

# Identification key for the Central European *Cacopsylla* species

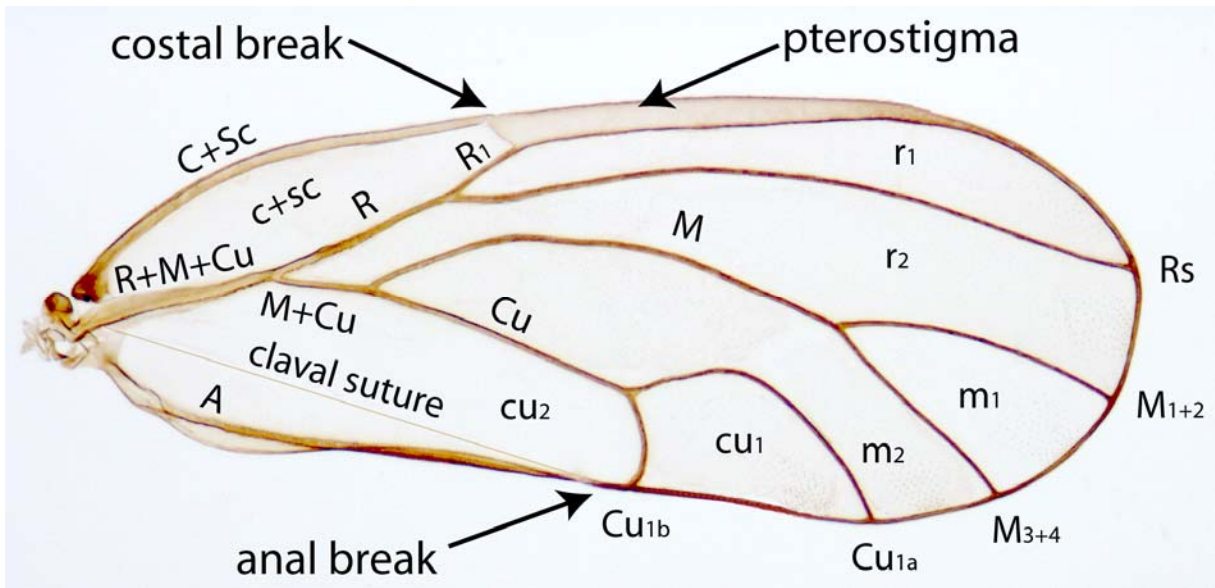
Daniel Burckhardt, Naturhistorisches Museum Basel



- 1 Mesoscutum distinctly longer than mesopraescutum along median longitudinal body axis, the latter about twice as long as pronotum ..... subgenus *Thamnopsylla* 3
- Mesoscutum about as long as or slightly longer than mesopraescutum; both more than twice as long as pronotum ..... 2
- 2 Dorsal surface spinules in cell rs of forewing above bifurcation of vein M arranged in squares or rhombi of about 20  $\mu$  length; surface spinules in cell c+sc restricted to apical portion of cell or entirely reduced; surface spinules reduced in basal part of rs, at most a few spinules present; fields of surface spinules tapering along apical wing margin; forewing membrane always colourless; pterostigma oblong cuneate, evenly tapering. Antenna shorter than 1.75 mm, if longer then forewing longer than 3 mm. Male paramere simple, lamellar. Female terminalia short, cuneate ..... subgenus *Cacopsylla* s. str. 14
- Forewing spinulation different, or wing membrane yellowish or brownish, or pterostigma elongate with subparallel margins. If antenna longer than 1.75 mm then forewing shorter than 3.0 mm. Male paramere often complex. Female terminalia different ..... subgenus *Hepatopsylla* 17
- 3 Dorsal surface spinules of forewing in cell rs above bifurcation of vein M very densely and irregularly spaced (2–10  $\mu$ ) ..... 4
- Dorsal surface spinules of forewing in cell rs above bifurcation of vein M evenly spaced in 15–20  $\mu$  distance forming squares or rhombi ..... 5
- 4 Forewing bearing dark ribbon apically. Metatibia without genual spine. Male subgenital plate bearing apical tubercular extension. Female proctiger and subgenital plate ending in thorn-like process ..... *breviantennata*
- Forewing irregularly dark without distinct apical ribbon. Metatibia with genual spine. Male subgenital plate rounded apically. Female proctiger and subgenital plate evenly tapering in profile ..... *pruni*
- 5 Dorsal surface spinules covering entire cell c+sc of forewing apart from stripes along veins; forming extended fields in other cells which taper towards wing margin; membrane colourless or fumate but never with brown stripe along vein Cu<sub>1b</sub> which is strongly contrasted from surroundings ..... 6
- Dorsal surface spinules of forewing more or less reduced, or not tapering towards wing margin, or wing pattern consisting with dark, strongly contrasted stripe along vein Cu<sub>1b</sub> ..... 9
- 6 Antenna usually longer than 1.2 mm. Genal processes broad and blunt. Paramere broad, lanceolate. Dorsal margin of female proctiger raised in the middle, apex rounded ..... *pyrisuga*
- Antenna usually shorter than 1.1 mm. Paramere narrow or with apical processes. Dorsal margin of female proctiger concave in the middle, or apex angular ..... 7
- 7 Paramere, in profile, with square base bearing 2 apical processes. Dorsal margin of female proctiger, distal of circumanal ring, evenly concave; apex rounded ..... *picta*
- Paramere, in profile, elongate; apex with inward and forward pointing tooth. Dorsal margin of female proctiger raised in the middle; apex angular ..... 8

