

Revision of *Empis* s. str. species (Diptera: Empididae) described by G. Strobl. Part I

OLDŘICH SYROVÁTKA

Institute of Entomology, Czech Academy of Sciences,
Branišovská 31, 370 05 České Budějovice, Czech Republic

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Abstract. The types of the following species of subgenus *Empis* s. str. described by G. Strobl are revised: *Empis* (*Empis*) *alpicola*, *E.* (*E.*) *apfelbecki*, *E.* (*E.*) *assimilis*, *E.* (*E.*) *baldensis*, *E.* (*E.*) *cantabrica*, *E.* (*E.*) *ciliatopennata*, *E.* (*E.*) *dusmetii*, *E.* (*E.*) *fasciculata*. 2 holotypes are identified and 6 lectotypes designated.

INTRODUCTION

The subgenus *Empis* s. str. represents a taxonomically complicated and an, as yet, incompletely known group within the family Empididae and is very rich in species in the Palearctic. 106 species of *Empis* s. str. are listed in the Palearctic Catalogue (Chvála & Wagner, 1989), but it is thought that a relatively large number of species await description from southern and south-eastern Europe, and from non-European areas of the Palearctic region since the knowledge of these faunas is incomplete. Indeed, even some new species have been described recently from central Europe (Chvála & Syrovátka, 1989; Syrovátka, 1989; Chvála, 1994). Chvála (1994) estimated that the number of species described is only half of those in existence.

The only monograph of European species available is Engel's (in Engel & Frey, 1946) elaboration of this group, which was not based on type revision. Collin's study of British species (1961) was based on type revision, but relates to the British fauna only. Chvála revised the Scandinavian species of this subgenus (Chvála, 1994).

The present author has studied the types of Becker, Loew, Meigen, Strobl and others (Syrovátka & Chvála, 1986; Syrovátka, 1991). The types of *Empis* s. str. species described by Strobl are deposited in the Strobl Collection in Admont (Austria). The first part of the results of their revision, the redescrptions of 8 from 16 Strobl's species, is presented herein.

The species are arranged alphabetically. *Empis alpicola* Strobl, and probably *E. assimilis* Strobl (known only from the female) belong to the *E. nigripes*-complex, the other species belong to *E. pennipes*-complex (Syrovátka, 1991). The pubescence of female legs is described as in Syrovátka (1991): the terms "pennate" and "pennation" are used only for the pubescence by distinctly rounded feather-shaped bristles (e.g. Figs 1E, 2E); the term "flattened bristles" relates to rather narrow, acute and lanceolate or sabre-shaped bristles (e.g. Figs 1D,E – tibia). The terms "dust" or "dusting" are used for a dusty structure of surface of body.

SYSTEMATIC TREATMENT

Empis (s. str.) *alpicola* Strobl, 1893 (Figs 1A–D)

Empis alpicola Strobl, 1893: 71.

Described from both sexes, taken in Austria ("Hohentauern, Wirthsgraben bei Hohentauern, Fichten zwischen Hohentauern und Scheiplsee, Kalbling"). There are 4♂ and 2♀ in Strobl's collection labelled "Hohentauern, 27.5.90", 4♂ "*Empis alpicola* m., Scheiphalm, 26.5.90" and a conspecific female without label. One male from Hohentauern has been selected and is hereby designated as the lectotype and labelled accordingly.

Grey species with dark halteres and yellow abdominal pubescence. Wings in male slightly grey, in female tinged brown; anal vein complete. Legs in female with pubescence of flattened bristles.

MALE. Head dark grey dusted. Occiput above neck with black bristle-like hairs, lower part of occiput with dense dark pubescence, and with some fair hairs. Antennae black, style about as long as two basal antennal segments altogether. Labrum black, about twice as long as height of head.

Thorax including mesonotum grey; mesonotum with three dark stripes on the lines of bristles visible from behind. All thoracic bristles and hairs black except metapleural bristles, which are white-yellow. Acrostichals and dorsocentrals quite numerous, biserial and somewhat longer than third antennal segment without style; dorsocentrals ending in 3–4 longer prescutellar bristles. 1 long humeral bristle with a group of 5–7 shorter dark and pale additional hairs; 3 notopleurals with a few dark additional hairs, 4 scutellars.

Wings slightly grey tinged, pterostigma distinct, dark and long; costa and radial veins black, the other veins ochraceous-brown. Anal vein complete. Halteres brown-black and grey dusted.

Legs slender, subshining dark brown. Coxae and pleura grey dusted, coxae with pale pubescence. Fore femora dorsally with short adpressed hairs, ventrally with a double row of almost pale hairs becoming longer towards apex (about two-thirds times as long as femur greatest width). Mid femora anterodorsally with a row of bristle-like hairs longer than width of femur on basal third and becoming shorter apically, posterodorsally with a row of short hairs; ventrally with two rows of bristles longer than width of femur. Hind femora with dense short adpressed pubescence, ventrally with a few longer bristles. Fore tibiae and metatarsi dorsally with two rows of distinct long hairs, ventrally with dense pubescence of short fine hairs. Mid tibiae dorsally with short pale pubescence, with 4–5 long bristles, and with an apical bristle about two-thirds as long as mid metatarsus; ventrally with two rows of bristles becoming longer anteriorly. Hind tibiae anterodorsally with 5–6 long bristles and with a long apical bristle, posterodorsally with a row of bristles of different lengths; ventrally with a double row of bristles about as long as greatest width of tibia. Hind metatarsi with short pubescence.

Abdomen densely greyish dusted, genitalia slightly lustrous black; abdominal pubescence white-yellow, longer at base and laterally. Genitalia as on Figs 1A–C. Lateral lamellae with blackish pubescence mixed with a few pale hairs. Eighth tergum with a small lateral tubercle. Aedeagus pale brown, quite long and slender.

Length. Body 3.7–4.0 mm, wing 4.8–5.2 mm (lectotype 4.0 and 5.0 mm).

