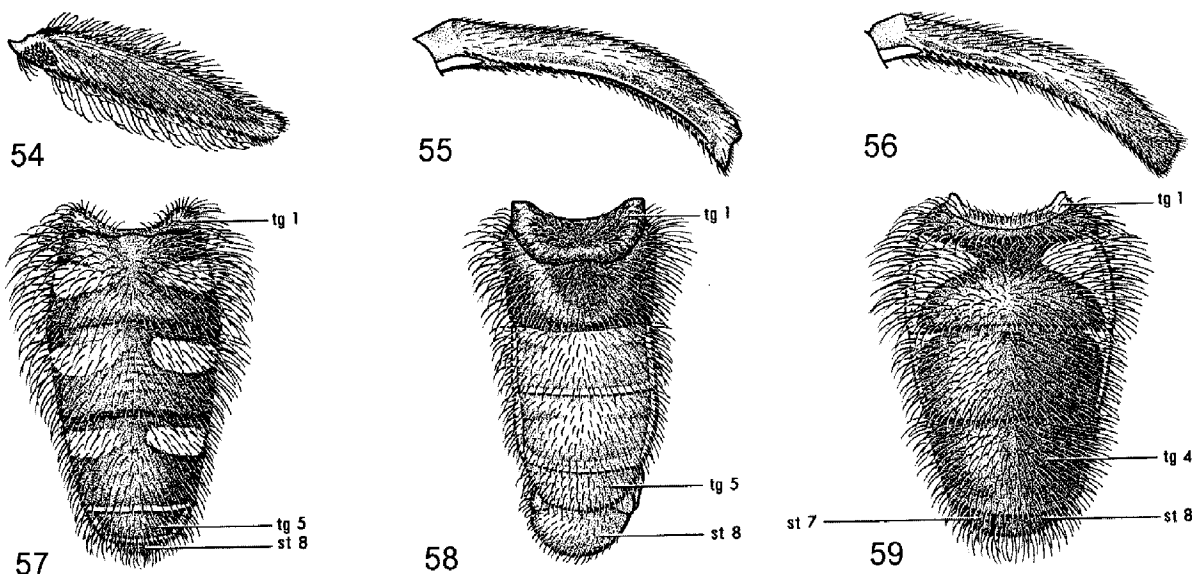
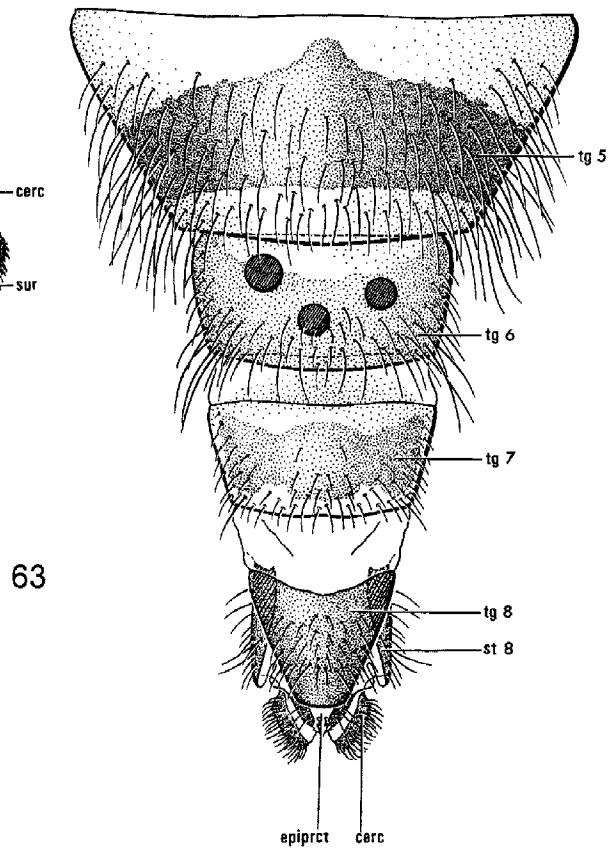
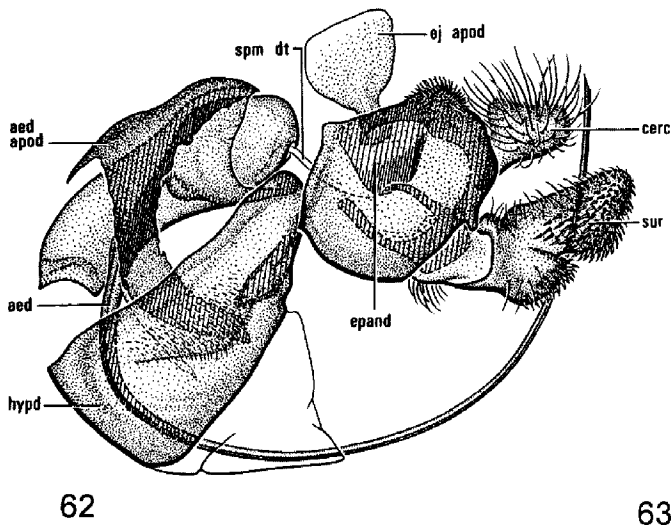
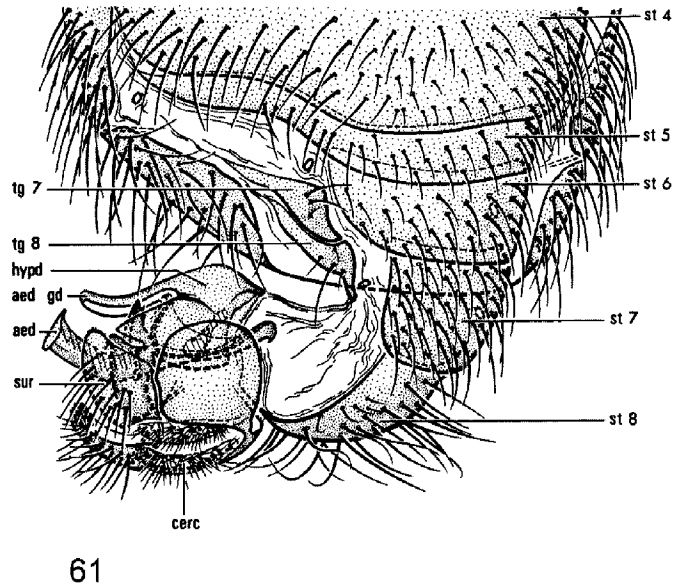
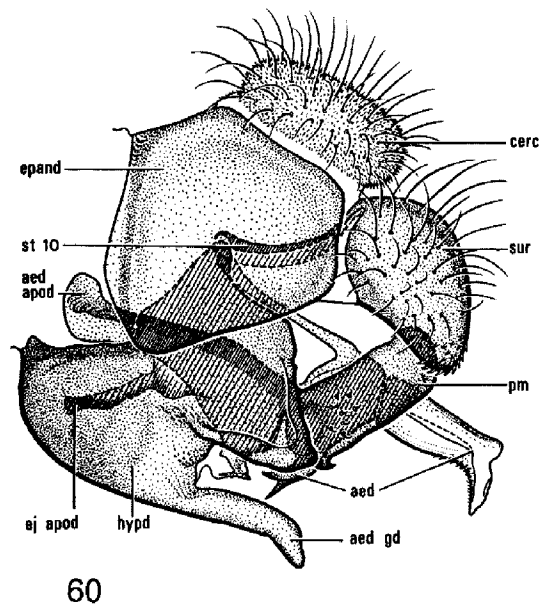


20. Metapleuron bare ventrad to spiracle; metasternum variable. Vein  $R_{4+5}$  straight or sinuate. Size and shape variable 22
- Metapleuron with a tuft of fine pile ventrad to spiracle; metasternum pilose; vein  $R_{4+5}$  distinctly sinuate (Fig. 21). Large species with broad flattened abdomens with distinct marginal sulcus 21
21. Metapleuron with a tuft of pile anterad to spiracle; hind coxa with a tuft of pile posterolaterally; subscutellar fringe present, dense; metasternum yellow pilose; katepisternum with anterior tuft of pile **Asarkina** Macquart  
2 spp.; Italy, North Africa, China and Far East; Bezzi 1903, 1908.
- Metapleuron with tuft of pile ventrad to spiracle; hind coxa without a posterolaterally tuft; subscutellar fringe absent or greatly reduced; metasternum black pilose; katepisternum without anterior tuft of pile **Didea** Macquart  
3 spp.; widespread.
22. Scutum with at most a poorly defined dull yellow pollinose lateral vitta; background black 30
- Scutum with a sharply defined shiny yellow or whitish yellow lateral or sublateral vitta extending at least from postpronotum to transverse scutal suture, background yellow 23
23. Abdomen without marginal sulcus 28
- Abdomen with at least a weak marginal sulcus on tergites 4 and 5, often with a strong sulcus on tergite 3–5 24
24. Vein  $R_{4+5}$  strongly sinuate (Fig. 24) **Asiodidea** Stackelberg  
1 sp., *A. nikkoensis* (Matsumura); China and Far East.



Figs 5.54–59. Adult Syrphidae. 54: *Eristalis (E.) tenax* (Linnaeus), hind femur, anterior view. 55–56: hind tibia, anterior view: 55: *Lejops (Lejops) bilineatus* (Williston); 56: *Parhelophilus laetus* (Loew). 57–59: abdomen, dorsal view: 57: *Melangyna (M.) lasiophthalma* (Zetterstedt); 58: *Paragus (Pandasyophthalmus) haemorrhous* (Meigen); 59: *Blera badia* (Walker) (abbreviations: st: sternite, tg: tergite) (after Vockeroth and Thompson 1987).

