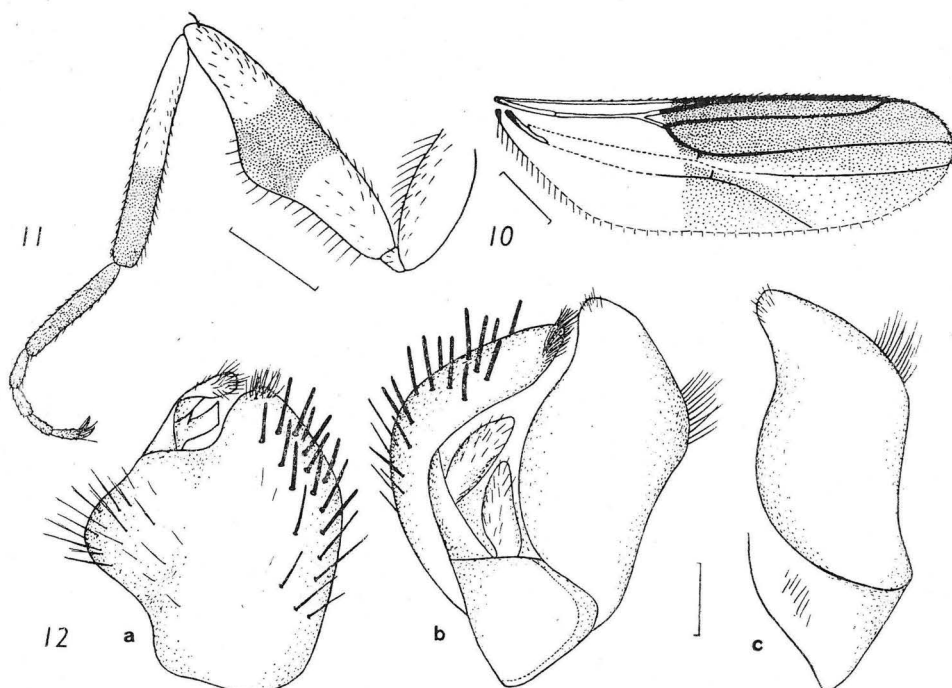
Male. Frons shining black, nearly parallel-sided, vertex and occiput on the upper part above neck faintly greyish dusted, otherwise occiput shining black. Two long black ocellar bristles, two somewhat longer and rather close postvertical, behind them three to four pairs of short dark hairs, lower two-thirds of occiput with longer whitish hairs. First two antennal segments yellow, 3rd segment brownish to black, nearly globular with dark somewhat supraapical arista which is about two and a half times as long as antenna. Palpi yellowish, covered with fine adpressed pale hairs, rather long and slender and with short black terminal bristle.

Thorax entirely faintly grey pollinose, only mesopleura shining blackish brown. Prothoracic episternum between humeri and fore coxae more densely dusted than the other parts of thorax. Mesonotum with long black bristles of nearly equal length: 2 humeral, 1 notopleural, another 2 or 3 shorter bristles in front of it and 1 postalar. Scutellum with 2 pairs of scutellar bristles, the inner pair longer, in front of scutellum 3 or 4 pairs of longer dorsocentrals.

The colouring of legs is rather variable; femora are yellow, fore femora with distinct blackish brown ring at middle (fig. 11), the ring is widened on middle femora and on hind femora leaving often only tips yellowish. Fore tibiae on basal third yellow, otherwise blackish brown, the dark coloration on posterior four tibiae extends even to basal third. Tarsi blackish brown. I have seen 1 male and 3 females from Denmark (coll. Lundbeck) with legs extensively blackish, leaving only tips of fore femora and apex of fore coxae yellowish. Fore femora stout with large swelling at middle beneath and with a row of fine pale hairs becoming longer towards base. Middle femora only slightly stout, with double row of short dark hairs beneath, no apical projection

to middle tibiae beneath. Hind legs slender, short haired and predominantly blackish brown.

Wings (fig. 10) on more than basal third distinctly milk-white, outer two-thirds (or somewhat less), including apex, clouded brown; a small paler patch only at hind margin in second posterior cell near end of postical vein. Radial vein straight, very close to costa, marginal cell distinctly narrower than submarginal. Halteres whitish.

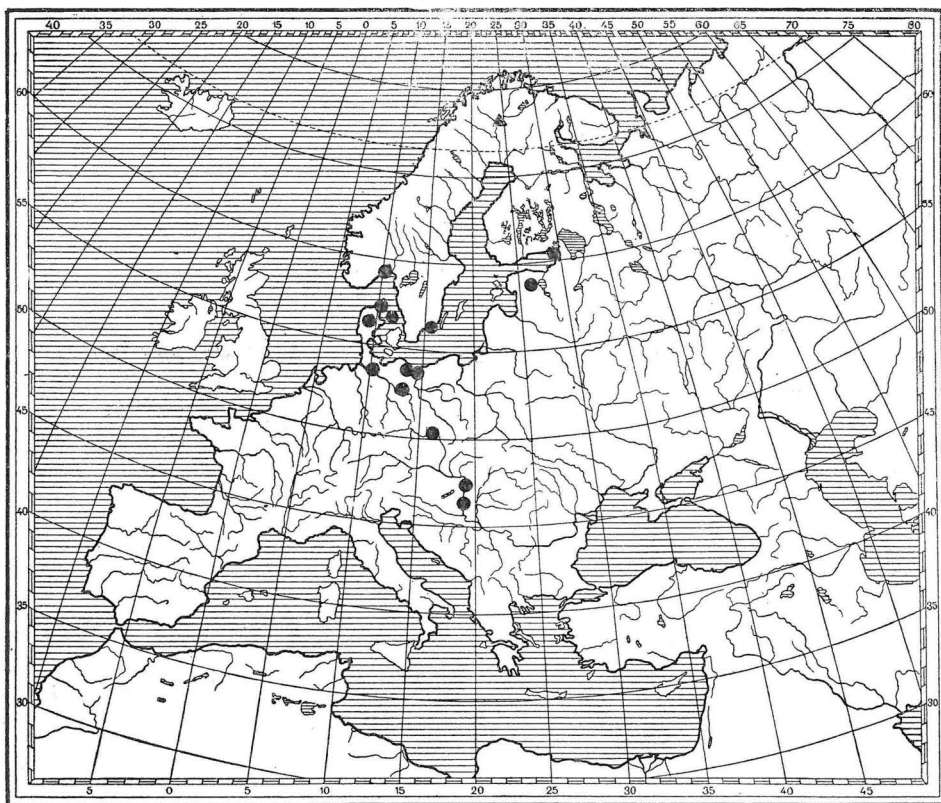


Tachydromia sabulosa Meig. ♂: Fig. 10. — Wing. Fig. 11. — Fore leg. Fig. 12. — Genitalia a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Swinojuscie, Poland).

Abdomen blackish brown, tergites faintly grey dusted, sternites nearly shining. Last sternite with row of long dark hairs at hind margin. Genitalia (fig. 12) large and globular, shining blackish brown, short and only sparsely hairy cerci are concealed in large round lamellae of epandrium. Front margin to right lamella with strong and conspicuously blunt black spines, left lamella not so wide, somewhat S-shaped and with only a brush of black hairs at hind margin above.

Female. Very closely resembling male only fore femora without swelling at middle beneath. Cerci slender but very short.

Length: 2—2.8 mm.



Map. 1. — Distribution of *Tachydromia sabulosa* Meig. — ● and *Tachydromia punctifera* (Beck.) — ▲

This species is very distinct by reason of the wing pattern, the greyish dusted thorax and stout fore femora with blackish ring at middle. It cannot be confused with any other species. *T. halterata* (Coll.) has shining black mesonotum, shorter antennal arista, dark halteres and wings largely hyaline along hind margin. *T. catalonica* (Str.) has also somewhat greyish dusted mesonotum but legs are extensively darkened and wings with hyaline apex.

Distribution: North, Central and East Europe (Map 1),

Zetterstedt described this species in 1842 as *Tachypeza fenestrata* from Sweden and Denmark, Frey (1913) records it from Finland. The most eastern occurrence known is in Estonian SSR at Derpt (Dorpat) and in Finland at Terijoki and Kivinebb, the most southern in Austria and in Hungary on the river Dunaj at Kalocsa (see also Thalhammer, 1899) and Tatarszentgyörgy. I have seen the documentary material from Sweden, Norway, Denmark, Finland, Estonia, Germany, Poland, Austria and Hungary.

The type material is deposited in the Naturhistorisches Museum, Wien,

altogether three males and one female labelled "coll. Winthem"; only a single female bears label "*sabulosa* mihi".

D a t e s: May to July. The great majority of the material was taken in July.

Adults are to be found in sandy localities, the species is common on the sea shore (Usedom, Swinojuscie) but found also by large rivers (Hamburg, Berlin, Budapest, Kalocsa) or on blown sands (Tatarscentgyörgy). Loew (1864) records frequent occurrence at moist sandy banks by streams in Silesia but the documentary material is missing in his collection.

M a t e r i a l E x a m i n e d: Jutland, Silkeborg 1 ♂ 1 ♀ Staeger, Frederikshavn 1. VII. 1908 1 ♂ 3 ♀♀ Lundbeck — coll. Lundbeck. Denmark, Anholt 3 ♀♀ Klefbeck, 18. VII. 1953 1 ♀ Muerling, Ardö; Hall. Trönninge, Larvik dynard 30. VI. 1944 8 ♂♂ 12 ♀♀ Ardö; Terijoki, Ollila 1 ♂ P. Suomalainen — coll. Lund. Hamburk 1 ♀ coll. Wiedemann (*sabulosa* de Wth., det. ?); Usedom 16. VII. 1899 1 ♀ Lichtwardt; Dorpat 1 ♂ (11. VII. leg. Lichtwardt, apud Engel, 1938); Austria, coll. Egger 1 ♂, Alte Sammlung 1 ♀ (*connexa*, det. Schiner); sine loc., coll. Winthem 3 ♂♂ 1 ♀ (♀ — *sabulosa* mihi, det. Meigen), coll. Wiedemann 2 ♀♀ — coll. Wien. Berolina 1 ♀ Erichson, Berlin 1 ♂ Ruthe; Hamburg 1 ♂ 3 ♀♀ v. Winthem (all *sabulosa* Meig., det. Loew); Usedom 14. VI. 1899 3 ♀♀, 16. VII. 1899 1 ♂ Lichtwardt — coll. Loew. Swinemünde VII. 15 ♂♂ 20 ♀♀ (*sabulosa* Meig., det. Becker); Budapest 11. V. 1 ♂ (*Tachista* n. sp., det. Becker) — coll. Becker. Usedom VII. 1887 1 ♂ 1 ♀ A. Kuntze — coll. München. Usedom No. 280 1 ♂ 2 ♀♀ — coll. Dresden. Europe, 1 ♂ 1 ♀ Purchd. from J. F. Ruthe; E. Prussia 19. VII. 1929 1 ♂ 2 ♀♀ P. Lackschewitz — coll. Brit. Mus. Ungarn, Tatarszentgyörgy VI. 1925 2 ♂♂ 1 ♀ Engel (*Tachista sabulosa* Meig., det. Engel) — coll. Stuttgart. Kalocsa 1 ♂ 2 ♀♀ (*Tachysta sabulosa*, det. Strobl) — coll. Strobl.

10. *Tachydromia aliterpicta* (Becker, 1889) comb. nov.

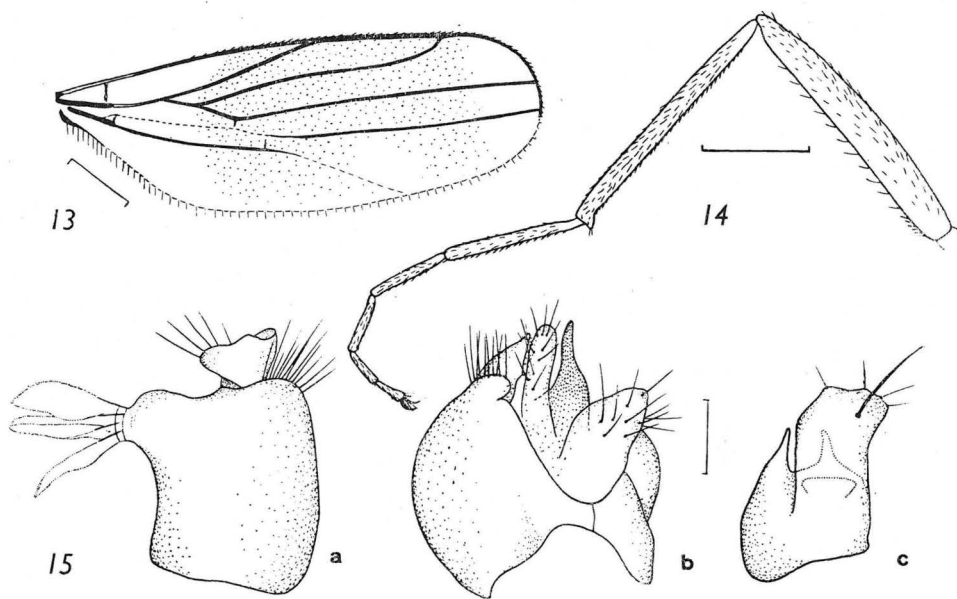
Tachista aliterpicta Becker, 1889, Berl. Ent. Zeitschr., 33 : 343 ♂ (*alteropicta*)

M a l e. Frons shining black, very narrow at base and slightly widened above. Vertex and occiput shining black, latter only just above neck fine greyish pollinose. Two dark ocellar bristles, two a little longer postvertical are inserted further below, about at one-third of upper part of occiput. Behind postvertical bristles some fine dark hairs and some long white hairs above the mouth-opening. Basal antennal segments yellow, 3rd segment brown, globular, rather higher than long, with very long dark somewhat supraapical arista which is about 4 times longer than antenna. Palpi whitish yellow, very slender, about as long as conspicuously short proboscis, fine whitish pubescent and with black terminal bristle.

Thorax shining black, prosternum and the whole prothoracic episternum, along the whole lower margin of humeri, silvery dusted. One long dark notopleural bristle and only one pair of scutellar bristles of about equal length. Dorsocentrals and acrostichals biserial, whitish and fine but well visible on front half of mesonotum.

Legs very long and slender, predominantly yellow, only fore tibiae, hind

femora on apical two-thirds, hind tibiae on apical half and last two segments of all tarsi, blackish brown. Fore femora only slightly stout and with only a row of short whitish hairs beneath, without dark bristles. Fore tibiae blackish brown, slender and only whitish short haired. Middle femora simple and slender, with only an indication of double row of short black spines at base beneath. Middle tibiae slender, as long as femur, with very small blunt projection at tip beneath (fig. 14). Hind legs long and slender, only short and sparsely whitish pubescent, hind tibiae somewhat thickened at tip. All tarsi slender, distinctly longer than tibiae, 2nd segment of middle tarsi only slightly longer than half the length of metatarsus.



Tachydromia aliterpicta (Beck.) ♂: Fig. 13 — Wing. Fig. 14 — Middle leg. Fig. 15 — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (lectotype: Senj, Jugoslavia).

Wings (fig. 13) rather long and narrow with round tip, entirely faintly greyish brown clouded, leaving only base and apex hyaline. The hyaline mid-stripe is reduced to a spot at the end of postical vein; the wing pattern as in *T. calcanea* (Meig.). Radial vein straight, ending gradually to costa, cubital and discal veins parallel, marginal and submarginal cells of about equal width at middle. Halteres whitish.

Abdomen shining blackish brown, only very short and sparsely pale hairy on the venter, last sternite with row of long brown hairs at hind margin. Genitalia (fig. 15) medium-sized and rather narrow, not wider than sixth abdominal segment. Right lamella of epandrium rectangular with four very little sclerotized appendices at hind margin above, dorsal process wide and cornet-

shaped with a brush of long brownish hairs near base. Left lamella with very long and strong dark subapical bristle, cerci with only scattered long brown hairs, between them heavily sclerotized spine-like process.

Female. Closely resembling male but occiput more greyish dusted, legs slightly darker, especially posterior four tibiae nearly all dark, middle femora darker at tip and above; no projection to middle tibiae at tip. Wings with two brown bands more separated, they are broadly connected along costa only in marginal and submarginal cells. Abdomen shining dark brown, last three segments greyish dusted, cerci long and very slender.

Length: body 2.2 (male) — 3 mm. (female), wing 2.3—2.4 mm.

T. aliterpicta (Beck.) seems to be an intermediate species between the *terricola*- and *connexa*-group. The long antennal arista, yellowish palpi, only one notopleural bristle as well as complicated genitalia in male show the affinity to the *terricola*-group and, on the other hand, wing pattern, very short proboscis and palpi and largely and densely dusted prothoracic episternum, show the relationship to the *connexa*-group. It may be distinguished from all other species by long and slender legs and also by the position of postvertical bristles which are inserted much lower on the occiput. *T. interrupta* (Loew) and *T. styriaca* (Str.), which also possess this character, cannot be confused with this species because they differ in all respects.

Distribution: South Europe, Near East.

Dates: April to July.

This species is known from Yugoslavia up to the present time only on the basis of two males taken in Dalmatia and described by Becker in 1889. Both specimens are deposited in Becker's Collection in Berlin, and I have labelled one male (Senj 24. V. 1889 No. 23944) as lectotype. Collin (1959) records this species from Palesitne from Bethakerem, Judaeon Highlands on the basis of 1 male and 4 females taken in May and July but he does not present the description of female sex. Finally I have found a single female from Sicily in the collection of the Museum in Vienna arranged among specimens of *T. connexa* Meig. The above description of female sex is presented here for the first time.

Material Examined: Dalmatien, Senj. 24. V. 1889 1 ♂ No. 23944, 10. V. 1889 1 ♂ No. 23945 (*T. aliterpicta* B., det. Becker) — coll. Becker. Sicily, Taormina 22.—30. IV. 1921 1 ♀ Wagner — coll. Wien.

11. *Tachydromia incompleta* (Becker, 1900) comb. nov.

Tachista incompleta Becker, 1900, Acta Soc. Sci. Fenn., 26 : 33 ♀

Male unknown.

Female. Shining black species with white pollinose patch between fore coxae and humeri. Head black, a narrow face and occiput dulled, frons shining. White palpi fine whitish hairy, without terminal bristle, slightly longer than short proboscis. Antennae yellow, 3rd segment somewhat brownish. Abdomen shining black, legs yellow with black pattern. Fore coxae yellow with whitish pollen on the frontal side. Fore femora relatively swollen, yellow, with narrow brown ring near apex and a brown stripe above. Fore tibiae with the exception of base blackish brown; fore tarsi yellow, last segments darker.

Middle legs with black coxae which are yellowish brown at apex only, femora yellow with brownish stripe above, tibiae blackish brown with yellow base; tarsi brown, first segment yellow. Wings with whitish glitter and with indistinctly delimited beginnings of two separate brown cross bands, the first runs from the frontal margin from ending of radial vein as far as to cubital vein; the second reaches from the frontal margin to apex of first basal cell and it disappears there; radial vein sharply upturned to costa. Cubital and discal veins very close and quite parallel. Length 2 mm. (Becker, 1900).

T. incompleta (Beck.) resembles the species of the *arrogans*-group but the pale palpi without terminal bristle distinguish it from all others. *T. parva* sp. n. has somewhat similar wing marking but it is smaller species with dark antennae and entirely black legs. *T. punctifera* (Beck.) differs also in black legs.

Distribution: Siberia.

Becker described this species on the basis of a single female taken in Siberia (island Nikander), the type being deposited in the Zoological Museum in Helsinki. I have not seen this species.

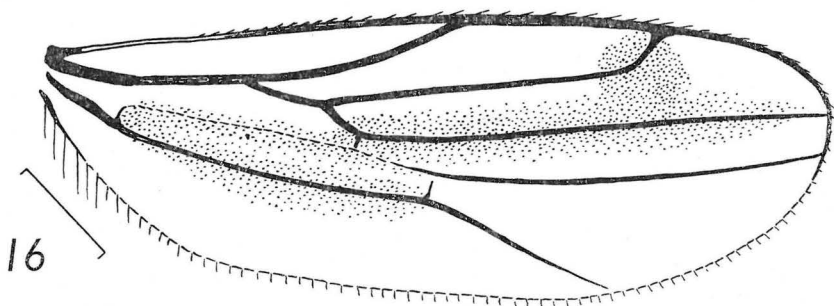
2. *Tachydromia ornatipes*-group

12. *Tachydromia punctifera* (Becker, 1900) comb. nov.

Tachista punctifera Becker, 1900, Acta Soc. Sci. Fenn., 26 : 32 ♀

Male unknown.

Female. Frons shining black, vertex and occiput covered with greyish dust, only the lower part of occiput above the mouth-opening shining. Two long pale ocellar bristles and about 6 pairs of the same bristles behind vertex on the upper part of occiput, postverticals not being distinguished. The lower part of occiput covered with fine pale hairs. Antennae blackish brown, 3rd segment nearly globular and with somewhat supraapical long black arista which is about two and a half times as long as antenna. Palpi yellowish, long and slender, slightly longer than proboscis, clothed with short silvery hairs, no terminal bristle.



Tachydromia punctifera (Beck.) ♀: Fig. 16. — Wing (Dudinka, Siberia).

Thorax shining black, prosternum and prothoracic episternum, as well as front of fore coxae, silvery dusted. Acrostichals and dorsocentrals absent, only several rather long posthumeral bristles, one notopleural and two pairs of fine scutellar bristles, all pale.

Legs unicolorous blackish brown, only knees somewhat brownish, long and slender, fore femora a little stouter. The whole legs microscopically whitish pubescent, anterior four femora short and densely whitish pubescent beneath and with two rows of whitish hairs becoming longer towards base. All tibiae only short haired and simple.

Wings (fig. 16) somewhat milk-white, veins distinctly dark brown. The brown pattern on wing consists of a distinct patch at the end of radial vein close to costal margin and of indistinct brownish clouds along basal veins and along the whole length of cubital vein. Radial vein straight, submarginal cell a little narrower than marginal. Halteres whitish yellow, stem brownish.

Abdomen shining black, fine and short pale pubescent, last two segments covered with greyish dust, as well as short but slender cerci.

Length: 2.4 mm. (according to Becker only 2 mm.).

This species most resembles *T. obsoleta* (Str.), having similar milk-white wings with dark veins, the same venation (with the exception of sharply up-curved radial vein) and blackish legs with distinct whitish pubescence. It differs, however, in yellowish palpi without terminal bristle, in shorter antennal arista and different wing pattern. *T. parva* sp. n. is much smaller species, *T. incompleta* (Beck.) has pale legs and different wing pattern.

Distribution: North Europe, Siberia (Map. 1).

Becker described this species on the basis of three females taken by J. Sahlberg at two localities (island Nikander and Dudinka) in North Siberia. Frey (1913) took another female in Finland at the river Muonio (Enontekis).

Dates: July.

Material Examined: Dudinka No. 42510 1 ♀ J. Sahlberg (*Tachista punctifera* Beck., det. Becker) — coll. Becker.

13. *Tachydromia ornatipes* (Becker, 1890) comb. nov.

Tachista ornatipes Becker, 1890, Wien. ent. Zeitg., 9 : 69 ♂

Tachysta styriaca var. *semifasciata* Strobl, 1893, Mitt. Nat. Ver. f. Steierm., 29 (1892) : 125 ♀ —

— syn. n.

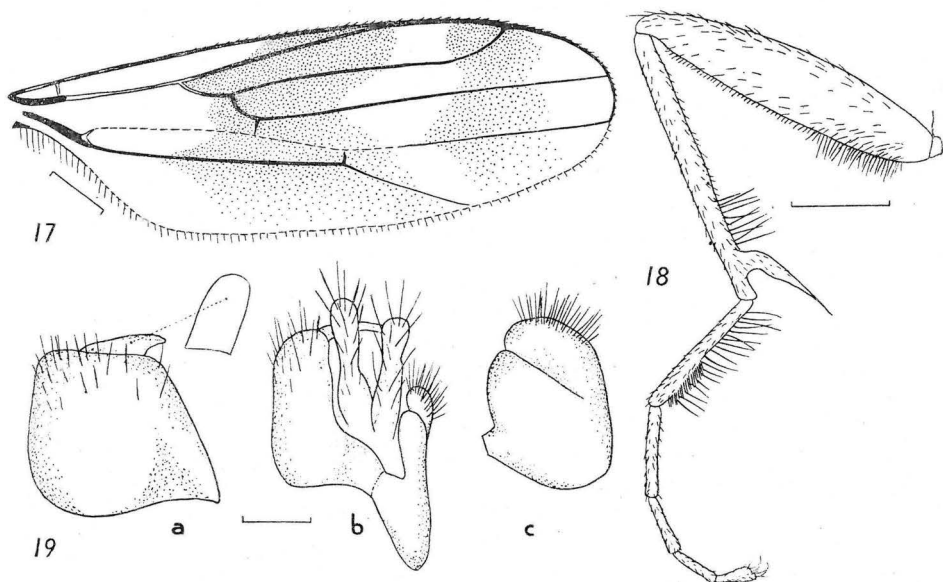
Tachista ornatipes Becker, Oldenberg, 1920, Zool. Jahrb. Abt. Syst., 43 : 229 ♀

Tachista aemula Loew apud Engel, 1938, in Lindner, Flieg. pal. Reg., IV : 22 ♀

Male. Frons shining black, nearly parallel-sided, vertex and occiput greyish dusted. Two short black ocellar bristles, two longer and close post-vertical, behind them 2 or 3 pairs of fine black hairs, the whole occiput densely whitish hairy. Antennae brownish, 3rd segment oval with very long dark supra-apical arista which is about 4 times as long as antenna. Palpi long and slender, yellow, with only scattered whitish hairs and fine black terminal bristle. Palpi a little shorter than proboscis.

Thorax shining black, prosternum, prothoracic episternum and metathorax above hind coxae, covered with silvery pollen. Dorsocentrals and acrostichals whitish and very minute, former uniserial, latter irregularly

uni- to biserial. One long black notopleural bristle, two pairs of scutellar bristles, the inner pair longer, sometimes a third pair of short and fine hairs at sides of scutellum.



Tachydromia ornatipes (Beck.): Fig. 17. — Wing of female. Fig. 18. — Middle leg of male. Fig. 19. — Male genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Tschamintal, Austria).

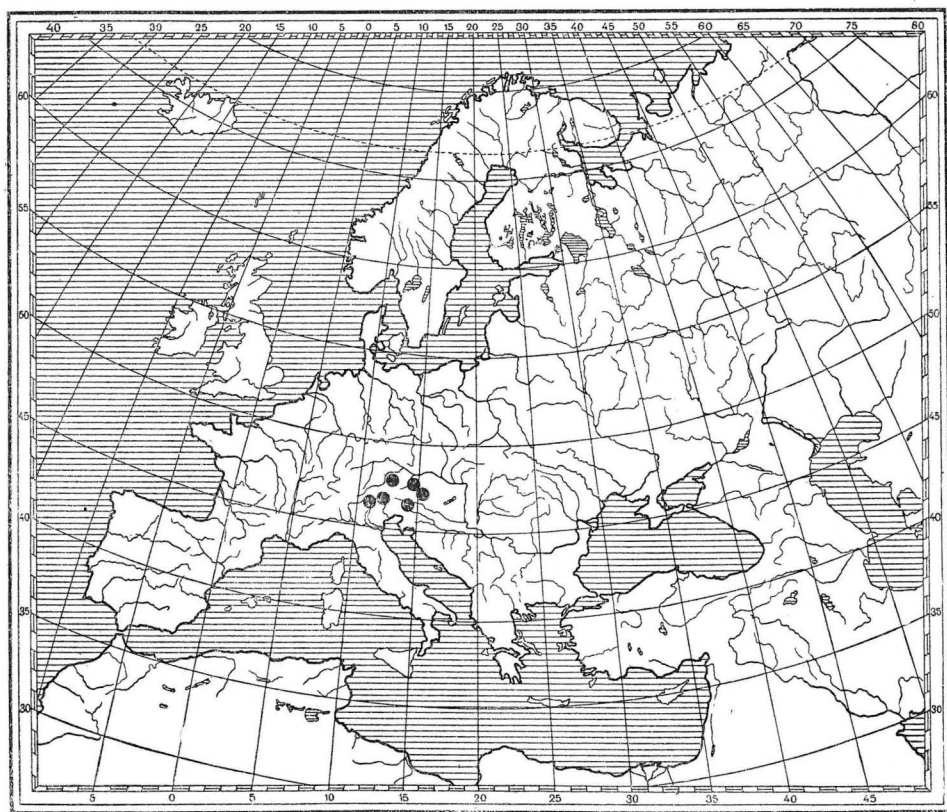
Legs blackish brown, fore coxae, all knees and first segment of anterior four tarsi, yellowish. Fore and part of middle femora yellowish but blackish brown above. Anterior four femora of about the same width, covered with microscopically whitish pubescence beneath, middle femora with double row of black bristly hairs near base beneath. Middle tibiae (fig. 18) with very long spur-like preapical projection beneath and with row of long black hairs on apical third before projection. Middle metatarsus long black hairy beneath, apical half with anteroventral row of short but dense whitish hairs. Hind legs long and slender, tibiae before tip beneath densely short whitish hairy.

Wings with only basal brownish cross-band, the outer third of wing is milk-white, twisted and not entirely developed, with weak and pale veins, only costa and postical vein being complete. Postical vein together with prolonged lower crossvein (m-cu) form the delimiting area of the outer third of wing. Halteres whitish yellow.

Abdomen shining blackish brown, sternites fine brownish hairy, hind margin of last sternite with long brown hairs. Genitalia (fig. 19) small and conical, cerci long and slender, long and fine pale hairy and overlapping both lamellae of epandrium. Right lamella wide, only sparsely pale hairy on the upper

part, dorsal process flat and bare. Left lamella smaller and very densely fine pale hairy at hind margin above. There is a similar pubescence anteriorly on hypandrium.

F e m a l e. Occiput not so densely whitish hairy as in male, femora of anterior two pairs darker, fore femora slightly stouter. Middle legs simple, no preapical spur to middle tibiae beneath, both femora and tibiae with metatarsi only short haired beneath. Wings (fig. 17) of usual shape, rather wide and somewhat blunt ended and with two brownish bands separated along the whole length. The bands are distinct only along costal margin, beyond cubital vein only faint, apical band narrower and forms, in fact, only a brownish patch at the end of radial vein. Cubital and discal veins parallel, radial vein nearly straight and rather sharply upturned to costa. Marginal and submarginal cells of about the same width at middle, the middle (r-m) and lower (m-cu) crossveins are distinctly wide apart. Abdomen pointed and nearly bare, cerci very narrow and fine dark pubescent.



Map 2. — Distribution of *Tachydromia ornatipes* (Beck.).

Length: 2.5—3 mm.

The male may be easily distinguished from all other species of this genus by very long and sharp spur to middle tibiae beneath, by long pubescence of middle legs and by undeveloped apical third of wing with changed venation. The female closely resembles *T. arrogans* (L.), but differs in very short and densely whitish pubescent fore femora beneath (the dark bristles are absent), in yellowish palpi, in wing pattern (the brownish bands are only very faint beyond cubital vein) and in conspicuously large separation of crossveins, the lower crossvein (m-cu) lies at about middle of wing. Some resemblance is also shown by female of Scandinavian *T. anderssoni* sp. n., but this has entirely shining black thorax without silvery patch between humeri and fore coxae, narrower wings and different shape of palpi.

Becker (1890) when describing this species on the basis of three males, obviously took all the specimens for just emerged and figured the wing normally plain with only one basal brownish band. Only Oldenberg (1920) found, when collecting a larger number of males and females, that undeveloped wing in male is of the usual appearance. He was right in saying that the male wing is modified not only in the shape but differs from female also in wing pattern and venation. I have not seen any male, inclusive of the Becker's type material, that would be an exception. Engel (1938 : 32) was wrong when he stated: „die Flügel des ♂ sind stets im Spitzendrittel verküppelt, aber von gleicher Zeichnung und gleichem Aderverlauf wie die des ♀“. The wing pattern and venation in female are original and show the relationship to *T. arrogans* (L.) and *T. lundstroemi* (Frey). The structure of male genitalia confirms this fact.

Distribution: Alps (Map 2).

T. ornatipes (Beck.) has been found up to the present time only in Austrian and Italian Alps, very probably an endemic species in Alps. Becker described this species on the basis of three males taken in South Tyrol (Landro), Strobl (1898) took two males in Styria (Scheiblstein), and Oldenberg (1920) described for the first time also the female; he took a large number of males and females in South Tyrol in Dolomites (Tschamintal). I have seen a type female of Strobl's *Tachysta styriaca* var. *semifasciata*, taken by Strobl in the Styrian Alps and it is without doubt also this species. As far as I know, there are no other records of this species.

I have found a further 5 females from Austria in the collection of the Museum in Vienna; four females were determined as „*aemula* Lw.“ and one female (Austria, Alte Sammlung) was arranged among specimens of *T. arrogans* (L.). Three females collected by Mik (Salzburg, Geisberg, and Styria, Hieflau) were taken by Engel (1938 : 22) for *T. aemula* (Lw.), and Engel erroneously elaborated description of *T. aemula* on the basis of this material.

I have selected one male (No. 2889) from the series of three syntypes (Landro 8. VII., coll. Becker) and have labelled it as lectotype.

Dates: June and July.

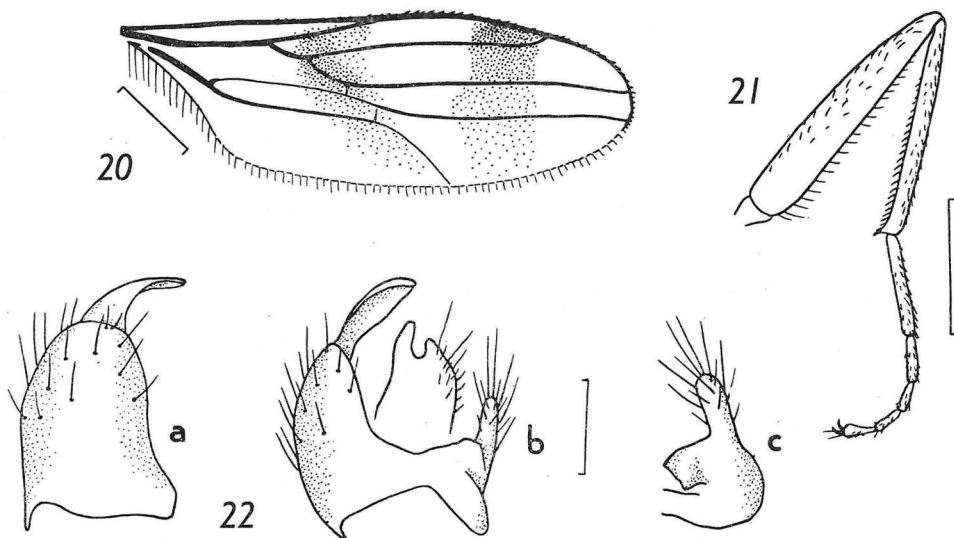
Rare Alpine species, Strobl has collected adults at an altitude of about 2000 m. on the limestone, Oldenberg (1920) on wooden railing and on boards along the road at an altitude of about 1200 m.

Material Examined: Landro 8. VII. 3 ♂♂ Typen (*Tach. ornatipes* Beck., det. Becker); Tschamintal 23. VI. 1914 2 ♂♂, 17. VI. 1914 2 ♂♂ 2 ♀♀

(*Tachista ornatipes* Beck., det. Oldenberg) — coll. Becker. The same data 20. VI. 1914 1 ♂, VI. 1914 1 ♂ 1 ♀ — coll. Duda, 12. VI. 1914 1 ♂ 1 ♀ and 23. VI. 1914 2 ♂♂ 2 ♀♀ — coll. DEI, 24. VI. 1914 1 ♂ 1 ♀ — coll. Stuttgart. Austria, Alte Sammlung 1 ♀ (*cimicoides* Fb., det. ?); Raibl VII. 1874 1 ♀ coll. Bgst.; Salzburg, Geisberg 17. VII. 1879 2 ♀♀ Mik; Styria, Hieflau 24. VII. 1893 1 ♀ Mik — coll. Wien. Scheiblstein 11. VII. 1895 2 ♂♂ (*Tachysta ornatipes* Beck., det. Strobl); Steir. Alpen 1 ♀ Strobl (*T. styr. v. semifasciata* m., det. Strobl) — coll. Strobl. Locality No. 10813 (?) 11. VI. 1867 1 ♀ (nov. sp., det. Loew) — coll. Loew.

14. *Tachydromia parva*, sp. n.

Very small (about 1.5 mm.) blackish species, prothorax with large and densely silvery dusted patch between humeri and fore coxae, legs entirely black, wings somewhat whitish with dark veins and with only very faintly brownish bands which are more distinct along costal margin only.



Tachydromia parva, sp. n. ♂: Fig. 20. — Wing. Fig. 21. — Middle leg. Fig. 22. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (paratype: Nová Sedlica, Czechoslovakia).

Male. Frons rather wide, shining black and nearly parallel, vertex shining but occiput densely covered with silvery grey dust, especially on the upper part above neck and at sides, leaving only a small part above mouth-opening shining. Two small black ocellar bristles, a pair of postvertical somewhat longer and wide apart, behind them at sides towards eye-margin other three black bristly hairs and some longer whitish hairs on the lower part above

mouth-opening. Antennae blackish brown, 3rd segment nearly globular with long, nearly apical, arista which is about three times as long as antenna. Palpi yellowish, very short but slender, clothed with long silvery hairs and with long black terminal bristle about as long as palpus.