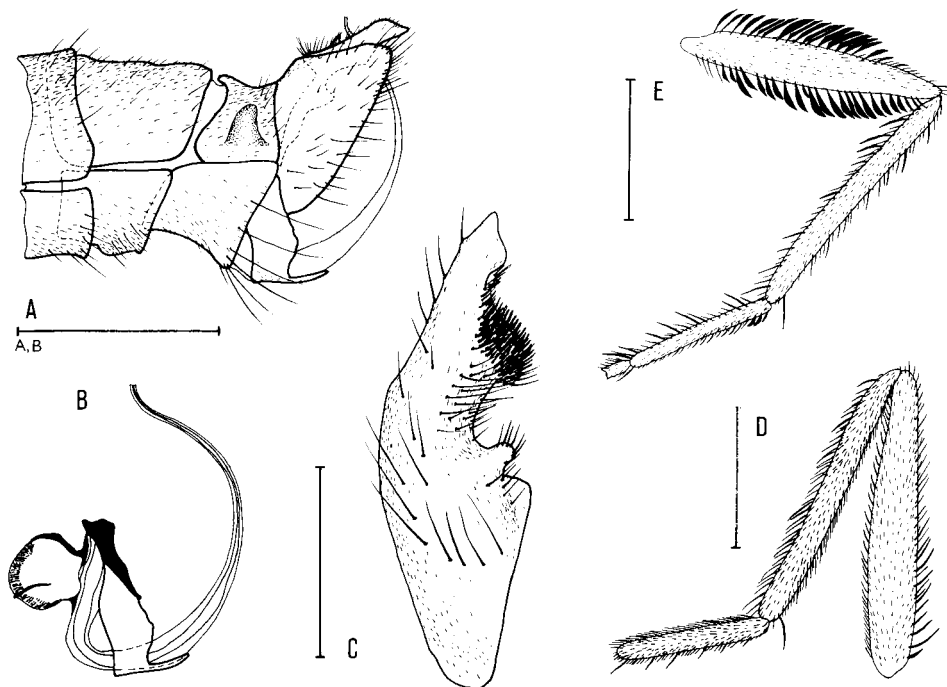


Fig. 1. A–D: *Empis alpicola* Strobl. A – male genitalia, lateral view; B – aedeagus with ventral lamella; C – detail of epandrium, dorsal view (lectotype); D – female mid leg, anterior view (paralectotype, Hohenauern 27/5 90). E – *Empis baldensis* Strobl, female mid leg, anterior view (holotype). Scale lines: A, B, D – 0.5 mm; C – 0.15 mm; E – 1.0 mm.

FEMALE. Like male but all pubescence is shorter and wings are tinged brown. Fore femora dorsally with short pubescence of slightly flattened bristles, ventrally short haired. Mid femora (Fig. 1D) dorsally with adpressed and slightly flattened bristles, ventrally short haired. Hind femora dorsally with dense pubescence of slightly flattened bristles about as long as two-thirds of width of femur, beneath with fine pubescence short at base and becoming longer apically. Fore tibiae dorsally with a row of slightly flattened bristly hairs about as long as two-thirds of width of tibia; ventrally with short pubescence. Pubescence of mid tibia nearly as on fore tibia. Hind tibiae dorsally with two rows of short pubescence mixed with several longer and thin bristles, ventrally with short hairs. Metatarsi dorsally with a short adpressed pubescence of slightly flattened bristles.

Length. Body 3.8–4.2 mm, wing 4.7–5.0 mm.

DIFFERENTIAL DIAGNOSIS. *E. alpicola* appears to be related to *E. filata* Loew, 1873 since both these species possess dark halteres, pale abdominal pubescence; grey body, male genitalia with long free penis, and lateral tubercles on the eighth tergum. Both these species belong to the *E. nigripes*-complex. *E. filata* may be easily differentiated by the presence of two dark stripes between the lines of acrostichal and dorsocentral bristles, by the 3 long bristles on the mid tibiae dorsally, by its longer penis and pale pubescence on

the lateral lamellae of the male genitalia; the female differs by the presence of distinct pennation on middle and hind legs. The halteres of *E. filata* are distinctly brown.

DISTRIBUTION. Alps, Carpathians and Pyrenees.

Empis (s. str.) *apfelbecki* Strobl, 1898
(Figs 2A–C)

Empis apfelbecki Strobl, 1898: 407, ♂; Strobl, 1900: 567.

Described from a single male taken in “Alpes Hercegovinae, Plasa bei Jablanica” (Yugoslavia). The type male specimen, in good condition in coll. Strobl labelled “Emp. apfelbecki m. ♂ Plasa/Herceg, 29/4 91” was identified as the holotype.

Polished black species with black halteres and rather pale abdominal pubescence. Wing membrane hyaline, anal vein complete.

MALE. Head black, occiput with dense light pubescence of short hairs. Antennal style as long as two-thirds of third segment. Labrum slender, black, twice as long as height of head.

Thorax black, dark grey dusted on pleura, mesonotum intensively shining black, without any stripes. Acrostichals biserial, sparse, nearly as long as ocellar bristles, dorsocentrals anteriorly almost uniserial, posteriorly biserial, ending in 1 very long prescutellar bristle. 1 humeral bristle with 3 short dark hairs, 3 notopleurals and 2 scutellars. Metapleurals black.

Wings hyaline with distinct brown pterostigma, veins dark brown, anal vein complete. Halteres black, base of stalk brown.

Legs black-brown, tibiae and tarsi brownish. Coxae dusted grey and with black pubescence. Fore femora dorsally with short adpressed pubescence, ventrally with two rows of bristles about as long at base as width of tibia, and becoming shorter apically. Mid femora dorsally with 2 rows of strong bristles about as long as width of femur on basal half and becoming shorter and adpressed apically, ventrally with two rows of distinct long bristles on basal two-thirds. Hind femora dorsally with dense adpressed pubescence, ventrally with two rows of bristles long in median third and shorter towards apices. Fore tibiae dorsally with 2 rows of long bristles, ventrally with short and dense pubescence; mid tibiae dorsally with two rows of bristles nearly as long as width of tibia, anteriorly with 2 very long bristles and with a preapical bristle about as long as two-thirds of middle metatarsus, posteriorly with 3 very long bristles, ventrally with two rows of stout bristles about as long as tibia width. Hind tibiae dorsally with two rows of bristles of varying length, ventrally as on middle tibiae. Front and mid metatarsi slender, hind metatarsi slightly enlarged and as wide as apex of hind tibia. Fore and mid metatarsi with very short and adpressed pubescence, hind metatarsi dorsally with a few longer bristles.