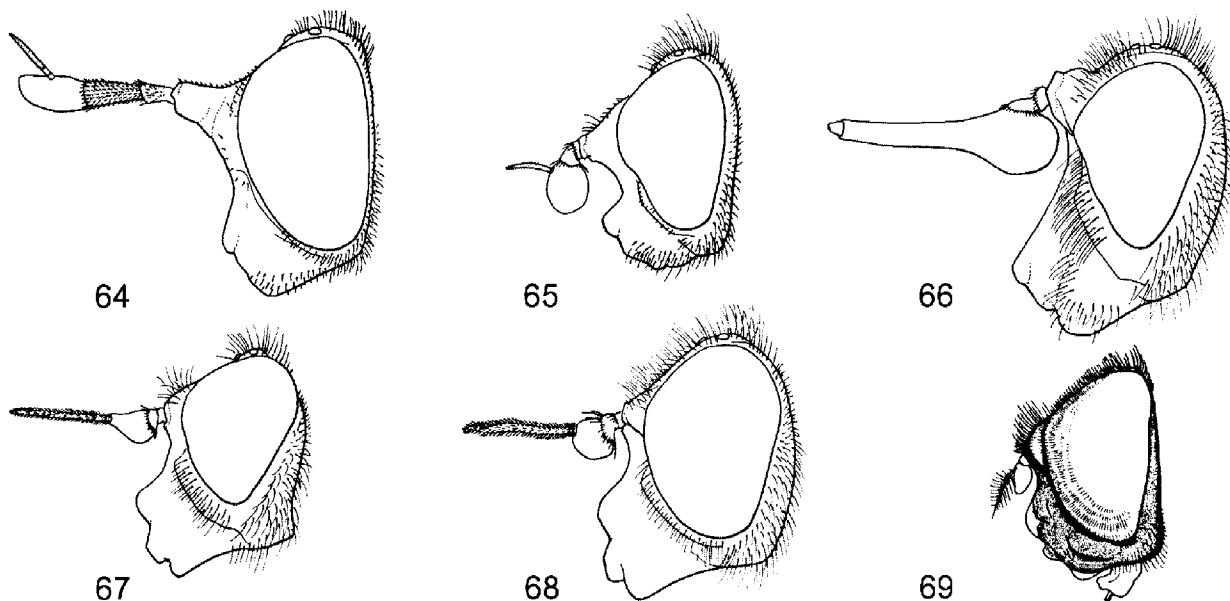
- Vein R<sub>4+5</sub> straight or nearly so (Figs 22–23, 25) 25
25. Anepisternum black; scutellum unicolorous brown; abdomen strongly convex in cross section, distinctly petiolate RETURN to couplet 18
- Anepisternum yellow posteriorly; scutellum at least brightly yellow posteriorly; abdomen nearly flat 26
26. Basoflagellomere elongate, from 1.6 to 2.0 times as long as broad; male hind trochanter with ventral calcar; wing hyaline, extensively bare, bare on basal 2/3 and only sparsely microtrichose on apical 1/3; scutellum entirely yellow; eye bare Ischiodon Sack  
2 spp.; North Africa, Middle East, China and Far East.
- Basoflagellomere oval, at most only 1.3 times as long as broad; male trochanter simple; wing usually dark anteriorly, extensively microtrichose, with moderate bare areas on basal 1.3, densely microtrichose on apical 1/3; scutellum always broadly black basally; eye bare or pilose 27
27. Mesonotum and katepisternum with sharply defined bright yellow maculae, not pollinose Xanthogramma Schiner  
17 spp.; widespread; Violovitsh 1975b.
- Mesonotum and katepisternum with at most a diffuse pollinose yellow maculae Epistrophe (Epistrophella) Dušek et Láska  
2 spp.; widespread.
28. Subscutellar fringe absent or nearly so on at least median 1/3, present but sparse laterally. Male terminalia extremely large, globose; tergite 9 as wide as abdomen (Fig. 90) Sphaerophoria Lepeletier et Serville  
48 spp.; widespread.
- Subscutellar pile fringe complete, well-developed, moderately dense (Fig. 41). Male terminalia small, inconspicuous; tergite 9 at most 1/3 as wide as abdomen 29
29. Metasternum bare Melangyna (Meligramma) Frey  
5 spp.; widespread.
- Metasternum pilose Allograpta Osten Sacken  
2 spp.; China and Far East.
30. Wing without transverse dark fascia, unmarked except for stigmal darkening or rarely with costal area longitudinally darkened and with dark anteroapical spot 33
- Wing with distinct transverse brown fascia at mid length extending from costa at least across crossvein R-M 31
31. Wing fascia broad, about 1/3 wing length in width, extending to posterior margin; sparsely pilose flies with Syrphus-like abdominal pattern of broad transverse yellow fascia Dideopsis Matsumura  
1 sp., *D. aegrota* (Fabricius); China and Far East.
- Wing fascia narrow, not more than 1/6 wing length in width, and not extending to posterior wing margin; pilose flies without typical Syrphus-like abdominal pattern 32



Figs 5.60–63. Adult Syrphidae. 60–61: male genitalia, lateral view: 60: *Syrphus ribesii* (Linnaeus); 61: *Microdon manitobensis* Curran. 62: *Syrphus ribesii* (Linnaeus), male terminalia and apex of abdomen, ventral view. 63: *Syrphus ribesii* (Linnaeus), female terminalia, dorsal view (abbreviations: aed: aedeagus, aed apod: aedeagal apodeme, aed gd: lingula, cerc: cercus, ej apod: ejaculatory apodeme, epand: epandrium, epiprct: epiproct, hypd: hypandrium, pm: superior lobe, spm dt: sperm duct, st: sternite, sur: surstylus, tg: tergite) (after Vockeroth and Thompson 1987).

32. *Bombus*-like flies with tergites 1 to 3 black and abdomen bright red to yellow apically; face yellow; wing membrane almost entirely trichose **Eriozona (Eriozona Schiner)**  
 1 sp., *E. (E.) syrphoides* (Fallén); widespread.
- Flies not *Bombus*-like, tergite 2 and base of tergite 3 pale yellow or grey, rest of tergites black; face yellow with broad black median vitta; wing with basal cells usually extensively bare **Leucozonia (Leucozonia Schiner)**  
 1 sp., *L. (L.) lucorum* (Linnaeus); widespread.
33. *Metasternum* pilose 46
- *Metasternum* bare 34
34. Eye bare or very nearly so 42
- Eye distinctly pilose 35
35. Tergite 1 greatly reduced, frequently almost linear on disc and practically covered by scutellum, sublaterally at most 1/2 as long as tergite 2 (Fig. 57); tergites not punctate. Length 6.7 mm or more 37
- Tergite 1 well-developed, especially on disc where it is frequently 1/2 as long as tergite 2 and always extends well beyond scutellum, sublaterally about 3/4 as long as tergite 2 (Fig. 58); tergites minutely punctate. Length 7.5 mm or less 36
36. Eye with pile arranged in 3 more or less vertical vittae or contrasting colour. Scutellum black with apex narrowly yellow or reddish **Paragus (Paragus Latreille)**  
 32 spp.; widespread including North Africa; Goeldlin 1976.
- Eye with pile of nearly uniform colour, not forming vittae of contrasting colour. Scutellum entirely black **Paragus (Pandasyopthalmus Stuckenberg)**  
 6 spp.; widespread including North Africa; Goeldlin 1976.
37. Wing with microtrichia very sparse and scattered, with extensive bare areas on apical 1/3 (Fig. 22). Male eye with well-defined area of enlarged facets dorsally **Scaeva Fabricius**  
 15 spp.; widespread including North Africa; Dušek and Láska 1985, Kuznetsov 1985.
- Wing with at least apical 1/3 densely and uniformly trichose, without bare areas along veins (Fig. 23). Male eye without well-defined area of enlarged facets dorsally 38
38. Tergite 2 with large subquadrate grey or yellow maculae that are much larger than pale maculae on tergites 3 and 4 **Leucozonia (Ischyrosyrphus Bigot)**  
 5 spp.; widespread; Stackelberg 1929.
- Tergite 2 with oval or transverse yellow maculae that are smaller than pale markings on tergites 3 and 4, or tergite 2 entirely black 39
39. Abdomen without sulcus, slender and parallel-sided or narrowly oval **Melangyna (Melangyna Verrall)**  
 18 spp.; widespread.
- Abdomen with weak but distinct marginal sulcus, oval 40

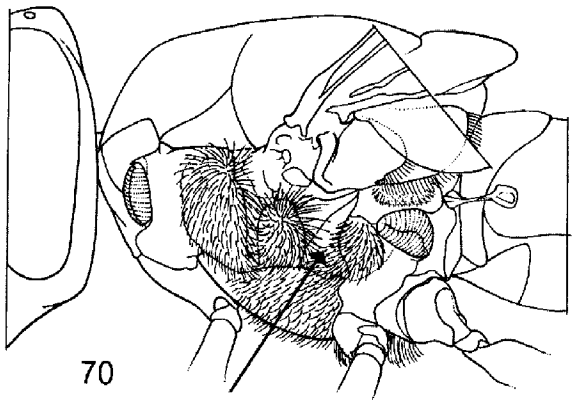
- 40. Katepisternum with dorsal and ventral pile patches separated posteriorly; abdominal maculae yellow or grayish, always very densely pollinose; face densely gray pollinose; eye densely and uniformly pilose Betasyrphus Matsumura  
     2 spp.; Egypt, China and Far East; Ohara 1984. 45.
- Katepisternum with dorsal and ventral pile patches narrowly to broadly joined posteriorly; abdominal maculae bright yellow, at most very slightly pollinose; if face densely pollinose, then eye distinctly pilose on dorsal 1/2 only 41
- 41. Eye uniformly pilose throughout or nearly so Dasysyrphus Enderlein  
     26 spp.; widespread; Peck 1974. –
- Eye with dense pile on dorsal half, nearly bare on ventral half Epistrophe (Epistrophe Walker) 46.  
     22 spp.; widespread.
- 42. Vein R<sub>4+5</sub> distinctly sinuate (Fig. 23) Eupeodes (Lapposyrphus) Dušek et Láška –  
     1 sp., *E. (L.) lapponicus* (Zetterstedt); widespread.
- Vein R<sub>4+5</sub> straight or nearly so 43 47.
- 43. Abdomen without sulcus. Face often with distinct dark medial vitta. Slender species with parallel-sided abdomen 45 –
- Abdomen with at least a faint trace of marginal sulcus on tergites 3, 4 or 5. Face with at most an obscure dark medial vitta. Broader species with oval or suboval abdomen 44 48.
- 44. Katepisternum with dorsal and ventral pile patches narrowly joined posteriorly. Tergum 4 with entire yellow fascia Epistrophe (Epistrophe Walker), part  
     see couplet 41. –



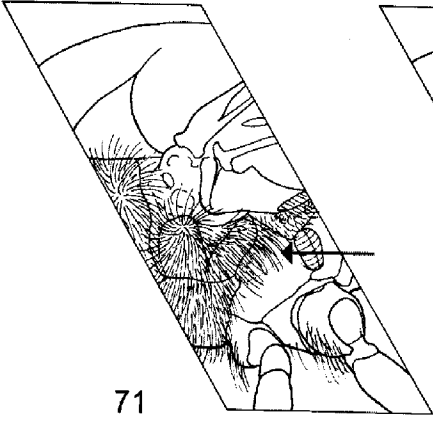
Figs 5.64–69. Adult Syrphidae, male heads (except 68 female), lateral view. 64: *Psarus abdominalis* (Fabricius); 65: *Psarochilosia djakonovi* Stackelberg; 66: *Macropelecocera paradoxa* Stackelberg; 67: *Ischyroptera bipilosa* Pokorný; 68: *Taeniochilosia atriseta* Oldenberg; 69: *Endoiasimyia formosana* (Shiraki) (after Shiraki 1930).