Thorax shining black, prosternum, all prothoracic episternum between humeri and fore coxae, front of fore coxae and metathorax, densely silvery grey dusted, scutellum somewhat dulled with grey. No acrostichals, dorso-centrals uniserial, pale yellowish and very minute, only last pair in front of scutellum long and dark. One long black notopleural bristle, one postalar and two pairs of scutellar bristles, the inner pair longer and coarser.

Legs entirely black, only first segment of all tarsi somewhat brownish. Fore femora stout, about twice as stout as middle femora, with double row of longer pale hairs beneath, tibiae only short haired. Middle femora slender with some longer pale hairs at base and with row of longer dark hairs becoming shorter towards tip beneath. Middle tibiae with very short but stronger black hairs beneath and very short but sharp apical projection (fig. 21). Hind legs long and slender, hind femora with posteroventral row of long pale hairs on basal part. Tarsi slender and only short haired, distinctly longer than tibia, 2nd segment of middle tarsi of about half the length of middle metatarsus.

Wings (fig. 20) rather narrow, slightly pointed at tip, somewhat tinged with milk-white and with two very faint brownish bands which are more distinct at costal margin and very faint and somewhat greyish beyond cubital vein, often slightly connected along costa in marginal cell. Veins conspicuously dark brown, radial vein very slightly arched towards costa at middle, in some specimens nearly straight, marginal cell much narrower than submarginal. Hind wing-margin with longer whitish fringes. Halteres whitish yellow, stem brownish.

Abdomen shining black, covered with only scattered brownish hairs especially on last segments, last two segments dulled with greyish dust. Genitalia (fig. 22) small and somewhat conical with only some fine brownish hairs. Right lamella of epandrium with rather wide and long strip-like dorsal process; cerci small basally fused.

F e m a l e. Very closely resembling male but no apical projection to middle tibiae beneath. Abdomen shining black, last three segments distinctly covered with greyish dust, cerci dulled, very long and slender, with some fine blackish hairs.

L e n g t h: body 1.3—1.6 mm., wing 1.6—1.8 mm. (holotype 1.4 and 1.6 mm.).

Tachydromia parva sp. n. is well distinguished from all species of this genus by small size, black coloration and by somewhat whitish wings with distinct dark veins. *T. obsoleta* (Str.) is a larger species, more than 2 mm. in length, with brown palpi, biserial acrostichals, male middle tibiae without apical projection, larger and different male hypopygium and wings, even though similarly whitish with darkish veins, are shorter and more blunt ended and with different pattern. The Siberian *T. minima* (Beck.) is still smaller (1 mm.), with partly yellow legs and quite different wing pattern; *T. incompleta* (Beck.) is larger species, with extensively yellowish legs and palpus without terminal bristle.

Distribution: Central Europe.

I know this species only from 3 males and 7 females from Czechoslovakia, which I took on 9 and 10 June 1966 in Poloninské Karpaty Mts. at Nová Sedlica (East Slovakia). The adults were running about on stones in a mountain brook; they are very rapid, fly very often and quickly and for long distances.

Holotype ♂: Slovakia or., Poloniny, Nová Sedlica — Beskid 10. VI. 1966 leg. M. Chvála; in the National Museum, Praha.

Paratypes: The same locality, 9. VI. 1966 5 ♀♀, 10. VI. 1966 2 ♂♂ and 2 ♀♀; in the National Museum, Praha, in the Naturhistorisches Museum, Wien, and in author's collection.

15. *Tachydromia halidayi* (Collin, 1926) **comb. nov.**

Tachista halidayi Collin, 1926, Ent. mon. Mag., 62 : 150

Male. Frons and vertex shining black, occiput entirely covered with greyish pollen, only just above mouth-opening somewhat shining. Two very short and fine ocellar bristles, a pair of short black postvertical, behind them some fine dark hairs becoming paler on the lower part of occiput. Antennae brownish, 3rd segment oval with long dark arista. Palpi pale whitish yellow, quite as long as proboscis, silvery hairy and with black terminal bristle.

Thorax shining black, somewhat dusted brownish on postalar calli and scutellum, prosternum and prothoracic episternum dulled with silvery pollen. No acrostichals, dorsocentrals uniserial, pale and very minute. One short black notopleural bristle, one postalar and two pairs of scutellar bristles.

Legs brownish black to black, only knees and first segment of all tarsi yellowish. Fore femora stout, all femora with only very fine short hairs beneath, fore tibiae somewhat thickened and, as well as middle tibiae, with only fine hairs, the latter without projection at tip. Hind legs long and slender, without any bristles, tarsi long, longer than tibiae.

Wings with two narrowly separated faint brownish bands which are indistinctly connected along costal margin. Radial vein straight but marginal cell distinctly narrower than submarginal. Halteres yellowish, brownish at base.

Abdomen shining black with only sparse fine hairs, first tergite at sides and last two tergites somewhat dulled with brownish pollen. Genitalia small, right lamella of epandrium large, ending dorsally in blunt-ended and claw-like process, left lamella narrow with some brownish hairs at tip.

Female. Last three abdominal segments dulled with brownish dust, cerci slender. Otherwise as in the male.

Length: 1.3—1.75 mm.

Resembling *T. arrogans* (L.) but smaller, legs blackish, femora of anterior two pairs only short fine pubescent and apparently without any bristles, brown bands on wing only narrowly separated at middle and indistinctly connected along costa. *T. halidayi* also closely resembles *T. parva* sp. n., but the latter has very small palpi, last pair of dorsocentral in front of scutellum long and dark, wings somewhat milk-white coloured with distinct dark veins, anterior four femora with longer bristly hairs beneath and male with distinct small projection to middle tibiae beneath.

Distribution: England.

Very rare species, Collin (1961) refers to four specimens of this species deposited in the museums at Dublin and Cambridge and I have found another pair without locality label in the British Museum, London.

Dates: July.

Material Examined: sine loc. 1 ♂ 1 ♀ (*Tachista halidayi*, det. Collin), both specimens are gummed to the cardboard mount together with a male of *T. woodi* (Coll.) — coll. Brit. Mus.

3. *Tachydromia arrogans*-group

16. *Tachydromia productipes* (Strobl, 1910) status n.

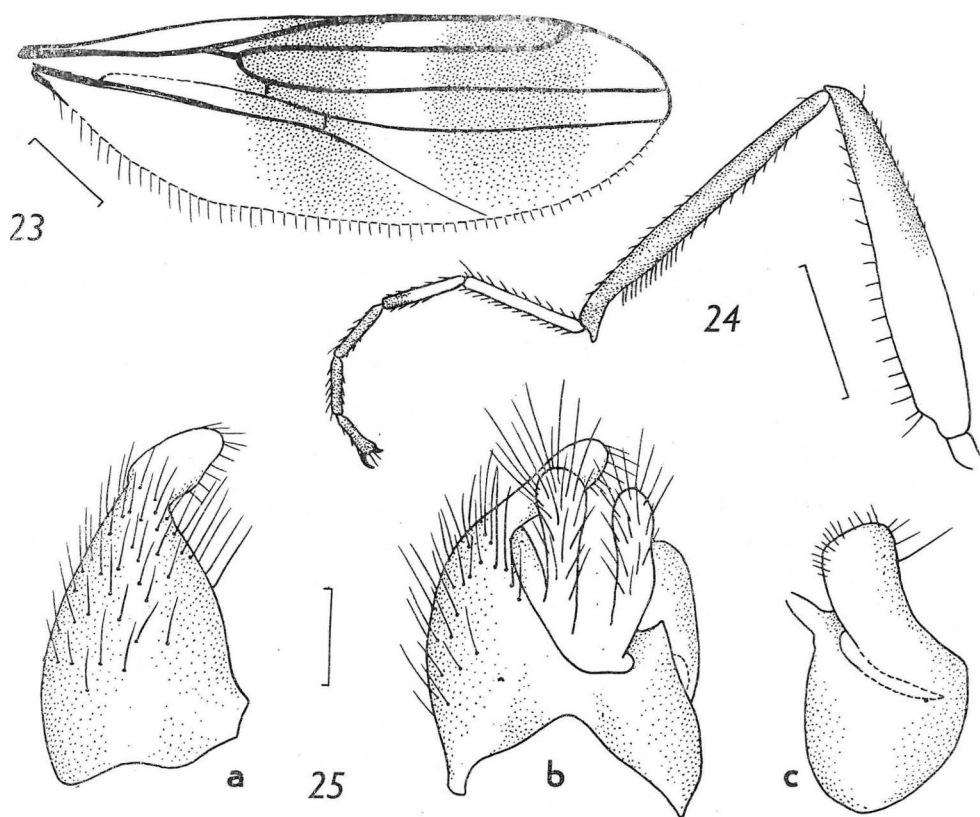
Tachysta arrogans var. *productipes* Strobl, 1910, Mitt. Nat. Ver. f. Steierm., 46(1909) : 85 ♂

Male. Frons and vertex shining black, occiput on the upper part above neck and at sides right to eye-margin densely covered with greyish dust, only lower part above mouth-opening shining. Two long dark ocellar bristles, two slightly longer and wide apart postvertical just on the line between shining vertex and dusted occiput and another pair of small dark hairs on each side of occiput. Basal antennal segments entirely yellow, 3rd segment dark brown with very long dark arista which is more than three times as long as rest of antenna. Palpi darkened, long and slender, clothed with long adpressed silvery hairs and with long black terminal bristle.

Thorax shining black, prosternum, episternum between humeri and fore coxae, hind part of hypopleura and pleura of metathorax, densely silvery dusted. Mesonotum on front half with very fine and short dark irregular acrostichals and with uniserial dorsocentrals along the whole length. One long dark notopleural bristle, one postalar and two pairs of scutellar bristles, the inner pair somewhat longer and coarser.

Legs predominantly yellow, anterior four tibiae brownish, hind femora with the exception of extreme base and all hind tibiae, dark brown, knees yellowish. Tarsi yellow, last two or three segments blackish. Fore femora slightly stout, ventrally with double row of pale hairs becoming more bristle-like and darker on apical third. Fore tibiae spindle-shaped dilated, covered with short dark hairs. Middle femora with double row of dark bristles beneath, posteroventral row somewhat paler and all bristles becoming weaker and paler towards base and with short dark bristle at tip above. Middle tibiae with row of black spine-like bristles beneath, apical fifth before projection entirely naked, apical projection distinctly pointed (fig. 24). First segment of middle tarsi densely clothed with yellow hairs beneath and about as long as half the length of middle tibia, middle tarsus a little longer than tibia. Hind legs long and slender, only short haired, femora with distinct posteroventral row of very long whitish hairs on basal half, the hairs being longer than femur is deep.

Wings (fig. 23) with two brownish bands which are, on the lower part beyond cubital vein, only faintly greyish. The shape of wing and venation as in *arrogans*. Halteres whitish, stem brownish.



Tachydromia productipes (Strobl) ♂: Fig. 23. — Wing. Fig. 24. — Middle leg. Fig. 25. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (holotype: Admont, Austria).

Abdomen shining dark brown, dorsally nearly bare, ventrally and at sides covered with long brown hairs, last sternite at hind margin with row of longer dark hairs. Genitalia (fig. 25) rather small, not so conical as in *arrogans*, more widened towards tip. Cerci with very long blackish hairs, right lamella of epandrium with egg-shaped dorsal process.

Female unknown.

Length: body 2 mm., wing 2.2 mm.

According to Strobl (1910) *T. productipes* is only a form of *T. arrogans*, the only one difference being a presence of large apical projection to middle tibiae beneath. I had the possibility to study the type specimen deposited in Strobl's Collection; it represents without any doubt a different species. *T. productipes* differs from *arrogans*, however, in many further characters: occiput is very densely grey dusted, especially on its upper half, hind femora are yellowish at base and armed with posteroventral row of very long whitish hairs on basal half, middle tibiae before apical projection beneath entirely naked and

with large pointed projection at tip, there are also some differences in genitalia. Venation and shape of wing resemble *T. arrogans* but the bands are only greyish and indistinct, distinctly brown along costal margin only (similar to *T. ornatipes*), basal band forms a brown patch in marginal cell, apical band is distinct only to cubital vein. *T. ornatipes* (Beck.) has pale palpi, extensively darkened legs and fore femora are covered with only microscopical whitish pubescence beneath, without any black bristles.

Distribution: Alps.

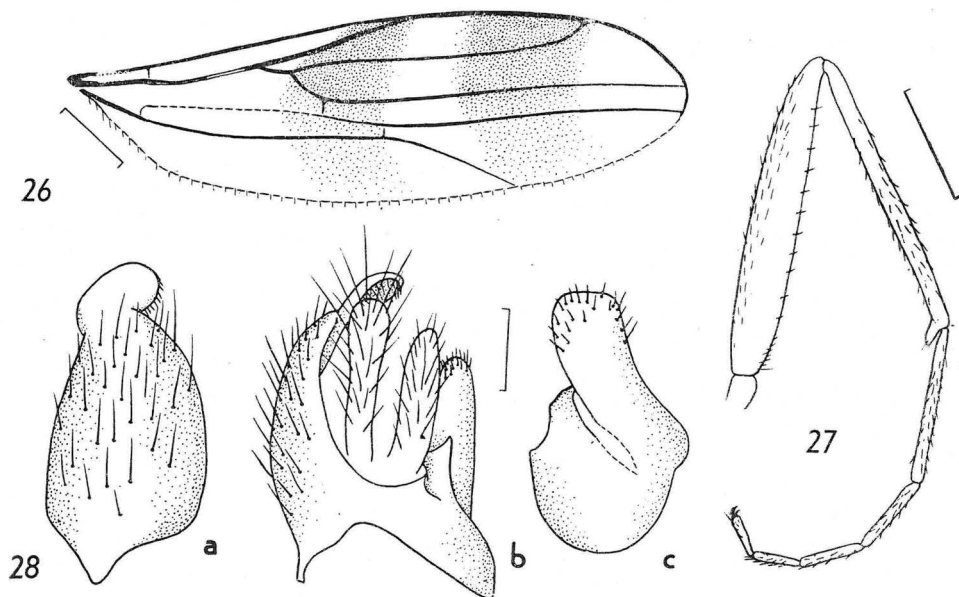
This species is known to me only from a single male collected and described by Strobl from the Austrian Alps.

Material Examined: Admont 1 ♂ (*Tach. productipes* m. i. l., det. Strobl) — coll. Strobl.

17. *Tachydromia monserratis* (Strobl, 1906) **comb. nov.**

Tachysta monserratis Strobl, 1906, Mem. R. Soc. esp. Hist. Nat., 3 (1905) : 318 ♂

Male. Frons and vertex shining black, occiput entirely dulled with greyish dust. Two black postvertical bristles are very short and close. Antennae dark brownish, dark terminal arista to 3rd segment short, about one and a half



Tachydromia monserratis (Strobl) ♂: Fig. 26. — Wing. Fig. 27. — Middle leg. Fig. 28. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (holotype: Monserrat, Spain).

times as long as antenna. Palpi brownish and long, about as long as proboscis, covered with only scattered short silvery hairs and without terminal bristle.

Thorax shining dark brown, prosternum, prothoracic episternum between humeri and fore coxae, metathoracic pleura and scutellum, dulled by greyish dust. Dorsocentrals irregularly uniserial, pale and minute, no acrostichals. One long black notopleural bristle, one shorter postalar and two pairs of scutellar bristles, the inner pair very long, much longer than scutellum is deep.

Legs yellowish, fore femora yellowish brown, all tibiae and last three tarsal segments brownish, hind femora along the whole length, inclusive of base, dark brown. Middle femora with pale brownish streak above. Fore femora only slightly stout, posteroventral row of longer pale hairs on basal third beneath, apical two-thirds with double row of short black bristly hairs beneath. Middle femora with double row of short black bristles on basal half beneath, middle tibiae with shovel-like pointed projection at tip beneath, before the projection a row of dense black hairs on apical third (fig. 27). Tarsi long, middle metatarsus distinctly longer than half the length of middle tibia. Hind legs long and slender, only short haired.

Wings (fig. 26) with two distinct brown bands separated along the whole length, radial vein straight, marginal and submarginal cells of about equal width. Wing pattern and venation as in *T. arrogans*. Halteres whitish with brownish base to stem.

Abdomen shining dark brown, sternites covered with fine brownish hairs, last sternite at hind margin with long brown hairs. Genitalia (fig. 28.) rather small, conical, cerci long with long dark hairs. Right lamella of epandrium larger than the left one and with round dorsal process.

F e m a l e unknown.

L e n g t h: body 2 mm., wing 2.2 mm.

The original description of this species given by Strobl (1906) is as follows: "Differt ab annulimana Meig. cellule marginali lata, femoribus anticis non annulatis." Strobl, and later also Engel (1938), erroneously compared this species with *T. annulimana* Meig., considering that there is no silvery patch on prothorax between coxae and humeri. I have had the possibility to study Strobl's type specimen and have found, that the silvery patch on prothorax is present although because of grease not very well visible. All the characters show that this species belongs to the *arrogans*-group, close to *T. arrogans* (L.) and especially to *T. productipes* (Str.). The large shovel-like projection to middle tibiae beneath distinguishes it at once from all species of the *arrogans*-group, with the exception of *T. productipes*, in which the apical projection is present as well. It differs from the latter in very close postvertical bristles, in short antennal arista, palpi without terminal bristle, hind femora without posteroventral row of long whitish hairs on basal half, brown bands on wing are well visible even beyond cubital vein and genitalia are different.

D i s t r i b u t i o n: Spain.

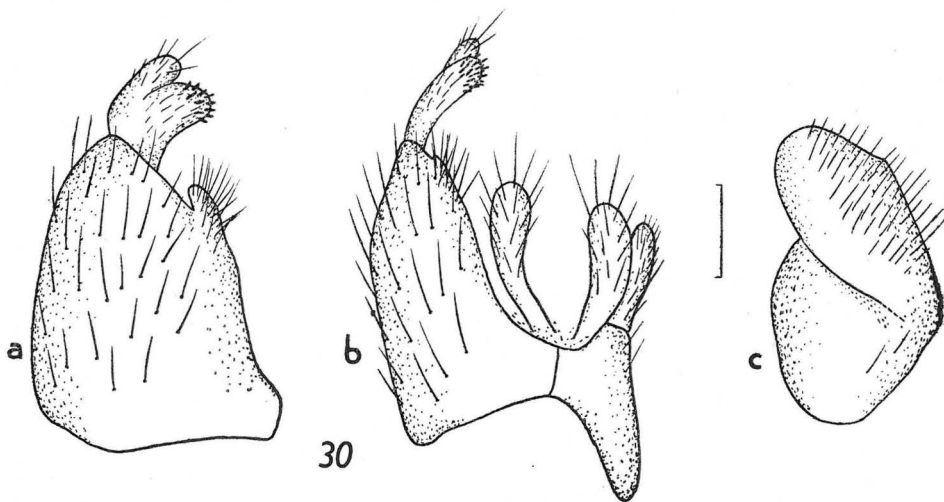
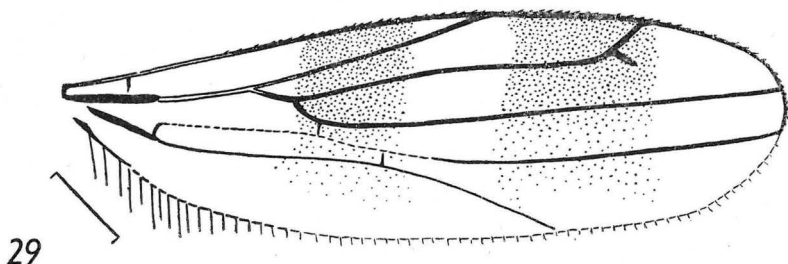
This species is known up to the present time only from the type male taken by Strobl in East Spain at Monserrat.

M a t e r i a l E x a m i n e d: Südsanien, Monserrat 1 ♂ Strobl (*T. monserratensis* m., det. Strobl) — coll. Strobl.

18. *Tachydromia lundstroemi* (Frey, 1913) **comb. nov.***Tachista Lundströmi* Frey, 1913, Acta Soc. pro F. et F. Fenn., 37 : 73

Male. Frons and vertex shining black, former rather wide and parallel-sided. Occiput on the upper part behind vertex greyish dusted, on the whole lower part and at sides right to eye-margin shining black. Two short black ocellar bristles and two somewhat longer and wide apart postvertical, upper greyish dusted part of occiput with several pairs of black hairs, lower part bare. Antennae blackish brown, 3rd segment nearly globular, with long dark apical arista which is about three times as long as antenna. Palpi dark brown, long and slender, short dark greyish hairy anteriorly and with short black terminal bristle.

Thorax shining black to brownish black, prosternum and prothoracic episternum between humeri and fore coxae densely dusted with silvery pollen. Mesonotum conspicuously bare, no acrostichals nad dorsocentrals, only one black notopleural and one postalar bristle, two pairs of scutellar bristles, the inner pair longer and coarser.



Tachydromia lundstroemi (Frey) ♂: Fig. 29. — Wing. Fig. 30. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Ural).

Legs long and slender, unicolorous blackish brown, only knees and all metatarsi somewhat yellowish. Fore femora slightly stout, conspicuously greyish dusted beneath and with double row of short but strong black bristles along the whole length beneath. Middle femora slender, not dusted beneath but also with double row of black spines becoming longer and coarser towards base. Anterior four tibiae slender and with row of short bristly hairs beneath, middle tibiae with only indicated sharp apical projection. Hind femora fine dark hairy beneath and with anteroventral row of short black spines. Tarsi long and slender, metatarsi short reddish to yellowish pubescent beneath, tarsi only slightly longer than tibia.

Wings (fig. 29) long with two separate brown bands which are distinct along costal margin to cubital vein and only very faint on lower half of wing. Radial vein straight, rather sharply upturned to costa, subapically with short appendix pointed downwards. Marginal and submarginal cells of about the same width, cubital and discal veins parallel. Halteres dirty yellow.

Abdomen shining blackish brown, tergites conspicuously bare, with only some short dark hairs at sides. Genitalia (fig. 30) small and narrow, cerci shorter than right lamella of epandrium and with only scattered long brownish hairs. Right lamella with bilobed dorsal process, left lamella smaller, on apical third with fine dark hairs.

Female unknown to me.

Length: 3 mm.

This species may be distinguished by its large size, predominantly dark coloration, dark brown palpi, entirely dark legs and by distinct black spine-like bristles on anterior four femora beneath. *T. arrogans* (L.), in addition to being smaller, has distinct brown bands on wing, paler anterior legs and small dark bristles only on apical half of fore femora beneath. This species is the only Palaearctic one known to me possessing a short appendix to radial vein, similar to the North American *Tachydromia enecator* Mel. The latter differs in black halteres and in wing pattern, the base of wing being entirely brown. The Alpine *T. ornatipes* (Beck.) differs in only microscopically whitish pubescent fore femora beneath, without any dark bristles.

Distribution: North Europe, Ural.

This species has been known up to the present time only from Finland and I have found now another male in Becker's Collection from Ural.

Dates: July

Frey (1913) collected adults in Finland on tree-trunks, they run about there together with *T. arrogans* and *T. umbrarum* (referred by mistake as *annulimana* Meig.), but rarely.

Material Examined: Ural VII. 1 ♂ No. 59071 (*Tachista* sp., det. Becker) — coll. Becker.

19. *Tachydromia arrogans* (Linnaeus, 1761)

Musca arrogans Linnaeus, 1761, Fauna Suecica, p. 457

Musca cimicoides Fabricius, 1781, Spec. Ins., 2 : 447

Empis bifasciata Olivier, 1791, Encycl. Meth., 6 : 390

Tachista Fabricii Loew, 1864, Zeitschr. f. Ent. Breslau, 14 (1860) : 22

Tachysta connexa var. c Strobl, 1893, Mitt. Nat. Ver. f. Steierm., 29 : 124 — syn. n.

Male. Frons and vertex shining black, former slightly widened above and somewhat greyish just above antennae. Occiput on the upper part above neck and at sides right to eye-margin silvery grey dusted; on the lower part at middle, above the mouth-opening, shining. Two short black ocellar bristles, two longer and wide apart postvertical, usually two pairs of shorter dark hairs at sides, behind them one to three pairs of another hairs in two rows. Antennae yellowish at base, 3rd segment dark with long dark and somewhat supraapical arista which is three times as long as antenna. Palpi dark, about as long as proboscis, clothed with short adpressed silvery hairs and with black terminal bristle.

Thorax shining black, prosternum, prothoracic episternum, and metathorax above hind coxae, distinctly silvery pollinose. Acrostichals and dorso-centrals yellowish and very minute, former irregularly biserial on front half of mesonotum, latter uniserial and more distinct on hind part of mesonotum. One long black fine notopleural bristle, one postalar, and two pairs of scutellar bristles, the inner pair longer and coarser.

Legs slender, all fore coxae, posterior coxae at apex, anterior four femora with the exception of dorsum and first two segments of all tarsi, yellowish to yellowish brown, otherwise legs blackish brown to black. Fore femora slightly stout, fine whitish pubescent beneath and with double row of short black bristly hairs at most on apical two-thirds beneath. Middle femora hardly thickened, with similar black bristles on the whole length beneath, hind femora only short haired. All tibiae armed with short black adpressed hairs beneath, fore tibiae somewhat stouter. A very short and hardly visible pointed apical projection to middle tibiae beneath. Tarsal segments only short haired, yellowish on two basal segments; all tarsi distinctly longer than tibia.

Wings (fig. 31) with two brown bands entirely separated along the whole length from costa to hind margin. Radial vein straight and sharply upturned to costa, marginal cell slightly narrower than submarginal. Halteres whitish yellow with brownish stem.

Abdomen shining black, only ventrally with some fine pale hairs, last segments with longer dark hairs at hind margin. Genitalia rather small and conical, cerci and right lamella of epandrium with long dark hairs. Cerci long and slender, right lamella larger than left one and with round dorsal process (see fig. 34).

Female. Closely resembling male but middle tibiae without even a small apical projection beneath, last two abdominal segments brownish dusted, cerci long and slender.

Length: 2—2.5 mm.

T. arrogans (L.) may be easily distinguished from all other species of the *arrogans*-group by the characters given in the Table. *T. ornatipes* (Beck.) has densely grey dusted and whitish hairy occiput, pale palpi, dark anterior legs, and anterior four femora are only microscopically whitish pubescent beneath, without any black bristles. The male differs in the shape of genitalia, and in structure of middle tibiae which are long haired, and bear a sharp spur before tip beneath. There are also some differences in wing pattern, the brown bands are in female of *ornatipes* distinct along costa only, subcosta ending beyond middle of wing, so that joined costal and subcostal cell is much longer

than in *arrogans* and both crossveins are wide apart, the lower crossvein being at middle of wing. *T. lundstroemi* (Frey) is a larger black species, anterior four femora with black bristles along the whole length beneath, the two brown bands on wing only very faint on lower half beyond cubital vein and radial vein with short appendix before end. *T. productipes* (Str.), described in 1910 as a form of *T. arrogans*, is a distinct species and may be distinguished in the male sex, inter alia, by yellowish anterior legs and by large apical projection to middle tibiae beneath. *T. arrogans* needs comparison with *T. aemula* (Loew), the detailed distinctive characters are given under the latter species.

Tachista fabricii, described by Loew in 1864 on the basis of a single male from Fabricius' Collection, and previously named by Meigen (1830:341) as *arrogans* L., is still an uncertain species. According to Lyneborg (in litt.) this specimen is missing in Fabricius' Collection in Copenhagen. Strobl's *Tachysta connexa* var. *c* is according to a single female labelled "var. *c*, Admont 10.8.", and deposited in Strobl's Collection at Admont, also *T. arrogans*.

D i s t r i b u t i o n: Europe, Near East.

Very common species known throughout Europe, Collin (1959) records it from Palestine (Bethakerem, Judaeen Highlands), and Engel (1938) also from North Africa (Tunis) on the basis of the material deposited in DEI, Eberswalde, but I did not find the documentary material in this collection. I have revised material from many European countries (England, Sweden, Denmark, Germany, Poland, Czechoslovakia, Austria, Hungary, Switzerland, Spain, Italy, Rumania and Bulgaria), eastward as far as Syria (Damascus).

D a t e s: From March to October. I have seen the documentary material taken from the end of March (Stettin 29. III. 1914) to the first half of October (Ungarn, Weiden 12. X. 1913). Collin (1961) gives in England dates ranging from 19 March to 21 October.

The adults are to be found very often running about on logs, stumps, stones, or tree-trunks, and only seldom on vegetation, predominantly in shady places in woodland, and contrary to the closely allied *T. aemula* (Loew), more frequently in submontane and montane regions. According to Strobl (1898) this species was uncommon in the Styrian Alps at an altitude of 1400 m. The adults fly quite well when disturbed, even for long distances.

I collected this species several times, especially on logs, stones, or cubic metres of logs, and only very rarely on adjacent vegetation; in Krkonoše Mts. (Bohemia) at an altitude of about 1000 m. on 20 August 1965, at Lednice (Moravia) on 5 June 1967, at Nová Sedlica in Poloninské Karpaty Mts. (East Slovakia) on 16 July 1963 and 10 June 1966, at Remetské Hámre in Vihorlat Mts. (East Slovakia) on 7 June 1966, and near Korytnica in Nízke Tatry Mts. (Central Slovakia) on 12 June 1966. In Mecsek Mts., Misina (Hungary) this species was common on 26 May 1964 on beech-trunks.

M a t e r i a l E x a m i n e d: Austria sup., Gallneukirch 23. VI. 1867 1 ♂, 15. V. 1867 1 ♂ Mik, Freistadt 10. VI. 1882 1 ♂ 1 ♀ Handlirsch, Hammern 3. IX. 1879 1 ♀, 5. IX. 1873 1 ♀, 10. IX. 1873 1 ♂ Mik; Austria inf., Kahlenberg 31. V. 1885 1 ♂, 27. VII. 1880 1 ♀ Handlirsch, Marchauen 25. V. 1884 1 ♀, Oberweiden 27. V. 1885 1 ♀, Bisamberg 3. VI. 1884 4 ♀♀ Handlirsch, Wien

1. V. 1886 1 ♂, 15. V. 1879 1 ♀, 15. IX. 1863 1 ♀ Mik, Heinfeld 13. VII. 1893 1 ♂, 13. VIII. 1898 1 ♂, 24. VIII. 1892 3 ♀♀, Schönbrunn 21. VI. 1878 1 ♀ Mik, Straning 13. VIII. 1916 6 ♀♀, Sigmundsherb 13. V. 1915 1 ♀, Schwarza a St. 28. VII. 1923 1 ♀ Zerny; Tirolis, Obladis 10. VII. 1891 1 ♂, 19. VII. 1888 1 ♂, 1. VIII. 1890 1 ♂ 1 ♀ Mik, Stamser Alm 10. VIII. 1928 1 ♂, Kütthai 15. VIII. 1928 1 ♀ Zerny; Ramsau 7. VI. 1866 1 ♂ coll. Bgst. (*connexa*, det. Bergenst.); Gn.unden 1 ♀ (*arrogans*, det. Schiner); Dornbach 1 ♀ (*cimicoides*, det. Schiner); Illyria, Görz 14. VI. 1865 1 ♂ Mik; Frankenfels V. 1878 1 ♂ 9 ♀♀, VI. 1878 1 ♀ coll. Bergenst.; Steiermark, Sainbach 11. VIII. 1911 1 ♀ Zerny; Carinthia, Mauthen 15. VII. 1920 2 ♀♀ Zerny; Austria, Alte Sammlung 1 ♂ 6 ♀♀ (*cimicoides*, det. Schiner), 4 ♀♀ (*arrogans*, det. Schiner); sine loc. coll. Winthem 2 ♂♂ 1 ♀ (*arrogans*, det. ?), coll. Bgst. 1 ♂ 3 ♀♀ (*connexa*, det. Bergenst.), 2 ♀♀ (*arrogans*, det. Bergenst.); Kiel 2 ♀♀ coll. Wiedem.; Ins. Usedom, Ahlbeck 14.—22. VIII. 1923 1 ♂ 1 ♀ Zerny; Bohemia, Prachatitz (Prachatic) 27. VII. 1881 4 ♂♂, 28. VII. 1884 1 ♂, Frauenberg (Hluboká) 27. V. 1881 4 ♀♀ Handlirsch; Moravia, Frain (Vranov n. Dyjí) 10. IX. 1883 1 ♀ Handlirsch; Hungaria, Jakobsdorf 3. VI. 1915 1 ♀, Weiden 12. X. 1913 1 ♀ Zerny; Trafoi 1. VIII. 1888 1 ♂ 1 ♀ Handlirsch; Triest 20. V. 1876 1 ♂ coll. Bergenst. (*cahana*, det. Bergenst.); Sicilia, Monreale 14.—23. V. 1921 2 ♂♂ 1 ♀ Zerny; Madrid 1 ♂ coll. Winthem; Andalusia, Algeciras 22.—27. V. 1925 1 ♂ Zerny — coll. Wien. Funen, Brenderup VIII. 1880 1 ♂ H. J. Hansen; Zealand, Kobenhavn 1. X. 1940 1 ♀ H. Anthon, Rodovre 26. V. 1953 1 ♀ W. Buch; Spain, Granada: Rio Lanjaron 9 km NW Orgiva 1600 m. 22. IV. 1966 1 ♀ Lyneborg-Martin-Langem. — coll. K o b e n h a v n. Langeland, Ichals 1.—5. VII. 1909 3 ♂♂, 1 ♀ Lundbeck; Jutland, Hald 27. VI. 1910 1 ♂ Lundbeck, Brangsbo 18. VI. 1905 1 ♀ Lundbeck; Zealand, Suserup 10. VI. 1917 1 ♂ Lundbeck, Skelskor 1 ♂ H. J. Hansen, Noroskov Jaegerspris 21. VI. 1908 1 ♀ Lundbeck, Egabaeksvang 9. VII. 1915 1 ♀ Lundbeck; sine loc., coll. Staeger 1 ♂ 4 ♀♀ — coll. L u n d b e c k. Stettin, Lindenhof 7. VI. 1918 1 ♀ E. Schmidt, Stettin, Westand 20. VI. 1916 1 ♀ E. Hanau (both *Tachista cimicoides* F., det. G. Schroeder), Stettin 29. III. 1914 1 ♀ E. Hanau — coll. W a r s z a w a. Schles., Nimptsch 27. V. 1910 1 ♂, 1. VI. 1908 10 ♂♂, 4. IX. 1915 4 ♂♂ Duda; S.-Harz, Ilfeld 21. V. 1915 1 ♀, 8. IX. 1914 1 ♂, 16. IX. 1915 1 ♀ Duda; Rheinl., St. Wendel 2. V. 1920 1 ♀ 7. VII. 1914 1 ♂, 17. VIII. 1919 1 ♂, 18. IX. 1920 2 ♂♂, 6. X. 1920 2 ♂♂ Duda; Wölfelsgrund 21. V. 1912 2 ♀♀, 5. VI. 1912 2 ♀♀ Duda; Wustung b. Habelschwerdt 24. IV. 1921 4 ♀♀, 26. V. 1914 1 ♀, 15.—31. VII. 1921 8 ♂♂ 8 ♀♀, 12. VIII. 1921 3 ♂♂, 12. IX. 1921 3 ♀♀, 21.—24. IX. 1921 25 ♂♂ 3 ♀♀, 2. X. 1921 3 ♀♀ Duda — coll. D u d a. Berolina 1 ♂ coll. Erichson; Sanalp. 6 ♂♂ 9 ♀♀ Loew, 4 ♀♀ Zeller; Bartenk. VIII. 1867 1 ♀ (all *Tachista arrogans* L., det. Loew); sine loc. 1 ♂ (*Tachista aemula* m., det. Loew) — coll. L o e w. Oderwald 1. VI. 2 ♂♂ 1 ♀; Brechelshof 27. VI. 2 ♂♂ 1 ♀; Wölfesfall 19. VI. 4 ♂♂ 2 ♀♀, 1. VII. 2 ♀♀; Reinerz 2. VI. 3 ♂♂; Moisdorf 13.—26. VII. 1 ♂ 2 ♀♀; Ziegenhals 3. VI. 2 ♀♀; Guttenstein 1. VI. 2 ♀♀; Sedrun 12. VIII. 1 ♂; Sinaja 3. VII. 2 ♀♀; Rapallo 20. IV. 2 ♀♀; Damaskus IV. 1 ♀ (all *Tachista arrogans* L., det. Becker); Moisdorf VI. 1 ♀, 20. VIII. 1 ♀; Spanien No. 54621 1 ♀ (*Tachista aemula* Lw., det. Becker); Kohlfurt 14. VI. 1 ♂ 1 ♀ (*Tachista* sp., det. Becker) — coll. Becker. Monachium 1 ♂ 1 ♀ Hiendlmayr; Triest VI. 1901 1 ♀; Zschachwitz V. 1889 2 ♀♀; Starnberger Seegebiet, Maisinger-See 6. X.

