

# Field Key to the Soldierflies of the Netherlands

(Diptera: Stratiomyidae & Xylomyidae)

by Menno Reemer, 2014 (first edition)

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(Text translated and edited for UK use by Jim Middleton and Martin C. Harvey, July 2014;  
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This is a translation of (most of) the text from Menno Reemer's superbly illustrated photographic guide, which can be downloaded (PDF) from: <http://www.repository.naturalis.nl/document/529708>  
This text key should not be used as a stand-alone key, but is intended to help UK users make use of the illustrated key.

UK species that are not covered by Reemer's key (with links to Steven Falk's photos on Flickr):

- Yellow-tipped Soldier [Oxycera terminata](#) (Welsh borders, central England), likely to key to couplet 34
- Irish Major [Oxycera fallenii](#) (Ireland, Yorkshire), likely to key to couplet 36
- Round-spotted Major [Oxycera dives](#) (Wales, Scotland, northern England), likely to key to couplet 39
- Long-horned Black Legionnaire [Beris geniculata](#) (widespread in UK), will key to couplet 48

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## Introduction (Inleiding, page 3)

This is a simple field key for naming the soldierflies and wood-soldierflies found in the Netherlands and Belgium. As far as possible easily-visible characters are used, although the use of a hand lens will be helpful. In some cases, a microscope and additional literature will be required to confirm a reliable species identification.

The features used are based in part on the identification keys in Brugge (2002: [Wapenvliegentabel](#)) and Stubbs and Drake (2001: [British soldierflies and their allies](#)), and partly on my own insights.

For further information on this group of flies in the Netherlands see the project page:  
[http://waarneming.nl/vliegen\\_start.php](http://waarneming.nl/vliegen_start.php)

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## How to use the key (Gebruik tabel, page 7)

A sample page from the key is shown. In the orange bar at the top are the couplet number and a summary of the characters already selected. Below this are the characters to choose from, with the various states separated by a horizontal line. Sometimes three or four different choices are given. Each choice refers to the next couplet, or to a species.

On some pages, a red exclamation mark is shown at the top right: **!**

This indicates where it is particularly difficult to distinguish the choices, and that in some cases a lens or microscope will be needed.

[Captions for sample page]

- Couplet number and character/s already chosen
- New character
- Photos illustrating the character, and range of variation
- Name of the species
- Dividing line for alternative character
- Alternative character
- Photos illustrating character and variation, sometimes with additional labelling
- Link to next couplet

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1.

- Scutellum without spines -> 2
- Scutellum with two spines. (Note: Sometimes small or difficult to see through hair!) -> 19
- Scutellum with four or more spines. -> 41
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2. (Scutellum without spines)

- Scutellum dark -> 3
- Scutellum yellow = Wood-soldierflies, Xylomyidae  
Thoracic dorsum black, coxae black: Drab Wood-soldierfly *Solva marginata* (6-7 mm)  
[Thoracic dorsum black, coxae yellow: Long-horned Wood-soldierfly *Solva varia* (6-7 mm)  
unconfirmed UK record]  
Thoracic dorsum mottled yellow: Wasp Wood-soldierfly *Xylomya maculata* (9 mm)
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3. (Scutellum without spines, scutellum dark)

- Thoracic dorsum metallic green  
Both small and large species (3-13 mm) -> 4
- Thoracic dorsum black  
Only small species (2-7 mm) -> 11
- 

4. (Scutellum without spines, thoracic dorsum metallic green)

- Eyes hairy Broad Centurion *Chloromyia formosa* (7-9 mm)
- Eyes (almost) bare, at most with very short, sparse hair -> 5
- 

5. (Scutellum without spines, thoracic dorsum metallic green, eyes bare)

- Abdomen at most as long as head + thorax. Length 3-5.5 mm -> 6
- Abdomen longer than head + thorax. Length 6-13 mm -> 7
- 

6. (Scutellum without spines, thoracic dorsum metallic green, eyes bare, abdomen shorter than head + thorax)

- Front femur mostly black, antenna entirely black Black-horned Gem *Microchrysa polita* (4.5-5.5mm)
- Front femur entirely or largely yellow, first antennal segment yellow, green abdomen  
Green Gem *Microchrysa flavicornis* (3.5-4.5mm)
- Front femur entirely or largely yellow, first antennal segment partly yellow, black abdomen  
Black Gem *Microchrysa cyaneiventris* (3-4.5mm)



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**14.** (Scutellum without spines, thoracic dorsum black, head with snout, abdomen partly white, male: underside of abdomen black, female: frons with white spots)

Both sexes: snout short. Male: abdomen with black spot on segment 3.

Female: spots on frons short triangular. Flecked Snout *Nemotelus notatus* (4.5-7 mm)

Both sexes: long snout. Male: abdomen with segment 3 white.