Abdomen polished black, terga slightly brown in colour. Abdominal pubescence yellow-white and mixed with sparse darker hairs. Genitalia as on Figs 2A–C. Penis long and free; eighth sternum with pale marginal hairs, pubescence of lateral lamellae dark.

Length. Body 3.1 mm, wing 3.4 mm (holotype).

FEMALE. Unknown.

DIFFERENTIAL DIAGNOSIS. *E. apfelbecki* resembles *E. fasciculata* Strobl, 1901 in having a lustrous black body, 2 scutellar bristles, black metapleural bristles, pale abdominal pubescence and analogous male genitalia. *E. fasciculata* differs in possessing pale halteres,

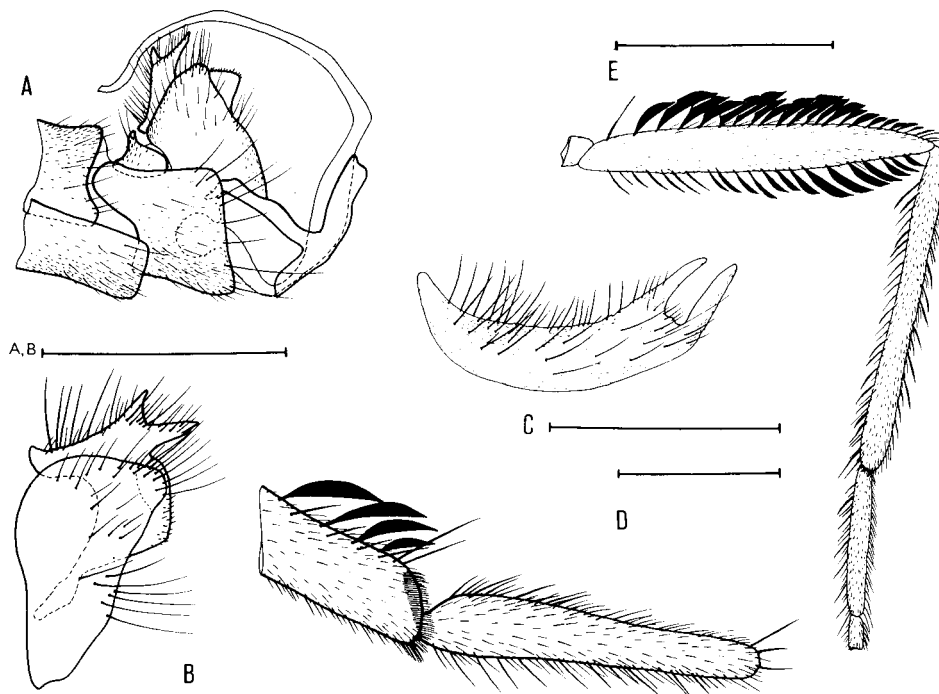


Fig. 2. A–C: *Empis apfelbecki* Strobl. A – male genitalia, lateral view; B – detail of lateral lamella and epandrium; C – detail of epandrium, dorsal view (holotype). D–E: *Empis assimilis* Strobl. D – female hind leg, part of tibia and metatarsus, lateral view; E – female mid leg, posterior view (lectotype). Scale lines: A, B, E – 0.5 mm; C, D – 0.25 mm.

numerous additional black hairs on humeri and dense pubescence of long black undulating bristles on lateral lamellae of male genitalia (see redescription of *E. fasciculata*).

DISTRIBUTION. Hercegovina. (*E. apfelbecki* is known to the author only from the type specimen.)

Empis (s. str.) *assimilis* Strobl, 1893
(Figs 2D,E)

Empis assimilis Strobl, 1893: 79.

Described from both sexes taken in Austria: "Tauern 30.7." (1 ♂) and "Natterriegel 22.8." (1 ♀). The type male specimen has not been found and its label "assimilis, St. Leonh. 30/7 91 ♂" is pinned together with the female type specimen, which is labelled "Natt. ♀" (almost illegible) "965" and "Empis assimilis Strobl, Typen Exemplar rev. G. Morge 1961". (Another conspecific female in the collection labelled "E. assimilis Admont, 1.7." is not a type specimen.) The female from Natterriegel is, hereby, designated as the lectotype of *E. assimilis* and labelled accordingly.

Greyish species with yellow halteres and pale abdominal pubescence. Wings in female slightly tinged brown. Anal vein complete, middle and hind female legs bearing pennation.

MALE. See the original description.

FEMALE. Head grey, occiput above neck with short black pubescence, lower parts of occiput with thin dark hairs, below mouth with pubescence of white hairs. Labrum slender, brown, twice as long as height of head. Antennal style almost as long as third segment.

Thorax dull grey. Mesonotum viewed from above with two darker stripes between rows of bristles. Acrostichals and dorsocentrals biserial and short. Humeri with 1 very long and strong humeral bristle, with 1 shorter bristle and a few dark hairs; 3 notopleurals and 2 scutellars.

Wings slightly tinged brown, pterostigma indistinct but front margin of wing is somewhat darker; veins brown, anal vein complete. Halteres yellow.

Coxae grey with white pubescence. Legs brown and dusted grey. Fore femora with short adpressed pubescence, mid and hind femora dorsally throughout its length with distinct rows of pennate bristles about as long as femur greatest width, mid femora (Fig. 2E) with distal two-thirds of ventral margin bearing pubescence of flattened bristles becoming pennate towards femoral apex, hind femora with a fringe of distinct pennate bristles ventrally on apical two-thirds. Fore tibiae, dorsally, with a row of short bristles, nearly two-thirds as long as greatest width of tibia, ventrally with dense adpressed pubescence of short hairs. Mid tibiae (Fig. 2E) on both sides with short pubescence which is slightly flattened ventrally near base and dorsally throughout its length. Hind tibiae, dorsally, with distinct fringe of pennate bristles about 1.2–1.3 times the width of tibia, ventrally with distinct pennation on basal third. Metatarsi with short adpressed pubescence. Hind metatarsi distinctly tapering (Fig. 2D).

