

# Key to genus *Thereva* (Therevidae)



Version 1.1 at Jan 2020 (corrects a few minor typos)

This key is by Morten Falck (2011. [The stiletto flies \(Diptera, Therevidae\) of Norway](#). *Norwegian Journal of Entomology* 58, 131–163). Falck stated that the key was “slightly modified after Haarto & Winqvist (2006. Finnish flies of the family Therevidae. *Entomol. Fennica* 17: 46–55), with some few alterations after Stubbs & Drake (2001), and based on the author’s own studies.” The version here (compiled by Martin C. Harvey at February 2018, with kind permission from Morten Falck) selects just the UK species of *Thereva* from Falck’s key, corrects a transposed pair of figures (10A and 10B) from Falck’s key, and adds notes on British distribution and habitats.

Falck’s key includes all nine *Thereva* species known from the UK:

- *T. bipunctata* (Twin-spot Stiletto)
- *T. cinifera* (Large Plain Stiletto)
- *T. fulva* (Small Plain Stiletto)
- *T. handlirschi* (Golden Scottish Stiletto)
- *T. inornata* (Light Scottish Stiletto)
- *T. nobilitata* (Common Stiletto)
- *T. plebeja* (Crotchet-hooked Stiletto)
- *T. strigata* (Cliff Stiletto)
- *T. valida* (Dark Northern Stiletto)

Note that Falck’s paper uses *Thereva unica* for what we call *Thereva bipunctata*; I have used the latter name in the version of the key below.

I have not yet tested this key with British material. Beware that some of the identification features, especially some of the information about colours of body parts and hairs, may not be reliable for British specimens. If you find any discrepancies like this when using the key in Britain please let me know.

## Key to UK species of *Thereva* – males (eyes touching)

1. All tergites completely dusted with grey or yellowish pollen. ....2
  - At least tergites 2–5 dark anteriorly. ....3
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2. Knob of halteres dark, brownish black. Tip of aedeagus short (Figure 5A). ..... ***T. cinifera***  
*Rare, south Wales, Sussex and Kent, dunes, sandy soils at river edges, shingle; Jul*
  - Knob of halteres yellowish brown. Tip of aedeagus long (Figure 5B). ..... ***T. fulva***  
*Rare, southern England and Wales, usually on sandy soils, occasional on calcareous grassland; mid-Jun to Jul*



FIGURE 5A. Aedeagus. *Thereva cinifera* Meigen, 1830.



FIGURE 5B. Aedeagus. *Thereva fulva* (Meigen, 1804).

3. At least one posteroventral bristle basally on hind femora. ....4
- The basal part of hind femora has no posteroventral bristle. ....7

4. At least 2 pairs of dorsocentral bristles at rear of thorax (Figure 7). Basal part of hind femora with 3–4 anteroventral bristles, which usually are uniserial (Figure 6). Tip of aedeagus long and curved (Figure 5C). ..... ***T. inornata***  
*Rare, Scottish Highlands, sandy soils; mid-Jun to early Sep*
- Only 1 pair of dorsocentral bristles in the hind part of thoracic dorsum. Basal part of hind femora with bristles not arranged in one neat row, but several bristles outside the row. ....5

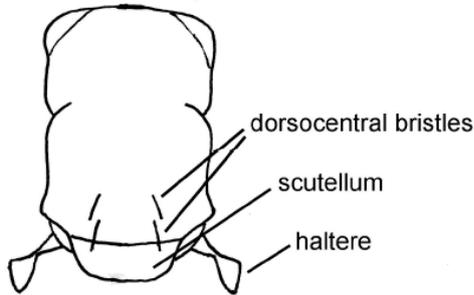


FIGURE 7. Thorax.

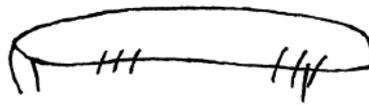


FIGURE 6. Hind femora. *Thereva inornata* Verrall, 1909.

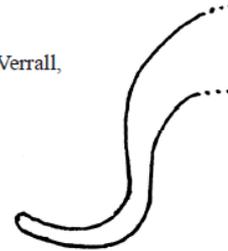


FIGURE 5C. Aedeagus. *Thereva inornata* Verrall, 1909.