Female: spots on frons elongated. Barred Snout *Nemotelus uliginosus* (4-7 mm)

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**15.** (Scutellum without spines, thoracic dorsum black, front of head rounded)

Basal half of wings blackish -> 16

Wings entirely light coloured -> 17

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**16.** (Scutellum without spines, thoracic dorsum black, front of head rounded, basal half of wings blackish)

Scutellum small, much shorter than head Dark-winged Black *Pachygaster atra* (2-4.5 mm)

Scutellum large, about as long as head Scarce Black *Eupachygaster tarsalis* (3-4.5 mm)

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**17.** (Scutellum without spines, thoracic dorsum black, front of head rounded, wings entirely pale)

Femora almost entirely yellow, at most dark ring on hind femur

Yellow-legged Black *Pachygaster leachii* (3-3.5 mm)

Femora largely black -> 18

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**18.** (Scutellum without spines, thoracic dorsum black, front of head rounded, wings entirely pale, femora largely black)

Face with silver zygoma (eye margins) Silver-strips Black *Neopachygaster meromelas* (2.5-3 mm)

Face without silver zygoma

Two species are difficult to distinguish:

Pine Black *Zabrachia tenella* (2-3 mm)

[*Zabrachia minutissima* (2-3 mm) not found in UK]

For separation see Bruges (2002)

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**19.** (Scutellum with two spines)

Thoracic dorsum red [*Clitellaria ephippium* (9.5-14.5 mm) not confirmed in UK]

Thoracic dorsum black, sometimes with yellow or green spots -> 20

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**20.** (Scutellum with two spines, thoracic dorsum black)

Antenna without arista (tapered end) -> 21

Antenna with arista (end abruptly narrower than previous section) -> 32

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**21.** (Scutellum with two spines, thoracic dorsum black, antenna without arista)

Antenna longer than head, 1st segment greatly extended, at least 4 times as long as wide -> 22

Antenna is less than or equal in length to head. 1st segment short, no more than 3 times as long as wide  
-> 25

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**22.** (Scutellum with two spines, thoracic dorsum black, antenna without arista, longer than head)

Thorax long with light brown hair, abdomen black, at most very small light spots on the sides  
Long-horned General ***Stratiomys longicornis*** (9.5-14.5 mm)

Thorax with short black or greyish hairs, abdomen with distinct yellow spots -> 23

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**23.** (Scutellum with two spines, thoracic dorsum black with short hairs, antenna without arista, longer than head)

Yellow bands on underside of abdomen (sternites) not connecting, appear largely black  
Flecked General ***Stratiomys singularior*** (11-17 mm)

Yellow bands on underside of abdomen (sternites) connected, largely yellow -> 24

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**24.** (Scutellum with two spines, thoracic dorsum black with short hairs, antenna without arista, longer than head, yellow bands on sternites connecting)

Yellow spots on tergite 4 connected (forming a band), female also has band on tergite 3  
Banded General ***Stratiomys potamida*** (13-16 mm)

Yellow spots on tergite 4 separate, female has twin spots on tergite 3  
Clubbed General ***Stratiomys chamaeleon*** (12-16 mm)

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**25.** (Scutellum with two spines, thoracic dorsum black with short hairs, antenna without arista, shorter than head)

Abdomen black, or at most with small light spots on the edges -> 26

Abdomen with large yellow or green spots -> 27

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**26.** (Scutellum with two spines, thoracic dorsum black with short hairs, antenna without arista, shorter than head, abdomen black)

Abdomen without silvery hairs (but females have pale hairs, which may seem silvery, along the margins of the abdomen)  
Black Colonel ***Odontomyia tigrina*** (7.5-11.15 mm)

Abdomen with silvery hairs in both sexes (including the central part of the abdomen in females)  
Silver Colonel ***Odontomyia argentata*** (7-10 mm)

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**27.** (Scutellum with two spines, thoracic dorsum black with short hairs, antenna without arista, shorter than head, abdomen with pale spots)

Scutellum completely dark -> 28

Scutellum pale, or with pale margin -> 29

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**28.** (Scutellum with two spines, thoracic dorsum black with short hairs, antenna without arista, shorter than head, abdomen with pale spots, scutellum completely dark)

Smaller: 6-9mm. Male: Black spot on tergite 3 narrower than tergite 4. Female: Head completely dark. In live specimens, eyes with dark spots and cross band.

Common Green Colonel *Oplodontha viridula* (6-9 mm)

Bigger: 8-12 mm. Male: black spot on T3 about as wide as T4. Female: Partly yellow head. Eyes in live animals uniformly coloured.

Barred Green Colonel *Odontomyia hydroleon* (8-12 mm)

See also couplet 31.