1941 1 ♀ Stöcklein; sine loc. 3 ♀♀ Hiendlmayr (*arrogans* L., det.?), 1 ♂ 1 ♀ (*Tachista arrogans* L., det. Engel), 1 ♀ (*cimicoides* F., det.?). *Tachista interrupta* Loew, det. Engel) — coll. München. Silesia No. 1285 1 ♂ Strobl; Süd-Steiermark 2 ♀♀ Strobl — coll. Dresden. Allgau, Wengen b. Hinterstein 11. VIII. 1923 2 ♂♂ 6 ♀♀ Engel, Osterachthal 1050 m. 30. VI. 1924 1 ♀; Stuttgart 25. V. 1936 1 ♀ Lindner; Württemberg 1872—76 2 ♀♀ V. Roser (*cimicoides*, *arrogans*, det. V. Roser); Gurgl Ötztal 19. VII. 1931 1 ♀ Lindner — coll. Stuttgart. Amstetten 1 ♀ (*Tachydromia connexa* Mg., det. Strobl); Admont 10. VIII. 1 ♀ (*Tachydromia connexa* var. *c*, det. Strobl); Seitenstetten 6 ♂♂ 11 ♀♀; Amstetten 1 ♀; Melk 9. V. 1 ♀, 19. V. 1886 1 ♀, 24. V. 1886 1 ♂ (all *Tachydromia cimicoides* Fbr., det. Strobl) — coll. Strobl. Mehádia 1 ♂ Kertész; Brassó 1 ♀ Kertész — coll. DEI. Ochoz u Brna 21. VI. 1 ♂ Czižek; Losiny 25. VIII. 1907 1 ♂ 3 ♀♀ Czižek; Bílovice 23. V. 1903 1 ♀ Czižek — coll. Brno. Františkovy Lázně IX. 1 ♀ Kowarz — coll. Praha.

20. *Tachydromia aemula* (Loew, 1864) comb. nov.

Tachista aemula Loew, 1864, Zeitschr. f. Ent. Breslau, 14 (1860) : 22

Male. Frons shining black, slightly widened towards vertex, just above antennae with small greyish spot. Vertex shining, occiput on the upper half at middle only faintly grey dusted, otherwise shining black, at sides right to eye-margin always shining. Two fine black ocellar bristles, one pair of long and widely separated postvertical, behind them 4 to 5 pairs of long black hairs in two rows. Antennae yellowish, 3rd segment dark, with long slightly supraapical dark arista which is more than three times as long as antenna. Palpi slender, about as long as proboscis, brownish, clothed with adpressed silvery hairs and with black terminal bristle.

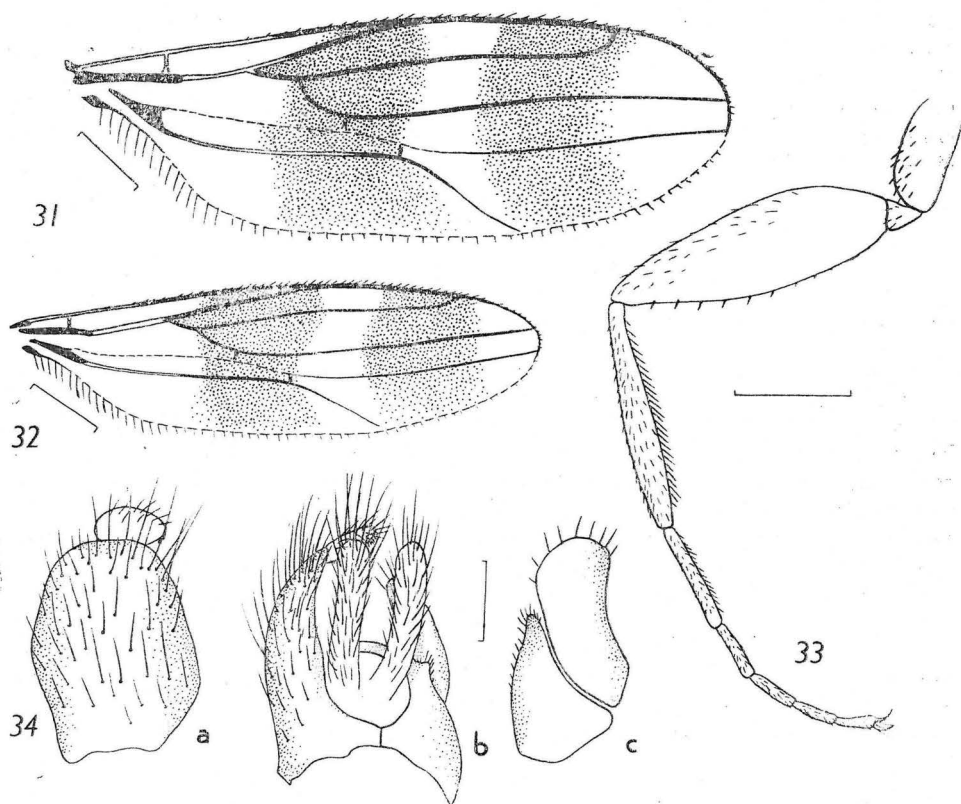
Thorax shining black, prosternum, prothoracic episternum and metathorax above hind coxae, densely silvery pollinose. Acrostichals and dorso-centrals yellowish and very minute, former sparsely and irregularly biserial, latter uniserial. One black notopleural bristle, one postalar and two pairs of scutellar bristles, the inner pair long and coarser, the outer pair only fine, about half of the length of the former.

Legs predominantly yellow, posterior four coxae at base, hind femora on apical two-thirds and last two or three segments of all tarsi brown, all tibiae somewhat brownish, darker at middle, anterior four femora sometimes slightly brownish at apex above. Fore femora stout, with double row of short black bristle-like spines on apical two-thirds beneath, anteroventral row usually only on apical half, the bristles being shorter there. Middle femora only slightly stouter, with row of longer but fine black bristles on the whole length beneath, hind femora only short haired. Tibiae and tarsi as in *arrogans* (fig. 33). Hind femora on basal half yellow, in darker specimens at least basal fourth of hind femora distinctly yellow.

Wings (fig. 32) small and narrow, apparently pointed at apex and with two brown bands, as in *arrogans*. Radial vein nearly straight, only very slightly arched at middle but closer to costal margin and not so sharply

upturned to costa, ending only gradually. Marginal cell distinctly narrower than submarginal. Halteres whitish with brownish base to stem.

Abdomen shining black, tergites at sides, and all sternites, fine pale pubescent, last segments at sides with long dark hairs. Genitalia (fig. 34) small and conical, resembling quite closely that of *arrogans*.



Tachydromia arrogans (L.) ♂: Fig. 31. — Wing (Misina, Hungary). *Tachydromia aemula* (Loew) ♂: Fig. 32. — Wing. Fig. 33. — Fore leg. Fig. 34. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Brezno, Czechoslovakia).

F e m a l e. Closely resembling male but no projection to middle tibiae beneath. Last three abdominal segments dark grey pollinose, cerci long and slender, greyish dusted.

L e n g t h: 1.6—2.5 mm.

T. aemula (Loew) is very closely allied to *T. arrogans* (L.) but is smaller on average, wings are apparently shorter and narrower, radial vein closer to and not so upturned to costa, ending only gradually. I have seen a female

in the collection of the Museum in Vienna (Tanichschachturm 28. VIII.), with very short and narrowly pointed wings about as long as abdomen, resembling brachypterous *T. brevipennis* (v. Ros.). Occiput is in *aemula* predominantly shining black, only a small part just behind vertex being greyish dusted. Legs are more yellowish than in *arrogans*, fore femora stouter, with some more distinct black bristles beneath, posterior four coxae predominantly yellow and basal half to fourth (in darker specimens) of hind femora always yellowish. There seem to be no differences on hypopygium in these two species.

By the courtesy of Dr. A. Kaltenbach, Wien, I have had the opportunity to revise the specimens which Engel (1938 : 22) had when describing this species in Lindner, „Die Fliegen der palaearktischen Region“; Engel stated: „An allen mir zu Gebote stehenden Stücken habe ich nur feststellen können, dass die f_1 ventral sehr kurz und dicht behaart sind und nicht die bei *arrogans* stets vorhandenen weitläufigen Reihen von Dörnchen besitzen“. This statement was at variance with Strobl's description, and Collin (1961 : 85) also pointed out this fact. Nevertheless, Engel says: „Trotz alledem bleibt die Art (= *aemula*) zweifelhaft“. All three females that Engel supposed to be *T. aemula* (Salzburg, Geisberg 17. VII. 1879 2 ♀♀; Styria, Hieflau 24. VII. 1893 1 ♀ leg. Mik) are in fact females of *T. ornatipes* (Beck.).

Collin (1961) takes this species only for a form of *T. arrogans*, considering that the genitalia in the male are not differentiated. It seems to me, however, with respect to a number of constant characters, that two different species are involved. *T. aemula* differs from *arrogans* also from the ecological point of view. Contrary to *arrogans*, the adults of *aemula* are to be found in warm and sunny localities in lowland on vegetation, especially on the leaves of *Petasites* and *Arctium*. The pale coloration and short wings seem to be an adaptation for such a life (the most extreme adaption is in *T. brevipennis*). Species occurring in shady localities in higher or mountain regions, on logs, tree-trunks etc., are usually dark coloured species and they fly very well.

According to Collin (1961) *aemula* is much commoner in England than *arrogans*, and I have found this to be true in Czechoslovakia. *T. aemula* is very common in the lowlands but rare in mountains. During the last four years I took 175 specimens of *aemula* in Czechoslovakia but only 38 specimens of *arrogans*. On the contrary I have examined altogether 111 specimens of *arrogans* from Austria in the collection of the Museum in Vienna, but only 14 specimens of *aemula*. The prevalence of *arrogans* is due very probably to the woody and mountainous character of Austria. The method of collecting is also important.

Distribution: Europe.

I have seen the documentary material from England, Sweden, Norway, Denmark, from the whole Central Europe (Germany, Poland, Czechoslovakia, Austria, Hungary and Switzerland), from France and Yugoslavia.

Loew (1864) described this species on the basis of a single female taken at Karlsbrunn (Karlova Studánka) in Jseeníky Mts. in Moravia. The type female is well preserved and deposited in Loew's Collection in Berlin.

D a t e s: June to October.

In Czechoslovakia a very common species, I have collected it in many localities over the whole territory on dates ranging from 12 June to 14 September. The adults run about on vegetation, very often on large leaves of *Petasites* and fly very rarely, only for a short distance when disturbed. I took this species only very rarely on stones or logs. On 21 August 1963 I took a female at Švermovo (Slovakia) with a small Chironomid as prey, and on 28 June 1967 another female at Veselí n. Lužnicí (South Bohemia) with a small Cecidomyid as prey. In Bavaria at Garmisch-Partenkirchen (Partnachklamm) I took a single male on a stump as late as 24 September 1966, and at Wahlberg, at an altitude of about 1500 m., a single female on a leaf of *Petasites* on 2 October 1966.

Material Examined: Austria sup., Hammern 28. VII. 1884 1 ♂ Mik, Freistadt 14. VI. 1883 1 ♀ Handlirsch; Austria inf., Marnauwierre VII. 1883 1 ♀ Mik; Salzburg, Gastein 30. VII. 1867 2 ♀♀, 18. VIII. 1887 1 ♀, Böckstein 31. VII. 1867 1 ♀ Mik; Tirolis, Obladis 21.—28. VII. 1888 2 ♀♀, Achensthal 24. VII. 1886 2 ♀♀ Mik; Karawanken, Loibl 670—1370 m. 5.—13. VII. 1934 1 ♂ Zerny; Austria 1 ♀ Egger (*arrogans*, det. Schiner); sine loc. 1 ♂ coll. Winthem (*arrogans*?, det. prope Meigen); Insel Usedom, Ahlbeck 14.—22. VIII. 1928 1 ♀ Zerny; Bohemia, Buchers (Puchov near Kaplice) 25. VIII. 1883 1 ♂, Zettwing (Cetvina near Kaplice) 1. VIII. 1873 1 ♀ Mik — coll. Wien. Carlsb. (Karlova Studánka) 18. VII. 1858 1 ♀ (*Tachista aemula* m., det. Loew); Kreuth VIII. 1867 1 ♂ 1 ♀; Bartenk. VIII. 1867 1 ♀; sine loc. 1 ♀ (all *Tachista aemula* m., det. Loew); Berolina 1 ♂ Erichson (*Musca arrogans* L., det. Loew); Waisniz VII. 1855 1 ♀ (*arrogans* L., var. *praec. pallida*?, det. Loew) — coll. Loew. Sk. Lomma 22. VII. 1959 1 ♂ 5 ♀♀ H. Andersson; Sk. Ilstorp 10. VII. 1 ♂ 1 ♀ C. D. E. Roth; Sk. Ystad. 15. VI. 1911 1 ♀ Ammitzböll; N Karleby No. 2069 1 ♀ R. Frey; Norge, Jaeren, Orre 11. VII. 1953 dynhed 1 ♀ Ardö — coll. Lund. Stettin, Hökendorf 1. VI. 1880 1 ♂ E. Schmidt (*T. arrogans* L., det. Enderlein) — coll. Warszawa. Langeland, Snagsskov 23. VII. 1930 1 ♂ Sv. G. Larsson; Jutland, Vorso 1 ♂ 1 ♀ S. L. Tuxen; Lolland, Sollested 29. VI. 1964 1 ♀ P. Jenssen; Funen, Gerup Skov 25. VIII. 1964 1 ♀, Vissenbjerg 25. VIII. 1964 1 ♀ N. P. Kristensen; sine loc. 2 ♂♂ 2 ♀♀ N. P. Jorgensen — coll. København. Langeland, Lohals 21. VII. 1913 1 ♀ Lundbeck; Zealand, Ordrup Mose 15. VII. 1911 1 ♂, Rorvig 21.—28. VII. 1908 7 ♀♀ Lundbeck; Jutland, Hejls 8. VII. 1919 1 ♂, Bangsbo 18. VI. 1905 1 ♀ Lundbeck; sine loc. 4 ♂♂ 5 ♀♀ Staeger — coll. Lundbeck. Dachau 10. VII. 1912 2 ♀♀, Dachau Kultur. 8. IX. 1914 1 ♂, 10. IX. 1918 4 ♀♀, Karsfeld 15. VIII. 1915 3 ♂♂ leg.?, Lunz, Nd.-Donau 21. VII. 1940 1 ♀ Lindner — coll. Stuttgart. Monachium 2 ♀♀ Hiendlmayr — coll. München. Süd-Steiermark 1 ♀ Strobl — coll. Dresden. Hohentauren 1 ♀ Strobl (*Tachydromia cimicoides* Fbr., det. Strobl) — coll. Strobl. Reinerz (Duszniki-Zdroj, Poland) 2. VI. 1 ♂; Sedrun 12. VIII. 1 ♀ (both *Tachista arrogans* L., det. Becker); Admont 25. VI. 1890 1 ♂ 1 ♀ (*Tachista aemula* Lw., det. Becker); La Grave No. 56584 3 ♀♀; Gavarnie VII. No. 61185 1 ♀ (both *Tachista* sp., det. Becker) — coll. Becker. Františkovy Lázně 1 ♀ Kowarz — coll. Praha. Tóváros 1 ♀ Kertész; Gyón 1 ♀ Kertész (*Tachista arrogans* L., det. Oldenberg, mutanasslich *T. arrogans* L., wenn nicht etwa noch mehr Arten darin enthalten sind. Oldenberg) — coll. DE I.

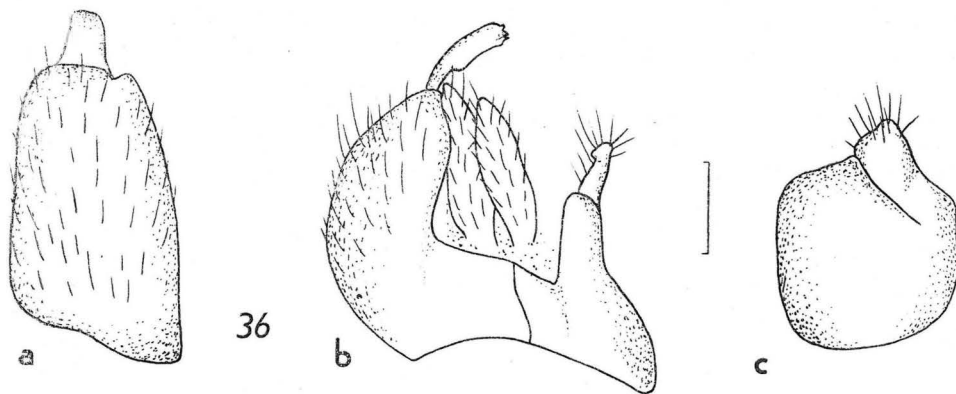
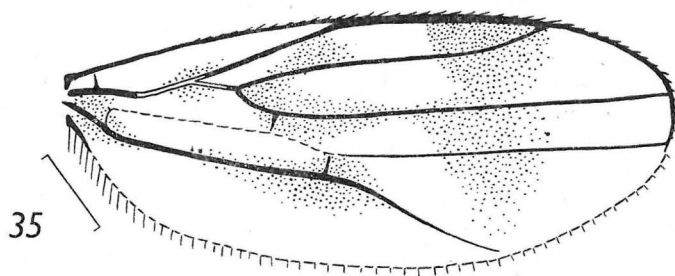
4. *Tachydromia interrupta*-group21. *Tachydromia obsoleta* (Strobl, 1910) status n.

Tachysta styriaca var. *d.* Strobl, 1893, Mitt. Nat. Ver. f. Steierr., 29 (1892) : 125

Tachysta interrupta var. *obsoleta* Strobl, 1910, Mitt. Nat. Ver. f. Steierr., 46 (1909) : 85

Male. Frons shining black, slightly widened above, vertex somewhat shining, occiput densely greyish dusted. Two long black ocellar bristles, as long as a pair of postvertical which are inserted at hind margin of vertex. Upper part of occiput above neck with 2 or 3 pairs of shorter black hairs, lower part with fine greyish hairs. Antennae dark brown, 2nd segment large and very short, 3rd segment oval with slightly supraapical dark arista which is nearly three and a half times as long as antenna. Palpi dark brown, conspicuously long and slender, slightly longer than proboscis, clothed with silvery hairs and with dark terminal bristle.

Thorax shining black, prosternum, prothoracic episternum, and metathorax above hind coxae, silvery pollinose. Dorsocentrals and acrostichals whitish and very minute, scarcely visible, former uniserial, latter irregularly biserial. One long black notopleural bristle, two pairs of scutellar, the outer pair only short and fine.



Tachydromia obsoleta (Strobl) ♂: Fig. 35. — Wing. Fig. 36. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Styriae Alpes, leg. Strobl).

Legs shining blackish, whitish pubescent, fore coxae at front and posterior coxae at sides, conspicuously silvery dusted. Fore femora stout, at least twice as stout as middle femora, very densely and short whitish pubescent beneath and with anteroventral row of longer white hairs along the whole length. Fore tibiae somewhat thickened, clothed with silvery pubescence beneath and with row of longer dark hairs. Middle femora slender, microscopically silvery white pubescent beneath and with double row of short black spines becoming longer towards base. Middle tibiae with row of short black spine-like bristles beneath, no apical projection, hind legs long and slender and only short haired.

Wings (fig. 35) rather short and wide with rounded apex, somewhat milk-white and nearly without dark pattern but all veins apparently dark brown. The wing pattern is reduced to very faint brownish streak below the ending of radial vein and all bifurcations and both crossveins in first-third are somewhat clouded. Radial vein straight, cubital and discal veins parallel or somewhat diverging. Marginal cell narrower than submarginal, first posterior cell about as deep as marginal. Halteres yellowish brown.

Abdomen shining blackish brown, last two segments with long brown hairs at hind margin. Genitalia (fig. 36) rather large, right lamella of epandrium fine pale pubescent, dorsal process strip-like and with tuft of short hairs at tip. Left lamella smaller but wide, with some fine hairs at tip only. The largest part of hypopygium represents enlarged and convex hypandrium.

F e m a l e. Closely resembling male but fore femora without anteroventral row of white hairs, with only 2 or 3 longer hairs at base. Abdomen without long hairs on last segments, cerci very long and slender, with only scattered fine brownish hairs.

L e n g t h: 2.2—2.5 mm.

This species was described, and is still in literature recorded, as a form of *T. interrupta* (Loew). *T. obsoleta* (Str.) resembles this species only in shape, whitish pubescence and blackish coloration of legs and in from of male genitalia but differs markedly in small size, in small postvertical bristles which are inserted just behind vertex and in short and broader wings which are somewhat blunt ended, rather milk-white coloured with distinct dark veins and almost without any dark pattern. *T. obsoleta* resembles *T. punctifera* (Beck.), but this has palpi pale yellowish without terminal bristle, antennal arista is distinctly supraapical, fore femora are only slightly stouter than middle femora, ocellar and postvertical bristles are small and fine, radial vein sharply upturned to costa and brownish patch at its end is much more distinct.

D i s t r i b u t i o n: Austrian Alps.

Strobl described this species in 1910 on the basis of 12 ♂♂ and 19 ♀♀ collected in Styrian Alps (Natterriegel) as a form of *T. interrupta* (Loew), but as early as in 1893 he recorded it as var. *d* of his *Tachysta styriaca* from Natterriegel and Scheiblstein of Styrian Alps as well. The type material is deposited in Strobl's Collection at Admont except to a single pair deposited in coll. DEI at Eberswalde. The type male, revised by Dr. habil. G. Morge, the custodian of Strobl's Collection, is in very bad condition (without wings, end of abdomen and some legs) but it is without doubt conspecific with other specimens of the type series. In addition to the type material, I have seen the

only one female of this species in the Museum in Vienna, collected by Mik on Schneeberg.

D a t e s: July and August.

Very little is known about this species but according to Strobl (1910) it was not uncommon on limestone rocks in Styrian Alps.

M a t e r i a l E x a m i n e d: Adm. Alp.. 1 ♂ 427 (*Tachysta interrupta* v. *obsoleta* m., det. Strobl; Typen-Exemplar rev. G. Morge 1961); Scheiblstein 6500' 27. VIII. 1883 1 ♂ 1 ♀ (var. *d*, det. Strobl); Natterriegel, Styriae Alpes 3 ♂♂ Strobl, Styr. Alp. 11. VII. 1 ♂ 4 ♀♀ Strobl (*T. interrupta* Lw. v. *obsoleta* m. i. l., det. Strobl) — coll. Strobl. Styriae Alpes 1 ♂ 1 ♀ Strobl, coll. Oldenberg (*Tachysta interrupta* Lw. v. *obsoleta* m. i. l., det. Strobl) — coll. D E I. Austria inf., Schneeberg 3. VIII. 1898 1 ♀ Mik (*Tachista interrupta* var. *obsoleta* Strobl, det. Dr. E. O. Engel) — coll. W i e n.

22. *Tachydromia nigerrima* (Bezzi, 1918) comb. nov.

Tachista nigerrima Bezzi, 1918, Mem. Soc. ital. Sci. nat. Milano, 9 : 112 ♀

Tachista nigerrima Bezzi, Engel, 1938, in Lindner, Flieg. pal. Reg., IV : 32 ♂

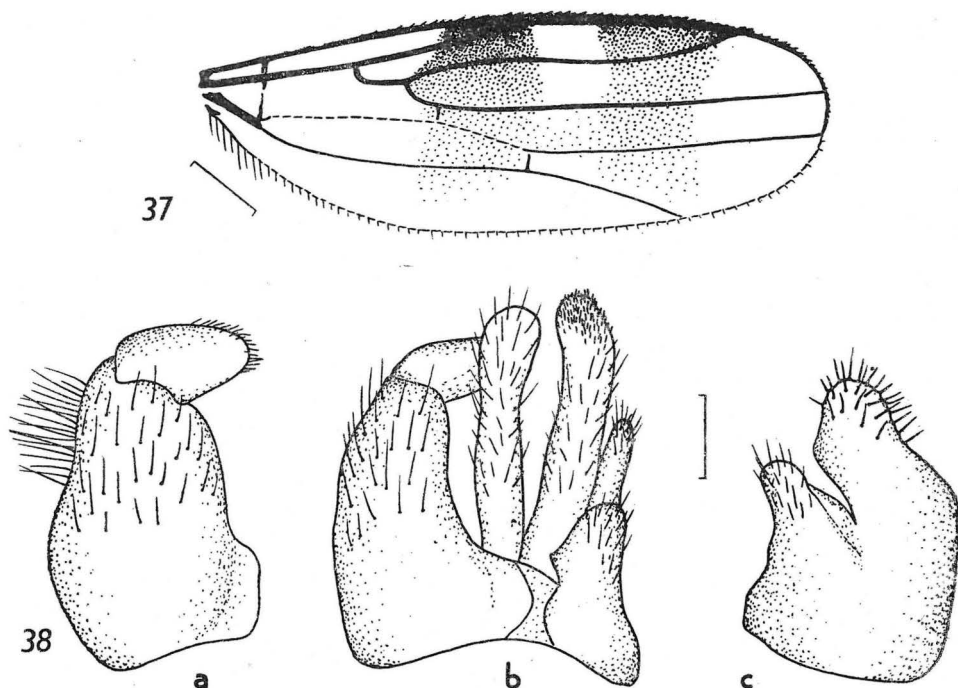
M a l e. Frons parallel-sided and shining black, vertex at hind margin and occiput dulled with greyish dust. Two short dark ocellar bristles, two longer and fine postvertical, behind them some shorter dark hairs. Antennae blackish brown, 3rd segment egg-shaped with very long and slightly supraapical dark arista, which is about four times as long as antenna. Palpi blackish brown, long and slender, about as long as proboscis, clothed with short adpressed silvery hairs and with black terminal bristle.

Thorax shining black, prosternum, prothoracic episternum and part of metathoracic episternum, silvery dusted. Dorsocentrals uniserial; whitish and very minute, acrostichals scarcely visible in front part of mesonotum, biserial and wide apart. One dark notopleural bristle and one pair of scutellar bristles of the same length.

Legs unicolorous blackish brown to black, fore coxae anteriorly silvery dusted. Fore femora as stout as middle femora, both microscopically whitish pubescent beneath, former with row of somewhat longer whitish hairs. Fore tibiae slender, wholly fine and short whitish pubescent and with row of short black bristly hairs beneath. Middle femora with round tubercle near base beneath which bears a tuft of longer white hairs. Middle tibiae only short haired, a short apical blunt ended projection beneath. Hind legs long and slender and only short haired.

Wings (fig. 37) long and rather narrow, apex blunt, brown bands slightly connected in first posterior cell, both bands only faint on the lower part beyond cubital vein. Radial vein very slightly arched towards costa at middle, ending nearly straight. Cubital and discal veins parallel; marginal, submarginal and first posterior cells at middle nearly of the same width. Hind wing-margin with only short fringes. Halteres dark brown.

Abdomen shining blackish brown, last sternites at hind margin with longer brown hairs. Genitalia (fig. 38) rather small and narrow, cerci conspicuously long, distinctly overlap both lamellae of epandrium. Right lamella (ventrally placed) fine brownish hairy on apical two-thirds, hind margin with



Tachydromia nigerrima (Bezzi) ♂: Fig. 37. — Wing. Fig. 38 — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Bessanese, Italy).

row of long hairs above, dorsal process short but wide and plain. Left lamella about as large as right one, dorsally bilobed.

Female. According to the original description resembling male in all except sexual characters.

Length: 2.5—3 mm.

T. nigerrima (Bezzi) is a conspicuously dark to blackish species, rather less hairy and with typical wing pattern of the *interrupta*-group. It may be distinguished at once from all species of this group by dark brown halteres. *T. lundstroemi* (Frey) has brown bands on wing separated along the whole length, not connected in first posterior cell, middle femora in male without any tubercle ventrally near base, halteres dirty yellow and femora of anterior two pairs with double row of short black bristles beneath.

I had at my disposal only a single male from Bessanese (coll. Wien), from which Engel (1938) described for the first time the male sex. Engel erroneously stated: „Am Kopf sind auch die Taster unbehaart und glänzend schwarz, wie . . .“, although Bezzi (1918) gives in the original description: „palpis pilis albis sed non longis tectis“. The male from Bessanese is very greasy, the pale hairs on palpi very adpressed and greasy as well, so that Engel took palpi for entirely naked. The brown coloration of wing is very faint in this specimen,

especially on the lower part of wing and the connection of bands in first posterior cell only hardly visible.

Distribution: Alps.

This species is known up to the present time only from Italian Alps. Bezzi described it on the basis of six females taken at Collo Altare, 2900—2960 m. on 31 July 1916 (one female), and Laghi di Peracival, 2700—2800 m. on 1 August 1916 (five females).

Dates: July and August.

Rare species, Bezzi (1918) collected adults on stones and rocks at higher altitudes from 2700 to 2960 m.

Material Examined: Bessanese 1 ♂ Frey (*Tachista nigerrima* Bezzi, det. Frey) — coll. Wien.

23. *Tachydromia pseudointerrupta*, sp. n.

Closely resembling *T. interrupta* (Loew) and *T. styriaca* (Str.) with brown bands on wing connected in first posterior cell, but postvertical bristles inserted just behind vertex, legs somewhat yellowish.

Male unknown.

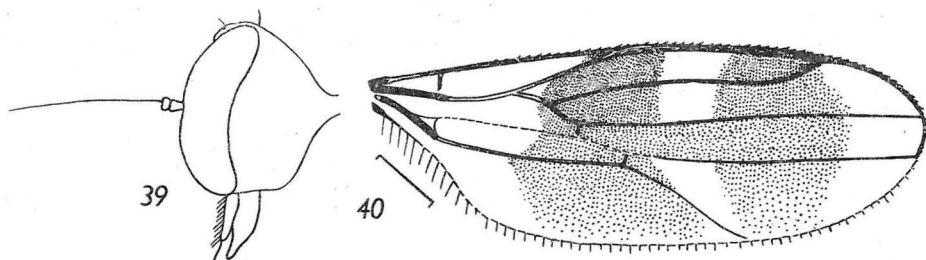
Female. Frons shining black, only very slightly widened above, vertex and occiput densely grey dusted, only a small part just above mouth shining. Two very fine black ocellar bristles, two about as long but coarser postvertical, inserted at hind eye-corners on vertex (fig. 39). Occiput just above neck and especially on lower part below neck with fine whitish hairs. Antennae blackish brown, 3rd segment very short, wider than long, with very long dark slightly supraapical arista which is more than four times as long as antenna. Palpi dark, nearly as long as proboscis, covered with short adpressed silvery hairs and with black terminal bristle.

Thorax shining black, prothoracic sternum and episternum above fore coxae silvery pollinose. Acrostichals and dorsocentrals irregularly uniserial, whitish and very minute. One strong black notopleural bristle and one pair of short, fine, and close scutellar bristles.

Legs black, fore coxae, knees and first segment of all tarsi, yellow; posterior four coxae posteriorly and fore femora below somewhat yellowish. Fore femora stout, more than twice as stout as middle one, with only fine short pale hairs beneath. Fore tibiae somewhat spindle-shaped dilated towards tip and wholly short pale hairy. Middle femora slender, with double row of whitish hairs becoming longer towards base. Hind femora short pale hairy beneath and with anteroventral row of long whitish hairs along the whole length, the hairs being longer at middle, about as long as femur is deep.

Wings (fig. 40) rather wide with round tip, resembling *T. styriaca* in shape and *T. interrupta* in the wing pattern. The brown bands are rather narrow, separated by broader hyaline mid-stripe which is interrupted in first posterior cell. Apical brown band reaches just beyond end of radial vein leaving apex largely hyaline. Radial vein very slightly arched at middle, cubital and discal veins parallel. The dark coloration in first posterior cell is more greyish by comparison with brown bands. Halteres whitish, stem brownish.

Abdomen shining brownish black, last two segments greyish dusted. Cerci greyish, about as long as last segment.



Tachydromia pseudointerrupta sp. n. ♀: Fig. 39. — Head, lateral view. Fig. 40. — Wing (holotype: Orotava, Canary Island).

Length: 2.1—2.8 mm., holotype: body 2.3 mm., wing 2.4 mm.

Variability: The coloration of legs is in part variable, in some specimens more yellowish; one female has all coxae, trochanters and base of femora, yellowish.

Closely resembling the European *T. interrupta* (Loew) and *T. styriaca* (Str.), especially in wing pattern and general appearance, but postvertical bristles are only small and very fine, inserted just behind vertex, fore coxae and first segment of all tarsi yellow and hind femora with anteroventral row of long whitish hairs. Both *interrupta* and *styriaca* have postvertical bristles conspicuously long and strong, inserted at middle of upper part of occiput, legs entirely black and hind femora in female only short haired.

Distribution: Canary Island.

Dates: January to June.

Three females of this new species are from Becker's Collection and were determined by Becker as *Tachista interrupta* Loew. I have seen another female in the British Museum, London, labelled „Cyummar 20. III. 1904 Teneriffe, Canary Is., Revd. A. E. Eaton 1904. 254“, and „*Tachista interrupta?* prope sp. nov., det. Collin, 1915“, which is identical with this species. Becker (1908 : 42) recorded this new species from Orotava as *T. interrupta* Lw.

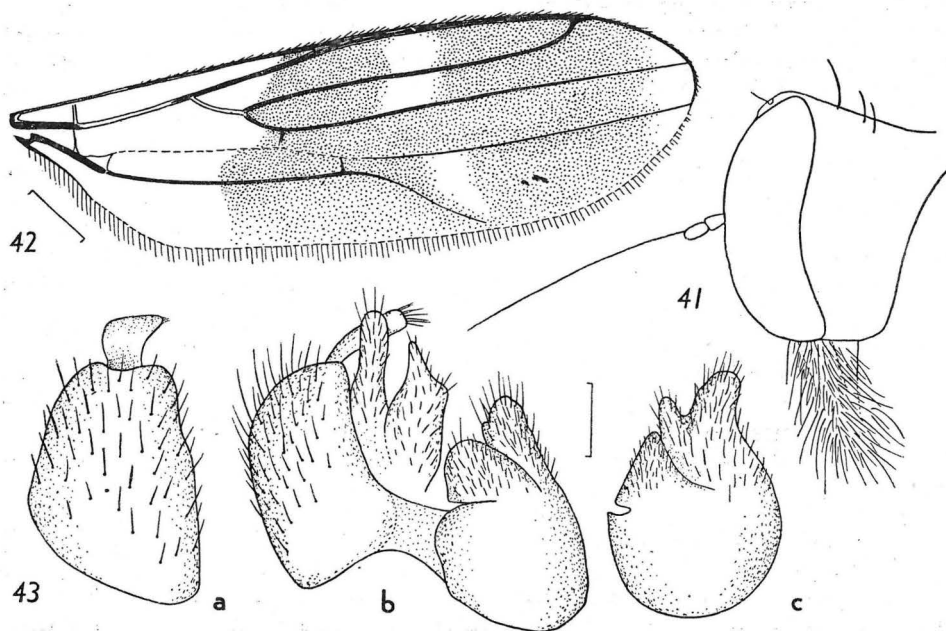
T. pseudointerrupta, sp. n. has been found up to the present time in three different localities on the island Tenerife and considering that the whole island is mountainous with the highest elevation, Pico Teide, 3716 m. high, it is very probably a montane species, as all other species of the *interrupta*-group, living on rocks.

Holotype ♀: Orotava i. No. 46878; in the Zoologisches Museum, Berlin, Coll. Becker.

Paratypes: Laguna vi. No. 51477 2 ♀♀; one female deposited in Becker's Collection, the second in author's collection. Teneriffe, Cyummar 20. III. 1904 1 ♀ A. E. Eaton; in the British Museum (Natural History) London.

24. *Tachydromia styriaca* (Strobl, 1893) comb. nov.*Tachysta styriaca* Strobl, 1893, Mitt. Nat. Ver. f. Steierm., 29 (1892) : 124*Tachista barbata* Oldenberg, 1920, Zool. Jahrb., 43 : 231 — syn. nov.

Male. Frons shining black, slightly widened above, ocellar triangle situated lower, in about third quarter of the frons height. Vertex somewhat dulled, covered with very short brownish pubescence. Occiput, with the exception of a small part just behind vertex, densely silvery grey dusted, on the upper part above neck very densely whitish pubescent. Two fine black ocellar bristles, two long postvertical only slightly curved upwards, inserted low, nearly at middle of the upper part of occiput (fig. 41). 2 or 3 pairs of shorter black hairs just behind postverticals at sides, lower part of occiput whitish hairy. Antennae blackish brown, 3rd segment with long dark supra-apical arista which is about three times as long as antenna. Palpi blackish brown, long and slender, densely covered with long silvery hairs which are distinctly erected, and with black terminal bristle.



Tachydromia styriaca (Strobl) ♂: Fig. 41 — Head, lateral view. Fig. 42. — Wing. Fig. 43 — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Stilfser Joch, Austria).

Thorax shining black, prosternum, prothoracic episternum and metathorax, densely silvery dusted. Mesonotum with fine pale hairs, all hairs being about as long as 3rd antennal segment: dorsocentrals and acrostichals on the

whole length of mesonotum uni- to biserial, three humeral bristles, one notopleural and two pairs of scutellar bristles; the notopleural bristle and inner pair of scutellar, black and coarser.

Legs unicolorous shining black to blackish brown, coxae at sides silvery dusted and all legs whitish pubescent. Fore femora very stout and somewhat laterally flattened, tibiae half the width of femora, both covered with longer adpressed white hairs. Fore femora only microscopically whitish pubescent beneath, with anteroventral row of short white hairs and distinct long white hairs above. Middle femora rather slender, microscopically whitish pubescent beneath and with double row of short black spines on basal half beneath. Anterior four tibiae with row of short black bristles beneath. Hind legs slender, short haired, femora and first tarsal segment often somewhat brownish at base. No apical projection to middle tibiae beneath, tibiae only somewhat pointed at tip.