Abdomen brown, thinly covered with greyish dust. Abdominal pubescence white-yellow, short and indistinct, with longer hairs near base and with longer marginal bristles on sterna.

Length. Body 3.4 mm, wing 4.0 mm (lectotype).

DIFFERENTIAL DIAGNOSIS. *E. assimilis* appears related to *E. nuntia* Meigen, 1804, *E. simulium* (Nowicki, 1868) and *E. filata* Loew, 1873 since all these species have a grey body, two dark stripes between rows of acrostichal and dorsocentral bristles and the legs bearing comparable pubescence. Both *E. nuntia* and *E. simulium* are distinguished since they possess light additional hairs on the humeri; *E. nuntia* has 4 scutellar bristles and darker wings, *E. simulium* (2 scutellar bristles) has brown or light brown legs. *E. filata* has 4 scutellars, and pubescence of distinctly flattened bristles on the dorsal margin of the fore tibiae. *E. nuntia* has yellow halteres whilst those in *E. filata* are brown. (See also *E. alpicola*.)

DISTRIBUTION. Austria. (*E. assimilis* is known to the author only from the specimens listed above).

Empis (s. str.) *baldensis* Strobl, 1899

(Fig. 1E)

Empis pennaria var. *baldensis* Strobl, 1899: 20, 31, ♀.

Described from a single female collected in Monte Baldo, Italy. A single female, in good condition in coll. Strobl standing beside its original white label "E. pennaria v. baldensis m., Mt. Baldo 10/5 98, ♀, Strobl" is the holotype and has been labelled accordingly.

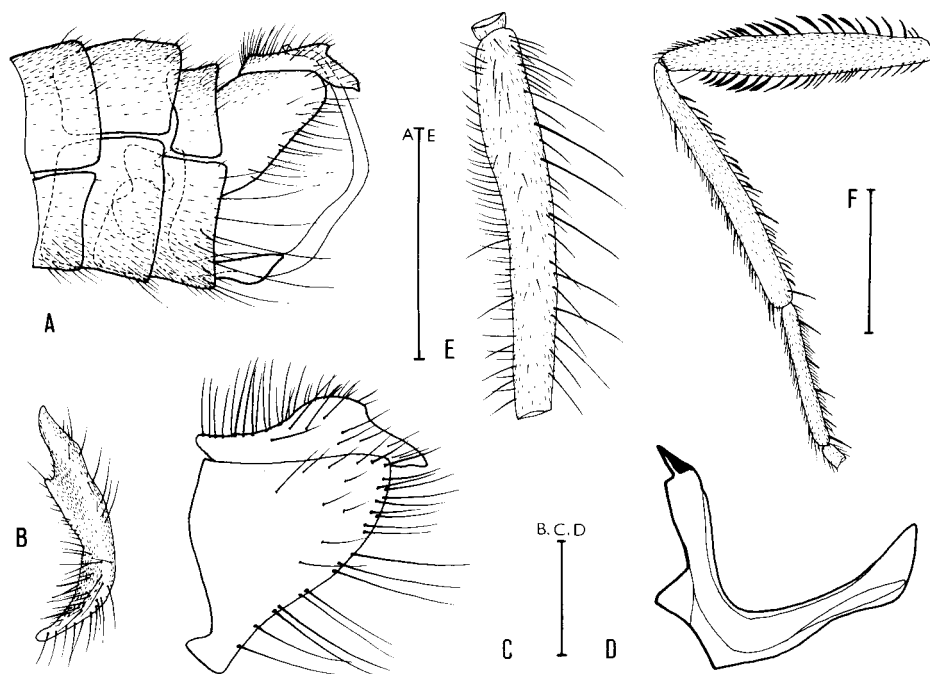


Fig. 3. A–F: *Empis ciliatopennata* Strobl. A – male genitalia, lateral view; B – detail of epandrium, dorsal view; C – detail of lateral lamella and epandrium; D – ventral lamella, lateral view; E – male hind leg, detail of basal part of right femur, anterodorsal view (lectotype); F – female mid leg (paralectotype, Kaisserau 15/8 91). Scale lines: B, C, D – 0.1 mm; A, E, F – 0.5 mm.

A large species with brown-yellow halteres and pale abdominal pubescence, with very long labrum and with distinct pennation on middle and hind legs; wings brown, anal vein complete.

MALE. Unknown.

FEMALE. Head dusted grey, occiput above neck with sparse black pubescence, postocular margin with four bristles longer than ocellar bristles, other postocular pubescence short; hairs behind mouth white, long and numerous. Labrum very long, about three times as long as head height.

Thorax dull grey, mesonotum with three subshining black stripes on lines of bristles. 1 very long humeral bristle with about 10 shorter dark additional hairs, 3 notopleurals and 4 (in the holotype missing) scutellars; dorsocentrals and acrostichals biserial, the former about as long as ocellar bristles, the latter distinctly shorter. Metapleurals mostly yellow-white, some of them darker.

Wings distinctly tinged brown with darker pterostigma, veins dark brown, anal vein complete. Halteres light brown-yellow.

Coxae and pleura grey, coxae with pale pubescence, front coxae apically with 3 large black bristles. Legs brown, femora and tibiae distinctly darker apically. Fore femora

dorsally with a row of strong bristles about as long as a half of width of femur, ventrally with double row of short hairs; mid and hind femora on both sides with distinct pennation throughout their length. Fore tibiae, dorsally, with a row of slightly flattened bristles nearly as long as width of tibia on basal half and becoming shorter apically, ventrally with dense and short soft pubescence; mid tibiae as on Fig. 1E, hind tibiae dorsally with a row of flattened bristles, with two rows of 4 longer bristles on each side and with a long apical bristle, ventrally with pubescence of flattened bristles becoming shorter apically. Metatarsi short and ciliate dorsally and with single longer and slightly flattened bristles. Hind metatarsi long (hind metatarsus : tibia = 1 : 2.1).

Abdomen brownish-black in ground-colour, slightly dusted grey above, and dusted densely beneath; abdominal pubescence pale with single dark bristle-like hairs about base, and with long dark marginal hairs on sterna.

Length. Body 5.6 mm, wing 6.2 mm (holotype).