- 8 Paramere, in profile, narrowed in the middle. Apex of distal segment of aedeagus weakly curved ..... *melanoneura*
- Paramere, in profile, evenly tapering from base to apex. Apex of distal segment of aedeagus strongly curved, hook-shaped.....*affinis*
- 9 Forewing membrane bearing dark brown patch along vein Cu<sub>1b</sub>..... 10
- Forewing membrane along vein Cu<sub>1b</sub> of same colour as surrounding membrane ..... 13
- 10 Forewing with dark, continuous ribbon along apex .....*limbata*
- Forewing lacking dark, continuous ribbon along apex ..... 11
- 11 Forewing bearing dark brown patches on tips of veins, at the bifurcation of vein M, and in the middle of vein Cu<sub>1a</sub>.....*pulchella*
- Forewing pattern different..... 12
- 12 Areas of radular spinules of cells m<sub>1</sub>, m<sub>2</sub> and cu<sub>1</sub> of forewing more or less dark; dark patch along vein Cu<sub>1b</sub> reaching bifurcation of Cu, straight in proximal half; vein Cu<sub>1a</sub> angular; surface spinules reduced in cells c+sc and r<sub>1</sub> .....*crataegi*
- Areas of radular spinules of cells m<sub>1</sub>, m<sub>2</sub> and cu<sub>1</sub> of forewing light; dark patch along vein Cu<sub>1b</sub> not reaching bifurcation of Cu, not narrowed in proximal half; vein Cu<sub>1a</sub> rounded; surface spinules forming extended fields in cells c+sc and r<sub>1</sub> .....*albipes*
- 13 Surface spinules of forewing forming very narrow fields. Antenna longer than 1.3 mm.....*rhamnicola*
- Surface spinules of forewing forming extended fields. Antenna shorter than 0.9 mm.....*corcontum*
- 14 Antenna shorter than 1.2 mm .....*peregrina*
- Antenna longer than 1.3 mm ..... 15
- 15 Antenna longer than 1.75 mm .....*ulmi*
- Antenna shorter than als 1.55 mm..... 16
- 16 Antennal segments 4–8 with black apex .....*sorbi*
- Antennal segments 4–8 with yellow or ochreous apex .....*mali*
- 17 Surface spinules of forewing forming more or less even squares or rhombi of 20 μ distance in cell rs above bifurcation of vein M; fields of surface spinules tapering towards wing margin. Clavus with brown apex..... 18
- Character combination different..... 20
- 18 Paramere sickle-shaped. Female proctiger strongly narrowed in the middle .....*pyri*
- Paramere lamellar. Female proctiger cuneate ..... 19
- 19 Genal processes blunt. Paramere bearing two apical teeth, one long, forwards directed and one short, inwards directed; foremargin with wide lobe. Distal segment of aedeagus with very wide, weakly curved apical dilatation. Dorsal margin of female proctiger with small swelling in the middle, apex blunt .....*bidens*
- Genal processes subacute. Paramere bearing one blunt, inwards directed apical tooth; foremargin more or less straight. Distal segment of aedeagus with very wide, hook-shaped apical dilatation. Dorsal margin of female proctiger concave .....*pyricola*
- 20 Dorsal surface spinules of forewing in cell rs above bifurcation of vein M irregularly, densely spaced (2–10 μ) or arranged in transverse rows ..... 21
- Dorsal surface spinules of forewing forming more or less even squares or rhombi of 20 μ distance in cell rs above bifurcation of vein M ..... 27
- 21 Surface spinules arranged in transverse rows ..... 22
- Surface spinules densely, irregularly spaced..... 24