Wings (fig. 42) long and rather wide, with very slightly pointed apex. Wing pattern consists of two broad dark brown bands, leaving only base, extreme apex and a narrow mid-stripe, hyaline. Brown bands are connected in first posterior cell and in extensively darkened specimens also along costa, rarely in the whole marginal cell. The mid-stripe in marginal and submarginal cells sometimes only in a form of round hyaline patches. Radial vein sometimes very slightly arched at middle, marginal cell a little wider than submarginal, cubital and discal veins in some specimens closer. Hind wing-margin with fine and long white fringes. Halteres whitish yellow.

Abdomen shining blackish brown and, especially on last segments, fine brownish hairy. Genitalia (fig. 43) rather small, wholly short but densely brown hairy. Right lamella of epandrium with only apically pubescent dorsal strip-like process. Cerci short brownish hairy, the right one longer.

F e m a l e. Resembling male but vertex and upper part of occiput close to vertex, more shining, palpi not so hairy and the hairs distinctly adpressed. Mesonotum with distinct notopleural and scutellar bristles only, the other hairs only very minute, whitish and scarcely visible. Legs not so hairy as in male, fore femora not so stout and only short haired above, middle femora besides the dense whitish pubescence with double row of minute black spines along the whole length beneath. Abdomen less hairy, cerci very long and slender.

L e n g t h: 2.8—3.5 mm.

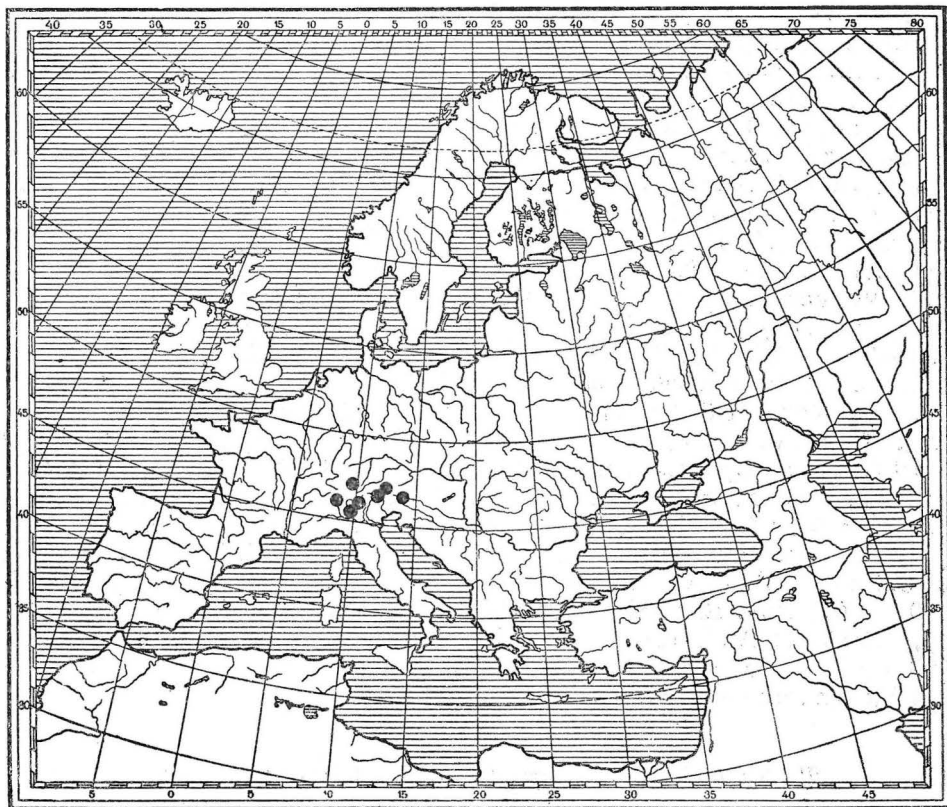
T. styriaca (Str.) closely resembles *T. interrupta* (Loew), the detailed distinctive characters are given under the latter. *T. nigerrima* (Bezzi) has brown bands on wing only faint below, dark halteres, palpi with only sparse adpressed hairs, anterior femora rather slender, middle tibiae in male with apical projection beneath and postvertical bristles just behind vertex.

D i s t r i b u t i o n: Alps.

T. styriaca is an alpine species collected at an altitude of over 3000 m. (Roseg 3943 m.), known from many localities in Austrian, Switzerland and Italian Alps, and it seems to be rather common in some localities (Map 3).

Strobl (1893) described this species on the basis of specimens collected in Styrian Alps, the type material is deposited in Strobl's Collection, Becker's Collection and in the Museum at Dresden. Strobl when describing this species

had at his disposal a single male, taken on Gumpeneck near Öblarn on 16 July 1890, with extremely darkened wings, the brown bands being connected in the whole marginal cell. The other material was represented by normal females with brown bands separated along costa, he therefore took this difference for sexual dimorphism. As it deals with the only well preserved male in Strobl's Collection I have labelled it as lectotype.



Map. 3. — Distribution of *Tachydromia styriaca* (Strobl).

In the same place, Strobl (1893 : 125) described also three other forms of *T. styriaca*: var. *b* — with darkened apex of wing, which is the case in extremely darkened specimens (I have seen 4 specimens from Tyrol (Vorarlberg, Lünensee) deposited in the Naturhistorisches Museum, Wien, with apical third of wing entirely brown); var. *c* — named *semifasciata*, only females, which is in fact female of *T. ornatipes* (Beck.); var. *d* — named later by Strobl (1910 : 85) as var. *obsoleta*, which represents a quite distinct species.

I have seen also the type material of *Tachista barbata* Oldenb., collected

by Oldenberg and deposited in coll. DEI, Eberswalde and in Becker's and Duda's Collections; this species is identical with Strobl's *T. styriaca*, and therefore synonymical with it. Three males and one female (coll. DEI and coll. Duda) are labelled "Stelvio, leg. Oldenberg". Giogo di Stelvio (= Stilsfer Joch) 2760 m., is in the Italian Alps, and it is recorded by Oldenberg in original description as „Ortler“.

Engel (1938) erroneously synonymized Strobl's *T. styriaca* with *T. interrupta* (Loew), leaving *T. barbata* (Oldenb.) as a different species.

D a t e s: June to August.

Strobl collected this species from stones in a brook, on mountain meadows with *Pinus pumilio* pine, and at higher altitudes over 2000 m. under stones. He observed the adults near Admont quickly running about on limestone rocks; they did not fly. Oldenberg collected the type material of *T. barbata* from stones and stumps in clearings, Keiser (1947) from stones in a brook and, according to him, the adults are often on sunlit rocks and tree-trunks, when disturbed they fly away or flee into crannies.

M a t e r i a l E x a m i n e d: Tirolis, Stilsfer Joch, Rogenhofer 1871 1 ♂ Mik, Stilsfer Joch 2.—20. VIII. 1888 6 ♂♂ 7 ♀♀ Handlirsch; Dobratsch VII. 1874 2 ♀♀; Vorarlberg, Lünsersee 8. VIII. 1922 1 ♂ 3 ♀♀ Zerny (*Tachista barbata* Oldb., det. Engel) — coll. Wien. Stelvio 8. VIII. 1909 1 ♂ 1 ♀ Typen (*Tachista barbata* Old., det. Oldenberg) — coll. D u d a. Roseg 1 ♀ "am Roseg an Steinen" (*Tachista interrupta* m., det. Loew) — coll. L o e w. Maloja 23. VII. 1906 Engadin 57874 1 ♂ 1 ♀ Typen (*Tachista barbata* Old., det. Oldenberg); Furka VII. 2 ♀♀ (*Tachista* sp., det. Becker); Styriae Alpes 1 ♂ 1 ♀ Strobl (*Tachysta styriaca* mihi, det. Strobl) — coll. B e c k e r. Styriae Alp. 1 ♀ (*Tach. styriaca* Strobl, det. Strobl) — coll. D r e s d e n. St. Moritz 1. VIII. 1906 2 ♂♂ 2 ♀♀ Oldenberg, Typen; Stelvio 8. VIII. 1909 2 ♂♂ Oldenberg, Typen (both *Tachista barbata* Old., det. Oldenberg) — coll. D E I. Gumpeneck bei Öblarn 6500' 16. VIII. 1890 1 ♂; Krebenze 1 ♀; Hochschwung 19. VIII. 1890 1 ♀ (all *Tachyst. styriaca* Str., det. Strobl) — coll. S t r o b l. Villach. Alp, Kärnt. 10. VII. 1941 1 ♂ 1 ♀ Lindner; Bernina Pass, Lagalp 23. VI. 1966 1 ♂ 1 ♀ Lindner; Umg. Wasserfall b. Marienhöhe Glockner 18. VII. 1941 1 ♂ Lindner — coll. S t u t t g a r t.

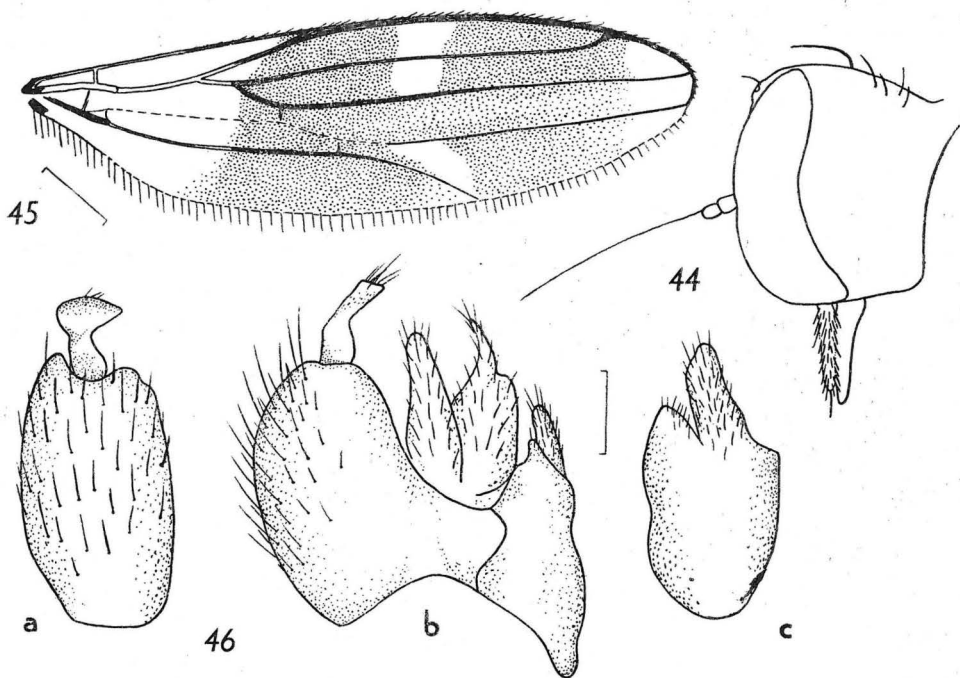
25. *Tachydromia interrupta* (Loew, 1864) **comb. nov.**

Tachista interrupta Loew, 1864, Zeitschr. f. Ent. Breslau, 14 (1860) : 19

M a l e. Frons shining black, nearly parallel-sided, ocellar triangle at about third-quarter of the frons height. Vertex and upper part of occiput at middle shining black, covered with short dense brownish pubescence. Lower part of occiput and the sides right to eye-margin, densely grey dusted. Two postvertical bristles are very long, black, and conspicuously curved upwards towards vertex and, as well as in *styriaca*, inserted very low, at about at middle of the upper part of occiput above neck (fig. 44). Behind them there are other four pairs of shorter black hairs, the upper two pairs being somewhat upcurved as postverticals. Antennae black, sometimes brownish at base, 3rd segment globular, with long dark supraapical arista which is nearly four times

as long as antenna. Palpi dark brown, long and slender, clothed with adpressed silvery hairs and with long black terminal bristle.

Thorax shining black, prosternum, prothoracic episternum, and metathorax above hind coxae, silvery dusted. One long black notopleural bristle and two pairs of scutellar, outer pair very short and fine. Front half of mesonotum with long and fine brownish hairs, which are only minute on hind part of mesonotum; about seven humeral bristles, some bristles on front part of notopleura, dorsocentral uniserial, and acrostichals irregularly biserial.



Tachydromia interrupta (Loew) ♂: Fig. 44. — Head, lateral view. Fig. 45. — Wing. Fig. 46. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Achenthal, Austria).

Legs shining black, covered with whitish hairs, knees and first segments of all tarsi somewhat brownish. Fore femora very stout, more than twice as stout as femora of posterior two pairs, fore tibiae only slender, slightly thickened towards tip. Fore femora microscopically whitish pubescent beneath, without dark bristles but with anteroventral row of very long whitish hairs, some longer hairs also on basal half above. Fore tibiae only short haired and with a single row of short black bristles beneath. Middle femora microscopically whitish pubescent beneath and with distinct double row of short black bristles along the whole length in addition to anteroventral row of long whitish hairs becoming on apical fourth about as long as femur is deep. Middle tibiae with

a row of short black bristles beneath. Posterior four femora of about equal width, hind legs slender and rather brownish short haired.

Wings (fig. 45) long and conspicuously narrow, distinctly pointed at apex. The brown bands well separated, connected only in first posterior cell, base and apex of wing largely hyaline. The dark coloration in first posterior cell is in contrast to brown bands often more greyish. Radial vein straight, marginal and submarginal cells of about the same width, cubital and discal veins somewhat converging towards tip and rather close together. Long whitish fringes to hind wing-margin. Halteres whitish yellow.

Abdomen shining black to blackish brown, last segments fine brownish hairy, last sternite with long brown hairs at hind margin. Genitalia (fig. 46) small and somewhat conical, only short and fine brownish pubescent. Right lamella of epandrium short hairy nearly along the whole length, dorsal process strip-like, with some short dark hairs at tip. Cerci of about the same length, left one more pointed at tip. Hypopygium closely resembles that of *T. styriaca*, but seems to be narrower and not so densely hairy as in *styriaca*.

F e m a l e. Resembling male, but vertex and upper part of occiput more shining and not so densely pubescent, a pair of postvertical bristles is not so conspicuously upcurved and all bristles on mesonotum, with the exception of notopleural bristle, only very minute, usually in form of pale points. Fore femora only short haired and, as well as middle one, without anteroventral row of distinct whitish hairs. Abdomen not so hairy as in male, last two segments covered with greyish dust, cerci long and slender.

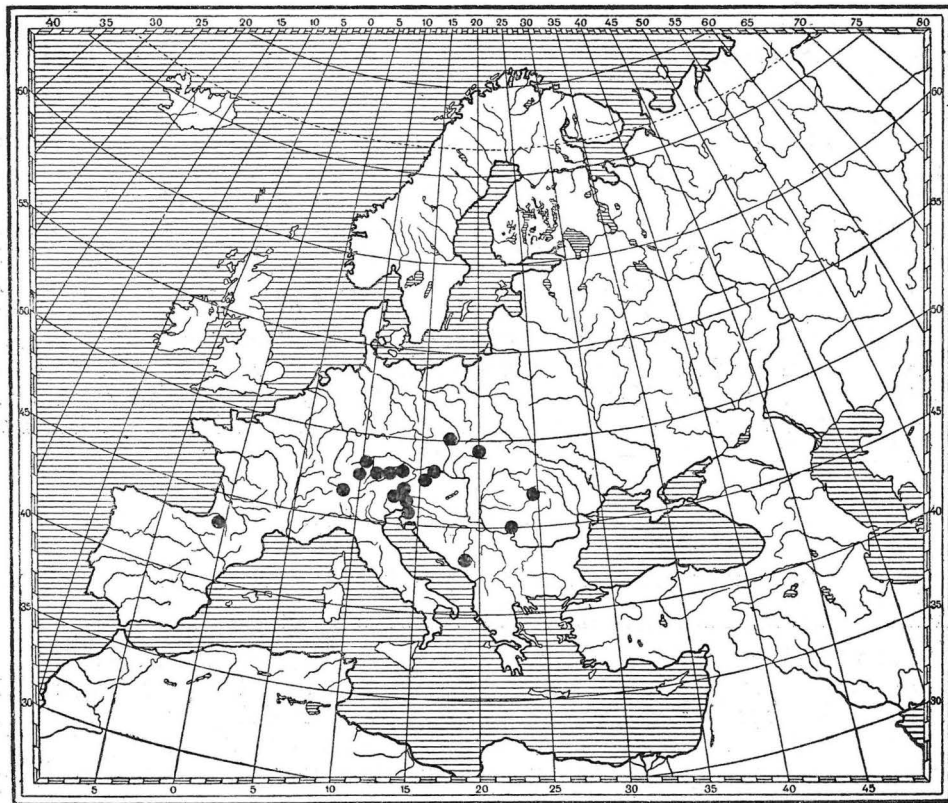
L e n g t h: 2.3—3 mm.

This species may be separated from all others by long postvertical bristles inserted very low on occiput, and by brown bands on wing connected in first posterior cell. *T. styriaca* (Str.) also possesses these characters, but may be distinguished at once by many other characters in male whilst female can only be separated with difficulty. *T. interrupta* is smaller on average, male has postvertical bristles much more upcurved, vertex and upper part of occiput more extensively shining, palpi are not so densely hairy as in *styriaca* and the hairs being always adpressed; wings are narrower and distinctly pointed, cubital and discal veins closer and wings are not so extensively brownish, apex being largely hyaline and mid-stripe distinct with straight sides. Anterior four femora bear in *interrupta* anteroventral row of very long white hairs which are absent in *styriaca* but on the other hand fore legs are distinctly more hairy in latter and fore femora above with long white hairs along the whole length. Females of both these species can be separated only with difficulty owing to only short haired legs, less hairy palpi, and more shining upper part of occiput. The best differential features seem to be the shape and pattern of wing, somewhat upturned postvertical bristles in *interrupta* and smaller size of this species on average.

D i s t r i b u t i o n: Mountains of Central and South Europe.

Loew described this species in 1864 on the basis of the material taken in the Jeseniky Mts. on Praděd (Altwater), 1942 m., later (Loew, 1870) he records it also from the Tatra Mts. I did not succeed in finding the type material in Loew's Collection, the only three specimens labelled by Loew as „*Tachista interrupta* m.“ are from the Alps (Rigi) or without locality label, but from

later date, from the year 1867. All other records (Strobl, 1893 and 1898, Engel, 1938) are from the Alps only. The record given by Becker (1908) from the Canary Isl. (Orotava) refers to *T. pseudointerrupta* sp. n.



Map. 4. — Distribution of *Tachydromia interrupta* (Loew).

I have found, however, on the basis of the revised material, that this species occurs on nearly all mountains of Central and South Europe (Map 4). The recently known borders of its area of distribution lie in the south in Yugoslav Durmitor Mts., in the east in Transylvanian Alps, and in the west in the Pyrenees on the river Gabas in France. The most northerly occurrence is the locality of type specimens in the Jeseníky Mts.

D a t e s: May to September.

T. interrupta is a rather widely distributed and not uncommon species. The adults are to be found running about on rocks, stones, stumps, or on cubic metres of logs. According to Engel (1938) the adults prey on small flies

of the families Sciaridae and Cecidomyiidae and I have found a female in the collection of the Museum in Vienna (Montenegro, Durmitor) with a small Sciarid as prey.

Material Examined: Austr. inf., Hernstein VII. 1883 1 ♂ Mik, Schneeberg 19. VIII. 1887 1 ♀ Handlirsch; Raibl 29. VII. 1886 3 ♂♂ 3 ♀♀ Handlirsch; Carniolia, Nanos Berg 14. VII. 1886 1 ♂ Handlirsch; Salzburg, Pass Lueg 14. VII. 1916 1 ♂ 3 ♀♀ Zerny, Geisberg 17. VII. 1879 1 ♂ 1 ♀ Mik; Tirolis, Achenthal 10. VIII. 1886 8 ♂♂ 6 ♀♀ Mik; Illyria, M. Czaun 27. VI. 1865 1 ♂ 1 ♀, Görz 23. V. 1864 1 ♂ 1 ♀ Mik; Montenegro, Durmitor 1750 m. 31. VII. 1 ♀ Penther; sine loc. 1 ♂ coll. Bgst. (*connexa*, det. Bergenst.) — coll. Wien. Rigi 10809 1 ♂; sine loc. 3. VII. 1867 1 ♂, 27. V. 1867 1 ♀ (all *Tachista interrupta* m., det. Loew) — coll. Loew. Kühwegeralpe 16. VII. 1895 1 ♀; Salzburg Okreselhütte 3. VIII. 1893 1 ♀ (both *Tach. interrupta* Lw., det. Strobl); Natterriegel 22. VIII. 1891 1 ♀ (*Tachyst. styriaca* Str., det. Strobl) — coll. Strobl. Allgäu, Dojsmer 1679 b. Hinterstein 9. VIII. 1921 3 ♂♂ 3 ♀♀, 15. VII. 1920 2 ♂♂ 3 ♀♀ Engel; Schliersee 4. IX. 1916 1 ♂; Nebelhorn Allg. Alp. 13. VII. 1949 1 ♀ Lindner; Rappensee Allgäu. Alp 27. VII. 1949 1 ♀ Lindner; Grossglockner 19.—31. VII. 1937 2 ♀♀, Schlicke Allg. 23.—25. VI. 1938 1 ♀, Nesselwänglescharte Allgäu 10. VII. 1939 1 ♀ Lindner; Namlos, Tirol VII. 1937 2 ♂♂ 4 ♀♀ — coll. Stuttgart. Mehadia 26. VII. 1912 1 ♂ 1 ♀; Siebenbürgen No. 38883 VIII. 1 ♀ (both *interrupta* Lw., det. Becker); Gabas No. 01030 VI. 1 ♀ (*Tachista* sp. det. Becker) — coll. Becker.

5. *Tachydromia connexa*-group

26. *Tachydromia catalonica* (Strobl, 1906) **comb. nov.**

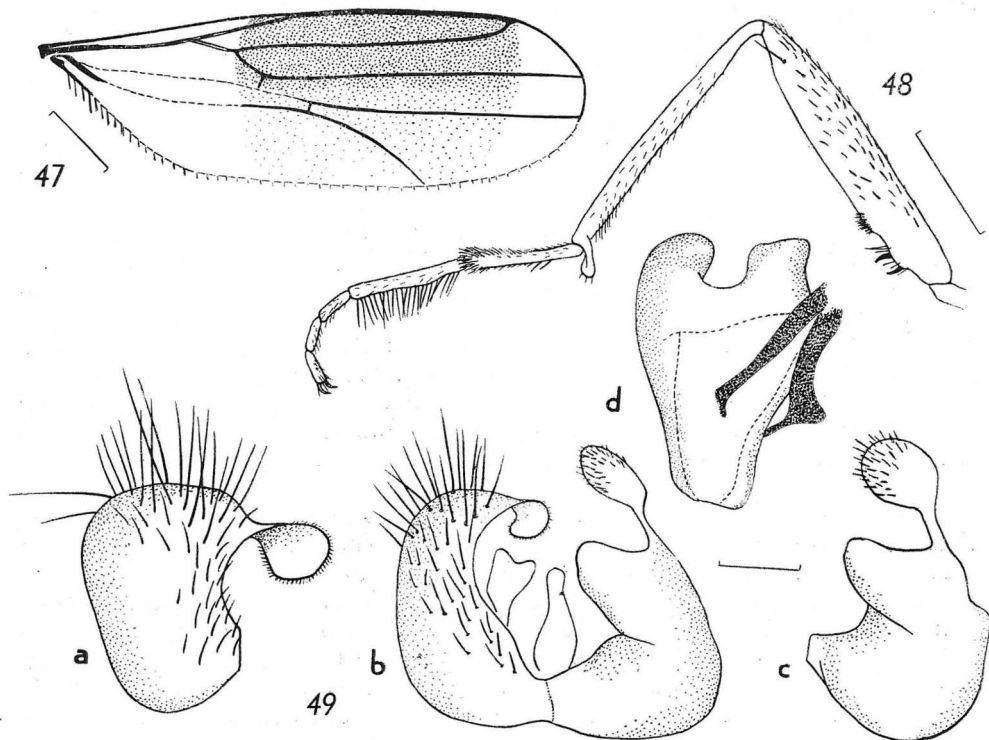
Tachysta catalonica Strobl, 1906, Mem. R. Soc. esp. Hist. Nat., 3 (1905) : 319 ♂

Male. Frons dulled with greyish dust, somewhat widened above, vertex and occiput densely grey dusted. Two black ocellar bristles, two longer and rather wide apart postvertical, behind them some other fine black hairs becoming paler and longer on the lower part of occiput. Antennae yellowish brown, 3rd segment darker, nearly globular, with short dark somewhat supra-apical arista which is about 1.5 times as long as antenna. Palpi very small and narrow, about one half length of the proboscis, dark brown, clothed with short but dense silvery hairs, black terminal bristle long, about as long as palpi.

Thorax dulled with greyish dust, only the mid-stripe on mesonotum right up to scutellum, hind margin of humeri and pleurae at middle, shining black. Prothoracic episternum between humeri and fore coxae, as well as metathorax, largely more intensively silvery dusted. No acrostichals, dorsoncentrals uniserial, dark brown and very minute, scarcely visible. One long dark notopleural bristle, one postalar and two pairs of short black scutellar bristles, the inner pair crossing, longer and coarser.

Legs predominantly darkish brown to blackish, somewhat dulled with greyish pollen, only fore femora anteriorly at tip, fore tibiae at base and first segment of hind tarsi, yellowish brown. First two segments of anterior four tarsi somewhat paler. Fore femora stout, with only some long and fine black hairs arranged in two rows on basal half beneath, otherwise fore legs only short

haired. Middle femora only slightly stout, short haired, with hardly visible short pubescent swelling at base beneath which is armed with two very strong black spines and with very long black bristle anteriorly before tip. Middle tibiae with anteroventral row of short black bristles and with long shovel-like projection at tip beneath, the projection being distinctly blunt at tip (fig. 48). Middle tarsus longer than tibia, first two segments long, of about equal length, last three segments very short, together about as long as first or second segment.



Tachydromia catalonica (Strobl) ♂: Fig. 47: — Wing. Fig. 48. — Middle leg. Fig. 49. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium, d — hypandrium (holotype: Monistrol, Spain).

First segment somewhat thickened towards tip, covered with short black bristles, especially densely at apex. Second segment slender, with posteroventral row of very long dark hairs which are nearly twice as long as segment is deep. Hind legs long and slender, short haired, only hind tibiae with anteroventral row of long dark hairs on apical half, the hairs being as long as tibia is deep.

Wings (fig 47) somewhat widened with blunt apex, basal part of wing milk-white and from the base of submarginal cell brownish, leaving tip from end of radial vein hyaline. The brown colouring in central part of wing is more

distinct along costa in marginal and submarginal cells and only faint on the lower part beyond cubital vein. Veins brownish, on the whitish basal fourth of wing very pale, blackish brown at extreme base. Radial vein straight, marginal and submarginal cells of about the same width, cubital and discal veins somewhat diverging towards apex. Halteres whitish yellow with brownish base to stem.

Abdomen dark brownish, slightly shining from some points of view, but entirely covered with greyish pollen. Sternites with some very short and fine dark hairs, last sternite with row of long dark hairs at hind margin. Genitalia (fig. 49) large and globular, especially right lamella of epandrium which is dulled with greyish dust and covered with long dark hairs on apical half, hypandrium apparently convex.

F e m a l e unknown.

L e n g t h: body 2.1 mm., wing 2.2 mm.

The wing pattern, shape of wings, structure of legs, especially the globular swelling and two strong spines to middle femora beneath at base, large and globular genitalia, small brown palpi and very short antennal arista, resemble species of the *connexa*-group. It may be distinguished from all species of this group by the milk-white wings at base, by only one notopleural bristle, apparently long haired middle tarsi and hind tibia and by distinctly greyish pollinose mesonotum, leaving only narrow mid-stripe shining. *T. elbrusensis* sp. n. has also somewhat milk-white wings at base but entirely shining black mesonotum and extensively yellowish anterior four legs. *T. sabulosa* Meig. is also very close, but this has wings brownish towards tip inclusive of apex, longer antennal arista, pale palpi, legs predominantly yellow, fore femora with blackish ring at middle and mesonotum is entirely covered with greyish dust.

D i s t r i b u t i o n: Spain.

Strobl described this species on the basis of a single male taken in North East Spain at Monistrol on the river Llobegrat. The type specimen is in good condition and deposited in Strobl's Collection at Admont.

In the same paper Strobl (1906) described from the same area of Spain (San Celoni), on the basis of another single male, var. *striatipennis*. The type specimen is in rather bad condition (without fore legs and right middle leg) but all the main characters are perceptible. It closely resembles the nominate form, only the brown design on wing is distinctly striated along longitudinal veins, marginal and submarginal cells are with distinct pale longitudinal mid-stripe.

M a t e r i a l *E x a m i n e d*: Monistrol, Südsanien 1 ♂ Strobl (*T. catalonica* m., det. Strobl); San Celoni, Südsanien 1 ♂ Strobl (*catalonica* v. *striatipennis* m., det. Strobl) — coll. Strobl.

27. *Tachydromia halterata* (Collin, 1926) *comb. nov.*

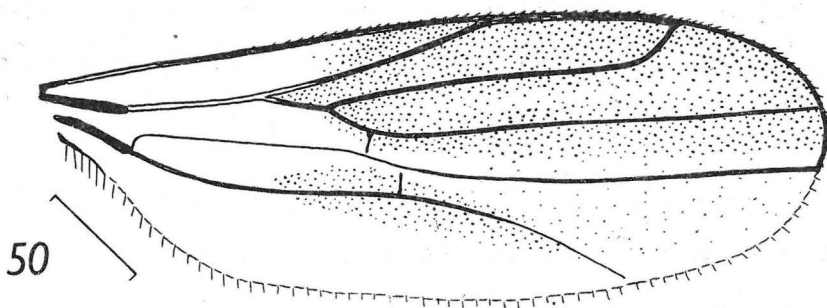
Tachista halterata Collin, 1926, Ent. mon. Mag., 62 : 151

M a l e. Frons shining blackish brown, very narrow above antennae and distinctly widened towards ocellar triangle. Vertex and occiput shining blackish brown, latter only very slightly dulled on the upper part above neck. Two

short black ocellar bristles, two long and wide apart postvertical, behind them some fine paler hairs becoming whitish on lower part of occiput. Antennae dark brown, 3rd segment slightly egg-shaped with short dark supraapical arista which is about 1.5 times as long as antenna. Proboscis of about one half length of head height, palpi very small, scarcely one half times as long as proboscis, oval and dark brown with only scattered dark hairs and with long black terminal bristle of about the same length as palpus.

Thorax shining black, prosternum and whole pro- and metathoracic episternum largely silvery dusted. Dorsocentrals pale and very minute, irregularly uniserial on hind part of mesonotum, no acrostichals. Two long black notopleural bristles, the front somewhat shorter, and two pairs of scutellar bristles, the outer pair hardly half the length of the inner pair.

Legs rather short and stout, blackish brown, only fore coxae, posterior four coxae at tip, fore femora on basal third, posterior femora at extreme base and all knees, yellow. Fore femora apparently stout, more than twice as stout as middle one, only short haired beneath and with posteroventral row of longer fine pale hairs. Fore tibiae densely clothed with adpressed short whitish hairs. Middle femora with deep excision beneath near base and with two or three longer spines on its margin which continue in posteroventral row of 4 to 5 spine-like bristles. Middle tibiae slender, anteriorly at base with two short black spines, only very slight projection at tip. Hind legs slender, femora with row of longer adpressed black hairs beneath, tibiae before tip densely short pale pubescent, as well as fore tibiae beneath and anteriorly. Anterior tarsal segments very short, 2nd segment shorter than one half of metatarsus, 2nd segment of middle tarsi longer, distinctly longer than one half of middle metatarsus.



Tachydromia halterata (Coll.) ♀: Fig. 50. — Wing (La Grave, France).

Wing (fig. 50) rather short and blunt ended, wholly tinged with brown leaving only base and hind margin hyaline. The brown coloration of wing is more distinct along costal margin towards, and inclusive of apex and along cubital vein. Radial vein straight, cubital and discal veins parallel, only slightly divergent before end. Marginal and submarginal cells of about equal width. Halteres brownish, paler at base.

Abdomen shining blackish brown, last two segments faintly grey dusted, all segments short dark hairy along hind margin, last sternite with a brush of long dark hairs at hind margin. Genitalia large and globular, right lamella of epandrium enlarged and with rounded dorsal process, left lamella only slightly smaller, and densely greyish pollinose. Cerci hidden in large epandrium.

Female. Closely resembling male but no excavation to middle femora beneath, only double row of black hairs becoming longer and paler towards base and one long yellow bristle at base. Middle tibiae only sparsely short haired. Last two abdominal segments dulled with greyish dust, cerci very short and narrow, faintly grey dusted.

Length: 1.6—2.2 mm.

T. halterata (Coll.) belongs on the basis of many characters (short antennal arista, very small and dark palpi, two notopleural bristles, rather short and blunt ended wings, short and stout legs, large and globular hypopygium) to the *connexa*-group and it may be distinguished from all others by darkened outer two-thirds of wing on costal half and by dark halteres. *T. sabulosa* Meig. has also wings clouded on outer two-thirds but differs, inter alia, in greyish dusted mesonotum, yellow fore femora with dark ring at middle, in more bristly head and thorax and in pale halteres and palpi.

Distribution: West and Central Europe, Ural.

A species with very large area of distribution, it has been known up to the present time only from 14 specimens captured in England. I have found now further material in Becker's Collection also from French Savoy Alps (La Grave) and from Ural, and another single female in Strobl's Collection from Hungary. The type material is deposited in the Zoological Museum at Cambridge and I have seen further documentary material in Collin's private Collection.

Dates: May to July.

Collin (1961) took a single female on a tree-trunk at Newmarket and another male was captured by H. Donisthorpe with *Lasius fuliginosus* in Kent.

Material Examined: La Grave No. 56584 1 ♀; Ural No. 58717 VII. 1 ♀ (both *Tachista* sp., det. Becker) — coll. Becker. Kalocsa 14. V. 1893 1 ♀ (*Tach. sabulosa*, det. Strobl) — coll. Strobl.

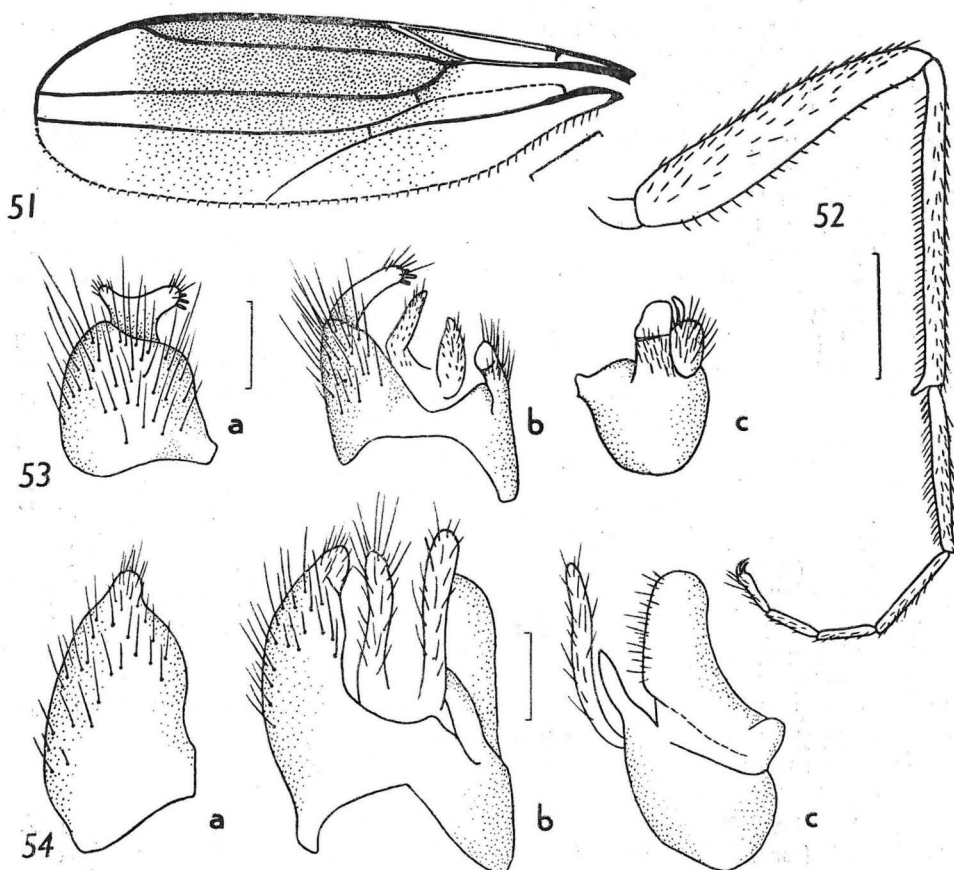
28. *Tachydromia calcarata* (Strobl, 1910) **comb. nov.**

Tachista calcarata Strobl, 1910, Mitt. Nat. Ver. f. Steierm., 46 (1909) : 85 ♂

Male. Thorax shining brown, prothoracic episternum between humeri and fore coxae distinctly silvery grey dusted, as well as prosternum. Mesonotum with long but fine dark uniserial dorsocentrals, three or four humeral bristles of the same length, acrostichals absent. One long and one shorter black notopleural bristles, on long postalar and two pairs of scutellar bristles, inner pair longer and coarser.

