

# Some taxonomical changes in the genus *Rhaphium* (Diptera, Dolichopodidae), with a key to the *Rhaphium albifrons* species group

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## Some taxonomical changes in the genus *Rhaphium* (Diptera, Dolichopodidae), with a key to the *Rhaphium albifrons* species group.

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The following taxonomical changes in the genus *Rhaphium* are proposed: *Rhaphium fluviatile* Vaillant syn. n. of *Rhaphium pectinatum* (Becker) nec *Rhaphium pectinatum* (Loew), *Rhaphium sagittiferum* Vaillant syn. n. of *Rhaphium albifrons* Zetterstedt, *Rhaphium montium* Vaillant syn. n. of *Rhaphium albomaculatum* (Becker), *Systemus viklundi* Grichanov comb. n, probably a synonym of *Systemus bipartitus* (Loew). A key to Palearctic species of the *Rhaphium albifrons* species group based on male genitalia characters is provided.

Keywords: Dolichopodidae, *Rhaphium*, Palearctic, synonymies, key.

### INTRODUCTION

The genus *Rhaphium* Meigen, 1803 includes 185 species worldwide which occur in all biogeographical regions, except the Australasian and Oceanian regions, and is represented in the Palearctic by 89 species (Yang *et al.* 2006). Pollet (2004) listed 49 species for Europe, but he did not include the three species described by Vaillant (1983). In Switzerland 20 species have been recorded so far (Naglis 2009).

### SYSTEMATIC ACCOUNT

The Palearctic species of the genus *Rhaphium* were revised by Negrobov (1979), including a key. Since then the following species have been described from Central and Western Europe:

- Rhaphium fluviatile* Vaillant, 1983: 272 (France)
- Rhaphium montium* Vaillant, 1983: 273 (France)
- Rhaphium sagittiferum* Vaillant, 1983: 273 (France)
- Rhaphium viklundi* Grichanov, 2004: 268 (Sweden)
- Rhaphium latimanum* Kahanpaa, 2007: 228 (Finland)

Because the publications of Negrobov (1979) and Vaillant (1983) include adequate drawings of the genitalia of the *Rhaphium* species, a study of the type material seems unnecessary. By comparing the characters, in particular those of the genitalia, the following decisions can be taken:

(i) Negrobov (1979) transferred all species of *Xiphandrium* and *Porphyrops* to *Rhaphium* and synonymised *Xiphandrium pectinatum* (Becker, 1908) with *R. bre-*

*vicorne* Curtis, 1835. In his description of *R. fluviatile*, Vaillant (1983) noted the similarity with *R. brevicorne* but mentions differences in the shape of the surstylus, where the ventral projection is longer than the dorsal one, whereas in *R. brevicorne* the length of the ventral projection is shorter than the dorsal one. This is in fact the case in the figure in Negrobov (1979, fig. 1692). Vaillant's figure of the surstylus is identical with that of *Xiphandrium pectinatum* Becker, figured in Becker (1918). An additional character for separating *R. brevicorne* from *R. pectinatum* is the length of the first flagellomere which is about 3 times as long as its basal width in *R. pectinatum* and 5 times as long in *R. brevicorne*. Therefore I herewith remove *R. pectinatum* Becker from synonymy with *R. brevicorne*. Since the combination *Rhaphium pectinatum* is preoccupied by Loew, 1859, the actual name is that of its synonym *R. fluviatile*.

*Rhaphium fluviatile* Vaillant, 1983: 272  
 = *Rhaphium pectinatum* (Becker, 1908: 49), **syn. n.**  
 preocc. by *Rhaphium pectinatum* (Loew, 1859: 16)

(ii) Vaillant's (1983) description of *R. sagittiferum* includes figures of the antenna and male genitalia. Both the antenna and the hypopygium are identical with *R. albifrons* Zetterstedt as described and figured in Negrobov (1979). Therefore I herewith synonymise *R. sagittiferum* with *R. albifrons*.

*Rhaphium albifrons* Zetterstedt, 1843: 479  
 = *Rhaphium sagittiferum* Vaillant, 1983: 273, **syn. n.**

(iii) Vaillant's (1983) description and figures of *R. montium*, especially the male hypopygium is identical with the description and the figures of the cerci and the surstylus of *R. albomaculatum* Becker in Negrobov (1979, figs 1663–1665). Therefore I herewith synonymise *R. montium* with *R. albomaculatum*.

*Rhaphium albomaculatum* (Becker, 1891: 291)  
 = *Rhaphium montium* Vaillant, 1983: 273, **syn. n.**

(iv) Grichanov (2004) figures the first flagellomere in his original description of *Raphium viklundi* which is typical for the genus *Systemus* and, moreover, the figure of the male hypopygium may be identical with that of *Systemus bipartitus* Loew, 1859 as figured in Negrobov (2005).

*Systemus viklundi* (Grichanov, 2004: 268), **comb. n.**  
 ? = *Systemus bipartitus* (Loew, 1850: 114)

### The *Rhaphium albifrons* species group

Grichanov (2004) provided a key to the Swedish species of the *Rhaphium albifrons* group but gave no diagnosis. The species *R. albifrons* Zetterstedt, *R. albomaculatum* Becker, *R. fissum* Loew and *R. gruniniani* Negrobov are herewith combined in the *Rhaphium albifrons* species group, defined by the following combination of characters: hind coxa with a strong white lateral seta; fore basitarsus without comb of strong setae; frons usually with dense white or grey pruinosity; arista at most twice as long as or shorter than basal width of first flagellomere.

**Key to males of the *Rhaphium albifrons* species group**

The traditionally used characters, the length of the arista and the first flagellomere relative to its basal width, are somewhat difficult to use because the antennae are often flexed or shrunken in dry specimens. Also the colouration of the femora shows a certain variation. Therefore key to genitalia features is here provided, in addition to Negrobov's (1979) key (couplets 61–63):

1. Median lobe of cercus 4 times as long as lateral lobe; surstylus broadened apically ..... *R. albomaculatum* (Becker)
- Median lobe of cercus about 2 times as long as lateral lobe; surstylus tapered apically ..... 2
2. Surstylus pointed apically ..... 3
- Surstylus stout and rounded apically ..... *R. gruniniani* Negrobov
3. Surstylus basally broad, tapering from mid-point ..... *R. fissum* Loew
- Surstylus slender from base to tip ..... *R. albifrons* Zetterstedt

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