49.  
–  
50.  
–  
51.

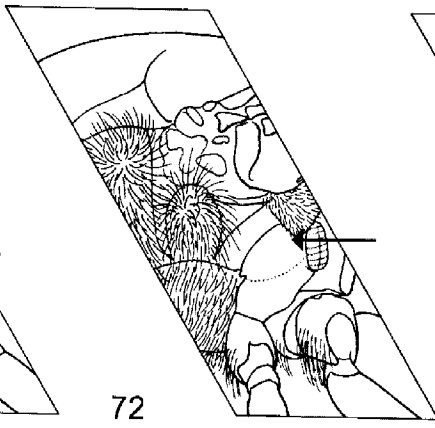
- Katepisternum with dorsal and ventral pile patches broadly separated. Tergite 4 with yellow fascia divided into two maculae **Epistrophe (Epistrophella Dušek et Láska)**, part see couplet 27.
45. Hind coxa with tuft of pile at posteromedial apical angle (as in Fig. 48). Pale abdominal maculae transverse, maculae of tergites 2–4 always separated. Face usually with black median vitta, rarely entirely yellow **Melangyna (Melangyna Verrall)**, part see couplet 39.
- Hind coxa without pile tuft posteromedially. Pale abdominal maculae oblique, sometimes confluent. Face entirely yellow **Melangyna (Meligramma Frey)**, part see couplet 29.
46. Eye bare or very nearly so 49
- Eye distinctly, and usually very densely, pilose 47
47. Eye distinctly but sparsely pilose; hind coxa without pile tuft; vein  $R_{4+5}$  straight or nearly so **Eupcodes (Metasyrphus Matsumura)** 63 spp.; widespread including North Africa; Dušek and Láska 1976, 1980.
- Eye very densely pilose; hind coxa with a tuft of pile posteromedially; vein  $R_{4+5}$  variable, sometimes distinctly sinuate 48
48. Vein  $R_{4+5}$  distinctly sinuate (Fig. 25); face yellow with black median vitta; tergite 4 at least half black, with broad incised yellow transverse fascia on anterior half **Eriozona (Megasyrphus Dušek et Láska)** 3 spp.; widespread; Peck 1974.
- Vein  $R_{4+5}$  straight or only very slightly sinuate; face entirely yellow; tergite 4 usually yellow or reddish with narrow black transverse or oblique fascia, rarely extensively black **Dideoides Brunetti** 3 spp.; Iran, China and Far East.
49. Face entirely black; abdomen elongate, slender, without marginal sulcus (Fig. 90); male terminalia greatly enlarged, globose, with tergite 9 as broad as preabdomen **Sphaerophoria Lepeletier et Serville**, part 1 sp. runs here, *S. nigra* Frey; see couplet 28.
- Face partly or entirely yellow; male terminalia usually small and inconspicuous, if enlarged, then tergite 9 much narrower than preabdomen 50
50. Vein  $R_{4+5}$  distinctly sinuate (Fig. 25) **Eriozona (Megasyrphus Dušek et Láska)**, part see couplet 48.
- Vein  $R_{4+5}$  straight or nearly so 51
51. Abdomen with strong distinct marginal sulcus extending clearly from middle of tergite 2 to end of tergite 5. Katepisternum with dorsal and ventral pile patches very nearly confluent anteriorly, distinctly separated posteriorly **Eupeodes (Metasyrphus Matsumura)**, part see couplet 47.



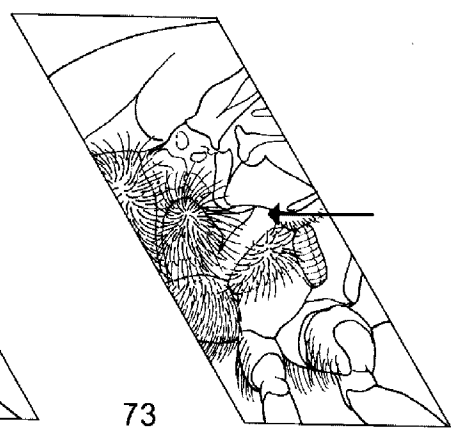
70



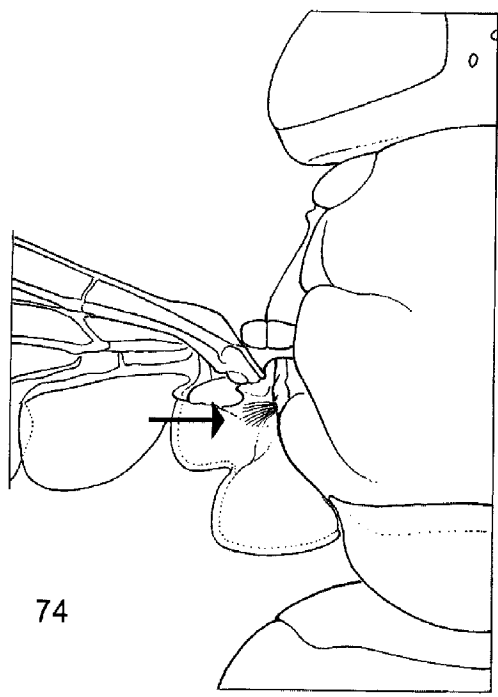
71



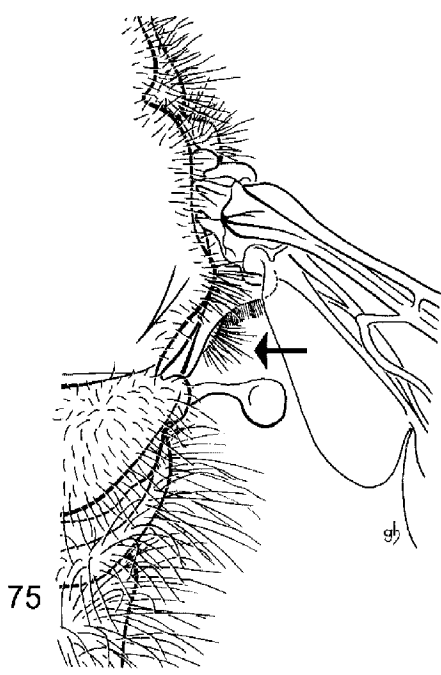
72



73



74



75

- Abdomen with p...
- se
- 52. Metep... rated... angle... 3
- Metep... Hind
- 53. Metas... consist... Face r... modif... 19
- Metas... or stro... or wit
- 54. Arista... tergite... see
- Arista... sided c
- 55. Eye pi... long a... 1 s
- Eye ba... as long
- 56. Face g... as broa... 1 s
- Face n
- 57. Meson... rugose
- Meson... puncta
- 58. Arista b... ventral... 4 sp

Figs 5.70-75. Adult Syrphidae, details of thorax. 70-74: lateral view: 70: "*Eristalis*" n. sp.; 71: *Eristalinus aeneus* (Scopoli); 72: *Eristalis (Eoseristalis) arbustorum* (Linnaeus); 73: *Eristalis (E.) tenax* (Linnaeus). 74-75: dorsal view: 74: *Pseuderistalis viridis* (Coquillett); 75: *Allobaccha apicalis* (Loew).

- Abdomen with very weak indistinct marginal sulcus that begins on tergite 3 or 4. Katepisternum with pile patches broadly separated anteriorly, narrowly joined posteriorly  
Epistrophe (*Epistrophe* Walker), part  
see couplet 41.
- 52. Metepisternum with some fine subappressed pile; katepisternum with pile patches broadly separated posteriorly, joined anteriorly (Fig. 42). Hind coxa with tuft of pile at posteromedial apical angle (as in fig. 48) Xanthandrus Verrall  
3 spp.; widespread including North Africa.
- Metepisternum bare; katepisternal pile patches broadly separated throughout (as in Fig. 45). Hind coxa without posteromedial apical pile tuft 52
- 53. Metasternum greatly reduced, with deep posterior incision laterally so that sclerotized portion consists of a median diamond-shaped area with narrow anterior and lateral strips (Fig. 46). Face not produced below, with small tubercle. Male legs slender, without bristles, pile tufts or modified pile Melanostoma Schiner  
19 spp.; widespread including North Africa.
- Metasternum entire (Fig. 47). Face variable, almost straight with weak tubercle or moderately or strongly produced forward ventrally. Male sometimes with legs modified, either broadened, or with special bristles, pile tufts or modified pile 54
- 54. Arista plumose, with pile more than twice as long as aristal width; abdomen petiolate, with 2nd tergite narrower than 3rd; male hind tibia modified Platycheirus (*Spazigaster* Rondani), part  
see couplet 18.
- Arista bare or pubescent, with pile less than twice as long as aristal width; abdomen parallel-sided or oval, with 2nd tergite as wide or wider than 3rd; male hind tibia simple 55
- 55. Eye pilose; antenna elongate, as long as face; basoflagellomere elongate, more than 5 times as long as broad; male dichoptic Platycheirus (*Pseudoplatycheirus* Doesburg)  
1 sp., *P. (Ps.) peteri* Doesburg; Russia (Pamir) and China (Karakorum Mts).
- Eye bare; antenna usually short, shorter than face; basoflagellomere usually not more than twice as long as broad; male holoptic 56
- 56. Face greatly produced anteriorly; antenna elongate, with basoflagellomere about 4 times as long as broad "Tuberculanostoma" Fluke  
1 sp., *T. solitarium* Doesburg; China (Karakorum Mts).
- Face not greatly produced anteriorly 57
- 57. Mesonotum smooth or with puncta finer and more widely scattered, not producing a distinct rugose appearance; legs partially pale 59
- Mesonotum distinctly and finely rugose; rugose appearance due to large and closely set puncta, puncta set in irregular rows; legs black 58
- 58. Arista bare, inserted near middle of basoflagellomere; face wider ventrally, with sides divergence ventrally; abdomen with pale maculae Platycheirus (*Rohdendorfia* Smirnov)  
4 spp.; high montane areas, Central Europe to Pamir; Stackelberg 1965, Violovitsh 1984, Claussen 1988.