Legs predominantly dark brown, only fore coxae, all first tarsal segments with the exception of tips and partially middle femora, yellowish brown. Fore femora microscopically whitish pubescent beneath and with anteroventral row of black bristly hairs, fore tibiae spindle-shaped dilated and wholly covered with short adpressed dark hairs. Middle femora ventrally with double row of

short black bristles becoming longer on basal third. Middle tibiae with row of very short bristles on apical half beneath, apical projection small but pointed (fig. 52). Hind legs long, slender and only short haired. Tarsi long, middle meta-tarsus somewhat longer than half length of tibia. Tarsi slightly longer than tibiae.



Tachydromia calcarata (Strobl) ♂: Fig. 51. — Wing. Fig. 52. — Middle leg. Fig. 53 — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (holotype: Admont, Austria). *Tachydromia* sp. ♂: Fig. 54. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium and left cercus (Gesäuse, Austria, coll. Strobl).

Wings (fig. 51) somewhat narrower, wing pattern as in *tuberculata* with brown bands broadly connected along costa, the hyaline mid-stripe reaches from hind wing-margin only to first posterior cell. Marginal cell distinctly narrower than submarginal, radial vein straight. Halteres whitish.

Abdomen shining blackish brown, genitalia (fig. 53) small and somewhat conical, covered with long and fine dark hairs. Right lamella of epandrium with bilobed dorsal process, cerci rather small.

Female unknown.

Length: body without head 1.9 mm., wing 2.1 mm.

Strobl (1910) described this species on the basis of a single male taken at Admont as follows: "Maxime affinis *tuberculatae* Lw.; diffet femoribus interm. non tuberculatis, tibiis calcaratis, tarsorum baso flava, hypopygio parvo." I have found this specimen in Strobl's Collection but unfortunately this specimen has lost the head.

Although the significant characters on the head are unknown to me, this species belongs probably to the *connexa*-group with regard to wing pattern and presence of two notopleural bristles. It may be distinguished from all other species of this group by very small genitalia, by presence of long dark dorsocentrals and humeral bristles on mesonotum, by middle legs, which are simple, femora with neither tubercle, nor excision near base beneath but armed with double row of distinct black bristles along the whole length and only short but distinctly pointed apical projection to middle tibiae.

Strobl (1910: 86) mentioned another specimen: „Im Gesäuse traf ich 1 sonst identisches ♂; nur sind auch die Mittelschenkel oberseits schwarz und die beiden Flügelbinden sind durchaus getrennt; höchst wahrscheinlich nur Var. davon. Ich hielt diese Tiere lange für *morio* Zett., doch wird diese jetzt allgemein als synonym zu *connexa* betrachtet." This specimen is also present in Strobl's Collection and labelled "*Tachysta morio* Z." but it is obviously different species. It differs from *T. calcarata* in absence of dorsocentrals, in shorter middle tarsi, larger apical projection to middle tibiae, in quite different hypopygium (fig. 54) and in well separated brown bands on wing along the whole length. This specimen represents very probably an undescribed species of the *arrogans*-group, quite different from *T. arrogans* (L.), *T. productipes* (Str.) or *T. ornatipes* (Beck.).

I have found another male in the Zoologische Staatssammlung, München, which is identical with *T. calcarata*. It is labelled "70. 2 335." only and unfortunately, as in the type specimen, without head.

Distribution: Austria.

Dates: July.

Material Examined: Admont 14. VII. 1 ♂ Strobl (*Tach. calcarata* m. i. l., det. Strobl) — coll. Strobl. Sine loc., 70. 2. 335. 1 ♂ — coll. München.

29. *Tachydromia tuberculata* (Loew, 1864) comb. nov.

Tachista tuberculata Loew, 1864, Zeitschr. f. Ent. Breslau, 14 (1860): 25

Tachista costalis v. Ros. apud Engel, 1938 p. p., in Lindner, Flieg. pal. Reg., IV: 27

Male. Frons shining black, rather narrow at base and slightly widened above. Vertex and occiput shining black, latter with only faint and hardly visible greyish dust. Two longer dark ocellar bristles, sometimes additional one or two shorter dark hairs, two long and wide apart postvertical, inserted

behind hind eye-corner and a number of fine dark hairs on the whole occiput. Antennae somewhat yellowish at base, 3rd segment brown, globular and with short slightly supraapical dark arista, which is about twice as long as antenna. Palpi dark brown, very short, with one or two black terminal bristles and some other dark hairs.

Thorax shining black, entire prothorax and metathoracic episternum densely silvery dusted. Dorsocentrals and acrostichals in form of irregular pale points on mesonotum, two black notopleural bristles, the front being shorter, one postalar and two pairs of scutellar bristles, the outer pair short and fine.

Legs rather longer and more slender than in *T. connexa* Meig. or *T. costalis* (v. Ros.), entirely dark brown, only nearly all fore coxae, hind coxae at tip and hind femora at base, yellow; anterior four femora somewhat yellowish but distinctly brown above. Fore femora slightly stouter than middle femora, with anteroventral row of longer fine dark bristles and with two long dark hairs at base beneath, some other dark hairs also on fore coxae at tip. Fore tibiae slightly widened towards tip and, as well as fore tarsi, only short haired. Middle femora with round swelling at first-third beneath, the swelling bears 2 longer spines and, posteriorly, a tuft of short black hairs, femur on apical half with double row of short black bristles. Middle tibiae only short haired beneath and with a slight rim-like projection at tip (fig. 56). Hind legs long and slender and only short haired. Tarsal segments rather slender, not so short as is usual in this group of species, 2nd segment of all tarsi only hardly longer than one half of metatarsus.

Wings (fig. 55) somewhat longer and rather wide with rounded tip. The brown bands are broadly connected along costa, leaving only basal fourth of wing and extreme apex hyaline, the hyaline mid-stripe reaches upwards only to middle of first posterior cell. Radial vein straight, cubital and discal veins parallel, marginal cell very slightly narrower than submarginal, both cells being completely clouded with the exception of apex of the latter. Halteres whitish, stem brownish.

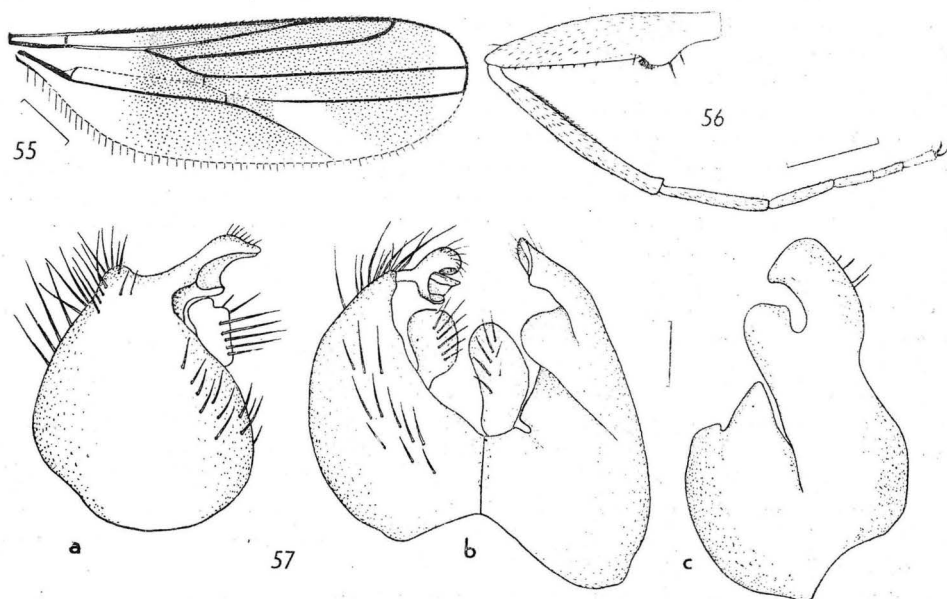
Abdomen shining blackish brown, short and fine black pubescent, tergites somewhat dulled with brownish dust. Sixth tergite, and seventh and eighth sternites with some scattered long hairs at hind margin, sixth sternite with tuft of very short black hairs at hind margin at sides. Genitalia (fig. 57) rather large and globular, right lamella of epandrium very large, sparsely fine pubescent, some shorter pale hairs anteriorly and with longer dark hairs at hind margin; dorsal process very complicated. Hypandrium somewhat convex and with small finger-like process at apex.

F e m a l e. Very closely resembling male, middle femora with two very long pale hairs at base beneath and with double row of short black bristles along the whole length. Middle tibiae with no trace of rim-like projection at tip. Tergites dulled with silvery brown coating, sternites shining dark brown, last three abdominal segments all greyish dusted.

L e n g t h: body 2.3—2.8 mm., wing 2.3 mm.

This species may be distinguished by extensively darkened and longer legs, tarsi especially are rather long and slender, by clouded marginal and submarginal cells, latter without any hyaline area at middle. Fore tibiae and tarsi in male only short haired (in contrast to *T. elbrusensis* sp. n.), middle

femora with round tubercle near base beneath, only very small rim-like projection to middle tibiae beneath at tip and sixth tergite with only scattered hairs along hind margin. Female is well distinguishable by slender dark brownish legs and conspicuously silvery brown dulled dorsum of abdomen. *T. costalis* (v. Ros.) (= *submorio* Coll.), which has the same wing pattern, is smaller (about 2 mm.), legs not so extensively darkened, 2nd segment of middle tarsi in male nearly as long as metatarsus and sixth tergite with tuft of long blackish hairs at hind margin at middle.



Tachydromia tuberculata (Loew) ♂: Fig. 55. — Wing. Fig. 56. — Middle leg. Fig. 57. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (lectotype: Saualp, Austria).

Engel (1938), without having been revised the type material of *T. tuberculata* (Loew), synonymized this species with older von Roser's *T. costalis*, which is in fact quite a different species, described more recently by Collin (1961) as *Sicodrus submorio*.

Distribution: Central Europe.

This species is known up to the present time only from Germany, Czechoslovakia, Austria and Hungary. Loew (1864) described it on the basis of the material taken in Moravia at Jeseník (Freiwaldau) and in Carinthia (Saualp). I have seen the type series of four specimens in Loew's Collection in Berlin, 2 males and 1 female labelled "Saualp, Zeller, *Tachista tuberculata* m." and a different single male with illegible locality label, determined by Loew as „*tuberc.*". The male closely resembles *T. tuberculata* but occiput is grey dusted

only just behind vertex, otherwise shining, legs are entirely yellow, only all tibiae at tip somewhat brownish and all tarsi distinctly black annulated; fore femora with only a single anteroventral row of very minute and fine darker bristles, otherwise legs as in *tuberculata*. Sixth tergite at hind margin with row of long brownish hairs and with brush of somewhat shorter black hairs at sides. The male represents an undescribed species.

I have selected one male from the type series (Saualp, Zeller) and have labelled it as lectotype.

Dates: May to August.

Material Examined: Saualp (2 ♂♂ 1 ♀) Zeller (*Tachista tuberculata* m., det. Loew) — coll. Loew. Admont 25. VI. 1890 1 ♂ 1 ♀ (*Tachista tuberculata* Lw., det. Becker) — coll. Becker. Salzburg, Aigen 20. VI. 1885 1 ♀ Mik (*Tachista costalis* v. Roser, det. Dr. E. O. Engel); Pistgau 31. V. 1901 1 ♀ (*Tachista tuberculata* Lw., det. Lichtwardt) — coll. Wien. Triebenthal 19. VIII. 1 ♀ (*Tach. connexa*, det. Strobl) — coll. Strobl. Württemberg 1872—76 1 ♀ v. Roser; sine loc. 1 ♀ (*Tachista connexa* Mg., det. Oldenberg) — coll. Stuttgart.

30. *Tachydromia costalis* (von Roser, 1840) comb. nov.

Tachypeza costalis von Roser, 1840, Korresp. Württ. landwirt. Ver., 1 : 53

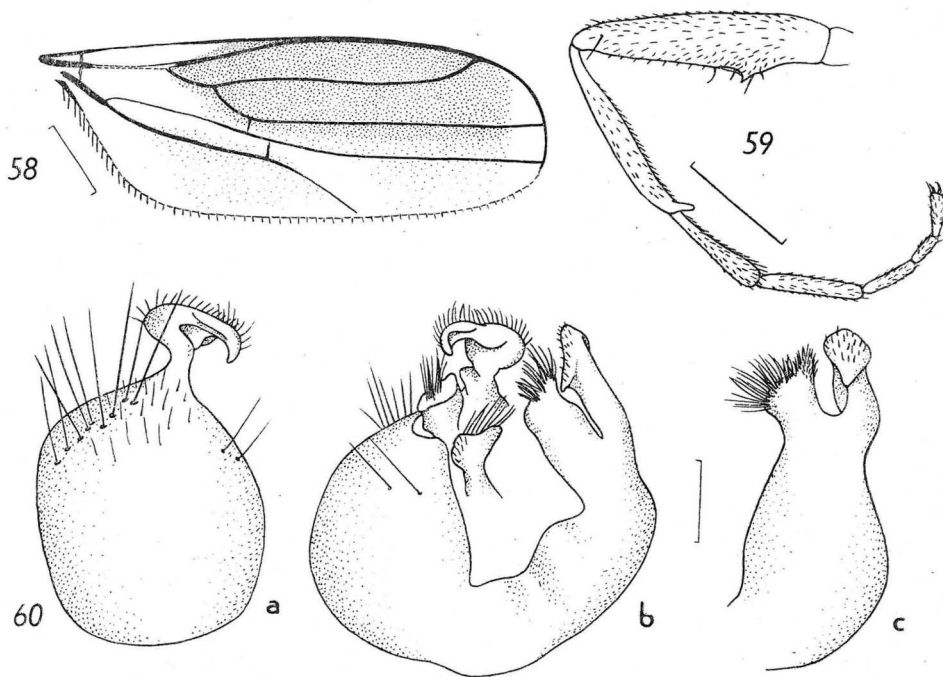
Sicodus submorio Collin, 1961, British Flies, 6 : 88 — syn. n.

Male. Frons and vertex shining dark brown, frons only a little widened towards vertex. Occiput very slightly covered with greyish dust, leaving the sides right to eye-margin shining. Two small black ocellar bristles, two longer and wide apart postvertical and some other fine dark hairs behind them and on lower part above the mouth-opening. Basal antennal segments yellowish, 3rd segment darker, with short somewhat supraapical black arista which is about twice as long as antenna. Palpi very small and short, dark brown, clothed with sparse brownish hairs and with black terminal bristle, sometimes with one or two shorter additional bristly hairs.

Thorax shining dark brown to black, prosternum, whole prothoracic episternum and metathorax above hind coxae, largely covered with silvery grey dust. Acrostichals nearly absent, dorsocentrals pale and very minute, irregularly uniserial, some other pale points also on humeri. Two long black notopleural bristles, the front smaller, one postalar and two pairs of scutellar bristles, the inner pair longer and coarser.

Legs rather short and stout, anterior pairs predominantly yellowish, hind legs dark brown with the exception of coxae and basal fourth to third of femora. Fore femora with brownish streak above, tibiae somewhat brownish towards apex above, middle femora extensively brown, leaving only tips yellowish, middle tibiae sometimes brownish at middle. Anterior four tarsi yellow, last segment blackish brown. Fore femora stout with anteroventral row of short dark bristles becoming longer and paler towards base. Fore tibiae and metatarsus with long and dense pale hairs beneath, middle femora as in *T. connexa* Meig., but anteroventral spine between excavation and base straight, as in *morio* Zett. Middle tibiae only short haired with short shovel-like apical

projection (fig. 59). Hind tibiae with anteroventral row of long dark hairs on apical half, the hairs being adpressed but nearly as long as tibia is deep. 2nd segment of middle tarsi nearly as long as metatarsus, both segments with some short dark bristles beneath.



Tachydromia costalis (v. Ros.): Fig. 58. — Wing of female (holotype). Fig. 59. — Middle leg of male. Fig. 60. — Male genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Württemberg Umg.?, Germany).

Wings (fig. 58) rather short and rounded at tip, with brown bands broadly connected along costal margin, the hyaline mid-stripe reaches from below only to first posterior cell, marginal and submarginal cells being entirely brownish leaving only very extreme apex hyaline. All longitudinal veins straight, marginal and submarginal cells of equal width. Halteres whitish yellow.

Abdomen shining dark brown, somewhat dulled above, sixth tergite with a tuft of long dark hairs at middle of hind margin, at sides only with usual dark hairs. Last two sternites with longer dark hairs along hind margin. Genitalia (fig. 60) large and globular, right lamella of epandrium with dorsal foot-like process as in *connexa* Meig.

F e m a l e. Closely resembling male but legs are darker, anterior four tibiae and tarsi dark brown, tarsi more slender, second segment being not so long as metatarsus and middle femora simple with double row of black bristles along the whole length. Fore femora with anteroventral row of short

black bristles as in male but tibiae and metatarsus only short haired as well as apical half of hind tibiae. Abdomen covered with greyish dust, only sternites shining, cerci rather short but slender.

Length: body 1.9—2.2 mm., wing 1.8—2 mm.

This species may be distinguished with *T. tuberculata* (Loew), *T. calcarata* (Str.) and *T. elbrusensis* sp. n. from the other species of this group by dark costal band of wing being without any hyaline area in submarginal cell. *T. tuberculata* has extensively darkened and rather long and slender legs, fore tibiae and metatarsus in male only short haired, no shovel-like apical projection to middle tibiae, middle femora with distinct tubercle near base beneath and second segment of middle tarsi being much shorter than metatarsus. *T. calcarata* has very small hypopygium, apparently long dark dorsocentrals, legs longer and small but very pointed apical projection to middle tibiae. *T. elbrusensis* has entirely black hind legs, fore tibiae and metatarsus with apparently long hairs beneath and all hyaline areas on wing being somewhat milk-white coloured.

The original description given by von Roser in 1840 was very short: "femoribus anterioribus rufis, alis ad marginem anteriorem nigris", and Engel (1938 : 27) although has seen the type female in the Museum at Stuttgart, described and figured under this species *T. tuberculata* (Loew) which he took to be identical with von Roser's *costalis*.

I have not seen the type material of *Sicodus submorio* Coll., but this species, according to the original description and with regard to the specimens I have seen in the British Museum, London, is certainly identical with *T. costalis*.

By the courtesy of Prof. Dr. E. Lindner, I had the possibility to revise von Roser's type material deposited at Stuttgart, in all 2 males and 2 females, one female being labelled „*costalis* m., Type" and the rest of the material erroneously determined, very probably later by Oldenberg, as *Tachista connexa* Meig.

Distribution: England, Central and South Europe.

This species is known up to the present time only from England, Germany and Italy.

Material Examined: Sine loc. (Württemberg) 1 ♀ "costalis m., Type" (*Tachista costalis* v. Ros. Type, det. Oldenberg) (*Tachista costalis* v. Ros. = *tuberculata* Lw., det. Dr. E. O. Engel), 1 ♂ (*Tachista connexa* Mg., det. Oldenberg), 1 ♂ 1 ♀ v. Roser (*Tachista connexa* Mg., det. ? Oldenberg) — coll. Stuttgart.

31. *Tachydromia elbrusensis*, sp. n.

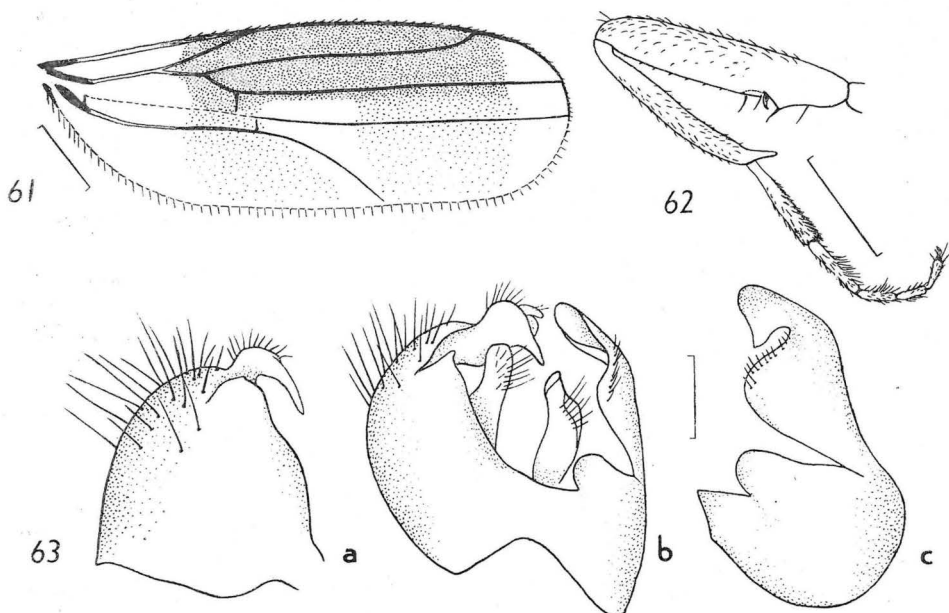
A species very closely resembling *T. connexa* Meig. but fore tibiae and metatarsi much longer hairy in male, hind femora all black, wings with distinct blackish brown costal band which is only faintly brownish beyond cubital vein, submarginal cell without any hyaline area; wing at base and apex and rest of hyaline mid-stripe beyond cubital vein, somewhat glittering milk-white.

Male. Frons shining black, only slightly widened above, vertex and occiput dulled with greyish dust. Two long black ocellar bristles, two wide apart postvertical of the same length, otherwise occiput nearly bare. Basal

antennal segment yellowish brown, 3rd segment dark, nearly globular, with short dark apical arista, at most twice as long as antenna. Palpi dark brown, very short and slender, covered with only sparse brownish hairs and with long black terminal bristle.

Thorax shining black, prosternum, prothoracic episternum and metathorax above hind coxae, largely silvery pollinose. No acrostichals, dorso-centrals uniserial, very minute and brownish. Two long notopleural bristles, front one somewhat shorter, one postalar and two pairs of scutellar bristles, outer pair only fine and much shorter.

Legs rather short and stout, anterior four legs predominantly yellowish, hind legs entirely shining black. Anterior coxae and femora yellow, latter only with dark brown streak above, fore tibiae yellow, dark brown on the whole length above, fore tarsi yellow, last two segments blackish. Middle tibiae blackish brown, tarsi brownish, last two segments darker. Fore femora stout, with only fine yellowish hairs beneath, tibiae and metatarsi with very long yellowish hairs beneath, the hairs on tibia being nearly as long as tibia is deep, on metatarsus about twice as long as metatarsus is deep. Middle femora with shallow excision in first-third beneath as in *connexa* Meig., dark anteroventral spine curved and another three very long black spine-like bristles at margin. From the excision towards tip anteroventral row of 6 to 8 very small dark bristles. A distinct shovel-like blunt ended apical projection to middle tibiae



Tachydromia elbrusensis sp. n. ♂: Fig. 61. — Wing. Fig. 62. — Middle leg. Fig. 63. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (holotype: Elbrus, Caucasus).

beneath, 2nd and 3rd tarsal segments with long dark hairs beneath, the hairs being longer than segments are deep, 2nd segment shorter than metatarsus but longer than one half of its length (fig. 62). Hind femora only short haired, tibiae with anteroventral row, of long black hairs on apical half.

Wings (fig. 61) with brown bands broadly connected along costa, rather broad hyaline mid-stripe reaches upwards only to cubital vein, no hyaline area in submarginal cell. Dark bands are apparently darkish brown along costal margin to cubital vein but only very faint and more greyish below. Hyaline mid-stripe, as well as base and apex of wing, are somewhat milk-white, veins being whitish here, otherwise dark brown. Radial vein straight, marginal cell as wide as submarginal. Halteres whitish, stem brownish.

Abdominal tergites distinctly silvery grey dusted, leaving only narrow stripe along hind margin shining black, sternites nearly shining, covered with very fine brownish hairs, only last two sternites with long dark hairs at hind margin. Sixth tergite with tuft of long black hairs at hind margin at middle, otherwise only short haired. Genitalia (fig. 63) large and globular, right lamella of epandrium with long black hairs posteriorly and with pointed foot-like dorsal process.

F e m a l e. Differing from male as follows: anterior legs darker, only both femora and fore tibiae at base yellowish, fore tibiae and tarsi only short haired. Middle femora with double row of rather long black bristles along the whole length beneath, without any excavation and with two long yellowish hairs at base, no apical projection to middle tibiae; all tarsi and hind tibiae only short haired. Abdomen with shining black stripe at hind margin of each tergite as in male, only last three segments entirely greyish dusted, cerci rather long and slender.

L e n g t h: body 1.8 mm. (male) — 2.3 mm. (female), wing 2—2.2 mm.

This species is easily recognized from other species of the *connexa*-group by extensively darkened, connected brown bands along costal margin which are only faintly greyish beyond cubital vein; by entirely black hind legs and by silvery dusted dorsum of abdomen, leaving only stripes at hind margin of each tergite shining.

D i s t r i b u t i o n: Caucasus.

D a t e s: July.

This species is known only from three specimens taken by Dr. P. Stary in the Caucasus on the glacier Irik on Elbrus on 31 July 1966. Adults have been captured at an altitude of about 2500 m., running about on birch-trunk.

H o l o t y p e ♂: Caucasus occ., glacier Irik (Elbrus) cca 2500 m., 31. VII. 1966 leg. P. Stary; in the National Museum, Praha.

P a r a t y p e s: 2 ♀♀ of the same data; one in the National Museum, Praha, the second in author's collection.

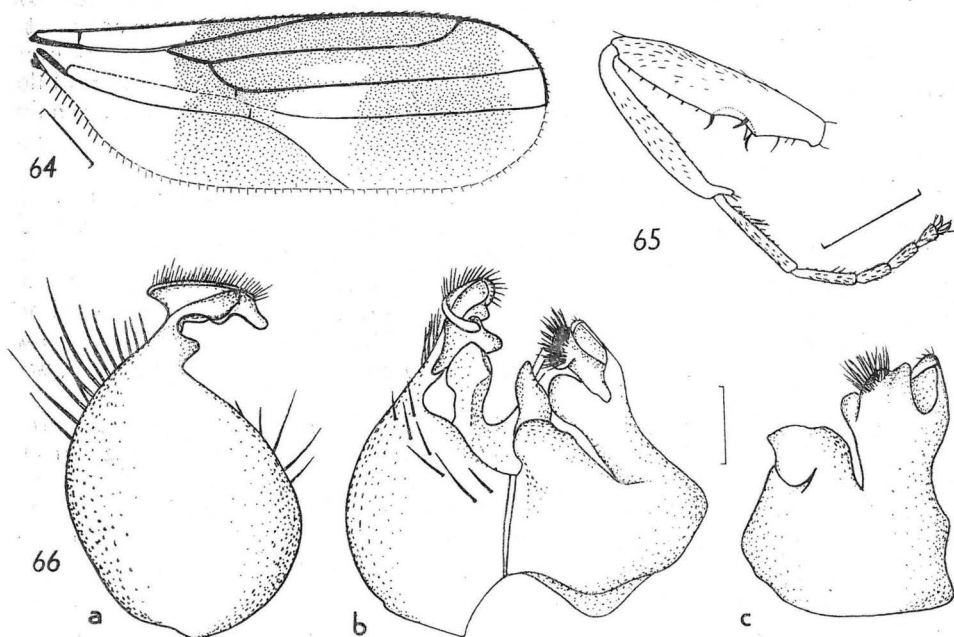
32. *Tachydromia connexa* Meigen, 1822

Tachydromia connexa Meigen, 1822, Syst. Besch., 3 : 70

M a l e. Frons shining black, very narrow below, and distinctly widened towards vertex. Vertex and occiput shining black, latter entirely but very indistinctly covered with greyish dust. Two longer black ocellar bristles, two

long and wide apart postvertical and some other shorter dark hairs on the whole occiput. Basal antennal segments yellowish, 3rd segment brown, shortly egg-shaped with slightly supraapical dark arista which is hardly twice as long as antenna. Palpi blackish brown, very short, only short dark pubescent and with black terminal bristle.

Thorax shining black, all prothorax and metathorax largely silvery dusted. Dorsocentrals uniserial, pale and very minute, no acrostichals. Two black notopleural bristles, the front somewhat shorter, one postalar and two pairs of scutellar bristles, the inner pair twice longer and distinctly coarser.



Tachydromia connexa Meig. ♂: Fig. 64. — Wing. Fig. 65. — Middle leg. Fig. 66. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Čelákovice, Czechoslovakia).

Legs predominantly yellow, anterior four femora with brown streak above, hind femora with the exception of base and all hind tibiae, blackish brown. Fore femora slightly stout, only a little stouter than middle femora, ventrally with row of fine pale hairs becoming longer towards tip, no trace of black bristles. Fore tibiae with anteroventral row of rather long and dense yellowish hairs, the hairs being present also on two basal segments of fore tarsi. Middle femora with shallow excision in first-third beneath, posteriorly with triangular yellow pointed tooth and black curved spine, on the anterior margin next 2 black spines. From the excision towards tip a double row of

very short and scattered black bristles. Middle tibiae shortened, only short haired and with shovel-like apical projection beneath (fig. 65). Hind legs slender, femora only short haired, tibiae with anteroventral row of longer adpressed black hairs on apical half. Tarsal segments of anterior two pairs rather short, 2nd segment of middle tarsi only very slightly longer than half of metatarsus.

Wings (fig. 64) rather wide and short, blunt ended, brown bands broadly connected along costal margin, leaving basal part of wing and apex hyaline. The hyaline mid-stripe reaches upwards to cubital vein and in form of isolated patch also to submarginal cell. Radial vein straight, cubital and discal veins nearly parallel, marginal and submarginal cells of about the same width. Halteres whitish yellow, stem darker.

Abdomen shining black, hind margin of sixth tergite at middle with long and dense blackish brown hairs, hind margin of seventh and eighth sternites with long but scarce dark hairs. Genitalia (fig. 66) very large and globular, right lamella of epandrium at hind margin with long brownish hairs, dorsal process horseshoe-shaped with widened ends at sides. Both cerci rather short and nearly bare, concealed in large lamellae of epandrium.

F e m a l e. Legs distinctly darker, all tibiae and tarsi more brownish, fore tibiae densely but only short yellowish pubescent beneath, as well as basal segments of fore tarsi. No ventral excision to middle femora, only double row of short black bristly hairs beneath along the whole length, and long yellow hair at base. No apical projection to middle tibiae. Last three abdominal segments greyish dusted, cerci rather short and slender. Otherwise as in male.

L e n g t h: body 1.8—2.2 mm., wing 2 mm.

This species may be distinguished with *T. morio* (Zett.) from the other species of this group by presence of hyaline patch in submarginal cell. *T. morio* has fore femora with row of fine black bristles beneath, legs darker, especially hind femora being all black including base and 2nd segment of middle tarsi nearly as long as metatarsus.

D i s t r i b u t i o n: Europe.

This species seems to be distributed all over Europe but more frequent in Central Europe. I have seen the documentary material from England, Sweden, Germany, Poland, Czechoslovakia, Austria, Switzerland, Rumania, Italy and France. *T. connexa* has not been recorded up to date from the north and the south of Europe, but I have found documentary material in Becker's Collection also from Scandinavia (Stockholm) and from the south from Rumania (Transylvania, Sinaia), and from French Pyrenees (Prades). The occurrence in Scandinavia is very surprising because *T. connexa* has been taken by all authors (e. g. Strobl, 1893, Collin, 1961) for a species with a more southern distribution which is replaced in the north by *T. morio* (Zett.). The record given by Frey (1913) from Finland refers very probably to *T. morio*, because Frey took these two species as identical (see the note under the latter).

Tachysta connexa var. *c.*, described by Strobl in 1893, and differing in darkened legs, is according to the single specimen (Admont 10. VIII.) deposited in Strobl's Collection, a female of *T. arrogans* (L.).

D a t e s: April to beginning of August.

T. connexa Meig. is a more springtime species, occurring mainly in May

and June. I have seen the documentary material taken on dates ranging from 8 April (Gorizia, Italy) to 6 July (Styria, coll. Strobl); according to Strobl (1893) in Styria until August but the only one female from 19 August deposited in Strobl's Collection and determined by Strobl as *connexa* is in fact *T. tuberculata* (Loew). Collin (1961) records this species in England on dates ranging from 7 June until 9 August.

In Central Europe not a rare species, Strobl collected adults on stones and lying logs near brooks and, as well as Czižek (1910), on bushes. I have taken this species only twice, on 25 May 1965 a pair at Čelákovice (Central Bohemia) running about on large leaves of *Petasites* and a single female in the same situation on 12 June 1966 at Korytnica in Nízké Tatry Mts. (Central Slovakia).

Material Examined: Brno (Karthus) 30. V. 1908 1 ♂ 2 ♀♀ Czižek; Pisárky 1. VII. 1909 1 ♀ Czižek (both *T. connexa* Mg., det. Czižek); Černo-vice 17. V. 1 ♀ Czižek (*T. arrogans*, det. Czižek) — coll. Brno. Austria sup., Linz 8. VI. 1867 1 ♀ Mik, Freistadt 10. V. 1870 4 ♂♂ 10 ♀♀ Mik, 26. VI. 1883 1 ♀ Handlirsch, Gallneukirch 19. VI. 1867 1 ♀ Mik; Austria inf., Bisamberg 18. V. 1884 1 ♂ 1 ♀ Mik, 2 ♀♀ Handlirsch, Brühl 3. VI. 1879 1 ♀ Mik, Piesting 1 ♀ P. Löw, Weidling 9. VI. 1885 1 ♀ P. Löw; Styria inf., Tüffer 20. V. 1917 1 ♀, Wotsch 22. V. 1917 1 ♀ Zerny; Austria 1 ♂ 2 ♀♀ Alte Sammlung (*connexa*, det. Schiner), 1 ♂ (*sabulosa*, det. Egger), 1 ♀ coll. Egger (*connexa*, det. Egger); sine loc. 2 ♂♂ 2 ♀♀ coll. Winthem (*connexa*, det. ?), 1 ♀ coll. Wiedemann (*connexa* M., det. ? Meigen), 3 ♂♂ 1 ♀ coll. Bgst. (*connexa*, det. Bergenst.); Germania, Aachen 1 ♂ Mik; Süd-Mähren, Nikolsburg (Mikulov) 16. V. 1926 1 ♂ 2 ♀♀ Zerny; Illyria, Görz (Gorizia) 8. IV. 1865 1 ♂ Mik — coll. Wien. Schlesien, Nimptsch 1. VII. 1906 1 ♀ Duda — coll. Duda. Berlin, Finkenkrug 17. VI. 1900 1 ♂ 1 ♀ (*Tachista connexa* Meig., det. Oldenberg), Berolina 1 ♀ Erichson, 9. V. 1841 2 ♂♂ 7 ♀♀ Erichson ?; loc. No. 10802 29. V. 1840 1 ♂ (all *connexa* Meig., det. Loew) — coll. Loew. Moisdorf VI. 1 ♀; Dohnau 15. VI. 1 ♀; Peist 4. VI. 1 ♂; Sinaja 3. VII. 1 ♂ 1 ♀; Stockholm 9. VI. 1 ♂ 1 ♀; Siebenbürgen VII. 1 ♀; Ziegenhals (Glucholazy) 3. VI. 1 ♀ (all *connexa* Meig., det. Becker); Prades V. 3 ♀♀; At VI. 1 ♀ (both *Tachista* sp., det. Becker) — coll. Becker. Stettin, Hökendorf 21. V. 1907 1 ♀, Sandsee 13. VI. 1907 1 ♀ E. Schmidt — coll. Warszawa. Styria 1 ♂ 1 ♀ Strobl, Admont 3 ♀♀ Strobl; Saxonia, Dresden-Trach 28. V. 1930 1 ♀ Junghähnel; Berlin, Finkenkg. 17. VI. 1900 1 ♀ — coll. Dresden. Veitlgraben 4 ♂♂ 4 ♀♀ Strobl; Amstetten 2 ♂♂ 2 ♀♀; Seitenstetten 2 ♂♂ 8 ♀♀, 21. VI. 3 ♂♂, 2. VII. 1890 1 ♀ (all *Tachydromia connexa* Mg., det. Strobl), 8. V. 1891 2 ♀♀ (var. *B*, det. Strobl); Melk 6. VI. 1 ♀; Innsbruck 1 ♀ (both *connexa* Mg., det. Strobl) — coll. Strobl. Monachium 2 ♂♂ 1 ♀ Hiendlmayr (*Tachydromia fuscipennis* Fall., det. ?); Südbayern, Freiham 20. VI. 1946 1 ♀ F. Daniel; Salzburg, Glan Moos 27. V. 1963 1 ♂, Parsch 3. VI. 1963 1 ♀, 21. VI. 1962 1 ♀, 30. VI. 1961 1 ♀ P. P. Babiý — coll. München.