DIFFERENTIAL DIAGNOSIS. *E. baldensis* is related to *E. decorella* Chvála, 1981, *E. nitidiventris* Loew, 1873 and *E. procera* Loew, 1873. All of these large species have pale halteres, pale abdominal pubescence and a very long labrum.

E. decorella has dense yellow pubescence on humeri, distinct flattened bristles on middle coxae and broad pennation on all legs. *E. nitidiventris*, having as well as *E. baldensis* and *E. procera* dark additional hairs on humeri, has besides somewhat smaller size of body and wings (max. 4.7 and 5.4 mm) a darker body, polished abdomen and legs, slightly flattened bristles on both sides of fore femora and distinct pennation of mid and hind femora. *E. procera* has also a smaller size of body and wings (max. 4.3 and 5.3 mm), and it bears brown stripes on the lines of acrostichal and dorsocentral bristles, less distinct pennation of hind femora and a more polished abdomen.

DISTRIBUTION. Italy. (*E. baldensis* is known to the author only from the type specimen.)

Empis (s. str.) *cantabrica* Strobl, 1899

(Fig. 5A)

Empis ciliatopennata var. *cantabrica* Strobl, 1899: 20, 32, ♀.

Described from 2 ♀ collected in Brincola (Spain). Two females located together on one pin beside a separate label "E. ciliatipennata v. cantabrica m., ♀, 5/6, Strobl" in the coll. Strobl are undoubtedly type specimens. One of them, indicated by a black point below the micropin and labelled accordingly is hereby designated as the lectotype.

A small species with yellow halteres and with dense black abdominal pubescence. Wings coloured brown, anal vein complete. Legs without pennation.

MALE. Unknown.

FEMALE. Head grey, occiput above neck with black pubescence about as long as antennal style; lower part of occiput with dense longer pubescence of rather pale hairs. Antennal style about as long as a half of third segment; labrum quite short and distinctly sabre-shaped (head : labrum = 3 : 5).

Thorax including mesonotum grey, with indistinct darker stripe on the line of acrostichals. Humeri with 1 long bristle and with 6–7 short black hairs, 3 notopleurals with a few pale and dark hairs anteriorly, 2 long internal and 2 very short external scutellars; acrostichals and dorsocentrals biserial, long: anteriorly about as long as ocellar bristles, posteriorly as long as humeral bristle. Metapleurals long and black.

Wings tinged brown, pterostigma brown and distinct, veins dark brown, anal vein complete. Halteres yellow.

Legs black or brown-black in ground colour, coxae dusted grey. Fore femora with short adpressed pubescence only. Mid femora anterodorsally and anteroventrally with a row of long strong bristles about as long as width of femur. Mid leg as in Fig. 5A. Hind femur anterodorsally with a row of long, numerous bristles almost as long as width of femur about middle, shorter towards apices, anteroventrally with a row of long bristles on apical half. Fore tibiae dorsally with two rows of hairs, those in the posterior row distinctly longer; ventrally with short dense pubescence. Hind tibiae with two rows of bristles of different length dorsally, and with 4–5 very long bristles anteriorly, ventrally with longer bristles only near base. Metatarsi with short adpressed pubescence. Hind metatarsus : tibia = 1 : 2.3.

Abdomen above subshining black and thinly dusted grey, beneath grey. Abdominal pubescence dense, long and black, mixed with a few pale hairs beneath.

Length. Body 3.1 and 3.4 (lectotype) mm, wing 4.0 mm.

DIFFERENTIAL DIAGNOSIS. *E. cantabrica* is related to *E. ciliatopennata* Strobl, 1893 and *E. melanotricha* Loew, 1873 since females of these species possess yellow halteres, dark abdominal pubescence, a grey body, brown coloured wings, a complete anal vein and dark metapleural bristles. Both *E. ciliatopennata* and *E. melanotricha* possess a longer labrum (about twice as long as height of head), shorter and thinner abdominal pubescence, rows of distinctly flattened bristly hairs on hind femora and tibiae, and slightly flattened bristle-like hairs on fore and mid legs.

DISTRIBUTION. Spain. (*E. cantabrica* is known from the above listed type specimens only).

Empis (s. str.) *ciliatopennata* Strobl, 1893
(Figs 3A–F)

Empis ciliatopennata Strobl, 1893: 80.

Described from specimens of both sexes taken at Admont, Gesause, Kaisserau, Hohentauern, Triebenthal, Steinbruck, Cilli, Sunk and Seitenstetten (Styria). The present author has examined a pair pinned together on one pin and labelled “Kaisserau 7/8 91 ♂ ♀”, 1 ♂ “*ciliatopennata* Str., Triebenthal 10.8.82”, 1 ♂ “Admont”, 1 ♂ “Gesause 16.7.91”, 1 ♀ “Hohentauern, 30.7.91”, 2 ♀ “Steinbruck, 16.7.92”, 1 ♂ labelled “*ciliatopennata* Str., 18.7.” and “Typen – Exemplar, rev. G. Morge”, “N. 968”, and 1 ♀ “Kalthofen 15/8 91”. (One pinned male bearing the name *E. ciliatopennata* and labelled “Sunth 3/8 91” belongs *E. nigritibialis* Strobl, 1898.) The male from Kaisserau 7/8 91, pinned together with a female, is hereby designated as lectotype and labelled accordingly.

A medium-sized grey species with yellow halteres and black abdominal pubescence. Wings in the male almost clear, in the female intensively coloured brown, anal vein complete.

MALE. Head black in ground-colour, densely dusted grey, occiput above neck with black bristle-like hairs, hairs below mouth white or dark with pale apices. Labrum twice as long as height of head; antennae slender, third segment almost cylindrical and twice as long as style.

Thorax dusted grey, thinly on mesonotum, more densely on pleura. Mesonotum with distinct broad stripe on the row of acrostichals, stripes on dorsocentrals narrow and less distinct. Humeri with 1 very long and 1 somewhat shorter bristle and with about 5 stout

and short hairs. 3 notopleurals with a group of black hairs about as long as antennal style, and 4 scutellars. Acrostichals and dorsocentrals biserial, the latter ending in 2 very long prescutellar bristles; metapleurals dark.

Wings clear or very slightly tinged grey, pterostigma pale brown, veins brown-black, anal vein complete. Halteres pale yellow-brown.