- Arista pubescent, with short, appressed pile, inserted basally; face not distinctly wider ventrally, with sides approximately parallel; abdomen entirely black 62.  

**Platycheirus (Syrphocheilosia Stackelberg)**

1 sp., *P. (S.) claviventris* Strobl; Europe; Claussen 1987.
- 59. Wing shorter than abdomen; abdomen broad or mostly red or black with 2 yellow maculae on 3rd tergite 63.  

**Platycheirus (Pyrophaena Schiner)**

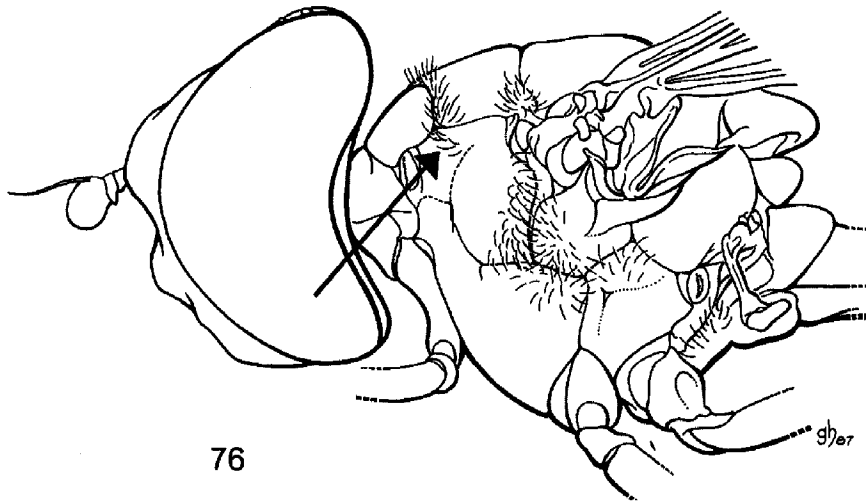
3 spp.; widespread.
- Wing longer than abdomen; abdomen narrow, not with such abdominal pattern 60
- 60. Male fore femur posteriorly on at least apical 1/2 with row of stiff straight black setae, with last seta longer and with its apex strongly curved -  

**Platycheirus (Pachysphyria Enderlein)**

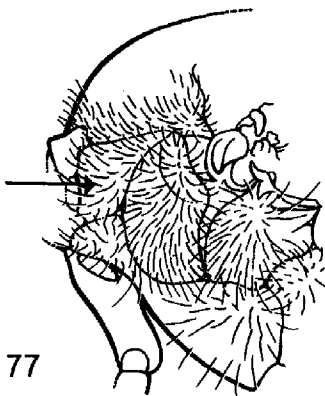
3 spp.; widespread, including Arctic.
- Without such chaetotaxy 64.  

**Platycheirus (Platycheirus Lepeletier et Serville)**

60 spp.; widespread. including Arctic; Nielsen 1981; Ohara 1980, 1984; Dušek and Láška 1982; Speight and Goeldlin 1990.
- 61. Anterior anepisternum with long erect pile 65
- Anterior anepisternum bare 62



76



77



78



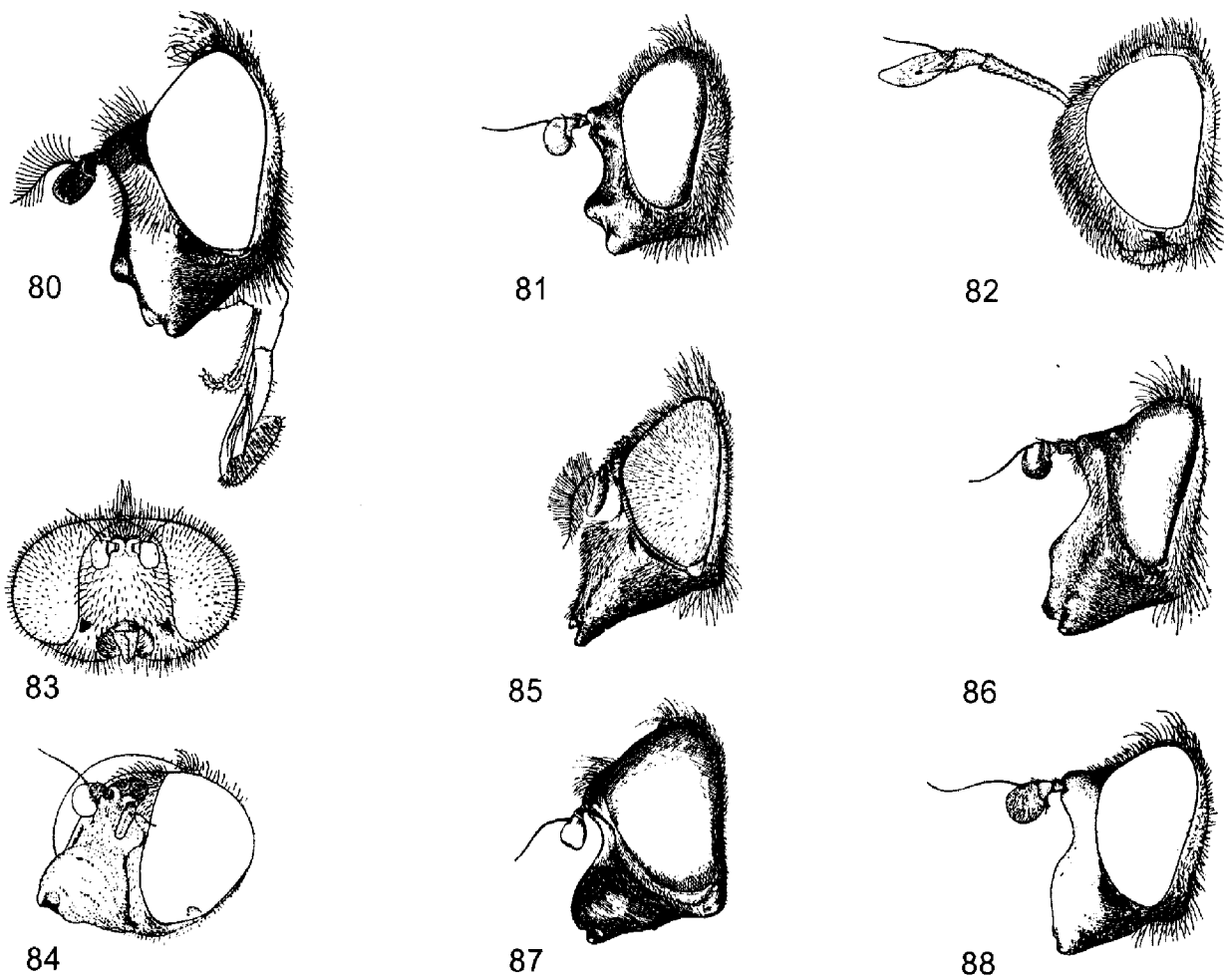
79

Figs 5.76–79. Adult Syrphidae, details of thorax, lateral view. 76: *Episyrrhus (Asiobaccha) nubilipennis* (Austen); 77: *Meliscaeva cinctella* (Zetterstedt); 78: *Allobaccha bergi* Curran; 79: *Allobaccha apicalis* (Loew).

62. Katepimeron bare; male with distinct conically produced frontal prominence; hind trochanter of male simple **Pipiza Fallén**  
34 spp.; widespread; Violovitsh 1988.
- Katepimeron pilose at least anteriorly; male with frontal prominence very short; hind trochanter of male often with ventral spur 63
63. Vein Sc ending opposite or before crossvein R-M; cell  $r_{4+5}$  truncate apically; vein  $M_1$  joining vein  $R_{4+5}$  perpendicularly **Pipizella Rondani**  
34 spp.; widespread; Lucas 1976.
- Vein Sc ending beyond crossvein R-M; cell  $r_{4+5}$  acute apically; vein  $M_1$  progressive apically, joining vein  $R_{4+5}$  at acute angle 64
64. Male coxae and trochanters without calcars. Female basoflagellomere much longer than wide; frons with conspicuous lateral pollenose maculae **Heringia (Heringia Rondani)**  
4 spp.; widespread; Claussen, Goeldlin and Lucas 1994.
- Male coxae and trochanters with calcars. Female basoflagellomere not, or only slightly longer than wide; frons with very small and inconspicuous pollenose maculae or none **Heringia (Neocnemodon Goffe)**  
11 spp.; widespread; Stackelberg 1952b (as *Cnemodon*), Delucchi and Pschorn-Walcher 1955.
65. Abdomen with tergites 2 and 3 well developed and subequal in length, 4th minute and barely visible dorsally **Triglyphus Loew**  
4 spp.; widespread including North Africa; Violovitsh 1980.
- Terga 2 to 4 well developed and subequal in length **Trichopsomyia Williston**  
5 spp.; widespread.
66. Vein  $R_{4+5}$  with medial appendix extending into cell  $r_{4+5}$  (Fig. 28) **Microdon Meigen**  
20 spp.; widespread including North Africa; Violovitsh 1976, Speight 1994.
- Vein  $R_{4+5}$  without an appendix; antenna short, shorter than face **Paramicrodon de Meijere**  
Not Palaearctic; 1 sp., *P. nigripennis* (Sack), Taiwan.
67. Eye and face pilose (Fig. 9). Crossvein R-M before middle of discal cell. Subscutellar fringe present **Callicera Panzer**  
10 spp.; widespread; Zimina 1986, Speight 1991b.
- Eye bare and face usually bare. If face pilose, then crossvein R-M beyond middle of discal cell. Subscutellar fringe absent 68
68. Crossvein R-M beyond middle of discal cell. Antenna long; scape three to four times as long as wide; basoflagellomere shorter than scape and pedicel together 72
- Crossvein R-M before middle of discal cell. Antenna short; scape about as long as wide; basoflagellomere large and longer than scape and pedicel together 69
69. Metasternum and first abdominal sternite bare; subscutellar fringe absent; scutellum with distinct bristles; basoflagellomere large, oval (Fig. 10); arista bare; sternopleural pile patches separated **Pelecocera Meigen**  
2 spp.; Europe; Kuznetsov 1989.
- First abdominal sternite pilose and usually metasternum bare 70