- 22 Paramere, in profile, with large basal lobe. Dorsal margin of female proctiger straight or weakly convex ..... *elegantula*
- Paramere, in profile, lamellar with anteriorly directed apical tooth. Dorsal margin of female proctiger sinuous ..... 23
- 23 Thorax brown, abdomen green, Terminalia ochreous or brown ..... *abdominalis*
- Body colour evenly light or reddish brown ..... *intermedia*
- 24 Forewing in cell c+sc without ventral surface spinules ..... 25
- Ventral surface spinules present in cell c+sc ..... 26
- 25 Forewing oval, widest in the middle; wing apex near apex of vein  $M_{1+2}$ . Antenna shorter than 1.0 mm ..... *parvipennis*
- Forewing widest in apical third; wing apex at the middle of outer margin of cell rs. Antenna longer than 1.0 mm ..... *flori*
- 26 Dorsal surface spinules of forewing light, leaving spinule-free stripes along the veins; cell c+sc entirely covered in ventral surface spinules ..... *ambigua*
- Dorsal surface spinules of forewing dark, covering the entire membrane up to the veins; ventral surface spinules present only in distal part of cell c+sc ..... *propinqua*
- 27 Antenna longer than 1.6 mm ..... 28
- Antenna shorter than 1.3 mm ..... 32
- 28 Metatibia with 1+1+(2-3)+1 sclerotised apical spurs ..... 29
- Metatibia with 1+3+1 sclerotised apical spurs ..... 30
- 29 Antennal segments 3-7 yellowish or ochreous with dark brown apex. Fields of surface spinules tapering along apical wing margin ..... *visci*
- Antennal segments 3-7 entirely yellow or ochreous. Fields of surface spinules evenly widening towards apical wing margin ..... *viburni*
- 30 Forewing brown to dark brown in apical half with colourless window in cell  $cu_1$  ..... *fulguralis*
- Forewing light or brown but lacking contrasted colourless window in cell  $cu_1$  ..... 31
- 31 Body colour dark brown. Paramere with short, angular apical, sclerotised apex. Valvula 2 of female terminalia with straight ventral margin ..... *zetterstedti*
- Body colour green or yellow. Paramere with long, curved apical, sclerotised apex. Valvula 2 of female terminalia with concave ventral margin ..... *hippophaes*
- 32 Pterostigma cuneate, broad and short, with converging margins ending in the middle of vein Rs; wing membrane yellowish or ochreous, veins ochreous or light brown ..... 33
- Pterostigma long and narrow, with subparallel margins ending in apical third of vein Rs; wing membrane colourless or dark, veins light or dark ..... 35
- 33 Foremargin of forewing relatively straight ..... *rhododendri*
- Foremargin of forewing strongly curved ..... 34
- 34 Surface spinules entirely covering cell c+sc of forewing ..... *myrtilli*
- Surface spinules absent from basal third of cell c+sc of forewing ..... *ledi*
- 35 Male paramere bearing subapical lobe along hind margin ..... 36
- Male paramere lacking subapical lobe along hind margin ..... 38
- 36 Paramere lacking basal lobe at hind margin ..... *moscovita*
- Paramere bearing basal lobe at hind margin ..... 37
- 37 Basal lobe at hind margin of paramere not incised dorsally ..... *saliceti*
- Basal lobe at hind margin of paramere strongly incised dorsally ..... *iteophila*
- 38 Apex of paramere forming simple, backwards directed sclerotised tooth ..... *pulchra*
- Apex of paramere with two strongly sclerotised teeth ..... 39
- 39 Paramere, in rear view, with a tooth in apical third ..... *brunneipennis*
- Paramere, in rear view, with lobe in the middle of inner margin ..... *nigrita*



Nomenclature of forewing veins and cells.