5. Anterior part of tergites 4–5 narrowly dark (more than half the side of tergites 4–5 dusted with grey pollen). (Tergite 6 completely covered in grey dusting, without any dark band. Wing membrane greyish, veins light brown and cross veins only faintly darkened. Hairs on the lower part of occiput and parafacial mixed white and black.) ..... ***T. bipunctata***  
*Widespread on coastal dunes, occasionally inland on sandy soils; late May to early Sep*
- Tergites 4–5 broadly dark anteriorly (not more than half the sides of tergites 4–5 covered in grey dusting). ....6

6. Mesonotum greyish brown and usually with a clear, dark brown central line. Hairs on tergite 1 completely blackish. Tip of aedeagus short (Figure 5D). ..... ***T. plebeja***  
*Widespread in south-east and central England, Welsh coasts, on sandy soil and vegetated shingle; late Apr to late Aug*
- Mesonotum bluish grey, and at most with a vague central line. Hairs on tergite 1 grey or yellowish medially. Tip of aedeagus long (Figure 5E). ..... ***T. strigata***  
*Rare, south coast plus Surrey, coastal cliffs and dry grassland; late May to Jul*

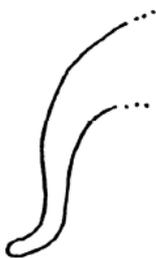


FIGURE 5D. Aedeagus. *Thereva plebeja* (L., 1758).



FIGURE 5E. Aedeagus. *Thereva strigata* (Fabricius, 1794).

7. Hairs on scutellum sparse, and completely black. Hairs on abdomen predominantly black. Usually 1 pair of bristles on Thoracic dorsum. Front femora without anteroventral bristles. ....***T. valida***  
*Rare, Scotland and Yorkshire, drained soils by streams, floodplain marshes, seepage meadows; early Jun to late Jul*
- Hairs on scutellum mixed yellow and black. Abdomen with yellow hairs laterally and black hairs dorsally. ....8

8. Anteroventral bristles on hind femora multiserial (some of the bristles outside the straight row) (Figure 8B). Hairs on scutellum not exceptionally dense' and mixed yellowish and black. Usually 1 pair of bristles on dorsum. Front femora with 1–4 anteroventral bristles. .... ***T. nobilitata***  
*Widespread including inland, scrub, hedges, rough vegetation; May to early Sep*
- Anteroventral bristles on hind femora uniserial (all placed in one neat row) (Figure 8A). Hairs on scutellum dense and almost completely yellow. 2 pairs of bristles on dorsum. Front femora with 2–7 anteroventral bristles. ....***T. handlirschi***  
*Scarce, Scottish Highlands, sandy soils at woodland edges; late Jun to early Sep*

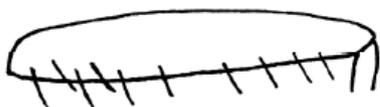


FIGURE 8B. Hind femora. *Thereva nobilitata* (Fabricius, 1775).

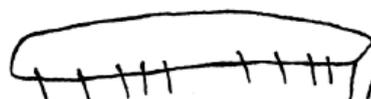


FIGURE 8A. Hind femora. *Thereva handlirschi* Krober, 1912.

**Key to UK species of *Thereva* – females (eyes separated)**

1. Shining black frontal callus either forming a narrow transverse band or divided into two separate calli. ....2
- One wide, usually large, shiny black frontal callus. ....3

2. Frontal callus forms a narrow, transverse band, which may be separated medially into two distinct calli (Figure 9A). Anteroventral bristles on hind femora uniserial. ....***T. valida***  
*Rare, Scotland and Yorkshire, drained soils by streams, floodplain marshes, seepage meadows; early Jun to late Jul*
- Frontal callus always separated into two parts (Figure 9B). Anteroventral bristles on hind femora nearly uniserial, but irregularly arranged towards base of femur. ....***T. bipunctata***  
*Widespread on coastal dunes, occasionally inland on sandy soils; late May to early Sep*



FIGURE 9A. Frontal callus. *Thereva valida* Loew, 1847



FIGURE 9B. Frontal callus. *Thereva unica* (Harris, 1780).