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**29.** (Scutellum with two spines, thoracic dorsum black with short hairs, antenna without arista, shorter than head, abdomen with pale spots, scutellum pale)

Small: 4-5mm

Long-horned Soldier *Vanoyia tenuicornis* (4-5 mm)

Large: 8-17mm

-> 30

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**30.** (Scutellum with two spines, thoracic dorsum black with short hairs, antenna without arista, shorter than head, abdomen with pale spots, scutellum pale, 8-17mm)

Bigger: 12-17mm. Spots on abdomen usually yellow, sometimes green

Ornate Brigadier *Odontomyia ornata* (12-17 mm)

Smaller: 8-12mm. Spots on abdomen usually green, sometimes yellow

-> 31

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**31.** (Scutellum with two spines, thoracic dorsum black with short hairs, antenna without arista, shorter than head, abdomen with pale spots, scutellum pale, 8-12mm)

Antenna (mostly) yellowish

Orange-horned Green Colonel *Odontomyia angulata* (8-12 mm)

Antenna entirely dark

Barred Green Colonel *Odontomyia hydroleon* (8-12 mm)

See also couplet 28.

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**32.** (Scutellum with two spines, thoracic dorsum (part) black, antenna with arista)

Abdomen at middle with light bands or spots, thoracic pleura with broad light stripes.

Stripes usually green, sometimes yellow.

Three-lined Soldier *Oxycera trilineata* (5-7 mm)

Abdomen black in centre, side and end often spotted yellow, thoracic pleura with narrow yellow stripes.

Stripes usually yellow, sometimes white

-> 33

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**33.** (Scutellum with two spines, thoracic dorsum (part) black, antenna with arista, abdomen with black centre)

Abdomen black, only base and tip yellow

-> 34

Abdomen with yellow or white spots

-> 35



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**40.** (Scutellum with two spines, thoracic dorsum (part) black, antenna with arista, abdomen black with short pale spots, scutellum entirely yellow)

Male: Yellow spot between humerus and wing.

Female: Yellow stripe along thoracic pleura joined at anterior of thorax to stripe on thoracic dorsum

Delicate Soldier *Oxycera nigricornis* (3-4.5 mm)

Male: No spot between humerus and wing. Female: Stripes not joined

Hill Soldier *Oxycera pardalina* (4.5-5.5 mm)

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**41.** (Scutellum with four or more spines)

Eyes bare. Hind femur clearly thickened, tergites with orange centres and black edges.

Eyes separated in males -> 42

Eyes hairy. Hind femur with little or no thickening, tergites completely black or completely orange (possibly with fine black terminal band). Eyes in male touching -> 43

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**42.** (Scutellum with four or more spines, hind legs thickened)

Male: tergite 2 black. Female: tergites with wide black edges

Dull Four-spined Legionnaire *Chorisops tibialis* (5-6.5 mm)

Male: tergite 2 largely yellow. Female: tergites with narrow black edges

Bright Four-spined Legionnaire *Chorisops nagatomii* (6-7 mm)

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**43.** (Scutellum with four or more spines, hind legs not thickened)

Abdomen orange. Sometimes with narrow black transverse bands -> 44

Abdomen black. Sometimes with narrow black transverse bands -> 45

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**44.** (Scutellum with four or more spines, hind legs not thickened, abdomen orange)

Abdomen with narrow black transverse bands. Female with blackish wings

Scarce Orange Legionnaire *Beris clavipes* (5.5-7 mm)

Abdomen without black cross bands. Female with clear wings

Common Orange Legionnaire *Beris vallata* (5-6 mm)

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**45.** (Scutellum with four or more spines, hind legs not thickened, abdomen black)

No obvious palps at the bottom of the head. Male with eyes touching -> 46

Palps clearly visible. Males with eyes separated [Actina chalybea (7.5-8.5 mm) not found in UK]

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**46.** (Scutellum with four or more spines, hind legs not thickened, abdomen black, head without obvious palps)

Middle tibia entirely pale -> 47

Middle tibia two toned: partially dark -> 48

**47.** (Scutellum with four or more spines, hind legs not thickened, abdomen black, head without obvious palps, middle tibia pale)

Male: Eyes and thoracic dorsum with dark hairs.

Female: frons above antennae at least as wide as 1/3 of head width

Murky-legged Black Legionnaire *Beris chalybata* (5-6 mm)

Male: Eyes and thorax with sparse light brown hairs.

Female: frons above antennae at most as wide as 1/4 of head width

Yellow-legged Black Legionnaire *Beris morrisii* (6-7.5 mm)

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**48.** (Scutellum with four or more spines, hind legs not thickened, abdomen black, head without palps, middle tibia partially dark)

Third antennal segment abruptly widened      Short-horned Black Legionnaire *Beris fuscipes* (6.5-7 mm)

Third antennal segment not abruptly widened at base (needs comparison with *Beris fuscipes*!)

[*Beris hauseri* (4-6.5 mm) not found in UK]

Long-horned Black Legionnaire *Beris geniculata* (widespread in UK) is similar and likely to require microscopic examination; *Beris strobli* is also similar but not found in UK.