- 70. Basoflagellomere greatly elongate dorsally; terminal antennal style very short, less than 1/10 as long as basoflagellomere, bare (Fig. 66); anterior anepisternum pilose; thorax without bristles 73.  
**Macropelecocera** Stackelberg  
 4 spp.; Central Asia and China; Kuznetzov 1990. -
- Basoflagellomere short, oval; arista elongate, more than 4 times as long as basoflagellomere, densely pilose (Figs 67-68); anterior anepisternum bare 74.  
71
- 71. Thorax with bristles -  
 1 sp., *T. atriseta* (Oldenberg); high montane areas, Central Europe. **Taeniochilosia** Oldenberg
- Thorax without bristles 75.  
 1 sp., *I. bipilosa* Pokorny; high montane areas, Central Europe. **Ischyroptera** Pokorny
- 72. Frontal prominence at least as long as scape (Fig. 12) 74  
 - Frontal prominence absent or much shorter than scape 73

76.



77.

78.

79.

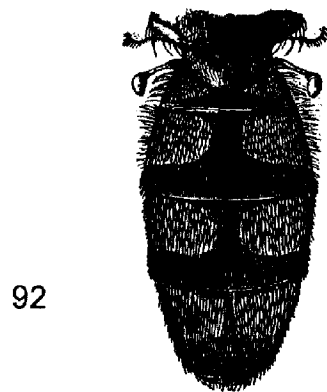
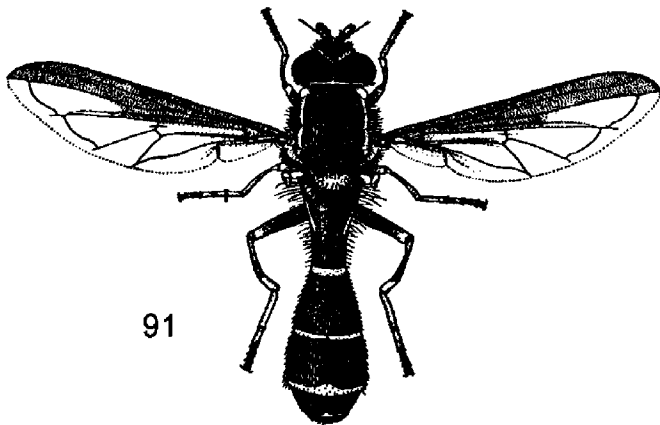
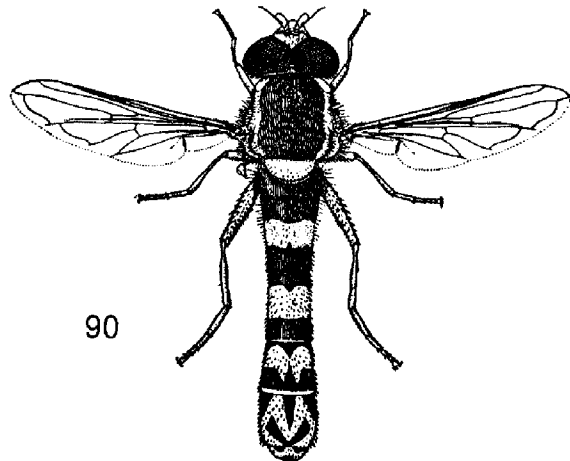
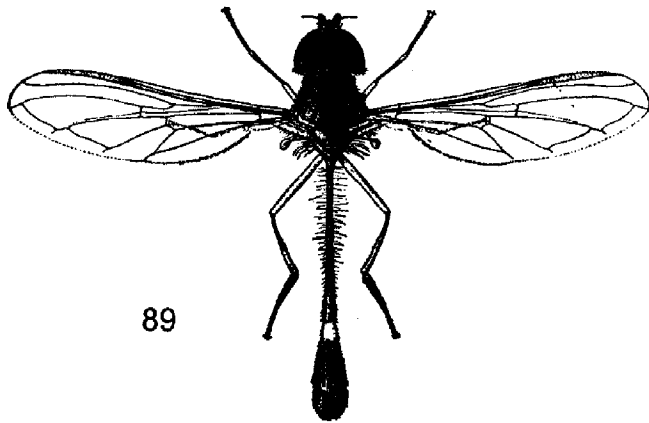
80.

81.

Figs 5.80-88. Adult Syrphidae, male heads, lateral view (except 83 anteroventral and 84 lateroblique). 80: *Sericomyia lappona* (Linnaeus); 81: *Pocota personata* (Harris); 82: *Microdon mutabilis* (Linnaeus); 83: *Pipiza noctiluca* (Linnaeus); 84: *Portevinia maculata* (Fallén); 85: *Volucella bombylans* (Linnaeus); 86: *Criorhina floccosa* (Meigen); 87: *Portevinia maculata* (Fallén); 88: *Blera fallax* (Linnaeus) (after Verrall 1901).

73. Eye pilose  
2 spp.; Far East. **Primocerioides** Shannon
- Eye bare  
5 spp.; Europe, Far East. **Sphiximorpha** Rondani
74. Vein R<sub>4+5</sub> with a appendix into cell R<sub>4+5</sub>. Abdomen not petiolate  
17 spp.; widespread including North Africa. **Ceriana** Rafinesque
- Vein R<sub>4+5</sub> without appendix. Abdomen petiolate  
3 spp.; China and Far East. **Monoceromyia** Shannon
75. Vein M<sub>1</sub> usually processive anteriorly (Figs 35, 37–38). If slightly recessive, then arista plumose or cell r<sub>2+3</sub> petiolate. Anepisternum bare anteriorly 80
- Vein M<sub>1</sub> recessive anteriorly (Figs 29, 34, 36). Anepisternum with anterior flattened portion pilose; arista bare; cell r<sub>2+3</sub> open at wing margin 76
76. Eye bare. Antenna elongate, with pedicel elongate, as long or longer than basoflagellomere; arista elongate, with apex expanded in male; female face distinctly tuberculate; anepimeron with triangular area pilose; hind femur without apicolateral ventral triangular plate  
**Platynochaetus** Wiedemann  
5 spp.; Spain, North Africa; Bezzi 1924.
- Eye pilose or bare. If eye bare, then pedicel shorter, anepimeral triangle pilose. Arista never with flared apex; face never tuberculate 77
77. Hind femur with apicolateral ventral triangular plate (Fig. 97); anepimeron with triangular area pilose 79
- Hind femur only slightly swollen, without ventral plate; anepimeron with triangular area bare 78
78. Scutellum long, narrow, about 4 times as long as broad, as wide as head; vein R<sub>4+5</sub> sinuate; apical portion of vein M without external spurs **Azpeytia** Walker  
1 sp.; *A. shirakii* Hurkmans; Japan.
- Scutellum more quadrate, about 2 times as long as broad, with its width less than that of head; vein R<sub>4+5</sub> straight or sinuate; apical portion of vein M with external spurs **Eumerus** Meigen  
156 spp.; widespread including North Africa; Stackelberg 1961, 1964, 1965; Peck 1966.
79. Male dichoptic **Merodon (Exmerodon)** Becker  
3 spp.; Caucasus, Turkey and Altai.
- Male holoptic **Merodon (Merodon)** Meigen  
95 spp.; widespread including North Africa; Hurkmans 1993.
80. Cell r<sub>1</sub> petiolate, closed before reaching wing margin (Figs 33–35) 93
- Cell r<sub>1</sub> open at wing margin (Figs 36–38) 81
81. Arista plumose (Fig. 85) 108
- Arista bare 82

- 82. Metasternum bare. Hind femur without anterobasal patch of short dense black setulae. Male holoptic, female face concave  
Pterallastes Loew  
 3 spp.; China and Far East.
- Metasternum pilose. Other characters variable 83
- 83. Hind femur swollen, with a large apicoventral triangular plate, without distinct anterobasal setulae (Fig. 94); metasternum with a basal membraneous seam. Male holoptic, face carinate (Fig. 8). Female face concave  
Tropidia Meigen  
 1 sp. runs here, *T. fasciata* Meigen; widespread.
- Hind femur without apicoventral plate, with anterobasal patch of short dense black setulae; metasternum without a seam. Male holoptic or dichoptic, face tuberculate. Female face tuberculate or straight 84
- 84. Postalar pile tuft present (Fig. 74) 96
- Postalar pile tuft absent 85



Figs 5.89-92. Adult males of Syrphidae. 89-91: habitus: 89: *Baccha elongata* (Fabricius); 90: *Sphaerophoria scripta* (Linnaeus); 91: *Doros profuges* (Harris). 92: *Portevinia maculata* (Fallén), abdomen, dorsal view (after Verrall 1901).