Fore femora dorsally with very short adpressed hairs, ventrally on basal two-thirds with a row of short hairs. Mid femora, anterodorsally, with a row of sparse short and strong hairs, with a row of 5 very long bristles anteroventrally in basal half and with 2 longer bristles preapically, posteroventrally on basal third with 4 very long bristles. Hind femora, viewed from beneath, distinctly enlarged near base (Fig. 3E), anterodorsally with a row of long bristles on basal half, ventrally with short pubescence. Fore tibiae dorsally with double row of bristles of different length, ventrally with short pubescence. Mid tibiae, anterodorsally, with 2 very long bristles at middle and with a shorter one at basal third, posterodorsally with a row of short bristly hairs, with 2 slightly longer bristles and with a very long preapical bristle, nearly as long as middle metatarsus, anteroventrally with a row of 6–7 very long bristles. Hind tibiae slender near base and distinctly dilated towards apex, dorsally with a double row of, at least, 5 bristles slightly longer than greatest width of tibia and with 2 long preapical bristles, ventrally with short adpressed hairs. Fore metatarsi slender, dorsally with short adpressed pubescence of strong hairs. Hind metatarsi slightly stouter but not as wide as hind tibiae, dorsally with dense and long pubescence, ventrally with pubescence of numerous stout hairs about as long as width of metatarsus, apex with a circle of 8 strong bristles.

Abdomen, in ground colour, brown-black, above less densely covered by grey dust, beneath more so. Abdominal pubescence black, longer at base and on sides of abdomen, sterna with pairs of long marginal bristles. Genitalia (Figs 3A–D) with black pubescence.

Length. Body 3.3–4.2 mm, wing 4.4–4.6 mm (lectotype 3.7 and 4.6 mm).

FEMALE. Similar to male but all pubescence including acrostichal and dorsocentral bristles shorter. Head somewhat darker grey dusted than in the male, and wings are strongly tinged brown. Fore femora, dorsally, with short adpressed pubescence, ventrally with a row of short bristly hairs which are slightly flattened around the middle of the femur. Mid femora (Fig. 3F), dorsally, throughout their length with pubescence of short, slightly flattened, bristly hairs about as long as half of femur greatest width, ventrally with similar pubescence on apical half, basally with short bristle-like hairs. Hind femora, dorsally, throughout their length and, ventrally, on apical two-thirds with fringe of adpressed flattened bristle-like hairs about half as long as femur greatest width. Fore tibiae on both sides with pubescence of short bristle-like hairs, dorsal pubescence with a tendency to be slightly flattened. Mid tibiae and metatarsi on both sides with pubescence of short bristly hairs. Hind tibiae dorsally with double row of flattened bristles and with about 4–5 longer bristles distributed throughout their length, ventrally with short and dense adpressed pubescence. Pubescence of fore metatarsi as on tibia, with a few longer hairs.

Length. Body 3.5–4.2 mm, wing 4.5–4.6 mm.

DIFFERENTIAL DIAGNOSIS. *E. ciliatopennata* is similar to *E. melanotricha* Loew, 1873. The male of *E. melanotricha* differs by the thinner pubescence of its lateral lamellae upon the genitalia, by the absence of a distinct group of dark long hairs on the anterior of the notopleura and by the shape of hind femora, which are not enlarged and convex basally. The

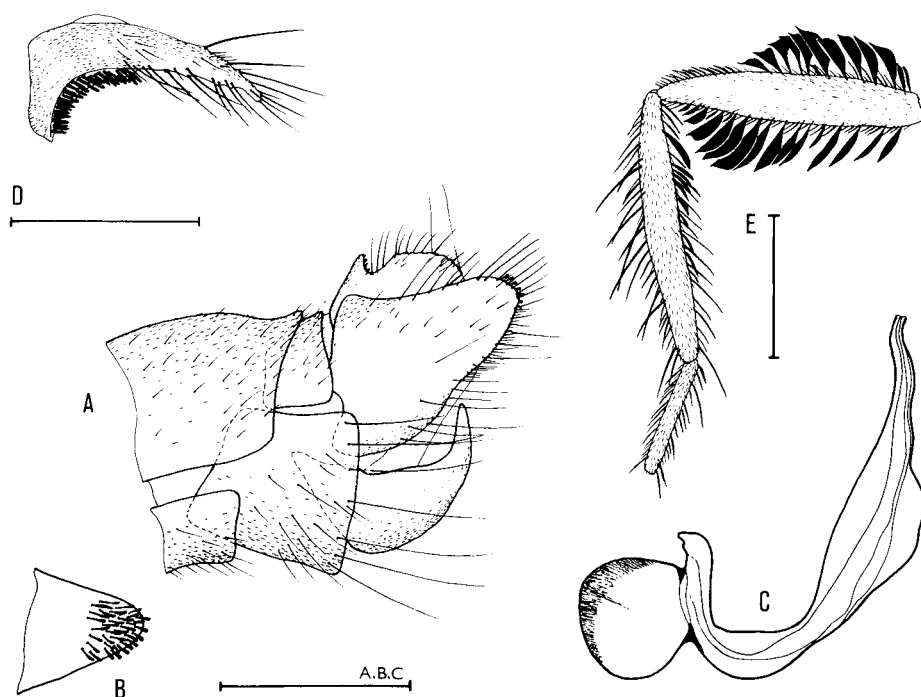


Fig. 4. A–E: *Empis dusmetii* Strobl. A – male genitalia (lateral view); B – lateral lamella, detail of inside apical part; C – aedeagus; D – detail of epandrium, dorsal view (lectotype); E – female left mid leg, posterior view (paralectotype, Villaverde 2/6 07). Scale lines: A, B, C – 0.3 mm; D – 0.15 mm; E – 0.5 mm.

female of *E. melanotricha* has black smoked wings and less enlarged flattened bristles on ventral side of hind femora. While *E. melanotricha* is predominantly collected in spring, *E. ciliatopennata* is on the wing from the end of June to August. *E. ciliatopennata* is also related to *E. plebeja* Loew, 1873 which possesses a less densely dusted abdomen in both sexes, and distinct broad pennation on female mid and hind legs. Considering the type of male genitalia *E. ciliatopennata*, *E. melanotricha* and *E. plebeja* belong to the *E. pennipes*-complex. (See also *E. cantabrica*.)