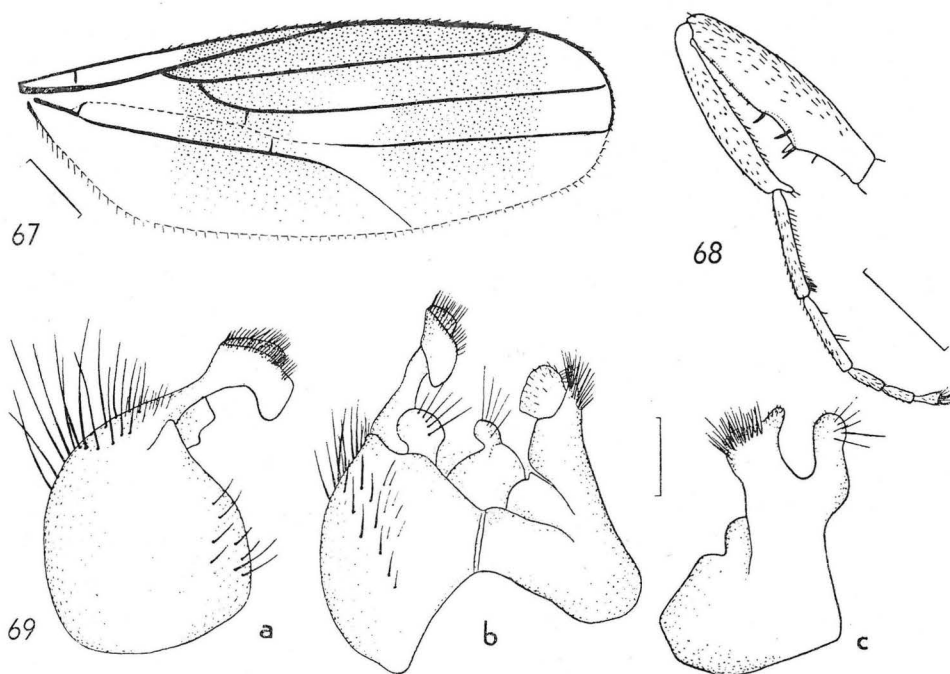
33. *Tachydromia morio* (Zetterstedt, 1838) comb. nov.

Tachypeza morio Zetterstedt, 1838, Ins. Lapp. Dipt., p. 546

Male. Frons shining black, very narrow at base and distinctly widened above, at ocellar triangle at least twice wider than at base above antennae.

Occiput wholly very faintly greyish dusted, at sides right to eye-margin shining. Two short black ocellar bristles, two longer and wide apart postvertical and some other fine dark hairs on the upper part of occiput. Antennae dark brown, 3rd segment slightly pointed at tip and with short dark somewhat supraapical arista which is about twice as long as antenna. Palpi dark brown and very small, shorter than proboscis, covered with sparse dark hairs and with long black terminal bristle of about the same length as palpus.

Thorax shining black, with prothorax and metathorax largely silvery dusted, mesonotum with two black notopleural bristles, the front being shorter, and one postalar. Two pairs of scutellar bristles, outer pair fine and much shorter. Dorsocentrals very minute, acrostichals practically absent.



Tachydromia morio (Zett.) ♀: Fig. 67. — Wing (Lapponia). *Tachydromia? morio* (Zett.) ♂: Fig. 68. — Middle leg. Fig. 69. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Vermosa, Albania).

Legs predominantly blackish brown, only all knees paler, fore femora with anteroventral row of rather short black bristles along the whole length; tibiae with row of fine black hairs beneath and, especially at tip, short and densely pale pubescent. Middle femora with shallow excision as in *T. connexa* Meig., but the black spine placed posteriorly to ventral excavation straight. Middle tibiae shortened with shovel-like projection at tip beneath, 2nd tarsal segment of nearly the same length as metatarsus. Hind legs rather long and

slender, entirely black femora with row of longer fine black hairs beneath.

Wings (fig. 67) as in *T. connexa* Meig. with brown bands broadly connected along costa and with hyaline area in submarginal cell about middle. Halteres pale yellowish, brownish at base.

Abdomen shining dark brown, sixth tergite at hind margin with brush of long blackish hairs in middle third and at sides in hind corners. Genitalia very large and globular, closely resembles that of *connexa* but dorsal process to right lamella of epandrium wider.

F e m a l e. Closely resembling male but middle femora with only double row of longer black bristles beneath and with two long black hairs at base. Abdomen with only sparse and fine dark hairs, last segments dulled with greyish dust, cerci rather short and slender.

L e n g t h: about 2 mm.

T. morio (Zett.) closely resembles *T. connexa* Meig., the distinctive characters are given in the Table and under the latter species. It may be distinguished from all other species of the *connexa*-group by the presence of hyaline area in submarginal cell.

This species was described by Zetterstedt from Scandinavia (Lapland) but later by many authors (Strobl, 1893, Engel, 1938) taken only for a dark form of *T. connexa*. The lectotype (♂ "Lapp., Giebostat"), selected by Collin, is deposited in Zetterstedt's Collection at Lund.

D i s t r i b u t i o n: England, North and Central Europe.

Northern species known from Scandinavia, later on found also in Scotland and northern parts of England (Collin, 1961), in Scotland being more frequent. I have found a single female from Styria (Gesäuse) in Strobl's Collection, arranged among specimens of *T. connexa*. Frey (1913) records this species as "*Tachista connexa* Meig = *Tachypeza morio*" from Finland. I had at my disposal a single female from Sweden and another documentary material from the Museum in Vienna and from Loew's Collection, in both cases very old material determined very probably by Zetterstedt himself. There is another single male in the Museum in Vienna labelled "Vermosa 1200 m, Altan. montenegr. Grenze, 3. VI.—5. VII. 1914, Penther" which is very similar if not identical with *T. morio* (figs. 68, 69).

D a t e s: May to July.

M a t e r i a l E x a m i n e d: Lapponia 2 ♀♀, No. 10804 1 ♀ (all *Tachypeza morio* Lap. Ztst., det.? Zetterstedt) — coll. Loew. Torne lappm., Abisko 1929 1 ♀ L. Brundin — coll. Lund. Gesäuse 28. V. 1 ♀ (*T. connexa*, det. Strobl) — coll. Strobl. Sine loc. 1 ♀ (*Tachpz. morio* Ztst., det.? Zetterstedt) — coll. Wien.

6. *Tachydromia calcanea*-group

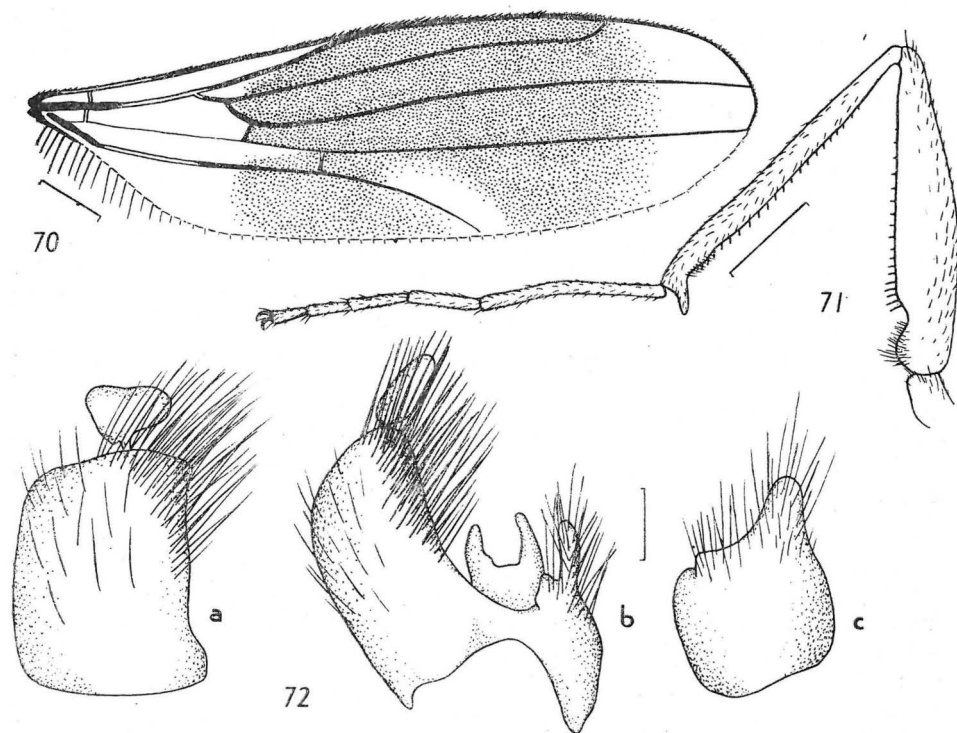
34. *Tachydromia calcanea* (Meigen, 1833) comb. nov.

Tachypeza calcanea Meigen, 1833, Syst. Besch., 7 : 95

Tachista longipennis Loew, 1864, Zeitschr. f. Ent. Breslau, 14 (1860) : 95

M a l e. Frons shining black, somewhat widened towards shining vertex, occiput wholly covered with greyish dust, only on the lower part above mouth-

opening slightly shining. Two short ocellar bristles, two long black postvertical, with one or two pairs of shorter black hairs at sides and another pair of long black hairs just above neck. Whole occiput covered with scattered long whitish hairs. Antennae brown to dark brown with long supraapical arista which is about four times as long as antenna. Palpi long and very slender, about as long as proboscis, very pale, clothed with short greyish hairs and with short dark terminal bristle.



Tachydromia calcanea (Meig.) ♂: Fig. 70. — Wing. Fig. 71. — Middle leg. Fig. 72. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Brezno, Czechoslovakia).

Thorax entirely shining black, only prosternum, scutellum and metanotum faintly greyish pollinose, no silvery patch on prothorax between humeri and fore coxae. Dorsocentrals uniserial, pale and very minute, acrostichals absent. One strong black notopleural bristle, 2 pairs of scutellar, the inner pair long and black, the outer one only fine and paler, only half the length of the inner pair.

Legs dark brown to black, only whole fore coxae, posterior four coxae at tip, fore femora at base, all knees, and first segments of all tarsi, yellowish. Fore femora somewhat stout, with long yellow and black hairs at base beneath,

towards tip with row of short black bristly hairs. Fore tibiae spindle-shaped dilated, with very long yellow hairs near apex above and with row of short black bristly hairs on the whole length beneath. Middle femora (fig. 71) with a shallow excision near base beneath, anteriorly with tuft of yellow hairs and double row of short black hairs beneath towards tip. Middle tibiae with a row of short black bristly hairs beneath and with large shovel-like projection at tip. First segment of all tarsi short black pubescent, very long, nearly as long as all other tarsal segments together.

Wings (fig. 70) long and rather narrow, nearly twice as long as abdomen, predominantly greyish brown clouded, leaving only base, apex from the end of radial vein and small patch at hind margin, hyaline. Radial vein only slightly arched towards costa at middle, marginal cell distinctly narrower than submarginal and first posterior. Halteres whitish yellow.

Abdomen shining dark brown to black, with longer brownish hairs on the venter, last segments with long dark hairs at hind margin. Genitalia (fig. 72) large, wider than last abdominal segments, apically with tufts of long brown hairs. Right lamella of epandrium rectangular, densely and long hairy at front margin, dorsal process rather wide and plain, with narrow stem. Left lamella smaller and only finely hairy above. Hypandrium with very long brown hairs at central part.

F e m a l e. Resembling male but palpi brownish, no ventral excision to middle femora near base and middle tibiae without apical projection, only short and densely black pubescent beneath. Last three abdominal segments dulled with brownish dust, cerci long and slender, fine brownish pubescent as well as last three abdominal segments. Fore tibiae without long yellowish hairs above.

L e n g t h: 2.5—3.5 mm.

T. calcaenea (Meig.) is a large blackish species and the only one without silvery patch on prothorax, with wings without brown bands, but extensively darkened, leaving only base, apex and a small area near the end of postical vein at hind wing-margin, hyaline.

D i s t r i b u t i o n: Central and South Europe.

Predominantly Central European species known from Germany, Poland, Czechoslovakia and Austria (Map 5), Thalhammer (1899) recorded it (as *longipennis* Lw.) from Rumania (Mehadia), and I have found a pair from Transylvania in Becker's Collection. Loew's *Tachista longipennis* is identical with this species, I have found one male in Loew's Collection labelled "Salzbrunn VII. 1859" and "*longipennis* m.", which should be the type, because Salzbrunn (Polish Szczawno near Zdrój in Central Silesia) corresponds with the locality "Fürstenstein", given in the original description. Meigen's type of *T. calcaenea* is probably in the Museum in Paris.

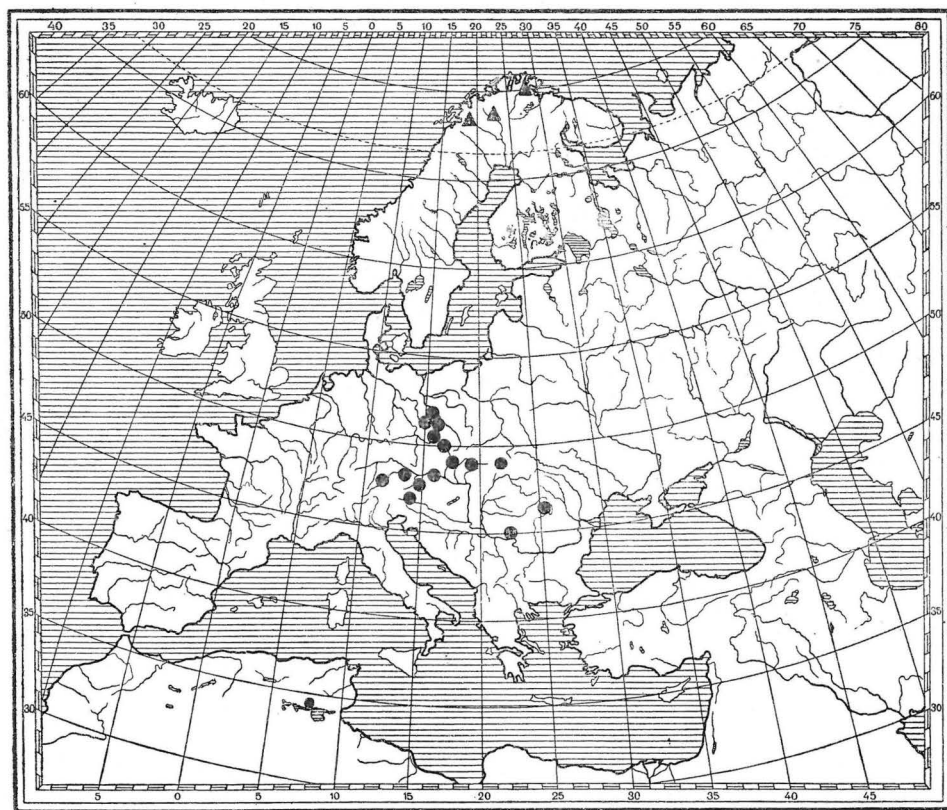
D a t e s: May to August.

The species occurs most frequently in July, but I have seen documentary material on dates ranging from 24 May (Onova) to 28 August (Moisdorf).

T. calcaenea (Meig.) seems to be a local species but at suitable localities very common. It is often to be found in collections in large series from one locality, the most numerous material is deposited in Duda's Collection; he

collected in the period of four years at one locality at Bystrzyca Kłodzka (Wustung bei Habelschwerdt) in Polish Silesia altogether 68 males and 43 females. The adults are to be found in various situations, running about on vegetation, stones or logs, usually in moist and shady localities along brooks, they fly very well and quickly, also for long distances. According to Strobl (1893) in Alps up to an altitude of 1250 m.

I collected this species only four times, in Nízke Tatry Mts. near Brezno (Central Slovakia) on 18 August 1963 5 ♀♀ along brook on leaves of *Petasites*, a year later on 21. August 1964 a pair at the same locality, on 7 June 1966 at Remetské Hámre (East Slovakia) 2 ♂♂ and 1 ♀ also on leaves of *Petasites*, and on 9 June 1966 at Nová Sedlica in Poloninské Karpaty Mts. (East Slovakia) the adults being common, running about on stones in a brook and on neighbouring vegetation; Dr. J. Buchar took a single female on 28 June 1966 at Buchlov (Moravia) also from stones in a brook.



Map. 5. — Distribution of *Tachydromia calcanea* (Meig.) — ● and *Tachydromia anderssoni*, sp. n. — ▲

Material Examined: Austria inf., Purkersdorf 24. VI. 1882 2 ♂♂ Mik, 26. VI. 1881 1 ♀ Handlirsch; Salisburg, Aigen 2. VI. 1885 1 ♀, 18. VII. 1885 1 ♂ Mik; Dornbach 1 ♂ 1 ♀ Alte Sammlung; Marbel 30. VII. 1869 1 ♀ coll. Bgst.; Gmunden 1 ♀ Alte Sammlung; Austria 1 ♂ 5 ♀♀ Alte Sammlung, 1 ♂ 1 ♀ Egger — coll. Wien. Onova 24. V. 1904 1 ♂ 1 ♀ Vimmer; Dornbach 13. VI. 1908 2 ♀♀ F. Kowarz — coll. Praha. Wustung b. Habelschwerdt 21. VI. — 18. VIII. 1922 12 ♂♂ 12 ♀♀, 4.—29. VII. 1923 32 ♂♂ 11 ♀♀, 15.—31. VII. 1921 20 ♂♂ 20 ♀♀, 23. VIII. 1920 4 ♂♂ Duda — coll. Duda. Salzbrunn VII. 1859 No. 10808 1 ♂; Langenau VII. 1865 2 ♀♀; Kreuth VIII. 1867 3 ♂♂ 1 ♀ (all *Tachista longipennis* m., det. Loew) — coll. Loew. Moisdorf 13. VII.—28. VIII. 14 ♂♂ 8 ♀♀; Liegnitz (Legnica, Poland) VII. 1 ♂ 1 ♀; Siebenbürgen VII. 1 ♂ 1 ♀ (all *longipennis* Lw., det. Becker) — coll. Becker. Seitenstetten 3 ♂♂ 5 ♀♀, 21. VI. 3 ♂♂; Admont 16. VII. 1885 4 ♀♀ (all *Tachydromia calcanea* Mg., det. Strobl) — coll. Strobl. Württemberg 1872—76 1 ♀ v. Roser; Reinez 10. VII. 1916 2 ♀♀; Ruhpolding, Taubensee 27. VI. 1916 1 ♀ — coll. Stuttgart.

35. *Tachydromia anderssoni*, sp. n.

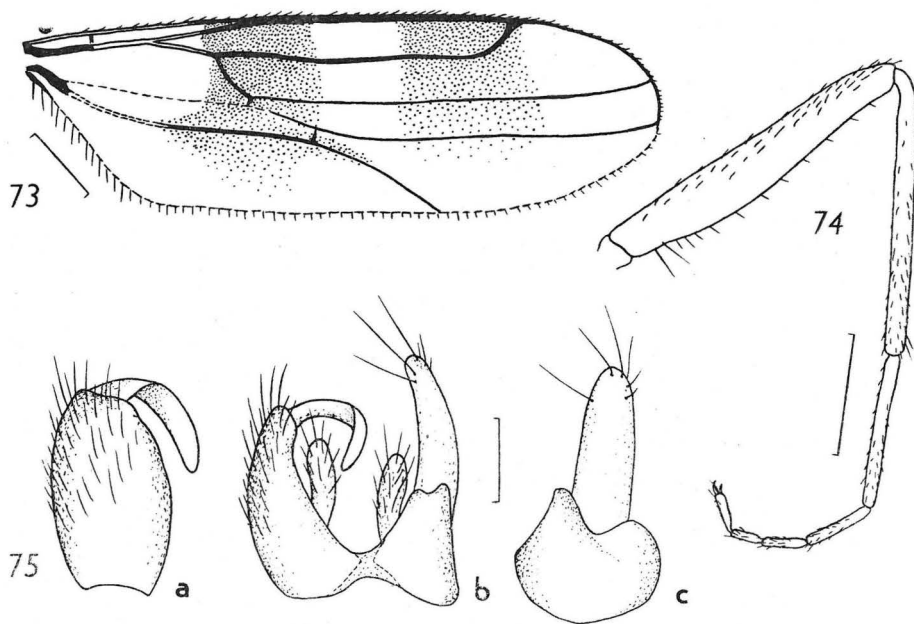
Medium-sized, extensively blackish species, thorax without silvery patch on prothorax between humeri and fore coxae, mesonotum with only ordinary bristles and wings with two rather narrow brown bands which are only faint on the lower half beyond cubital vein. Palpi long, apparently dorsoventrally flattened, especially in male; yellow on basal half and entirely black on apical half in male; entirely pale yellow and narrower in female.

Male. Frons shining black, rather wide and parallel-sided, vertex and upper part of occiput above neck right to eye-margin covered with greyish dust, on the lower half entirely shining. Ocellar bristles very minute, postvertical rather close, dark and fine, whole occiput covered with fine pale hairs, about as long as postverticals. Basal segments of antennae yellowish, 3rd segment dark brown, oval, with somewhat shorter dark supraapical arista which is about 2.5 times as long as antenna. Palpi long, rather wide and distinctly dorsoventrally flattened, yellow on basal half and entirely black on apical half to third, densely covered with fine pale or black hairs respectively; no terminal bristle.

Thorax shining black, only prosternum and a very small patch above hind coxae silvery pollinose, prothorax without silvery patch between humeri and fore coxae. Dorsocentrals uniserial, pale and very minute, only last pair in front of scutellum dark and longer; no acrostichals. One long black notopleural bristle, one short and very fine postalar and two pairs of nearly equal long black scutellar bristles. Some more very minute pale hairs behind humeri and in front of notopleura.

Legs rather long and slender, only fore femora slightly and fore tibiae very stout. Fore coxae yellow, silvery pollinose and whitish hairy anteriorly, posterior four coxae at apex, inclusive of trochanters, yellow. Anterior four femora yellowish, darkish near tip and on dorsum, all tibiae and hind femora blackish brown, tarsi somewhat brownish, last two segments blackish. Fore femora with

anteroventral row of pale hairs becoming longer towards base, at base nearly half as long as femur is deep, posteroventrally at base with three long pale hairs. Fore tibiae clothed with short adpressed pale hairs, especially anteriorly and with row of short black bristly hairs beneath. Middle femora beneath with double row of fine shorter pale hairs becoming longer towards base, middle tibiae only short haired and with row of short black adpressed bristles beneath; no projection to middle tibiae at tip (fig. 74). Hind legs short haired, clothed with fine pale hairs, only hind femora with some longer hairs beneath. Tarsi short haired, long and slender, middle metatarsus longer than one half length of tibia and all tarsi distinctly longer than tibia.



Tachydromia anderssoni, sp. n. ♂: Fig. 73. — Wing. Fig. 74. — Middle leg. Fig. 75. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (paratype: Abisko, Sweden).

Wings (fig. 73) long and rather narrow, with two brown bands, leaving base, large apex, and rather wide mid-stripe, hyaline. The bands are separated along the whole length, more distinct on the upper half of wing and only very faint below. Radial vein very slightly undulating and sharply upturned to costa. Cubital and discal veins parallel, slightly upturned in apex of wing, marginal and submarginal cells of nearly equal width, or marginal cell somewhat narrower. Halteres pale yellow, stem brownish.

Abdomen shining black, sternites with scattered fine brownish hairs

at hind margin, last two segments with long dark hairs at hind margin. Genitalia (fig. 75) small and conical. Right lamella of epandrium egg-shaped, sparsely fine brownish pubescent, with very long strip-like dorsal process which is distinctly turned downwards. Left lamella small but wide, with very long flat and straight dorsal process, only sparsely hairy at apex.

F e m a l e. Closely resembling male but palpi not so flattened and unicolorous pale yellow. Wings somewhat wider and more blunt ended, legs are daker, more brownish, only fore coxae distinctly yellow. Cerci short but slender and, as well as last two abdominal segments and all sternites, densely short brownish pubescent.

L e n g t h: body 2.2—2.6 mm., wing 2.4—2.6 mm.; holotype 2.2 and 2.4 mm.

This species may be at once recognized from other species with entirely shining thorax without silvery patch between humeri and fore coxae, by palpi without terminal bristle, curiously bicolored and somewhat flattened in male, and unicolorous pale yellowish and slender in female, in addition to rather narrow brownish bands on wing which are only faint and indistinct on lower part.

D i s t r i b u t i o n: Scandinavia, Transbaikalia.

Northern and Asiatic species; it has been collected up to the present time only in three localities in Sweden and Norway in polar circle, above 68th parallel (Map 5), and in one locality in Transbaikalia and North East Mongolia.

This species is known to me from 8 Scandinavian specimens, 1 male and 4 females Dr. H. Andersson of the Zoological Museum at Lund collected and kindly sent for determination and I have found another male and two females (one being without head) in Becker's Collection, all three specimens were determined by Becker as "*Tachista* sp."

I have seen another pair in the State University of Moscow, collected by O. A. Černova near the sources of the river Vitim, Transbaikalia. Dr. Kovaliev, Moscow, has kindly dissected the male and confirmed the conspecificity.

Mr Kenneth G. V. Smith of the British Museum, London, has kindly sent to me a single female taken by the Expedition of Dr. Z. Kaszab in Mongolia, labelled "Mongolia, Čojbalsan, aimak 32 km SO v. Somon, Bajan-uul, 750 m, Nr. 439, 18. VIII. 1965". The female seemed to me, except for some minor differences, identical with *T. anderssoni*, sp. n.

This new species is named after Dr. Hugo Andersson, Lund.

H o l o t y p e ♂: Sweden, Torne lappmark, Karesundo 25. VII. 1955 leg. H. Andersson; in the Zoological Museum, Lund.

P a r a t y p e s: 1 ♀ with the same data as holotype; Norway, Finmark, Tana Bru 8. VII. 1956 3 ♀♀ leg. H. Andersson; Abisko (No. 60208) VII. 1 ♂ and 2 ♀♀ coll. Becker; in the Zoological Museum at Lund, in Becker's Collection. Zabaikalje, istočki r. Vitim VII. 1961 1 ♂ 1 ♀ leg. O. A. Černova; in the State University, Dept. of Entomology, Moscow.

Dr. H. Andersson (in litt., Febr. 8, 1967) collected this new species on 8 July 1956 at Tana Bru in Norway when sweeping on a moist grass field.

7. *Tachydromia annulimana*-group36. *Tachydromia brevipennis* (von Roser, 1840) comb. nov.

Tachypeza brevipennis von Roser, 1840, Korresp. Württ. landwirt. Ver., 1 : 53

Tachista microptera Loew, 1864, Zeitschr. f. Ent. Breslau, 14 (1860) : 26

Male. Frons shining black with small silvery patch above antennae, slightly widened above. Vertex and occiput shining black, latter only faintly greyish brown pollinose on upper half above neck. Two very short dark ocellar bristles, two long dark postvertical, behind them 2 or 3 pairs of smaller hairs and just above neck another pair of long black hairs. Some longer black hairs also around the mouth-opening. Antennae yellowish, 3rd segment with somewhat supraapical long darker arista which is nearly four times as long as antenna. Palpi brown, about as long as proboscis, clothed with long silvery hairs and with strong black terminal bristle.

Thorax shining black, without silvery patch between humeri and fore coxae, only prosternum and scutellum slightly greyish dusted. Dorsocentrals uniserial, dark, short and fine, only last pair in front of scutellum longer; no acrostichals. One long black notopleural bristle, one or two postalar and two pairs of scutellar bristles, the inner pair longer. According to Engel (1938) also two humeral and 1 posthumeral bristle but these are neither present on my specimens nor on the type female, humeri sometimes at most with some pale minute hairs.

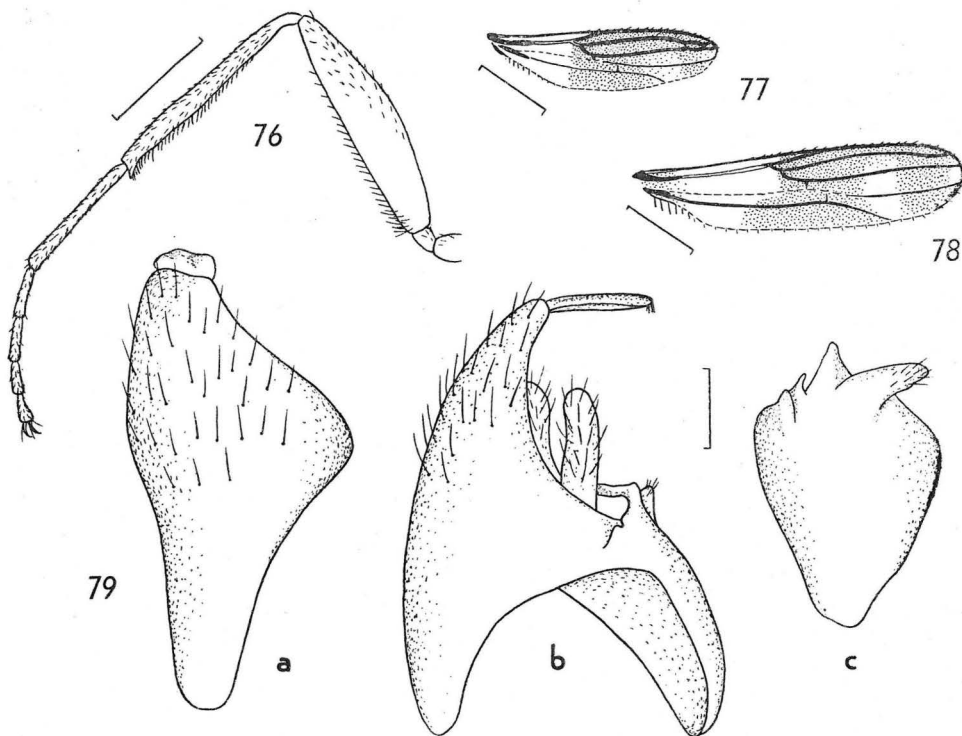
Legs yellow, only posterior four coxae at base, fore tibiae (and sometimes also middle tibiae) at apex and last two or three segments of all tarsi, brownish. Fore femora sometimes slightly brownish at middle, a little stout, with fine yellowish hairs beneath, the hairs being darker towards tip and with longer black hairs above. Middle femora ventrally with double row of short black hairs becoming more dense towards base. Fore tibiae spindle-shaped dilated and, as well as posterior tibiae, covered with fine black hairs. A very small apical pointed rim-like projection to middle tibiae beneath (fig. 76). Tarsi long, distinctly longer than tibia, middle metatarsus very long, nearly three times as long as second segment.

Wings (fig. 77) very narrow and conspicuously shortened, about as long as two-thirds of abdomen, with two dark brown bands, leaving only base of wing to bifurcation of radial and cubital veins and extreme apex, hyaline. Dark bands are connected along costal margin, hyaline mid-stripe reaches upwards at most to submarginal cell. Veins are conspicuously strong and dark brown, pale only on basal third, very often irregular; radial and cubital veins are often connected before end or joined by additional crossveins. Halteres whitish yellow.

Abdomen shining blackish brown to black, on the venter fine black pubescent, last segments with long black hairs at hind margin. Genitalia (fig. 79) very large, when seen from above narrowly pointed and somewhat curved, at least about two-thirds as long as abdomen. Right lamella of epandrium narrow and prolonged, only fine black pubescent, dorsal strip-like process straight. Left lamella bare, with inwards curved apical projection.

Female. Closely resembling male but legs extensively darkened, fore

femora at middle and hind femora on apical two-thirds dark brown. No apical rim-like projection to middle tibiae beneath. Wings (fig. 78) slightly longer, about as long as abdomen; venation not so irregular as in male. Last two abdominal segments covered with greyish dust, cerci also dulled, very short and slender.



Tachydromia brevipennis (v. Ros.): Fig. 76. — Middle leg of male. Fig. 77. — Wing of male. Fig. 78. — Same of female. Fig. 79. — Male genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Malužiná, Czechoslovakia).

Length: 2—2.8 mm.

This species may be well distinguished from all others by very shortened wings. Rather short and narrow wings are also found in *T. aemula* (Loew), but this species has distinctly silvery pollinose thorax between humeri and fore coxae.

Distribution: Central and South Europe.

Central European species penetrating to South Europe (Rumania), up to the present time it is known from Germany, Poland, Czechoslovakia, Austria, Hungary and Rumania.

Von Roser described this species in 1840 from Germany from the neigh-

bourhood of Württemberg, the type female labelled "*brevipennis* m., Type" is deposited in the Museum at Stuttgart (Ludwigsburg) and is in quite good condition. In 1864 Loew described this species as *Tachista microptera* on the basis of a single female taken in Polish Central Silesia at Ladek Zdrój (Bad Landeck), the type female is deposited in Loew's Collection in Berlin and is identical with von Roser's type female. Engel (1938) recorded this species from Hungary (Gyon) and Austria (Klosterneuburg).

D a t e s: June to August.

T. brevipennis (v. Ros.) seems to be a rare species, I took it only once, altogether 9 males and 7 females, on 21 August 1964 at Malužiná in Nízke Tatry Mts. (Central Slovakia). The adults were common here, running about together with *T. aemula* very quickly on the leaves of *Petasites* along the brook Boca, they do not fly at all.

M a t e r i a l E x a m i n e d: Sine loc. (Württemberg) 1 ♀ von Roser (*brevipennis* m., Type); sine loc. 1 ♀ von Roser (*hemiptera* m., v. Ros.) (*Tachista* = *brevipennis* v. Ros., det. Oldenberg) — coll. Stuttgart. Bad Landeck No. 10806 1. VI. 1845 1 ♀ (*Tachista microptera* m., det. Loew) — coll. Loew. Austria inf., Klosterneuburg 15. VI. 1877 1 ♀ Mik (*Tachista brevipennis*, det. Engel) — coll. Wien. Moldavie, Vall. du Sérhad 1 ♀ Montandon (*brevipennis* v. Ros., det. Oldenberg) — coll. D E I.

37. *Tachydromia umbrarum* Haliday, 1833

Tachydromia annulimana auctt., nec Meigen, 1822, p. p.

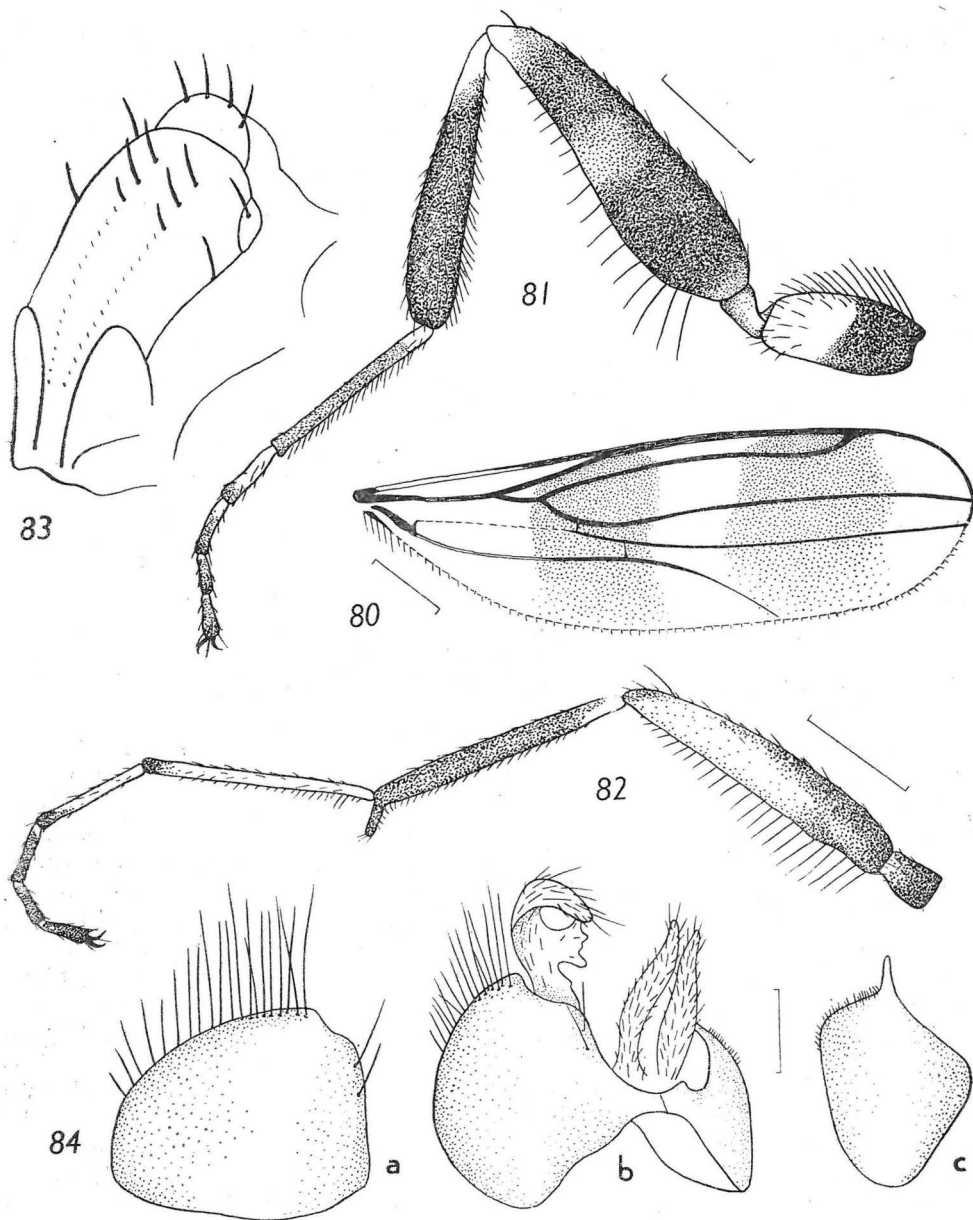
Tachydromia umbrarum Haliday, 1833, Ent. mon. Mag., 1 : 161

Tachypeza albitarsis Zetterstedt, 1842, Dipt. Scand., 1 : 313

M a l e. Frons shining black, vertex and occiput densely grey dusted, latter on lower part above mouth-opening shining black. Vertex with long black postvertical bristles, behind them three to four pairs of longer yellowish bristly hairs above neck and some other whitish hairs on lower part of occiput. Antennae yellowish, 3rd segment darker, with long dark somewhat supraapical arista, more than three times as long as antenna. Palpi dark and slender, clothed with long adpressed silvery hairs and with long black terminal bristle.