Male  
oew

83

etu-  
Fig.  
ngenilae;  
ber-

84

96

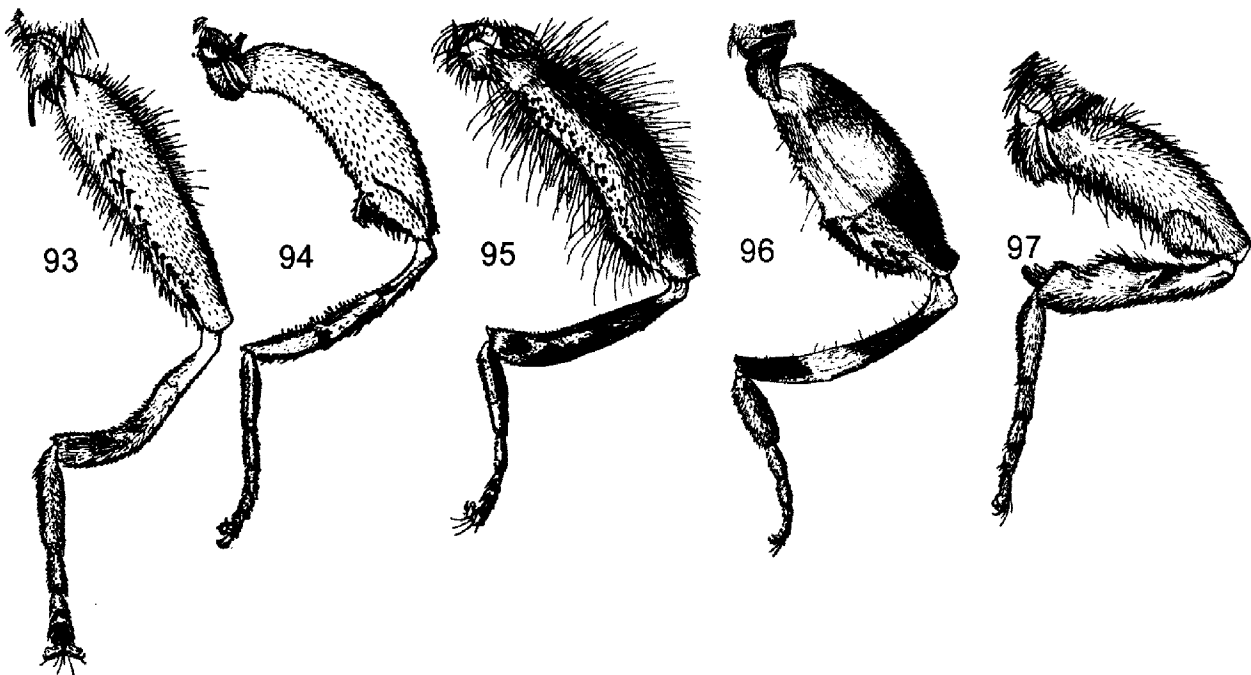
85



2 (Lin-

85. Eye bare 88
- Eye pilose; katepimeron bare 86
86. Wing partly bare on basal 1/3 **Mallota Meigen**  
23 spp.; widespread; Stackelberg 1950, Violovitsh 1978a.
- Wing entirely microtrichose; mesonotum usually with yellow or grey pollinose vittae or fasciae 87
87. Male dichoptic; 1st and 2nd sternites fused laterally; mesonotum with obscure gary pollinose vittae **Parhelophilus (Pleskeola) Stackelberg**  
1 sp., *P. (P.) sibirica* Stackelberg; boreal, Europe to Siberia; Thompson 1997.
- Male holoptic; 1st and 2nd sternites separate; mesonotum usually with a distinct yellow to gray pollinose pattern (Fig. 2) **Myathropa Rondani**  
3 spp.; widespread including North Africa.
88. Katepimeron pilose; hind basitarsis with globuliferous pile basoventrally; male holoptic **Mesembrius Rondani**  
5 spp.; widespread including North Africa.
- Katepimeron bare; hind basitarsis without such pile; male dichoptic 89
89. Pterostigma elongate, not simulating a crossvein, at most slightly darkened basally (Fig. 37); abdomen oval, usually with large orange maculae on 2nd tergite **Helophilus Meigen**  
18 spp.; widespread; Violovitsh 1979a.
- Pterostigma very short, simulating a crossvein (Fig. 38). Abdomen oval to slender, variable in colour 90
90. Face extensively black in background colour, pale pollinose laterally but shiny black medially 92
- Face pale, yellow to orange in background colour and completely pale pollinose 91
91. Hind tibia truncate apically, with ventral carina restricted to basal half or less, with apical half rounded ventral (Fig. 56) **Parhelophilus Girschner**  
7 spp.; widespread; Thompson 1997.
- Hind tibia produced apicoventrally as an acute or rounded spur, with ventral knife-edged carina on basal half, carina continuing less distinctly posteroventrally to or almost to tibial apex (Fig. 55) **Lejops (Lejops) Rondani**  
13 spp.; widespread.
92. Face produced anteroventrally, almost straight, without distinct tubercle (Fig. 13) **Lejops (Arctosyrphus) Frey**  
1 sp., *L. (A.) willingii* (Smith); boreal, Europe to Siberia.
- Face not produced anteroventrally, with large distinct tubercle **Mallota Meigen, part**  
see couplet 86.
93. Metasternum pilose 95
- Metasternum bare. Hind femur without anterobasal patch of short dense black setulae 94

94. Vein  $R_{4+5}$  with last section long, longer than crossvein H; arista shorter than maximal facial width; face concave in both sexes; female front entirely pollinose  
**Palumbia (Palumbia Rondani)**  
 2 spp.; Italy, Caucasus.
- Vein  $R_{4+5}$  with last section short, less than half as long as crossvein H; arista longer than maximal facial width; male face tuberculate; female face concave; female front shiny on ventral 1/3  
**Palumbia (Korinchia Edwards)**  
 2 spp.; China.
95. Hind femur without anterobasal patch of short dense black setulae, with a preapical anteroventral tooth-like process  
**Milesia Latreille**  
 10 spp.; widespread; Hippa 1990.
- Hind femur with anterobasal patch of short dense black setulae, without apicoventral tooth 96 101
96. Katepimeron pilose (Figs 70–71, 73); other sclerites frequently partly pilose 98
- Katepimeron, anepimeron on posterior half, meron, and metepisternum all bare (Fig. 72) 97 102
97. Postalar pile tuft present (Fig. 74); metallic green to purple flies  
**Pseuderistalis Shiraki**  
 2 spp.; China and Far East.
- Postalar pile tuft absent; not metallic flies  
**Eristalis (Eoseristalis Kanervo)**  
 39 spp.; widespread including North Africa. 103
98. Eye with dark maculae or vittae. Anepimeron with triangular area ventrad to wing base pilose (Fig. 71); postalar pile tuft present (Fig. 74) 101



Figs 5.93–97. Adult Syrphidae, male hind legs, anteroventral view. 93: *Xylota segnis* (Linnaeus); 94: *Tropidia scita* (Harris); 95: *Brachypalpus (B.) laphriformis* (Fallén); 96: *Syrirta pipiens* (Linnaeus); 97: *Merodon equestris* (Fabricius) (after Verrall 1901).

facial

- Eye unicolorous. Anepimeron with triangular area bare; postalar pile tuft absent 99

dani)

99. Meron bare posteroventrally, without pile anterior or ventral to spiracle (Fig. 73); eye pilose; wing bare  
**Eristalis (Eristalis Latreille)**  
 2 spp.; widespread including North Africa.

maxi-

al 1/3

ards)

- Meron pilose posteroventrally, with pile anteroventrally to spiracle; eye bare; wing partially microtrichose 100

oven-

reille

100. Front with strongly rugose area dorsal to antenna; male holoptic **Phytomia Guérin-Ménéville**  
 2 spp.; China and Far East.

oth

- Front not rugose; male dichoptic **Simoides Loew**  
 2 spp.; Afrotropical, not Palaearctic.

96

101. Eye fasciate and punctate **Eristalinus (Eristalodes Mik)**  
 1 sp., *E. (E.) taeniops* Wiedemann, Mediterranean to Pakistan.

98

- Eye punctate 102

) 97

102. Male dichoptic **Eristalinus (Eristalinus Rondani)**  
 1 sp., *E. (E.) sepulchralis* Linnaeus, widespread.

miraki

- Male holoptic **Eristalinus (Lathyrophthalmus Mik)**  
 14 spp.; widespread including North Africa.

nervo)

103. Cell  $r_1$  petiolate; apical crossvein strongly recessive (Fig. 34); katepimeron pilose  
**Volucella Geoffroy**  
 20 spp.; widespread including North Africa; Zimina 1961.

pilose

101

- Cell  $r_1$  open, not petiolate; apical crossvein perpendicular or slightly recessive; katepimeron bare 104

104. Eye bare 106

- Eye pilose 105

105. Vein  $M_1$  processive; anterior anepisternum bare; scutellum without medial concavity; male holoptic **Endoiasimyia Bigot**  
 4 spp.; China and Far East.

- Vein  $M_1$  recurrent or perpendicular; anterior anepisternum pilose at least posterodorsally; scutellum with medial concavity; male dichoptic **Graptomyza Wiedemann**  
 11 spp.; China and Far East; Mutin 1983.

106. Metasternum pilose; subscutellar fringe present 108

- Metasternum bare; subscutellar fringe absent 107

107. Vein  $R_{4+5}$  with apical section longer than crossvein R-M; hind tibia with short strong black spines on anterior surface; anepisternum, postalar callus, and scutellum with strong bristles; face of male with tubercle **Brachyopa (Hammerschmidtia Schummel)**  
 3 spp.; widespread.