DISTRIBUTION. Central and south Europe.

Empis (s. str.) *dusmetii* Strobl, 1909
(Figs 4A–E)

Empis dusmetii Strobl, 1909: 173, 192.

Described from both sexes (1♂ and 2♀) taken in Villaverde near Madrid (Spain). These type specimens are deposited in coll. Strobl and are labelled "Villaverde, Dusmet, 2-6-7". One female is damaged, left wing, right fore leg and both hind legs are missing. The male is hereby designated as the lectotype and has been labelled accordingly.

A medium-sized long haired species with yellow halteres and white abdominal pubescence. Male wings clear, those in female slightly tinged grey. Anal vein shortened. Mid and hind female legs with distinct pennation.

MALE. Head light grey, occiput above neck with dense black pubescence, lower part of occiput covered with many long white hairs. Basal two antennal segments long haired, apical half of third segment slender. Antennal style about as long as half of third segment. Labrum slender and black, 1.5 times as long as head height.

Thorax dusted light grey, mesonotum viewed from above with three black stripes on the lines of bristles. Humeri, notopleura, and mesonotum anteriorly and laterally with very long, dense and distinct white pubescence, without black humeral bristles. 4 notopleurals, 6 long scutellars. Acrostichals and dorsocentrals white, biserial, and numerous. Metapleurals long and white.

Wings clear, without pterostigma, veins brown-black, anal vein shortened. Halteres yellow.

Legs shining brown-black, stout, with long pubescence. Coxae covered with white hairs. Fore femora, dorsally, with short black bristle-like hairs, ventrally with 2 rows of pale hairs. Mid femora, dorsally, with dense, adpressed, black short bristles, anteroventrally throughout their length and posteroventrally, in basal half, with a row of numerous long pale bristles. Hind femora with white pubescence, ventrally with a double row of numerous pale, fine hairs. Fore tibiae dorsally with two rows of black bristles about as long as greatest width of tibia, posteroventrally densely covered with pale pubescence. Mid tibiae anterodorsally with a short bristle basally and with 2–3 long bristles about the middle, posterodorsally with a row of bristles of different length, ventrally with a double row of numerous bristles long anteriorly and shorter posteriorly. Hind tibiae dorsally with a double row of numerous long black bristles, ventrally with pubescence of numerous bristles of different length. Fore metatarsi, dorsally, as on tibiae, posterodorsally with a longer bristle, apically with a distinct circle of strong preapical bristles. Mid metatarsi black haired, dorsally with two long preapical bristles, ventrally with two longer strong bristles near base. Hind metatarsi long haired and with three distinct long bristles on basal third, ventrally with double row of stout short bristles.

Abdomen dorsally lightly dusted grey and subshining black, densely dusted grey beneath. Abdominal pubescence white, dense and long. Lateral lamellae of genitalia with long white hairs and with a few short black marginal hairs (Figs 4A–D).

Length. Body 3.8 mm, wing 4.0 mm (lectotype).

FEMALE. Occiput above neck with dense pubescence of strong black bristles. Labrum one third longer than the height of head. Acrostichals and dorsocentrals long, in contrast to the male mostly black. Wings slightly tinged grey with indistinct brown pterostigma, veins brown-black. Femora stout, polished black. All coxae with pubescence of black, flattened bristles. Fore femora, dorsally, with a fringe of short, flattened bristles, posteroventrally with a row of longer and more flattened bristles. Mid femora ventrally throughout their length, dorsally on basal two-thirds with irregular rows of long pennate bristles. Hind femora dorsally on the whole length, ventrally on apical half with rows of long pennate bristles, on basal half with pubescence of short bristles. Fore tibiae on both sides with long bristles. Mid tibiae (Fig. 4E) dorsally as in male, ventrally with two rows of strong bristles (slightly flattened bristles in the posteroventral row), near base with a short row of almost

pennate bristles. Hind tibiae dorsally with two rows of very long bristles (almost as long as tibia greatest width) mixed with several flattened bristles, ventrally with pubescence of flattened bristles mixed with pennate bristles as long as tibia greatest width on basal half and distinctly shorter apically. Metatarsi with pubescence as in male. Abdomen as in male, but its pubescence is shorter.

Length. Body 4.0–4.3 mm, wing 3.8–4.0 mm.

DIFFERENTIAL DIAGNOSIS. *E. dusmetii* is comparable with the larger (max. 5.0 mm) *E. albidiseta* Becker, 1907 (described from Tunis) which has pale halteres and pale abdominal pubescence, mesonotum covered with numerous white hairs, white acrostichal and dorsocentral bristles and shortened anal vein. *E. albidiseta* differs in the presence of only 2 scutellar and 3 notopleural bristles and in the absence of dark stripes on mesonotum; the female differs in absence of pennate bristles on legs. *E. albopilosa* De Meijere, 1935 (described from the Netherlands), of nearly the same size of body as *E. dusmetii*, does not possess dense pubescence on mesonotum; it has 3 notopleural and 2 or 4 scutellar bristles and white coloured wings in the male; female legs of *E. albopilosa* do not possess flattened bristles. *E. dusmetii*, *E. albidiseta* and *E. albopilosa* belong to the *E. pennipes*-complex.

DISTRIBUTION. Spain. (*E. dusmetii* is known from the type specimens only.)

Empis (s. str.) *fasciculata* Strobl, 1901
(Figs 5B–D)

Empis fasciculata Strobl, 1901: 200.

Described from 4♂ and 9♀ collected in Villach ("bei Kapuzinerkloster", Kärnten, Austria). There are 7 syntypes in the coll. Strobl: 2♂ (mounted on one pin) standing beside an original green label "E. fasciculata m., Kärnten ♂" and labelled "E. fasciculata m. ♀", "Kapuzi. 1.5."; 1♀ labelled "E. fasciculata m. ♀" and 3♀ without labels. One male has been selected and is hereby designated as the lectotype.

Small shining black species with yellow halteres and white abdominal pubescence. Wings slightly grey-tinged in the male and smoked brown in the female, anal vein complete. Mid and hind legs in female pennate.