Thorax shining black without silvery patch on prothorax between humeri and fore coxae and very conspicuously long black bristly. One strong black notopleural, 1 postalar, 2 or 3 pairs of hind dorsocentrals and 2 (or very exceptionally 3 to 4) pairs of scutellar bristles. No acrostichals, dorsocentrals yellowish and very minute, except to last 2 or 3 pairs in front of scutellum; when three pairs present, then front pair smaller (fig. 83). Sternites between middle and hind coxae with very long yellow bristles.

Legs predominantly blackish, fore coxae yellow, blackish at base or on basal half, posterior four coxae entirely blackish. Fore femora slightly stout, yellowish at apex only and usually somewhat brownish about middle, with long yellowish hairs at base beneath, becoming shorter towards tip and with short black apical bristle above (fig. 81). Middle femora slender, yellowish brown and often blackish at base and above, with scarcely visible tubercle at base beneath and with anteroventral row of long yellow hairs on basal two-



Tachydromia umbrarum Hal. ♂: Fig. 80. — Wing. Fig. 81. — Fore leg. Fig. 82. — Middle leg. Fig. 83. — Thorax (schematically). Fig. 84. — Genitalia, a — right lamella of epandrium without dorsal process, b — epandrium and cerci, c — left lamella of epandrium (Třeboň, Czechoslovakia).

thirds, the hairs being as long or longer than femur is deep and with long black apical bristle above. Hind legs very slender, femora blackish and short haired. All tibiae blackish except on extreme base, fore tibiae spindle-shaped dilated towards tip and clothed with short black hairs. Middle tibiae with large shovel-like projection at tip beneath. Basal two segments of posterior four tarsi pale yellow, darker at tip only, last three segments blackish. Middle metatarsus nearly as long as tibia, or other four tarsal segments together and tarsi very distinctly longer than tibia (fig. 82).

Wings (fig. 80) with two brown bands distinct and separate along the whole length. Radial vein distinctly arched about middle to costa, marginal cell very much narrower than submarginal. Cubital and discal veins slightly convergent towards apex. Halteres whitish with brownish stem.

Abdomen shining black, sternites covered with some short black hairs, last two or three segments with long black hairs at hind margin. Genitalia (fig. 84) small and rather narrow, right lamella of epandrium with row of about twenty very long black hairs at hind margin and above, dorsal process curved and long haired.

Female. Closely resembling male only fore coxae predominantly yellow, blackish at extreme base only, fore femora yellowish on basal third and legs not so hairy, especially the pale hairs on anterior four femora beneath only short; no shovel-like apical projection to middle tibiae. Last two abdominal segments greyish dusted, as well as long and slender cerci.

Length: 2—2.5 mm.

This species can be compared only with *T. caucasica* sp. n., *T. annulimana* Meig. and *T. smithi* Chv., from all other species it differs in possessing long yellow bristles on meso- and metasternum between middle and hind coxae. *T. umbrarum* is a much darker species, especially fore femora being extensively darkened without any yellow design, legs are long and more slender, middle metatarsus nearly as long as tibia. Both *annulimana* and *smithi* have only two scutellar bristles, only last pair of dorsocentrals in front of scutellum as large as scutellar bristles, middle tarsi much shorter and anterior four femora without anteroventral row of long pale hairs.

Distribution: England, North, Central and East Europe, Ural.

T. umbrarum Hal. is a species with typically northern distribution, common in North Europe and England but in Central Europe occurs rather scarcely. The eastern border of its area of distribution lies in Ural (according to a single female from Becker's Collection), southern border in Austria. Kovalev (1966) records this species as „*annulimana* Meig.” in the Oka State reserve near Moskva in the U.S.S.R. (Kovalev, in litt.). I have seen the documentary material from England, Finland, Sweden, Norway, Ural, Denmark, Holland, Germany, Czechoslovakia and Austria.

This species has been for a long time mistaken for Central European *T. annulimana* Meig., especially in North Europe and England; both these species have been separated only recently (Chvála, 1966). The precise description of *T. annulimana* Meig. given by Collin (1961) in his excellent elaboration in “British Flies”, refers also to *T. umbrarum* Hal.

Dates: May to September.

The adults are to be found running about on tree-trunks, palings or walls,

they fly only seldom, usually when disturbed and for short distances. In Czechoslovakia I took a single male at Remetské Hámre in Vihorlat (East Slovakia) on 18 July 1963 on a beech-trunk, Mr. J. Macek took 7 males and 1 female on a wall at Karlov by Maxov (North Bohemia), and I found this species to be common during the last five years (1963—1967) in several localities in colder region between Třeboň and Veselí n. Lužnicí in South Bohemia on dates ranging from 19 May to 18 August. I took about a hundred specimens running about on concrete benches and oak-trunks near Třeboň and on tree-trunks, guard stones along roads and on telegraph-poles near Vlkov, Horusice and Veselí n. Lužnicí.

Material Examined: Nb. Råneå 28. VI. 1963 2 ♂♂ 3 ♀♀; Nb. Högsön 18. VIII. 1962 1 ♂; Hall. Enslöv 30. VII.—6. VIII. 1957 1 ♀; Sk. Lomma 11. VIII. 1958 1 ♀; Nb. Ned. Lul. Smedsbyn 2. VII. 1963 1 ♀; Sk. Silvåkra Stensoffan 9. VI. 1964 Fuktäng 1 ♀, Gard 2 ♂♂; Nb. Pajala 27. VII. 1955 1 ♂ — all leg. H. Andersson; Nb. Pajala s. n. Utmockan 30. VII. 1951 2 ♀♀ Ander, Ardö, Berdén, Dahl; Sk. Ilstorp 5. VII. 4 ♂♂ 2 ♀♀ C. D. E. Roth; Sk. Vänga, Nytorp. 9. VI. 1925 1 ♂ I. Ammitzböll; N Lut 7—15 2 ♀♀ H. Svenonius; Suomi, Porvoon pit. 1 ♀ P. Suomalainen — coll. Lund. Zealand, Brødrup Gadstrup 15. VII. 1965 3 ♂♂ 6 ♀♀ L. Lyneborg, Tibirke 18. VII. 1943 1 ♀ P. Johnsen; Falster, Naesgaard 25. VII. 1929 1 ♀ P. Esben-Petersen; Jutland, Silkeborg 10. VII. 1929 1 ♂ leg.?, Grejsdalen 27. VII. 1964 1 ♂ Ole Martin — coll. København. Zealand, Nordskov Jaegerspris 21. VI. 1908 1 ♂, Frederikssund 20. VI. 1908 2 ♀♀ Lundbeck; Jutland, Hejls 2.—8. VII. 1919 1 ♂ 4 ♀♀, Mou 2.—12. VII. 1921 7 ♂♂ 2 ♀♀, Sminge 10. VII. 1909 1 ♀, Bangsbo 18. VI. 1905 1 ♀ Lundbeck; Langeland, Lohals 17. VII. 1913 1 ♀ Lundbeck; Bornholm, Almindingen 7. VIII. 1911 1 ♀ Lundbeck; Allinge VII. 1883 1 ♀ H. J. Hansen — coll. Lundbeck. Finland 3 ♀♀; sine loc. 1 ♂ 1 ♀ (♂ — var. *annulimana* Meig., det.?) — coll. Berlin. Berolina 1 ♂ Erichson (*cimicoides* Fabr., *albitarsis* Zett., *umbrarum* Halid., det. Loew); Augsburg 1 ♂ Loew (var. *albitarsis* Zett., det. Loew); Finnland 1 ♂ Loew (nov. spec. conf. *annulimana*, det. Loew) — coll. Loew. Boden No. 43222 30. VI. 3 ♂♂ 2 ♀♀; Edefors No. 43283 1. VII. 3 ♂♂ 3 ♀♀; Kaltwasser No. 28511 11. VI. 1 ♂; Storbakken No. 43405 4. VII. 1 ♂ 5 ♀♀; Norwegen No. 36116 5. VIII. 1 ♀ (all *annulimana* Meig., det. Becker); Uleåborg No. 43658 2 ♀♀; Ural No. 58715 VII. 1 ♀ (both *Tachista* sp., det. Becker) — coll. Becker. Curland, Libau 1 ♂ Dr. C. Siebert — coll. DE I. Silesia No. 1284 1 ♀ Strobl — coll. Dresden. Admont 1 ♂ 1 ♀ Strobl (*Tachydrom. annulimana* Mg., det. Strobl) — coll. Strobl. Bohemia, Prachatitz (Prachaticce) 15. VII. 1884 1 ♂ Handlirsch (*Tachista arrogans* L., det. Engel); Salzburg, Parsch 27. V. 1961 1 ♀ P. P. Babiy — coll. München. Františkovy Lázně 1 ♀ F. Kowarz (*Tachista annulimana*, det. Vimmer); sine loc. 1 ♀ (*Tachista arrogans*, det. Vimmer) — coll. Praha. Tirolis, Achenthal 15. VII. 1886 1 ♂ 5 ♀♀ Mik; Austria sup., Hammern 1. VIII. 1882 1 ♂, 12. VIII. 1875 5 ♂♂, 17. VIII. 1878 2 ♂♂, 18. VIII. 1874 1 ♂ Mik, Schanz 26. VIII. 1883 1 ♂ 2 ♀♀ Mik; Austria inf., Wien 9. IX. 1864 1 ♂, Klosterneuburg 15. VI. 1877 1 ♀ Mik; Austria, Alte Sammlung 1 ♂ 2 ♀♀ (*cimicoides*, det. Schiner); sine loc., coll. Winthem 1 ♂ 3 ♀♀ (*annulimana*, det.?), 2 ♂♂ (*nigripes* mihi, det.?), 3 ♂♂; Kiel 1 ♂ coll. Wiedem. (*arrogans*, det.?), Holland 1 ♂ (*Tachydromia cimicoides* F., det. ?) — coll.

Wien. Fischhausen u. Schliersee 29. VII. 1919 1 ♂ 1 ♀ Lindner — coll. Stuttgart.

38. *Tachydromia caucasica*, sp. n.

Closely resembles *T. umbrarum* Hal., prothorax without silvery patch between humeri and fore coxae, strong thoracic bristles on hind part of mesonotum and scutellum, distinct long yellow bristles between posterior four coxae and wings with two separated brown bands, radial vein being distinctly arched at middle and very close to costal margin; legs extensively yellowish, especially all femora, fore femora yellow and distinctly dark brown on basal third, middle metatarsus short, only slightly longer than half of middle tibia.

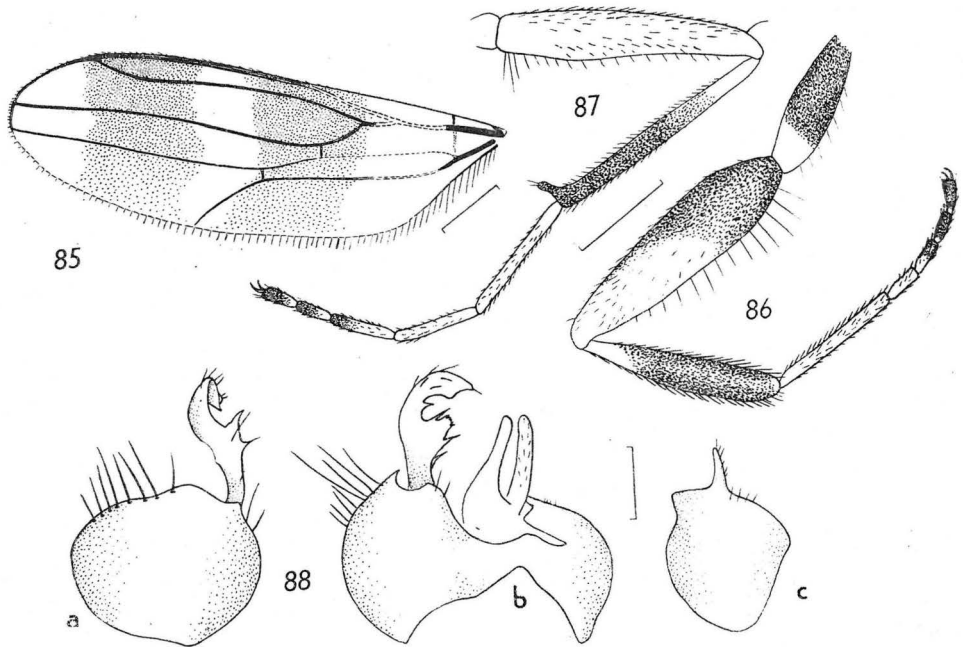
Male. Frons parallel-sided, shining blackish brown, on the lower fourth above antennae greyish dusted. Vertex, upper part of occiput and sides right to eye-margin, densely covered by greyish dust, only lower part of occiput above mouth-opening shining. Ocellar bristles very minute, pair of postvertical black and rather short, behind them above neck two or three pairs of long dark hairs and some other long whitish hairs on the lower part of occiput. Basal antennal segments yellowish, 3rd segment darker, with long somewhat supraapical dark arista which is more than three times as long as antenna. Palpi dark brown, rather long and slender, clothed with long nearly adpressed silvery hairs and with very long black terminal bristle, about as long as palpus.

Thorax shining blackish brown, without silvery patch on prothorax, only prosternum, scutellum and metanotum very slightly dulled. No acrostichals, dorsocentrals uniserial, pale and minute, only last two pairs in front of scutellum black, very strong and long, about as long as one notopleural bristle, one postalar and four scutellar bristles. Meso- and metasternum between posterior four coxae with tuft of long whitish yellow bristles.

Legs predominantly yellow to yellowish brown, only fore coxae on basal two-thirds, posterior coxae at base, fore femora on basal third, fore and hind tibiae with the exception of base, middle tibiae on apical two-thirds and all tarsi on last two or three segments, brown to dark brown. Fore femora stout at base, with anteroventral row of very long pale hairs becoming longer towards base, another row of shorter pale hairs anteriorly on apical half and only very small dark bristle at apex above (fig. 86). Fore tibiae distinctly spindle-shaped dilated, covered with short dark hairs, metatarsus with longer yellowish hairs beneath. Middle femora slender, with only several pale anteroventral hairs at base and a very long black bristle before apex above. Middle tibiae only short haired, with large shovel-like apical projection beneath. Hind legs very long and slender, femora with posteroventral row of very long and fine whitish hairs on basal half, the hairs being longer than femur is deep, otherwise hind legs only short haired. Middle metatarsi not so long as in *umbrarum* Hal., only slightly longer than one half length of middle tibia, at most nearly as long as two-thirds of tibia (fig. 87). All tarsi distinctly longer than tibiae and only short haired.

Wings (fig. 85) as in *umbrarum* with two rather narrow brown bands separated along the whole length but the bands are only faintly brownish.

Radial vein very arched at middle towards costa, marginal cell much narrower than submarginal. Cubital and discal veins somewhat convergent on apical half, hind wing-margin with rather long whitish fringes. Halteres whitish yellow with brownish base to stem.



Tachydromia caucasica, sp. n. ♂: Fig. 85. — Wing. Fig. 86. — Fore leg. Fig. 87. — Middle leg. Fig. 88. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (holotype: Caucasus).

Abdomen shining blackish brown, covered with fine and short dark hairs at sides and on the venter, last sternite with very long dark brown hairs at hind margin. Genitalia (fig. 88) small as in *umbrarum* Hal. or *smithi* Chv., right lamella of epandrium at hind margin and above with only several (about nine) long dark hairs and with only sparsely hairy long curved dorsal process.

Female. Closely resembling male, anterior four femora somewhat darker, uniformly brownish to yellowish brown, fore femora not so darkened at base; all legs with the same pubescence as in male, only middle tibiae without large shovel-like apical projection beneath. Abdomen shining, with only scattered fine brownish hairs, last two segments covered with greyish dust. Cerci long and slender.

Length: body 2—2.5 mm., wing 2.2—2.5 mm.; holotype 2 and 2.2 mm.

This species is very closely allied to *T. umbrarum* Hal., it may be well distinguished from others of the *annulimana*-group by very strong last two

pairs of dorsocentrals and four scutellar bristles (all bristles being of the same length) and by presence of long yellowish bristles on the venter between posterior four coxae. *T. umbrarum* Hal. has extensively darkened legs, anterior four femora being entirely blackish, very long middle metatarsus, about as long as middle tibia, hind femora only short haired without posteroventral row of very long fine whitish hairs and wings with darker brown bands and only minute pale fringes on hind wing-margin.

Distribution: Caucasus.

The species is known to me only from four specimens (3 males and 1 female) deposited in Becker's Collection in Berlin, and determined by Becker as "*Tachista* sp."

Dates: August.

Holotype ♂: Kaukasus No. 50366 VIII.; in the Zoological Museum of Humboldt University, Berlin (coll. Becker).

Paratypes: 2 ♂♂ and 1 ♀ of the same data; a pair in the Zoological Museum of Humboldt University, Berlin (coll. Becker) and one male in author's collection.

39. *Tachydromia annulimana* Meigen, 1822

Tachydromia annulimana Meigen, 1822, Syst. Besch., 3 : 69

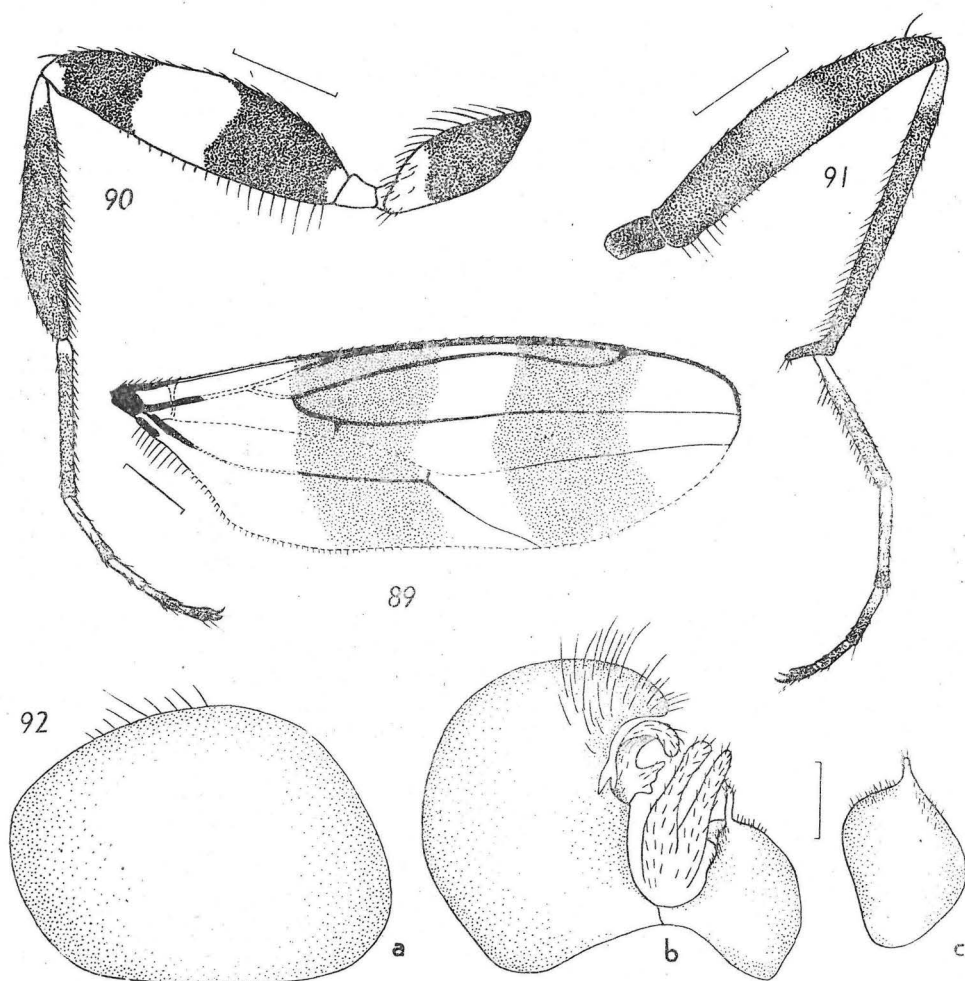
Male. Frons shining black, on the lower part above antennae slightly greyish dusted, vertex and occiput densely silvery grey dusted, latter on the lower part at middle shining. Ocellar bristles very minute and scarcely visible, two short and fine black postvertical, one or two pairs of long whitish hairs above neck and many shorter white hairs on the lower part of occiput right up to the mouth-opening. Antennae brownish, basal segments somewhat yellowish, 3rd segment with long dark somewhat supraapical arista which is about three times as long as antenna. Palpi dark brown, densely silvery grey hairy and with long black terminal bristle.

Thorax shining black without silvery patch on prothorax. No acrostichals, dorsocentrals are visible as yellowish points, last two pairs in front of scutellum black and long, first pair about half the length of the second one. One notopleural bristle, one postalar, and one pair of scutellar bristles, all of the same length as last pair of dorsocentrals. Meso- and metasternum between posterior four coxae with long yellow bristles.

Legs predominantly blackish, fore femora always with distinct yellow ring about middle. Coxae black, only fore coxae yellowish at apical fourth and silvery pollinose anteriorly. Fore femora stout, blackish brown to black, only extreme apex and distinct ring about middle yellow, ventrally with short yellowish hairs (the longest hairs at base are hardly half the length than femur is deep) and with short black bristle at apex above (fig. 90); middle femora only slightly stout, usually dark brownish with indication of paler ring about middle, on apical half more yellowish. Anteroventral row of yellow hairs is represented only by several rather short hairs on small and hardly visible tubercle at base beneath and a distinct black preapical bristle above. All tibiae blackish, yellowish at extreme base only, fore tibiae spindle-shaped

dilated and clothed with short black adpressed hairs. Middle tibiae slender, only short haired beneath and with large shovel-like apical projection beneath. Hind legs blackish brown, slender and short haired, tarsi brownish, last two or three segments nearly black. Middle metatarsus much shorter than in *T. umbrarum* Hal., shorter than half of tibia, tarsus only slightly longer than tibia (fig. 91).

Wings (fig. 89) rather long and narrow, wing pattern and venation as in *umbrarum* Hal. but the brown bands are in extensively darkened specimens slightly connected in very narrow marginal cell. Radial vein conspicuously



Tachydromia annulimana Meig. ♂: Fig. 89. — Wing. Fig. 90. — Fore leg. Fig. 91. — Middle leg. Fig. 92. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Slaný, Czechoslovakia).

arched towards costa, submarginal cell much wider than marginal. Halteres whitish with brownish stem.

Abdomen shining blackish brown to black, last three segments with long black hairs at hind margin. Genitalia (fig. 92) very large and globular. Both narrow and pointed cerci and curved dorsal process to right lamella of epandrium are nearly concealed in very large globular right lamella, which bears only some black hairs at upper margin. Left lamella much smaller than the right one.

F e m a l e. Resembling male but fore coxae predominantly yellow, somewhat brownish at base, fore femora yellow, blackish brown on apical third to fourth only and with only very short hairs beneath. Middle femora only short haired beneath at base and no shovel-like apical projection to middle tibiae. Last two abdominal segments dulled with greyish dust, as well as rather short but slender cerci.

L e n g t h: 2—2.5 mm.

This species need comparison especially with *T. smithi* Chv., the detailed distinctive characters are given in the latter. *T. umbrarum* Hal. and *T. caucasica* sp. n. have at least four scutellar bristles, last two pairs of dorsocentrals in front of scutellum of equal length, much longer tarsi, different coloration of legs and quite different and small genitalia in male.

D i s t r i b u t i o n: Central, South and partly West Europe.

Rather widely distributed species known from nearly the whole of Europe with the exception of the northern and northwestern parts inclusive of England. The northern border of its area of distribution lies in Central Germany (Berlin, coll. Loew), the most western known locality is in South France (Gabas, coll. Becker). The record given by Kovalev (1966) on its occurrence in the Oka State reserve near Moskva in the U.S.S.R., refers in fact to *T. umbrarum* Hal. (Kovalev, in litt.). I have seen the documentary material from Germany, Poland, Czechoslovakia, Austria, Hungary, France, Italy, Yugoslavia and Albania. In Central Europe one of the commonest species of this genus.

The neotype (♂ Bohemia centr., Slaný 11. VII. 1965), selected by the author (Chvála, 1966), is deposited in the National Museum, Praha.

D a t e s: April to September.

The adults are to be found very commonly running about on tree-trunks and fly only a short distances when disturbed. This species is very common on the whole territory of Czechoslovakia but especially in warm localities in the lowlands, on dates ranging from 12 May (Hrhov, South Slovakia) to 17 September (Čelákovice, Central Bohemia). On 3 August 1965 I took a female at Slaný on an ash-tree trunk with a small Dolichopodid as prey.

M a t e r i a l E x a m i n e d: Austria sup., Freistadt 11. VI. 1881 3 ♀♀, 16. VI. 1862 2 ♂♂ 2 ♀♀ Handlirsch, Linz 9. VII. 1867 1 ♀ Mik; Austria inf., Waidhof 4. IX. 1887 1 ♀ Mik, Wien 6. VI. 1877 2 ♂♂ 1 ♀, 8. VI. 1879 2 ♀♀, 30. V. 1883 1 ♀ Mik, Prater 16. V. 1919 1 ♂, 21. V. 1877 3 ♂♂ 10 ♀♀ coll. Bergenst.; Salisburg, Hofgastein 22. VII. 1879 1 ♀ Mik; Frankenfals V. 1878 2 ♂♂ 1 ♀ coll. Bergenst.; Dornbach 1 ♀ Alte Sammlung (*cimicoides*, det. Schiner); Austria, Alte Sammlung 1 ♂ (*annulimana*, det. Schiner), 1 ♂ (*annulimana*, det. Egger); Berlin 4. VI. 1 ♀ Lichtwardt; Illyria, Görz 23. V. 1864 1 ♂ 2 ♀♀ Mik; Alban. Exped.,

Kula Ljums 18.—28. V. 1918 2 ♂♂ — coll. Wien. Sine loc. 3 ♂♂ 3 ♀♀ (1 ♂ — *annulimana* var. *pallida*, det.?) — coll. Berlin. Schles., Nimptsch 1. VI. 1908 1 ♂, 15. VI. 1907 1 ♂ 1 ♀, 28. IX. 1909 4 ♂♂ 4 ♀♀ Duda; S.-Harz, Ilfeld 22. IX. 1915 1 ♀ Duda — coll. Duda. Berolina 1 ♀ Erichson (*cimicoides* Fabr., *albatarsis* Zett., *umbrarum* Halid., det. Loew) — coll. Loew. Kaltwasser 11. VI. 1 ♂ 2 ♀♀; Wölfelsfall 19. VI. 1 ♀; Rapallo No. 41486 20. IV. 1 ♂ (all *annulimana* Meig., det. Becker); Gabas No. 61029 vo. 2 ♂♂ 2 ♀♀ (*Tachista* sp., det. Becker) — coll. Becker. Monachium 4 ♀♀ Hiendlmayr; Walser 1860 1 ♀ (both *arrogans* L., det.?). Salzburg, Parsch 7. VII. 1962 1 ♂ 1 ♀ P. P. Babiy — an Electr. Stangen — coll. München. Kalocsa 4 ♂♂ Thalhammer — coll. Dresden. Plitvica 1 ♀ Kertész — coll. DEI. Admont 1 ♂ 1 ♀ Strobl (*Tachydromia annulimana* Mg., det. Strobl) — coll. Strobl. Ludwigsburg 30. VIII. 1966 1 ♂, Federsee 19. VIII. 1922 1 ♂ 1 ♀ Lindner; Stuttgart 19. VII. 1941 1 ♀ W. Richter; Dachau 18. VIII. 2 ♀♀ — coll. Stuttgart. Europe, Purchd. from J. F. Ruthe 58—29 1 ♂ (*Tachista spinisterna* sp. n. Coll. MS., det. Collin, 1915) — coll. Brit. Mus.

40. *Tachydromia smithi* Chvála, 1966

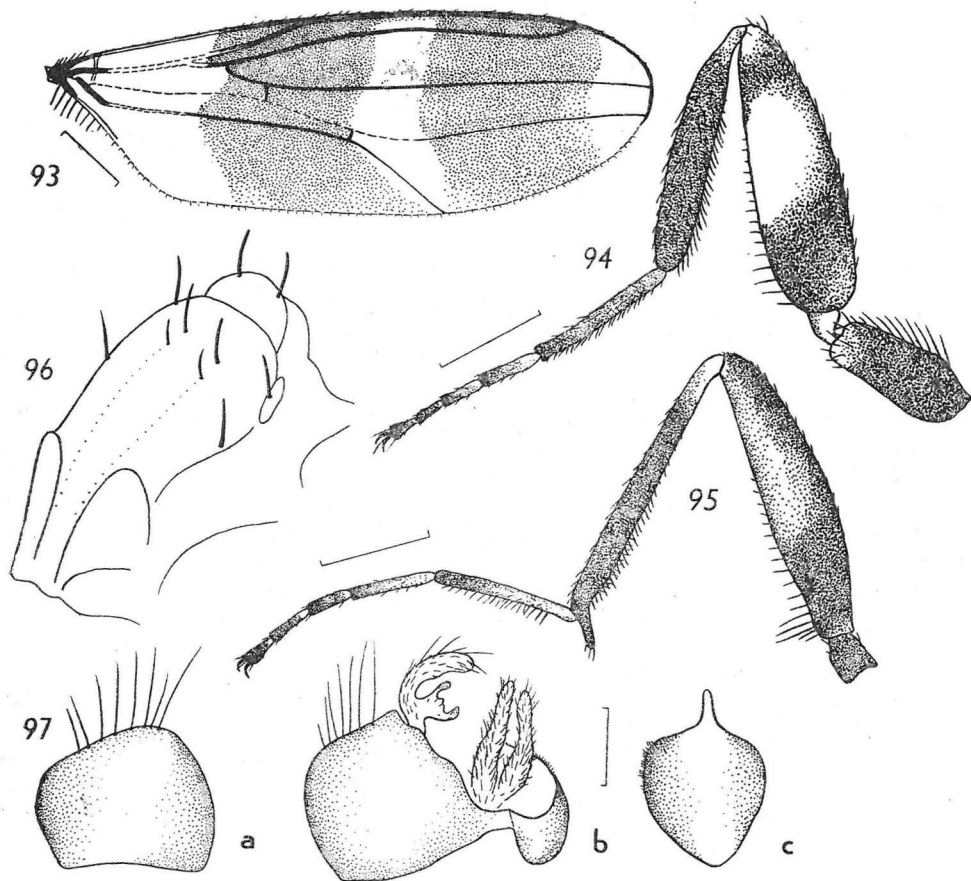
Tachydromia smithi Chvála, 1966, Acta ent. bohemoslov., 63 : 472

Male. Frons shining black with lower third covered with greyish dust, rather narrow and parallel-sided. Vertex and occiput greyish dusted, latter only on lower part at middle above the mouth-opening shining. Two very minute ocellar bristles, two black small and fine postvertical, two pairs of longer whitish hairs above neck and some more numerous whitish hairs on the lower part of occiput. Antennae brownish yellow, basal segments paler, 3rd segment with long dark somewhat supraapical arista which is about three times as long as antenna. Palpi dark brown and slender, clothed with long silvery hairs and with long black terminal bristle.

Thorax shining black, without silvery patch on prothorax between humeri and fore coxae, only prosternum, metanotum and scutellum somewhat dulled greyish. The black bristles on mesonotum and scutellum as in *annulimana* Meig. (fig. 96), meso- and metasternum between posterior four coxae with long yellow bristles.

Legs predominantly dark brown, fore coxae at extreme apex, all knees and metatarsi at base, yellowish. Fore femora stout, with indistinct yellow ring at middle, basal third, apical fourth, and whole dorsum of femur, dark brown; only short yellow hairs beneath and short black apical bristle above (fig. 94). Fore tibiae spindle-shaped dilated, covered with short black hairs which are longer beneath. Middle femora only slightly stout, with only several longer yellowish hairs beneath and with long black preapical bristle above. Middle tibiae slender, ventrally with short black hairs becoming longer and more numerous towards tip and large shovel-like apical projection beneath. Hind legs slender and short haired. Middle metatarsus about half the length of middle tibiae, short but densely yellowish hairy beneath (fig. 95). Tarsi dark brown, first two segments of posterior four tarsi paler, except to tip. Middle tarsus distinctly longer than tibia.

Wings (fig. 93) with two separate brown bands as in *annulimana* Meig., but apex of wing not so largely hyaline and brown bands somewhat broader. Radial vein distinctly arched towards costa at middle, marginal cell much narrower than submarginal. Halteres whitish, stem brownish.



Tachydromia smithi Chv. ♂: Fig. 93. — Wing. Fig. 94. — Fore leg. Fig. 95. — Middle leg. Fig. 96. — Thorax (schematically). Fig. 97. — Genitalia, a — right lamella of epandrium without dorsal process, b — epandrium and cerci, c — left lamella of epandrium (paratype: Kováčov, Czechoslovakia).

Abdomen shining black, covered with short black hairs, only last three segments with long black hairs at hind margin. Genitalia (fig. 97) small, resembling that of *T. umbrarum* Hal., but slightly smaller, dorsal curved process to right lamella of epandrium not so hairy as in *umbrarum* and right lamella with only of about 8 long dark hairs at upper margin.

Female. Resembling male but fore coxae yellowish, dark at base

only, fore femora blackish brown over the whole length above, yellow to yellowish brown on basal half beneath and on inner side and with indication of paler ring about middle. Middle femora only short haired beneath, without longer yellow hairs at base and no apical projection to middle tibiae beneath; all metatarsi somewhat more yellowish. Abdomen shining blackish brown and covered with only fine short hairs, especially at sides. Last two abdominal segments and slender cerci dulled with greyish dust.

L e n g t h: 2—2.5 mm.

This species superficially resembles in many characters *T. annulimana* Meig. (fine postvertical bristles, one pair of scutellar bristles and two pairs of unequal dorsocentrals in front of scutellum, yellowish ring about middle on fore femora in male, only short yellow hairs on anterior four femora beneath in male, short middle metatarsi) but differs conspicuously in male hypopygium which is very small and narrow and very similar to that of *T. umbrarum* Hal. and especially *T. caucasica* sp. n. The yellow ring on male fore femora in *smithi* is not so distinct as in *annulimana*, the dorsum of femur being always darkened and the ring therefore interrupted; all legs, with the exception of tarsi, are more brownish. The differentiation in the female sex is more difficult; the female of *smithi* is distinguishable by dark brown fore femora with slight indication of pale ring about middle and with some yellow on the inner side, whilst in *annulimana* fore femora are distinctly yellow, with only apical third to fourth blackish.

D i s t r i b u t i o n: Central and South Europe.

This species has been described on the basis of the material taken in Czechoslovakia, and I have seen additional documentary material from Germany, Austria, Italy and Spain, where Dr. Lyneborg took much material on the Danish Expedition to Spain in 1966. The type male (Bohemia centr., Zbraslav 18. VI. 1964, leg. J. Trakal) is deposited in the National Museum, Praha.

D a t e s: April to August.

The adults are to be found in the same situations as *T. umbrarum* Hal. and *T. annulimana* Meig., running about on tree-trunks; I took only once a single male running about on stalk of high burdock (*Arctium*). Mr. J. Trakal collected the type material (12 males and 2 females) on 18 June 1964 at Zbraslav by Praha on poplar-trunks. I took this species several times at Slaný (Central Bohemia) on ash-tree trunks, on 11 July 1965 1 male and 4 females, another pair at the same place on 8 August 1965, another male and 7 females on 22 August 1965 and yet another 3 males and 1 female on 17 July 1966; finally I took a single male on 15 August 1964 at Kováčov (South Slovakia).