- Vein  $R_{4+5}$  with apical section shorter than crossvein R-M (Fig. 31); hind tibia without spines; thorax with at most very weak bristles; face of male without tubercle  
 17 spp.; widespread including North Africa; Thompson 1980. **Brachyopa (Brachyopa Meigen)**
108. Vein  $R_{4+5}$  strongly sinuate; male dichoptic  
 1 sp., *P. oberthueri* Hervé-Bazin; Russia (Transbaikalia to Far East). **Pararctophila Hervé-Bazin**
- Vein  $R_{4+5}$  straight or only moderately sinuate 109
109. Anepimeron bare posteriorly; abdomen usually yellow fasciate 111
- Anepimeron with a patch of pile on posterior half; abdomen without yellow fasciae, either entirely black or yellow basally in ground colour 110
110. Abdomen black in ground colour, with long pile  
 3 spp.; Europe. **Sericomyia (Arctophila Schiner)**
- Abdomen yellow basally in ground colour, with short pile  
 1 sp., *P. decipiens* (Hervé-Bazin); Far East. **Pseudovolucella Shiraki**
111. Face greatly produced ventrally, projecting more than 1/2 eye length below eye, yellow  
 2 spp.; Caucasus and Siberia. **Sericomyia (Conosyrphus Frey)**
- Face not produced greatly, projecting less 1/2 eye length below eye, usually with black medial vitta (Fig. 80)  
 8 spp.; widespread; Stackelberg 1927. **Sericomyia (Sericomyia Meigen)**
112. Vein  $M_1$  strongly biangulate, recessive anteriorly, forming an acute angle with vein  $R_{4+5}$  (Fig. 29); anterior anepisternum pilose 77
- Vein  $M_1$  not biangulate, usually processive or perpendicular anteriorly, forming a right or obtuse angle with vein  $R_{4+5}$  113
113. Eye bare 118
- Eye pilose 114
114. Vein  $M_1$  processive; scutellum without medial concavity; male holoptic 115
- Vein  $M_1$  recurrent or perpendicular; scutellum with medial concavity; male dichoptic. Anterior anepisternum pilose at least posterodorsally; face tuberculate **Graptomyza Wiedemann**, part see couplet 105. 122.
115. Anterior anepisternum pilose; scutellum with distinct marginal sulcus. Face without a tubercle, straight, with a projecting epistoma (Fig. 15)  
 11 spp.; widespread including North Africa; Violovitsh 1980c. **Psilota Meigen**
- Anterior anepisternum bare; scutellum without apical sulcus, evenly convex apically. Face usually tuberculate, without a projecting epistoma 116 123.

116. Bristles absent; face black, usually concave, rarely with at most a small tubercle in males; subscutellar fringe absent **Chrysogaster** Meigen  
20 spp.; widespread including North Africa; Stackelberg 1959.
- Bristles present on thorax; face either yellow or with distinct tubercle; subscutellar fringe present 117
117. Crossvein R-M at or beyond middle of discal cell. Antennal sockets confluent; face yellow with black median vitta. Legs yellow **Ferdinandea** Rondani  
5 spp.; widespread.
- Crossvein R-M before middle of discal cell. Antennal sockets separated; face black. Legs usually mostly black **Cheilosia** Meigen  
303 spp.; widespread including North Africa.
118. Anterior anepisternum pilose posterodorsally; femora usually with distinct ventroapical spines; vein R<sub>4+5</sub> with last section much less than half as long as crossvein H or absent; cell r<sub>4+5</sub> closed at wing margin, not petiolate. Metasternum pilose or bare **Myolepta** Newman  
12 spp.; widespread including North Africa.
- Anterior anepisternum bare; anterior femora without distinct ventral spines. If hind femur with ventral spines, then vein R<sub>4+5</sub> with last section longer than crossvein H and usually longer than crossvein R-M 119
119. Subscutellar fringe absent or nearly so 128
- Subscutellar fringe present (as in Fig. 41) 120
120. Face produced into a long porrect snout, without tubercle (Fig. 16); costa and vein R<sub>4+5</sub> ending well posterior apex of wing **Rhingia** Scopoli  
5 spp.; widespread.
- Face not so produced, usually tuberculate; costa and vein R<sub>4+5</sub> ending at or anterior to apex of wing 121
121. Vein R<sub>4+5</sub> with last section shorter than crossvein H and at most half as long as crossvein R-M 127
- Vein R<sub>4+5</sub> with last section longer than crossvein H and usually longer than crossvein R-M 122
122. Abdomen elongate, strongly petiolate; 2nd tergite narrower than 3rd tergite, about 1/3 as wide as scutellum; anepimeron pilose; laterotergite dorsally with a patch of long pile (Far East only) **Allobaccha** Curran, part  
see couplet 15.
- Abdomen parallel-sided to oval, never distinctly petiolate; 2nd tergite as wide as 3rd tergite, wider than scutellum; anepimeron bare; laterotergite without long pile 123
123. Face yellow laterally; arista bare (Fig. 17); male broadly dichoptic **Pelecocera** (Chamaesyphus) Mik  
6 spp.; widespread including North Africa.

- Face entirely black or partly yellow. If face partly yellow, arista pilose, with arista pile (rays) distinctly longer than basal diameter of arista. Male holoptic 124
124. Face pilose laterally; male frons bare; female face straight with a projecting epistoma; scutellum without distinct bristles **Chrysosyrphus** Sedman  
3 spp.; Arctic; Violovitsh 1978; Kassebeer 1995.
- Not with all characters in combination; face usually bare; female (male also) with strong tubercle; male frons pilose; scutellum usually with strong bristles 125
125. Male broadly dichoptic; frons projecting beyond facial tubercle (Fig. 65); abdomen extensively red **Psarochilosia** Stackelberg  
1 sp., *P. djakonovi* Stackelberg; Siberia.
- Male holoptic; frons not strongly produced; abdomen black 126
126. Face with distinct tubercle; abdomen without grey pollinose maculae **Cheilosia** Meigen, part see couplet 117.
- Face with indistinct tubercle (Fig. 87); abdomen with distinct grey pollinose maculae (Fig. 92) **Portevinia** Goffe  
3 spp.; widespread.
127. Vein R<sub>4+5</sub> with last section subequal to crossvein H; cell r<sub>5</sub> with distinct petiole; hind femur without ventroapical spines; metasternum bare **Lejota** Rondani  
6 spp.; boreal, Europe to Siberia, Japan; Violovitsh 1980.
- Vein R<sub>4+5</sub> with last section much less than half as long as crossvein H or absent; cell r<sub>5</sub> closed at wing margin, not petiolate; hind femur with distinct ventroapical spines; metasternum pilose **Myolepta** Newman, part see couplet 118. 135
128. Abdomen parallel-sided or oval; alula at least as wide as cell bm (Fig. 31). Face variable. Postmetacoxal bridge absent 133
- Abdomen petiolate; alula narrower than width of cell bm (Figs 26, 30). Face concave or nearly straight, never tuberculate nor produced on ventral half. Postmetacoxal bridge usually entire or nearly so 129 136
129. Vein M<sub>1</sub> either perpendicular and forming a right angle with vein R<sub>4+5</sub> or with its apical portion slightly recessive (Fig. 31); basoflagellomere usually much longer than wide; face oblique, nearly straight (Fig. 20); katapisternum usually pilose; male broadly dichoptic 132
- Vein M<sub>1</sub> oblique, forming an acute angle with vein R<sub>4+5</sub> (Fig. 30); basoflagellomere oval, at most as long as wide; face convex (Fig. 4); katapisternum bare 130 137
130. Postmetacoxal bridge absent; metasternum pilose; male holoptic **Chalcosyrphus** (*Spheginoides*) Szilády  
1 sp., *Ch. (S.) obscurus* (Szilády); Hungary to Siberia.
- Postmetacoxal bridge entire (Fig. 52); metasternum bare; male broadly dichoptic 131 138

131. First abdominal sternite distinct, strongly sclerotized, subquadrate, pilose  
**Sphegina (Sphegina Meigen)**  
 34 spp.; widespread; Stackelberg 1953a, 1956; Violovitsh 1980d (Siberian spp.); Thompson and Torp 1986 (European spp.).
- First abdominal sternite absent or present, but if present, much weaker than second sternite, very slender and bare  
**Sphegina (Asiosphegina Stackelberg)**  
 10 spp.; widespread; Stackelberg 1953a, 1956; Violovitsh 1980d (Siberian spp.); Thompson and Torp 1986 (European spp.).
132. Postmetacoxal bridge complete  
**Neoascia (Neoasciella Stackelberg)**  
 10 spp.; widespread; Stackelberg 1955a, 1965.
- Postmetacoxal bridge incomplete  
**Neoascia (Neoascia Williston)**  
 7 spp.; widespread; Stackelberg 1955a, 1965.
133. Face and scutellum pale, orange to yellow; legs and abdomen extensively pale; vein R<sub>4+5</sub> with last section short, subequal to crossvein H  
**Brachyopa (Brachyopa Meigen), part**  
 see couplet 107.
- Face and scutellum black, usually with a metallic luster; legs and abdomen mostly black or dark metallic; vein R<sub>4+5</sub> with last section of variable length 134
134. Frontal prominence distinct, longer than scape (Fig. 64); antenna elongate, as long as face; male dichoptic; arista thick, inserted on apical half of basoflagellomere. Face and frons smooth  
**Psarus Latreille**  
 1 sp., *P. abdominalis* (Fabricius); Europe.
- Frontal prominence absent; antenna short, usually shorter than face; arista thin, inserted on basal half of basoflagellomere 135
135. Vein R<sub>4+5</sub> with last section less than half as long as crossvein R-M; male dichoptic; female face and frons smooth  
**Lejota Rondani, part**  
 see couplet 127.
- Vein R<sub>4+5</sub> with last section subequal to or longer than crossvein R-M; male holoptic; female face or frons or both sometimes rugose 136
136. First abdominal sternite entirely pollinose; vein M<sub>1</sub> usually processive, rarely with apical portion recessive; basoflagellomere oval, at most 1.4 times as long as wide; metasternum bare  
**Chrysogaster Meigen, part**  
 see couplet 116.
- First abdominal sternite shiny, metallic; if partially pollinose, then apical crossvein strongly recessive (Fig. 32) 137
137. Abdomen dull medially; male holoptic; metasternum usually pilose  
**Orthonevra Macquart**  
 32 spp.; widespread including North Africa; Stackelberg 1953b, 1965; Violovitsh 1979b.
- Abdomen entirely shiny 138
138. Male broadly dichoptic; metasternum pilose; radial sector with short bristles  
**Lejogaster Rondani**  
 4 spp.; widespread.