MALE. Head black, thinly dusted grey-brown, occiput with long, dense black pubescence. Labrum nearly twice as long as height of head. Antennae black, thinly yellow-brown dusted.

Thorax black, pleura grey, mesonotum polished black and slightly obscured by thin and dark dust, viewed from above with three narrow black stripes on the lines of bristles. 1–2 long humerals with many somewhat shorter additional black hairs, 3 notopleurals and 2 scutellars. Acrostichals and dorsocentrals biserial, anteriorly as long as humeral bristles, dorsocentral bristles ending in 3 very long prescutellars. Metapleural bristles black.

Wings slightly grey coloured, with dark brown pterostigma and dark veins. Anal vein complete. Halteres yellow.

Legs including coxae brown-black, thinly dusted grey, coxae with black pubescence. Metatarsi slender. Legs with long black bristles. Fore femora, dorsally, with short adpressed pubescence, ventrally with a double row of hairs about half as long as femur greatest width. Mid femora, anterodorsally, with a row of very long bristles, ventrally with a double row of bristles nearly three times as long as width of femur. Hind femora with dense adpressed pubescence dorsally, ventrally on apical third with a row of long bristles.

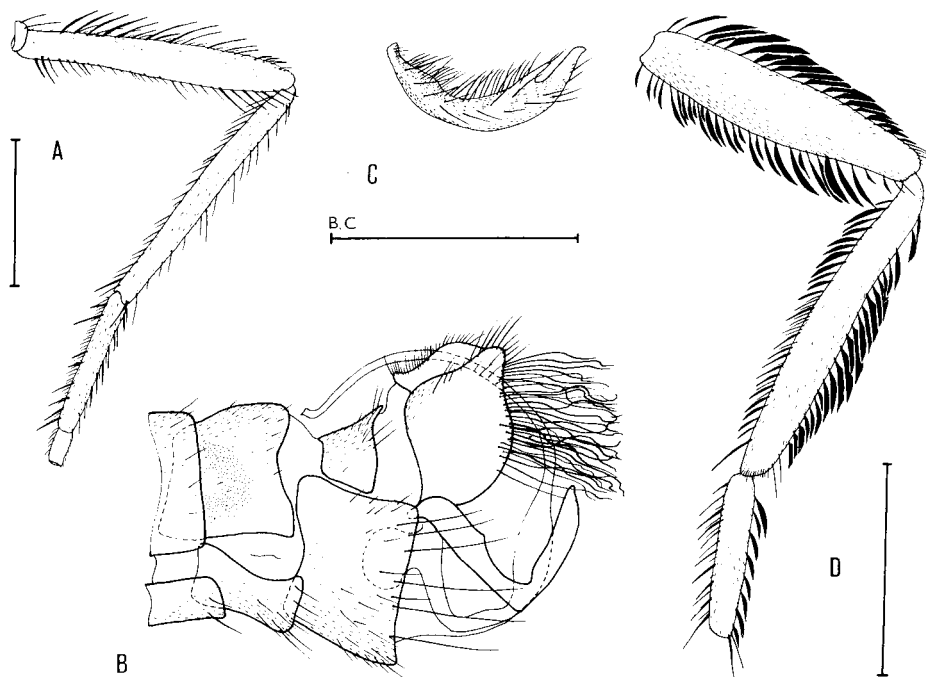


Fig. 5. A – *Empis cantabrica* Strobl, female mid leg, posterior view (lectotype); B–D: *Empis fasciculata* Strobl. B – male genitalia, lateral view; C – detail of epandrium, dorsal view (lectotype); D – female mid leg, posterior view (paralectotype, Kärnten). Scale lines: A, B, D – 0.5 mm; C – 0.25 mm.

Fore tibiae above with two rows of long bristles, with a row of shorter posterolateral hairs, and with a dense pubescence of short hairs ventrally. Mid tibiae on both sides with dense short pubescence, anterodorsally with additional row of bristles twice as long as width of tibia, with 3–4 longer bristles, and with a long apical bristle; ventrally with two rows of long, strong bristles. Hind tibiae with irregular pubescence of long bristles dorsally, ventrally with short adpressed hairs on basal third becoming longer towards apex. Metatarsi dorsally with short pubescence.

Abdomen shining black, on both sides very thinly dusted grey. Abdominal pubescence white, long, near base with a few black hairs, terga with black marginal bristly hairs. Eighth sternum and lateral lamellae of genitalia distinctly lustrous black, the latter with long and remarkably undulating black pubescence (Figs 5B–C).

Length. Body 3.3–3.6 mm, wing 3.6–3.8 mm (lectotype 3.5 and 3.7 mm).

FEMALE. Similar to male but abdominal pubescence distinctly shorter, labrum slightly shorter, wing coloured brown and acrostichal and dorsocentral bristles about as long as antennal style.

Legs including coxae brown-black and dusted grey. Fore femora with short pubescence dorsally, ventrally near base with a few longer bristles; mid and hind femora (Fig. 5D) on

both sides with rows of pennate bristles. Fore tibiae on both sides with short pubescence of unmodified bristly hairs. Mid tibiae dorsally on the whole length with a fringe of flattened and pennate bristles half as long as tibia greatest width, ventrally with flattened bristles on basal third and with short pubescence apically. Hind tibiae, dorsally, on basal half with short pubescence of bristly hairs, apically with longer flattened bristles, and ventrally with short fine bristle-like hairs. Front and middle metatarsi with pubescence of slightly flattened bristles, hind metatarsi with short adpressed pubescence.

Length. Body 3.4–3.6 mm, wing 3.5–3.6 mm.

DIFFERENTIAL DIAGNOSIS. Considering the form of the male genitalia, *E. fasciculata* belongs to the *E. pennipes*-complex. *E. fasciculata* is related to *E. aestiva* Loew, 1867 and *E. cincinnatula* Loew, 1867 which are similar in size and have a black polished body and possess similar forms of male genitalia and pubescence of female legs. Both *E. aestiva* and *E. cincinnatula* have black halteres, dark abdominal pubescence, and their anal vein is abbreviated. Also, *E. fasciculata* resembles *E. apfelbecki* Strobl, but the latter possesses dark halteres and only a small number of dark additional hairs on humeri (see redescription of *E. apfelbecki*).

DISTRIBUTION. Central Europe.

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