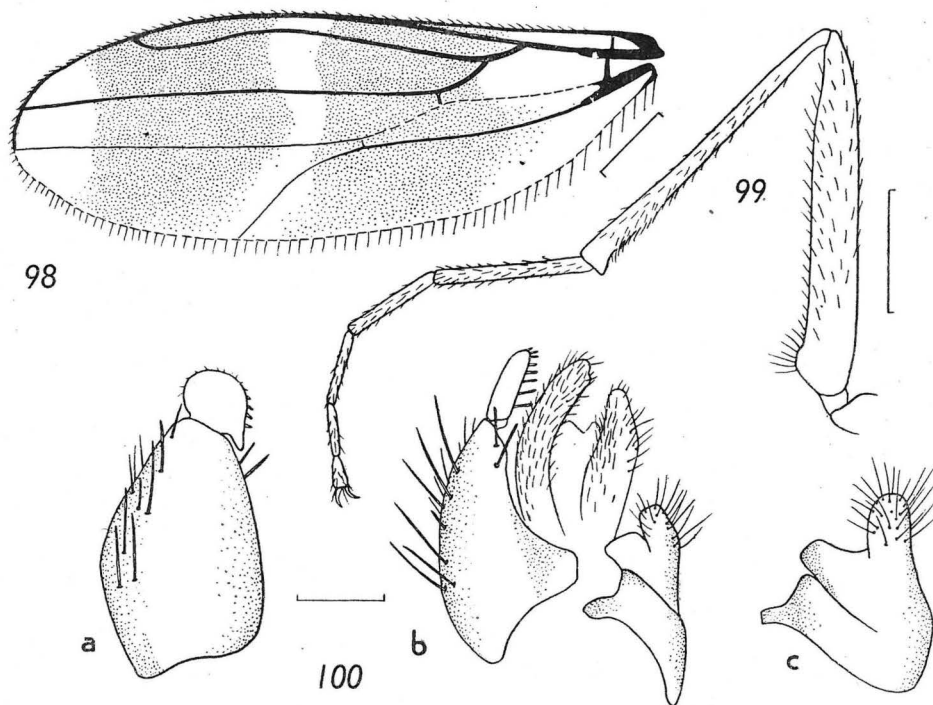
M a t e r i a l E x a m i n e d: Františkovy Lázně 1 ♂ 1 ♀ F. Kowarz (*Tachista annulimana*, det. Vimmer) — coll. Praha. Austria, Alte Sammlung 1 ♀ (*connexa*, det. Schiner); sine loc. 1 ♀ coll. Bgst. (*annulimana*, det. Bergenst.) — coll. Wien. Korsika No. 54954 V. 1 ♂ 1 ♀ (*arrogans* L., det. Becker) — coll. Becker. Monachium (München) 1 ♂ Samml. Hiendlmayr — coll. München. Württemberg 1872—75 1 ♀ v. Roser; sine loc. 1 ♂ von Roser (*Tachista annulimana* Meig., det.?) — coll. Stuttgart. Tsch. 16. VI. 1895 1 ♀ Strobl (*T. annulimana*, det. Strobl) — coll. Strobl. Spain, Granada: Rio Lanjaron near Lanjaron 600 m. 26. IV. 1966 2 ♂♂ 1 ♀,

Rio Guadalfeo, Orgiva 300 m. 2.—11. IV. 1966 9 ♂♂ 11 ♀♀, Pampineira 900 m. 9. IV. 1966 3 ♂♂ 2 ♀♀ Lyneborg-Martin-Langem. — coll. K o b e n h a v n.

41. *Tachydromia latifascipennis* Brunetti, 1917

Tachydromia latifascipennis Brunetti, 1917, Rec. Ind. Mus., 13 : 81

M a l e. Frons and vertex shining black, former parallel-sided and of usual width. Occiput densely grey dusted, only in central part above mouth-opening shining. Two postvertical bristles dark, long and wide apart, situated on a border between shining vertex and dusted occiput. Two dark ocellar bristles only slightly shorter, another two or three pairs of same bristles are one the upper part of occiput behind postvertical bristles, lower part of occiput with some pale hairs. Antennae dark brown, 3rd segment nearly globular with somewhat supraapical very long dark arista which is more than three times as long as antenna. Palpi dark and slender, of about the same length as proboscis, covered with long and dense adpressed silvery hairs and with long black terminal bristle.



Tachydromia latifascipennis Brun. ♂: Fig. 98. — Wing. Fig. 99. — Middle leg. Fig. 100. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Darjiling, India).

Thorax entirely shining black, only scutellum and metanotum slightly greyish dusted, prothorax without silvery patch between humeri and fore coxae. No acrostichals, dorsocentrals uniserial, fine and pale on hind two-thirds of mesonotum, rather long, about as long as or longer than 3rd antennal segment. One long dark notopleural bristle, one postalar, scutellum with two pairs of black bristles, inner pair long and convergent, outer pair only about of one half length and weaker. Front part of mesonotum with some posthumeral bristles of about the same length as dorsocentrals.

Legs long and slender, dark blackish brown, wholly covered with long and fine greyish hairs, especially on anterior two pairs, only posterior four metatarsi yellowish and fore femora with two yellow spots on the inner side at base, or distinctly yellowish at base. Fore femora distinctly but not so very stout and with short black apical bristle above. Fore tibiae slightly spindle-shaped dilated, middle femora only very slightly stout, with only a tuft of long yellow hairs at base beneath, otherwise with fine greyish hairs and with short and dark fine bristle at tip above. Middle tibiae with a row of longer dark bristly hairs on apical fourth beneath and with short but pointed projection at tip beneath (fig. 99). Middle metatarsus about half the length of middle tibia, tarsus only slightly longer than tibia.

Wings (fig. 98) long and rather narrow, with two broad brown bands which are separated by narrow mid-stripe along the whole length. Radial vein distinctly arched about middle towards costa, marginal cell very narrow, submarginal and first posterior cells of about the same width. Cubital and discal veins parallel only slightly convergent at tip, hind wing-margin with long pale fringes. Halteres whitish yellow, brownish at base.

Abdomen shining black to dark brown, last segments with long dark hairs at hind margin. Genitalia (fig. 100) rather large but narrow, right lamella of epandrium with some long greyish hairs posteriorly near hind margin and with straight, somewhat round, dorsal process which bears some bristly hairs along margin only. Cerci long and slender, covered with fine longer hairs, as well as apex of left lamella.

F e m a l e. Resembling male but dorsocentrals shorter and pale, legs only short haired, blackish but all metatarsi yellowish. Fore femora short and densely whitish pubescent beneath, middle femora with some longer pale hairs at base beneath, no apical projection. Abdomen shining dark brown, covered with fine pale pubescence, cerci short but slender.

L e n g t h: 2.1—2.8 mm.

T. latifascipennis Brun. belongs to the *annulimana*-group but may be distinguished from other species by absence of long yellow bristles on meso- and metasternum, by long and narrow wings with broader dark bands and long pale fringes at hind wing-margin, by blackish legs clothed with long greyish hairs especially on anterior two pairs in male, by only fine but long pale dorsocentrals and by short and pointed apical projection to middle tibiae in male. It closely resembles *T. undulata* (Str.) but this has fore femora entirely blackish without any yellowish spots on the inner side at base, last pair of dorsocentrals in front of scutellum is black and coarse and brown bands on wing are distinctly connected in marginal cell. *T. latifascipennis* shows some affinity also to species of the *interrupta*-group, especially in shape of wings and conspicuous pale

pubescence of legs but all species of this group have radial vein straight, marginal cell wide and brown bands on wing are connected in first posterior cell.

Distribution: India.

Brunetti (1917) described this species from the Himalayas, the type male (Darjiling 8.—11. VIII. 1909, J. T. Jenkins) and some other material of Brunetti's type series is deposited in the Indian Museum, Calcutta. I have seen four males and three females of this species, presented by Brunetti in 1927 to the British Museum (Natural History), London and kindly sent to me for examination by Mr. K. G. V. Smith.

Dates: April to August.

Material Examined: Ind. Mus., Darjiling 7000 ft, E. Himalayas 28. IV.—14. V. 1915 3 ♂♂ 3 ♀♀ F. H. Gravely, 11. VIII. 1909 1 ♂ J. T. Jenkins—coll. Brit. Mus.

42. *Tachydromia undulata* (Strobl, 1906) comb. nov.

Tachysta undulata Strobl, 1906, Mem. R. Soc. esp. Hist. Nat., 3 (1905) : 317 ♀

Tachysta undulata Strobl, Czerny et Strobl, 1909, Verrh. zool. — bot. Ges. Wien, 59 : 182 ♂

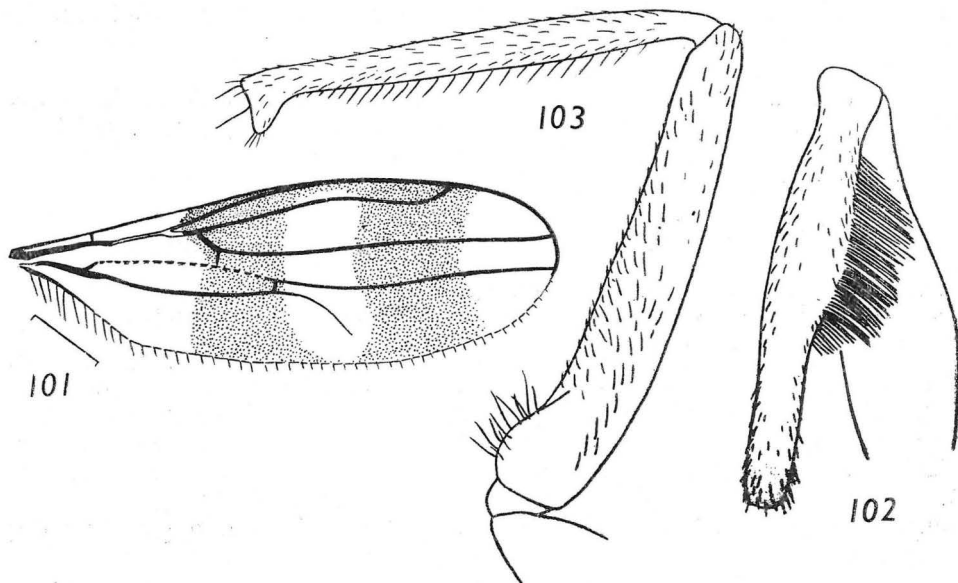
Female. Frons and vertex shining black, former slightly widened above, occiput on the upper part above neck and at sides right to eye-margin distinctly silvery grey dusted, lower part below neck shining black, covered with some fine pale hairs. Two very fine black ocellar bristles, postvertical black, rather short but strong, behind them some other fine dark hairs. First two antennal segments yellowish, 3rd segment dark with long dark arista which is about three times as long as antenna. Palpi brown, long and slender, clothed with long silvery hairs and with short black terminal bristle.

Thorax shining black, prosternum and metathoracic episternum densely silvery grey dusted, no silvery patch on prothorax between humeri and fore coxae. One small black notopleural bristle, one postalar and two pairs of scutellar bristles, the inner pair coarser and somewhat longer. No acrostichals dorsocentrals uniserial, pale and very minute, only last pair in front of scutellum dark, slightly longer, but fine.

Legs predominantly shining black to blackish brown, only all knees and first or first two segments of all tarsi, yellowish brown. Fore coxae often somewhat yellowish brown as well. Legs long and slender, fore femora only slightly stout, anterior four femora short and densely whitish pubescent beneath, middle femora with double row of fine whitish hairs becoming longer towards base. All tibiae only short haired, only middle tibiae with row of short black bristles along the whole length beneath. Hind legs very long and slender, femora with anteroventral and posteroventral rows of longer but very fine whitish hairs. Middle metatarsus hardly longer than half the length of middle tibia, all tarsi distinctly longer than tibiae.

Wings (fig. 101) somewhat shortened and rather wide, with two deep brown bands which are more or less connected along costa in marginal cell, sometimes also very faintly and narrowly along hind wing-margin. Veins brownish, costal and cubital veins, as well as base of postical, stouter and dark brown. Radial vein deeply arched towards costa at middle, marginal cell very

narrow, submarginal more than twice as wide as the former. Cubital and discal veins parallel, or cubital very slightly undulating at middle and both veins usually slightly divergent just before end, postical vein apparently short and turned downwards, disappearing before wing-margin. Halteres whitish with brownish base to stem.



Tachydromia undulata (Strobl) ♀: Fig. 101. — Wing (holotype: Montseny, Spain). *Tachydromia excisa* (Loew) ♂: Fig. 102. — Fore leg. Fig. 103. — Middle leg (holotype: Kudowa, Poland).

Abdomen shining dark brown, last two segments somewhat dulled, cerci long and slender, greyish dusted.

Male. I have not seen the male, but Czerny et Strobl (1909) give these differences: "Der Flügelrand bildet vor dem Ende der Marginalzelle eine auffallende bogenförmige, beinahe halbkreisförmige Erweiterung" — this is often to be seen in female as well. "An den vorderen Beinen sind die Schenkel und Schienen auf den sich zuwendenden Seiten ziemlich lang flaumhaarig und die Mittelschienen sind innen an der Spitze etwas dreieckig erweitert. Das kleine Hypopyg endet mit zwei länglichen Lamellen."

Length: body 2.4—2.7 mm., wing 2.1—2.4 mm.

Strobl (1906) described this species as: "*Similis connexae* Meig., differt cellula marginali angusta, vena secunda undulata, pedibus nigris, metatarsis rufis", and later on Engel (1938) also compared this species mainly with *T. connexa* Meig. *T. undulata* (Str.), however, does not show any relationship to species of the *connexa*-group, differing in long antennal arista, very long and silvery hairy palpi, long and slender legs, in presence of only one notopleural bristle, prothoracic episternum being shining black without silvery

patch and wings are, even though somewhat widened, not so blunt ended and with quite distinct venation.

This species closely resembles *T. annulimana* Meig. and its allied species *umbrarum* Hal., *caucasica* sp. n. and *smithi* Chv., but mesonotum and scutellum only usually bristled, and meso- and metasternum between posterior four coxae bare, without long yellowish bristles. *T. carpathica* Chv. and *T. woodi* (Coll.), which also possess these characters, are smaller species with legs predominantly yellow. Very closely allied also is the Indian *T. latifascipennis* Brun., but *undulata* may be distinguished at once from all species of the *annulimana*-group by enlarged and deep dark brown bands on wing which are more or less connected along costal margin, and by short postical vein disappearing before wing-margin.

Distribution: Central and South Europe, ? North Africa.

This species is known up to the present time from Spain, according to Vaillant (in litt.) *undulata* is rather frequent in Morocco, and I possess a single female taken by Dr. J. Buchar in Central Europe (East Slovakia) which is undoubtedly the same as the type female.

Strobl described this species on the basis of a single female taken in North East Spain at Montseny near San Celoni, other material has been taken in South Spain near Gibraltar: 2 females collected by Strobl at Ronda and a male collected by Czerny at Tarifa (Czerny et Strobl, 1909). The type female is deposited in Strobl's Collection at Admont but in very bad condition (both 3rd antennal segments and all legs on left side are missing). I did not succeed in finding the male specimen taken by Czerny at Tarifa.

Dates: March (Spain) and June (Czechoslovakia).

I have in my collection a single female taken by Dr. J. Buchar from stones in a brook at Nová Sedlica — Beskid in Poloninské Karpaty Mts. (East Slovakia) on 9 June 1966.

Material Examined: Montseny 19. III. 1 ♀ (*Tachysta undulata* m., det. Strobl); Südsanien. Ronda 2 ♀♀ Strobl (*Tach. undulata* Str., det. Strobl) — coll. Strobl.

43. *Tachydromia excisa* (Loew, 1864) comb. nov.

Tachista excisa Loew, 1864, Zeitschr. f. Ent. Breslau, 14 (1860) : 27 ♂

Tachista excisa Loew, Vaillant, 1952, Rev. franc. Ent., 19 : 64 ♀

Male. Frons nearly parallel-sided, shining blackish brown, only just above antennae with dull pale patch. Vertex shining, occiput on the upper part above neck and on the lower part at sides right to eye-margin, densely greyish dusted; lower part at middle shining. Two longer fine ocellar bristles, two pairs of dark postvertical, the inner pair longer and coarser. Occiput, especially on lower part, covered with fine whitish hairs. Antennae dark brown, with long slightly supraapical arista which is about three times as long as antenna. Basal antennal segments yellowish, not "ganz braun gefärbt" as given by Engel (1938 : 28). Palpi dark, long and slender, about as long as proboscis, densely clothed with long adpressed silvery hairs and with black terminal bristle.

Thorax shining blackish brown, without silvery patch on prothorax between humeri and fore coxae, only prosternum and front edge of fore coxae silvery pollinose. One short black notopleural bristle, one postalar and two pairs of scutellar bristles, the inner pair longer and coarser. Dorsocentrals uniserial and only minute, no acrostichals. Meso- and metasternum between posterior four coxae bare.

Legs dark brown, knees paler, first segment of fore tarsi and first two segments of posterior four tarsi, with the exception of tips, yellow. Fore coxae yellowish, anteriorly with long pale hairs, posterior four coxae brownish, yellowish at tip only. Fore femora stout, microscopically whitish pubescent beneath and with some longer hairs at base only. Fore tibiae (fig. 102) slender on apical half, wholly fine whitish pubescent, basal half distinctly stouter with posteroventral row of very long whitish hairs, the hairs being as long as tibia on basal half is deep. Posterior four femora rather slender, short pale pubescent, middle femora with round swelling at base beneath, covered with some longer pale hairs. Middle tibiae slender with row of longer pale hairs beneath and with short but strong projection at tip (fig. 103). Hind femora with short but dense pale hairs beneath. All tarsi pale pubescent, last segments dark, second segment of middle tarsi only a little longer than half the length of metatarsus; hind tarsi longer, second segment hardly half the length of metatarsus.

Wings apparently rounded at tip and distinctly narrower at base than is usual in this genus, with two rather broad brown bands, separated along the whole length or narrowly connected along costal margin (Vaillant, 1952, fig. 7). Radial vein arched towards costa at middle, marginal cell narrower than submarginal. Hind wing-margin with rather long greyish fringes. Halteres whitish yellow, stem darker.

Abdomen shining blackish brown, last three segments with longer dark hairs at hind margin. Genitalia rather small and conical, only short dark pubescent. Hypopygium resembles that of *T. umbrarum* Hal.

F e m a l e. Closely resembling male but fore tibiae only slightly curved at middle, without long pubescence. No apical projection to middle tibiae beneath.

L e n g t h: body 3 mm., wing 2.5 mm., holotype 2.2 mm. and 2.5 mm.

T. excisa (Loew) (nec *Tachydromia excisa* Becker, 1908 = *Palatypalpus*) closely resembles the species of the *annulimana*-group but it is larger, wings widely rounded at tip and narrower at base, no yellow bristles between posterior four coxae; fore tibiae in male stout at base and armed with long whitish hairs.

This species was described by Loew on the basis of a single male taken in Polish Silesia at Kudowa (Chudoba), Engel (1938) and later also Vaillant (1952) erroneously recorded this species from Bohemia. The type male is deposited in Loew's Collection in Berlin and, in view of the shortened abdomen, curved legs, and not entirely developed wings, it is probably newly emerged specimen. The general coloration of the type is more brownish than black, as stated also by Loew in his original description. The female was described by Vaillant (1952) from North Africa (Algier); he collected this species, both males and females, near Kerrata (Kabylia Minor) in 1951. The description and illustration given by Vaillant quite agree with Loew's type.

D i s t r i b u t i o n: Central Europe, North Africa.

D a t e s: March (Algier).

Rare species known up to the present time only from a single type male from Central Europe (Poland), and twenty specimens taken in Algier. Vaillant (1952) collected adults on rocks at an altitude of 800 m.

M a t e r i a l E x a m i n e d: Kudowa No. 10807 1 ♂ (*Tachista excisa* mihi, det. Loew) — coll. Loew.

44. *Tachydromia carpathica* Chvála, 1966

Tachydromia carpathica Chvála, 1966, Acta ent. bohemoslov., 63 : 475

M a l e. Frons shining black, nearly parallel-sided, only very slightly widened above. Vertex shining black, occiput on the upper part above neck and at sides right to eye-margin, densely silvery grey dusted, on lower part above mouth-opening shining. Two short ocellar bristles, a pair of long but fine black postvertical and another pair of similar bristles just above neck (fig. 104). The other hairs on occiput whitish and inconspicuous. First two antennal segments yellowish brown, 3rd segment brown, with long dark slightly supraapical arista which is about three times as long as rest of antenna, 2nd and 3rd antennal segments nearly globular. Palpi brownish and slender, anteriorly covered with long adpressed silvery hairs and with long black terminal bristle.

Thorax shining black without silvery patch on prothorax between humeri and fore coxae, only prosternum slightly silvery to greyish dusted and scutellum with metanotum somewhat dulled blackish. Mesonotum with one notopleural and one (or two) postalar bristles, scutellum with two pairs of scutellar bristles of about the same length, the inner pair slightly the coarser. All bristles on thorax are black, long but fine. No acrostichals, dorsocentrals very minute, uniserial, only last pair in front of scutellum dark and longer.

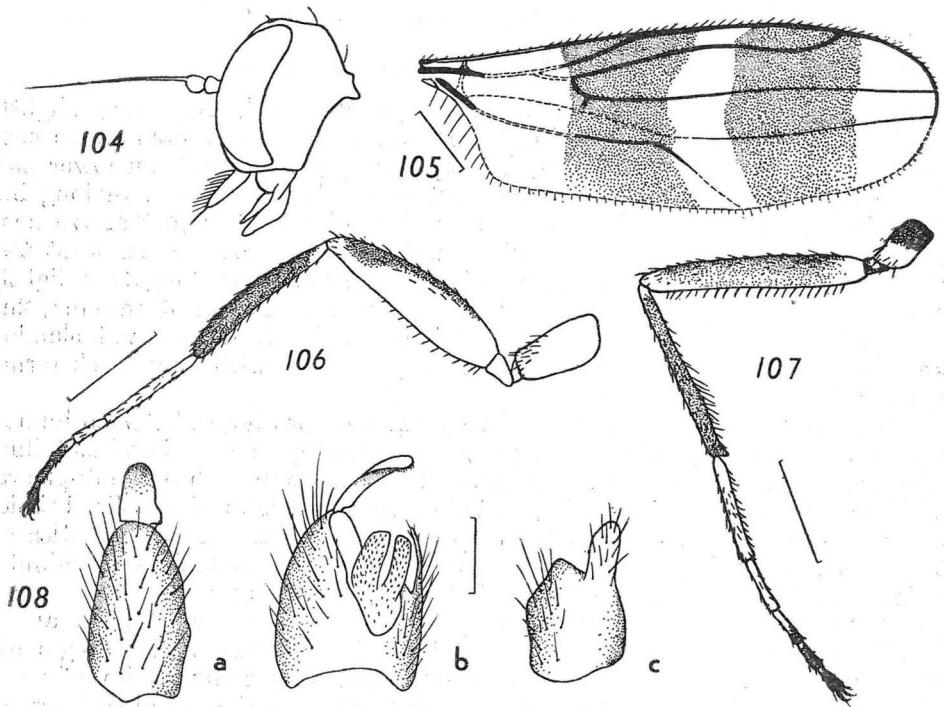
Legs slender and predominantly yellow, posterior coxae at base, apical two-thirds of hind femora and all tibiae, brownish; last two or three segments of all tarsi dark brown. Fore coxae at front edge silvery pollinose. Fore femora (fig. 106) only very slightly stouter, somewhat brownish above and with brown rounded spot near tip, beneath with only fine yellowish hairs, no bristles are present. Middle femora slender, slightly brownish on dorsum, beneath with double row of short black bristly hairs becoming longer and more yellowish towards base. Fore tibiae spindle-shaped dilated, clothed with short black hairs which are longer beneath. Middle tibiae slender, with anteroventral row of short black hairs and with about eight distinct black posteroventral bristles on middle third, a very short but pointed projection at tip (fig. 107). Hind legs slender and short haired, as well as all tarsi. Metatarsus of fore and hind tarsi nearly as long as next four segments together, middle metatarsus somewhat shortened and all tarsi distinctly longer than tibia.

Wings (fig. 105) with two faintly brown bands separated along the whole length, wing pattern and venation as in *T. annulimana* Meig., only marginal cell not so narrow and wings somewhat shorter with blunter tip. Halteres whitish with brownish stem.

Abdomen shining black, with some fine dark hairs at sides, last segments

with long black hairs beneath. Genitalia (fig. 108) small and conical, right lamella with only slightly crooked strip-like dorsal process, cerci flat and blunt.

F e m a l e. Very closely resembling male, middle femora with only yellowish hairs beneath and middle tibiae without apical projection. Abdominal pubescence at sides of all segments coarser, last two segments slightly greyish dusted, cerci very long and slender.



Tachydromia carpathica Chv. ♂: Fig. 104. — Head, lateral view. Fig. 105. — Wing. Fig. 106. — Fore leg. Fig. 107. — Middle leg. Fig. 108. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (paratype: Nová Sedlica, Czechoslovakia).

L e n g t h: 1.8—2.2 mm.

This species may be distinguished with *T. woodi* (Coll.) from other species of the *annulimana*-group by smaller size, yellowish legs, by presence of only usual bristles on mesonotum and by having no long yellow bristles on the venter between posterior four coxae. This species need comparison only with *T. woodi* but the latter has vertex and upper half of occiput at middle densely dulled by greyish dust, leaving the sides right to eye-margin shining, very small scutellar bristles, somewhat stouter legs, fore femora usually with blackish ring before tip and different genitalia.

Distribution: Central Europe.

This species was described in 1966 on the basis of the material taken in Slovakia, and I have found other documentary material in the Museum in Vienna from Austria (Carinthia). The type male is deposited in the National Museum, Praha.

Dates: June to August.

The adults are to be found running about on vegetation, especially at submontane or montane localities, collected up to the present time only in mountains of Central Europe (Poloninské Karpaty, Nízke Tatry, Vihorlat, Karawanken); they fly quite well when disturbed. I collected this species exclusively on the leaves of *Petasites*, at Nová Sedlica in Poloninské Karpaty Mts. (East Slovakia) on 16 to 17 July 1963 14 ♂♂ and 21 ♀♀, at the same locality on 9 June 1966 another 4 ♂♂ and 16 ♀♀, on 18 August 1963 2 ♀♀ near Brezno in Nízke Tatry Mts. (Central Slovakia), on 18 August 1964 a single male at Zadiel (South Slovakia), and another 2 ♂♂ and 2 ♀♀ on 7 June 1966 at Remetské Hámre in Vihorlat Mts. (East Slovakia).

Material Examined: Karawanken, Loibl 670—1370 m. 5.—13. VII. 1934 1 ♀ Zerny (*arrogans* L., det. Engel); sine loc No. 21870 1 ♂ coll. Bgst. (*connexa*, det. Bergenst.) — coll. Wien. Sine loc. No. 70 1 ♂ coll. Oldenb. (*Tachydromia*, det. ?) — coll. D E I.

45. *Tachydromia woodi* (Collin, 1926) **comb. nov.**

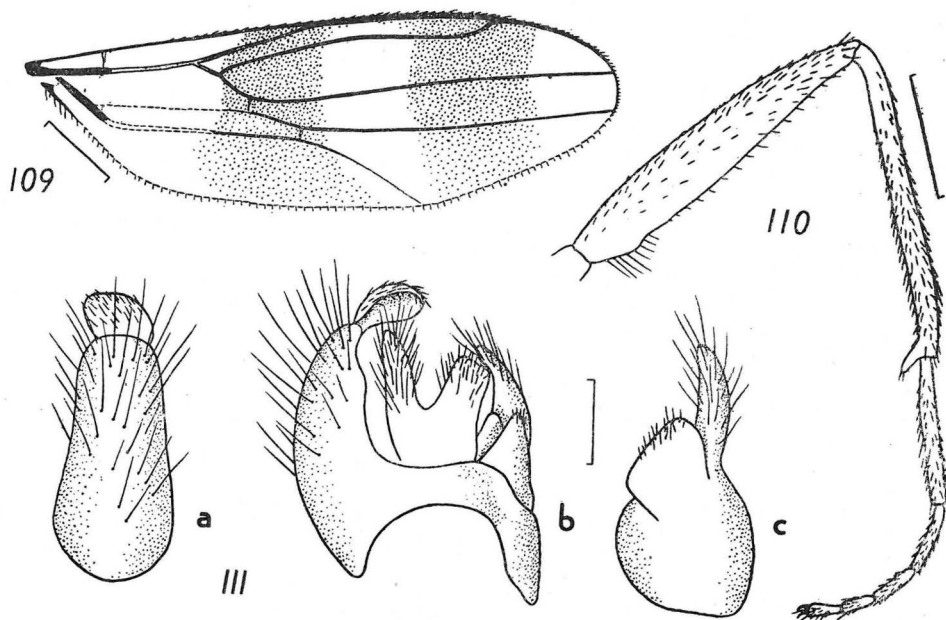
Tachista woodi Collin, 1926, Ent. mon. Mag., 62 : 151

Male. Frons shining black, vertex and upper half of occiput dulled with greyish dust, lower part of occiput and the sides right to eye-margin shining black. Two very short postvertical bristles, the dark hairs on occiput inconspicuous. Antennae pale yellowish, only 3rd segment somewhat pale brownish, with long dark arista which is more than three times as long as antenna. Palpi brownish, nearly as long as proboscis, densely clothed with adpressed silvery hairs and with long dark terminal bristle.

Thorax entirely shining black, without silvery patch on prothorax between humeri and fore coxae, only prosternum somewhat dusted. Dorsocentrals pale, uniserial, very minute and hardly visible, no acrostichals; one small dark notopleural bristle, a small hair on postalar calli and two short scutellar bristles of about the same length as notopleural bristle, sometimes another very short and fine outer pair. No yellowish bristles between posterior four coxae.

Legs predominantly yellowish brown, fore coxae all yellow, fore femora rather stout, yellow, with distinct dark ring before tip, or at least with dark patch on the inner side and with only short pale hairs beneath. Fore tibiae brownish, especially on the lower side, covered with only short pale and brownish hairs. Middle femora slender, yellow, sometimes brownish above, somewhat undulating near base beneath and with only several longer yellow hairs at extreme base beneath. No apical bristle above. Middle tibiae (fig. 110) brownish, short haired with only several slightly longer dark hairs about middle beneath, apical projection shorter and more pointed than in *annulimana* Meig. First two segments of anterior four tarsi yellow with darker tip, last

segments brownish. Middle tarsi shortened, at most about as long as tibia. Hind legs slender, brownish and short haired, only first two tarsal segments somewhat yellowish at base.



Tachydromia woodi (Coll.) ♂: Fig. 109. — Wing. Fig. 110. — Middle leg. Fig. 111. — Genitalia, a — right lamella of epandrium, b — epandrium and cerci, c — left lamella of epandrium (Siegsdorf b. Traunst, Germany).

Wings (fig. 109) with two brown bands separated along the whole length, radial vein arched towards costa at middle as in *annulimana* Meig., making marginal cell much narrower than submarginal. Halteres pale yellowish with brownish stem.

Abdomen shining black, genitalia (fig. 111) small, closely resembling that of *T. carpathica* Chv., but the straight strip-like dorsal process to right lamella of epandrium distinctly shorter, at most about one-third the length of lamella.

F e m a l e. Resembles male but dark ring before tip of fore femur only slightly indicated or wanting altogether, middle femora with only short pale pubescence at base beneath and no apical projection to middle tibiae. Abdomen shining brown to dark brown, cerci long and slender.

L e n g t h: 1.9—2.4 mm.

This species may be readily distinguished, with *T. carpathica* Chv., from *T. annulimana* Meig., and its allied species, by smaller size, by absence of strong black bristles on hind part of thorax and scutellum and by having

no long yellow bristles between posterior four coxae. *T. carpathica* has longer and more slender legs, fore femora without dark ring before tip, only short apical projection to middle tibiae, scutellar bristles distinctly longer, longer than scutellum $\frac{1}{2}$ deep; vertex entirely shining and sides of occiput right to eye-margin densely greyish dusted. The strip-like process to right lamella of epandrium is in *carpathica* distinctly longer, about half the length of right lamella.

Distribution: England, North and Central Europe.

Collin described this species in 1926 on the basis of two males and one female captured by Dr. J. H. Wood in July 1909, 1911 and 1913 in England (Herefordshire), and I have seen more numerous material in various collections from Denmark, Germany and Austria. In the British Museum (Natural History) there is another male, without locality label, gummed to the cardboard mount together with a pair of *T. halidayi* (Coll.), and determined by Collin. I have found a series of one male and two females without locality label in the Museum in Vienna (coll. Winthem), determined and labelled very probably by Winthem as "*Tussilaginis mihi*" but, as far as I know, this name has not been published.

Dates: June and July.

Nothing is known on behaviour of this species, adults have been collected on dates ranging from 11 June to 28 July.

Material Examined: Marchegg 16. VI. 1861 1 ♂ Handlirsch; Linz 1. VII. 1867 1 ♀ Mik; sine loc. 1 ♂ 2 ♀♀ coll. Winthem (*Tussilaginis mihi*, det. Winthem?) — coll. Wien. Siegsdorf b. Traunst. 6. VII. 1918 2 ♂♂ 1 ♀; Dachau 3. VII. 1913 1 ♂ 1 ♀, 21. VII. 1913 1 ♂; sine loc. 1 ♂ (*Tachista annulimana* Mg., det. Oldenberg) — coll. Stuttgart. Sine loc. 11. VII. 1867 1 ♂ — coll. Berlin. Mauthen 1. VII. 1928 1 ♂ coll. Oldenberg (sp.?, *T. arrogans*?, det. Oldenberg) — coll. D E I. Admont 1 ♂ Strobl (*T. annuliana* Mg., det. Strobl) — coll. Strobl. Denmark, Fyn, Faaborg 2 ♀♀ Schlick (*T. cimicoides* F., det. Lundbeck) — coll. K o b e n h a v n.

IV. Summary

The present paper is a revision of Palaearctic species of the genus *Tachydromia* Meigen, 1803 (= *Sicodus* Raf., 1815, *Tachista* Loew, 1864) based on study of the type material and many collections of European Museums and Institutions. At the present time there are known on the whole 45 species of this genus in the Palaearctic region.

Some new synonymy is established: *Tachysta styriaca* var. *semifasciata* Strobl, 1893 is synonym of *T. ornatipes* (Becker, 1890); *Tachysta connexa* var. *c* Strobl, 1893 is synonym of *T. arrogans* (Linnaeus, 1761); *Tachista barbata* Oldenberg, 1920 is synonym of *T. styriaca* (Strobl, 1893); *Sicodus submorio* Collin, 1961 is synonym of *T. costalis* (von Roser, 1840).

A lectotype is designated for *Tachydromia denticulata* (Oldenberg, 1912), *T. aliterpicta* (Becker, 1889), *T. ornatipes* (Becker, 1890), *T. styriaca* (Strobl, 1893) and *T. tuberculata* (Loew, 1864).

Two forms, *Tachysta interrupta* v. *obsoleta* Strobl, 1910 and *Tachysta arrogans* v. *productipes* Strobl, 1910, are raised to specific rank and five species are described

here as new to science: *Tachydromia parva*, sp. n., *T. pseudointerrupta*, sp. n., *T. elbrusensis*, sp. n., *T. anderssoni*, sp. n. and *T. caucasica*, sp. n.

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VI. Alfabetic index of names

(Synonyms in italics)

<i>aemula</i> Loew	455	<i>catalonica</i> Strobl	472
<i>albitarsis</i> Zett.	499	<i>caucasica</i> sp. n.	513
<i>aliterpicta</i> Beck.	435	<i>cimicoides</i> Fabr.	451
<i>alteropicta</i> Beck.	435	<i>connexa</i> Meig.	485
<i>anderssoni</i> sp. n.	494	<i>costalis</i> v. Ros.	481
<i>annulimana</i> Meig.	505	<i>denticulata</i> Oldenb.	424
<i>arrogans</i> L.	451	<i>elbrusensis</i> sp. n.	483
<i>barbata</i> Oldenb.	465	<i>enecator</i> Mel.	451
<i>bifasciata</i> Oliv.	451	<i>excisa</i> Beck.	516
<i>brevipennis</i> v. Ros.	497	<i>excisa</i> Loew	515
<i>cahana</i> Bergenst. MS	454	<i>fabricii</i> Loew	451
<i>calcanea</i> Meig.	490	<i>fenestrata</i> Zett.	432
<i>calcarata</i> Strobl	476	<i>fuscinervis</i> Frey	430
<i>carpathica</i> Chv.	517	<i>halidayi</i> Coll.	445

<i>halterata</i> Coll.	474	<i>productipes</i> Strobl	446
<i>hemiptera</i> v. Ros. MS	499	<i>pseudointerrupta</i> sp. n.	463
<i>incompleta</i> Beck.	437	<i>punctifera</i> Beck.	438
<i>interrupta</i> Loew	468	<i>sabulosa</i> Meig.	432
<i>latifascipennis</i> Brun.	511	<i>semifasciata</i> Strobl	439
<i>longipennis</i> Loew	490	<i>SICODUS</i> Raf.	415
<i>lundstroemi</i> Frey	450	<i>simplicissima</i> Engel	426
<i>microptera</i> Loew	497	<i>smithi</i> Chv.	508
<i>minima</i> Beck.	430	<i>spinisterna</i> Coll. MS	508
<i>monserratensis</i> Strobl	448	<i>striatipennis</i> Strobl	474
<i>morio</i> Zett.	488	<i>styriaca</i> Strobl	465
<i>mucronata</i> Coll.	431	<i>submorio</i> Coll.	481
<i>nigerrima</i> Bezzi	461	<i>TACHISTA</i> Loew	415
<i>nigripes</i> Winth. MS	502	<i>TACHYDROMIA</i> Meig.	415
<i>obsoleta</i> Strobl	459	<i>TACHYPEZA</i> Meig.	416
<i>occipitalis</i> Coll.	432	<i>terricola</i> Zett.	428
<i>ornatipes</i> Beck.	439	<i>tuberculata</i> Loew	478
<i>parva</i> sp. n.	443	<i>tussilaginis</i> Winth. MS.	521
<i>PHONEUTISCA</i> Loew	415	<i>umbrarum</i> Hal.	499
<i>PLATYPALPUS</i> Macq.	415	<i>undulata</i> Strobl	513
<i>preapicalis</i> Coll.	431	<i>woodi</i> Coll.	519