- Male holoptic; metasternum bare; radial sector without bristles **Liochrysogaster** Stackelberg  
1 sp., *L. przewalskii* Stackelberg; China.
139. Cell  $r_1$  petiolate, closed before wing margin **Milesia** Latreille, part  
see couplet 94.
- Cell  $r_1$  open to wing margin 140
140. Anterior anepisternum pilose; hind femur slender, with a slender preapical anteroventral  
tooth-like process; large robust flies, mimicking wasps and hornets **Spilomyia** Meigen  
17 spp.; widespread including North Africa; Stackelberg 1958.
- Anterior anepisternum usually bare. If pilose, then hind femur unarmed 141
141. Katepisternum with separate dorsal and ventral pile patches; gena and ventral part of face usu-  
ally bare. If face pilose, body entirely black. Body variable in appearance 143
- Katepisternum continuously pilose along posterior margin; gena and ventral half of face pilose;  
body with bright yellow pollinose markings; flies mimicking wasps 142
142. Alula narrow, only as wide as 2nd costal cell; abdomen distinctly petiolate; 2nd tergite always  
constricted basally; face concave; anterior anepisternum bare. Far East only 15  
**Takaomyia** Hervé-Bazin  
2 spp.; Far East.
- Alula broad, much broader than cell  $bm$ ; abdomen oval, not petiolate; 2nd tergite not constricted  
basally; face and anterior anepisternum variable. Widespread  
**Temnostoma** Lepeletier et Serville  
9 spp.; widespread including North Africa.
143. Metasternum bare 155
- Metasternum pilose, with pile as long as or longer than that of hind coxa 144
144. Wing almost bare on basal 2/3, very sparsely microtrichose on apical 1/3; metepisternum with  
a patch of fine pile; hind femur greatly enlarged, with an anteroventral spinose ridge on apical  
1/3 (Fig. 96) **Syritta** Lepeletier et Serville  
6 spp.; widespread including North Africa.
- Wing entirely microtrichose or with just moderate bare areas on basal 1/3 or slightly more,  
densely and uniformly microtrichose on apical 1/3; metepisternum pilose or bare; hind femur  
variable 145
145. Hind femur with an apicoventral triangular process (Fig. 94); metasternum large, with a basal  
membranous seem (Fig. 50) **Tropidia** Meigen, part  
1 sp. runs here, *T. scita* (Harris); widespread.
- Hind femur without apicoventral process 146
146. Face produced ventrally, usually tuberculate; gena broad (Figs 86, 88). Body either with long  
pile or with bright yellow pollinose markings 153
- Face concave, sometimes subcarinate, not tuberculate; gena narrow (Figs 11, 81). Body with  
short and sparse pile, without bright yellow pollinose markings 147

147. Face shiny, sparsely pilose; male hind femur with subbasal tubercle  
**Chalcosyrphus (Chalcosyrphus Curran)**  
 1 sp., *Ch. (Ch.) tuberculifemur* (Stackelberg); Siberia, Far East.
- Face pollinose, bare; male hind femur not as such 148
148. Abdomen greatly elongate, about twice as long as scutum and scutellum together; abdomen unicolorous, deep violet black  
**Chalcosyrphus (Xylotomima Shannon)**  
 10 spp.; widespread; Hippa 1968.
- Abdomen shorter, only 1.5 times as long as scutum and scutellum or shorter; abdomen otherwise 149
149. Mesonotum with distinct pattern of thick short pilose vittae; hind femur incrassate, with apicoventral carina rising abruptly basally, apex not curved posteriorly  
**Chalcosyrphus (Syrittosyrphus Hippa)**  
 1 sp., *Ch. (S.) shirakii* Hippa; China and Far East.
- Mesonotum without vittate pattern; hind femur normal 150
150. Alula narrow, narrower than width of cell bm; katepisternum bare; crossvein R-M basal, at basal 2/5 of discal cell  
**Chalcosyrphus (Spheginoides Szilády), part**  
 See couplet 130.
- Alula broad, broader than width of cell bm; katepisternum pilose; crossvein R-M apical, at or beyond middle of discal cell 151
151. Hind femur with strong irregularly spaced spinose pile; sexes strongly dimorphic in colouration  
**Chalcosyrphus (Dimorphoxylota Hippa)**  
 1 sp.; *Ch. (D.) eumerus* (Loew); Russia, China.
- Not so 152
152. Aedeagus without dorsal notch  
**Chalcosyrphus (Xylotina Hippa)**  
 5 spp.; widespread.
- Aedeagus with dorsal notch  
**Chalcosyrphus (Xylotodes Shannon)**  
 6 spp.; widespread.
153. Antenna greatly elongate, much longer than face. Thorax and abdomen with distinct yellow pollinose markings. Body with short and sparse pile; flies mimicking wasps  
**Sphecomyia Latreille**  
 1 sp., *S. vespiformis* Gorski; widespread.
- Antenna short, shorter than face. Thorax and abdomen without yellow pollinose markings. Body with long pile; flies mimicking *Bombus* or other bees 154
154. Male dichoptic; anepimeron usually pilose; basoflagellomere kidney-shaped, deeper than long  
**Criorhina Meigen**  
 17 spp.; widespread; Stackelberg 1955b (as *Penthesilea*), Violovitsh 1974b.
- Male holoptic; anepimeron bare; basoflagellomere oval, about as deep as long  
**Matsumyia Shiraki**  
 2 spp.; Far East.

155. Vein R<sub>4+5</sub> with last section not more than 1/3 as long as crossvein H 163 —
- Vein R<sub>4+5</sub> with last section at least 3/4 as long as crossvein H 156
156. Face black in background colour, rarely slightly yellowish ventrally 160
- Face mostly or entirely bright to dull yellow, at most with dark medial vitta 157 1.
157. Hind femur with a pair of apicoventral spurs **Macrozelima** Stackelberg  
1 sp., *M. hervei* (Shiraki); Far East; Hippa 1978b.
- Hind femur simple, unarmed 158 —
158. Abdomen either black and at least partly black pilose or black with clear yellow markings on tergites 2–4 or red on 4–5 **Blera** Billberg  
12 spp.; widespread; Barkalov and Mutin 1991. —
- Abdomen shiny metallic with brassy yellow pile, but without yellow or red markings 159 3.
159. Face tuberculate; scutellum without subscutellar fringe; metasternum not developed (as in Fig. 49) **Caliprobola** Rondani  
2 spp.; Europe, Central Russia —
- Face concave; scutellum with a subscutellar fringe; metasternum developed (as in Fig. 50) **Hadromyia** (**Chrysosomidia** Curran)  
1 sp., *H. (Ch.) cimbiciformis* (Portschinsky); Siberia, Far East 4.
160. Crossvein R-M slightly before middle of discal cell; abdomen broadly oval; subscutellar fringe present or absent; male narrowly dichoptic **Lejota** Rondani, part  
see couplet 127. —
- Crossvein R-M beyond middle of discal cell; abdomen elongate; Subscutellar fringe present; male holoptic 161 5.
161. Head triangular in anterior view (Fig. 18); face extensively shiny; gena broad, much broader than metathoracic spiracle; basoflagellomere kidney-shaped, broader than long; hind femur greatly enlarged, arcuate (Fig. 95) **Brachypalpus** Macquart  
6 spp.; widespread; Stackelberg 1965. —
- Head elliptical in anterior view (Fig. 19); gena narrow, narrower than metathoracic spiracle; basoflagellomere longer than broad; hind femur not greatly enlarged or arcuate; male hind trochanter frequently armed with spur or tubercle (Fig. 93) 162 6.
162. Frontal prominence normal; aedeagus with short ejaculatory process **Xylota** (**Xylota** Meigen)  
33 spp.; widespread including North Africa; Stackelberg 1952a, Hippa 1968. —
- Frontal prominence greatly produced; aedeagus with greatly elongate ejaculatory process **Xylota** (**Brachypalpoidea** Hippa)  
5 spp.; widespread; Hippa 1985 (Oriental spp.). 7.
163. Subscutellar fringe present and face black in background colour; abdomen black, without pale markings; face concave (Fig. 81). Large robust long-pilose flies, mimicking *Bombus*  
**Pocota** Lepeletier et Serville  
2 spp.; widespread. —

- Subscutellar fringe absent or face partly yellow in background colour; abdomen often with yellow markings; face tuberculate, not concave (Fig. 88). Smaller, barer flies, not mimicking *Bombus* **Blera** Billberg, part  
see couplet 158.

## Larvae

1. Antenno-maxillary organs mounted on a two-stage fleshy tapering projection (Fig. 101); this projection sometimes divided medially almost to base 11
- Antenno-maxillary organs mounted on a single-stage fleshy projection (Fig. 99) 2
2. Mouth hooks reduced, pale or apparently absent 7
- Mouth hooks present at apex of mouth, black downwardly projecting, in lateral view usually protruding from mouth (Figs 98–99) 3
3. Anal segment ends in flattened disc OR if tapering toward tip, with 2 or 3 pairs of lappets (fleshy tapering projections) (Fig. 104) 5
- Anal segment tapering towards tip, with 4 pairs of lappets; middle pair of lappets divided into 2 small projections 4
4. Dorsal lip (areas between mouth hooks at base of antenno-maxillary organs) covered in transverse rows of setae **Eumerus** Meigen  
In bulbs and roots of live plants.
- Dorsal lip lacking rows of setae **Merodon** Meigen  
In bulbs and roots of live plants.
5. Anus parallel to longitudinal axis of body; body ends with posterior spiracular process in center of flat inclined disk fringed with setae **Portevinia** Goffe  
In bulbs and roots of live plants.
- Anus transverse to longitudinal axis of body **Cheilosia** Meigen  
Mycophagous, in fruiting bodies of macrofungi; in decaying roots of herbacious plants; leaf-miners; cambium-feeders through bark of pine trees; tunnelling in roots and stems of herbacious plants.
6. Larva hemispherical in cross-section, with a narrow band of setae round entire margin of body except for a notch on anterior margin through which prothorax protrudes; setal band level with ventral surface; prothorax and mesothorax very narrow and usually withdrawn completely into metathorax (view from ventral surface) **Microdon** Meigen  
In and around ant nests, predators of ant larvae and pupae.
- Larva without this combination of characters 7
7. Larva with colour pattern made up from: pigments in haemolymph and/or variously coloured fat bodies and markings on integument; anal segment with tip rounded, bearing sensilla (Fig. 103); tip of prothorax with a pair of triangular-shaped sclerotized hooks; prothorax and mesothorax narrow and retractable into metathorax; usually free-living on plants 40
- Larva without this combination of characters 8