- 3. All tergites completely dusted, without dark band. (If the specimen has been collected in liquid, as in a malaise trap, the difference between the dark dusting on the front end of the tergites, especially the 2nd and 3rd, and the light dusting on the hind end, may be destroyed, and the specimen may key out here. Look closely at the other tergites). .....4
- Dark band on the anterior edge of at least tergite 2-5. (Anterior part of tergites 2-5 with a dark band which extends medially nearly to the posterior edge of tergites, but without breaking the grey bands. Thus the posterior edges of tergites 2-4 have complete bands of grey dusting.) .....5

- 4. Knob of halteres blackish. Tergite 7 dusted with greyish pollen. Frontal callus clearly separated from anterior ocellus (Figure 9C). ..... ***T. cinifera***  
*Rare, south Wales, Sussex and Kent, dunes, sandy soils at river edges, shingle; Jul*
- Knob of halteres yellowish. Tergite 7 glossy black, only laterally grey dusted. Frontal callus extends to the anterior ocellus (Figure 9D). ..... ***T. fulva***  
*Rare, southern England and Wales, usually on sandy soils, occasional on calcareous grassland; mid-Jun to Jul*



FIGURE 9C. Frontal callus. *Thereva cinifera* Meigen, 1830.



FIGURE 9D. Frontal callus. *Thereva fulva* (Meigen, 1804).

- 5. Frontal callus extends laterally to eye margin (Figures 9G, 9H). .....6
- Frontal callus separated from eye margin by a dull area. (Wing membrane greyish brown and cross veins not bordered by dark membrane.) .....7



FIGURE 9G. Frontal callus. *Thereva plebeja* (L., 1758).



FIGURE 9H. Frontal callus. *Thereva strigata* (Fabricius, 1794).

- 6. Spines on tip of ovipositor broad and blunt (Figure 10A). Mesonotum dark, brownish grey with distinct light longitudinal stripes. (Front callus as in Figure 9G above.) ..... ***T. plebeja***  
*Widespread in south-east and central England, Welsh coasts, on sandy soil and vegetated shingle; late Apr to late Aug*
- Spines on the tip of ovipositor slender (Figure 10B). Mesonotum light, bluish grey with distinct light longitudinal stripes. (Front callus as in Figure 9H above.) ..... ***T. strigata***  
*Rare, south coast plus Surrey, coastal cliffs and dry grassland; late May to Jul*

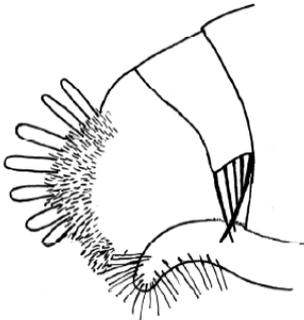


FIGURE 10A. Spines on tip of ovipositor broad and blunt. *Thereva plebeja* (L., 1758).

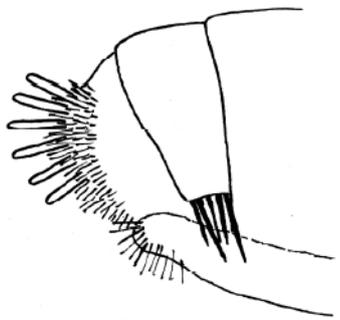


FIGURE 10B. Spines on the tip of ovipositor slender. *Thereva strigata* (Fabricius, 1794).

In Falck 2011 figure 10A (*plebeja*) is mislabelled as *strigata*, and figure 10B (*strigata*) is mislabelled as *plebeja*.

- 7. Knob of halteres yellowish brown. Anteroventral bristles of hind femora multiserial (with some of the bristles outside the anteroventral row). Frontal callus separated from anterior ocellus (Figure 9I). Tergite 3 without contrasting line between anterior narrow brownish part and posterior, greyish part of the tergite. .... ***T. nobilitata***  
*Widespread including inland, scrub, hedges, rough vegetation; May to early Sep*
- Knob of halteres blackish. Anteroventral bristles of hind femora uniserial. Frontal callus separated from or extends to anterior ocellus. Tergite 3 with contrasting line between broad blackish part and posterior greyish part of tergite .....8



FIGURE 9I. Frontal callus. *Thereva nobilitata* (Fabricius, 1775).

- 8. Hairs in scutellum mixed black and yellow. Frontal callus separated from anterior ocellus (Figure 9J). ..... ***T. inornata***  
*Rare, Scottish Highlands, sandy soils; mid-Jun to early Sep*
- Hairs on scutellum all yellow. Frontal callus extends to the anterior ocellus (Figure 9K). .... ***T. handlirschi***  
*Scarce, Scottish Highlands, sandy soils at woodland edges; late Jun to early Sep*



FIGURE 9J. Frontal callus. *Thereva inornata* Verrall, 1909.



FIGURE 9K. Frontal callus. *Thereva handlirschi* Krober, 1912.