Dixidae

Rüdiger Wagner (1998 Checklist: Rüdiger Wagner)
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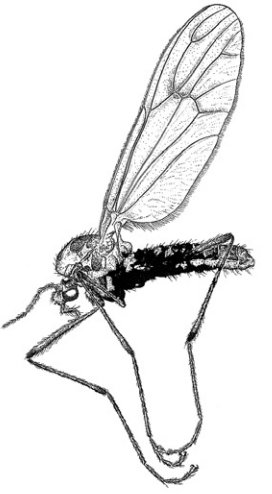
Diagnosis: Dixidae (or « meniscus midges ») are a small family of the lower Diptera. The long-legged adults resemble Culicidae, but differ by the presence of scales on wings and body (wing length 2-6 mm). Eyes separate, ocelli absent, antenna with scape, pedicel and a flagellum of 14 flagellomeres, mouth parts non-biting. Thorax with patterns of brown and yellowish stripes on pleurae and scutum, scutellum prominent. Fore and mid tibiae with short spurs, empodium small, pulvilli missing. Wing usually translucent, in some species with a characteristic pattern of brownish to black spots, surface covered with microtrichia. Wing venation shows radial and cubital fork, r-m crossvein distinct, no discal cell. Male genitalia inverted by subsequent torsion of segments 5-8. Larvae eucephalic, ventral surface of abdomen segments bears ambulatory combs. *Dixa* larvae bear in addition a number of dorsal « crowns of setae » that are absent in *Dixella*. The terminal complex is blackish with a pair of open spiracles in a sclerotised area, a pair of lateral « paddles » and a single caudal appendage with several long setae. Pupae resemble superficially those of mosquitoes (Culicidae). In contrast, mosquito pupae have no caudal paddles. Eggs bulbous to streamlined with a probably specific microsculpture on the surface.

Biology: Adults are poor fliers and do not feed. They sit or fly close to the water, sometimes gathering in mating swarms. Larvae are filter-feeders and develop at the edge of running or standing waters. They rest in a typical inverted U-shaped position on the water meniscus or on emergent structures. *Dixa* larvae are generally found along running waters, *Dixella* species prefer stagnant waters. *Dixa* larvae are abundant in the drift of streams (Elliott & Tallett 1977). Dixid pupae also rest in a U-shaped but live in « dryer » microhabitats along the banks of water bodies. Early instars of Dixidae larvae, especially in standing waters, may be infected by viruses (Goldie-Smith 1987). A dixid life cycle includes egg, four larval instars, pupae and adult stages. Little is known about the length of the life cycle, but laboratory cultures by Peach & Fowler (1986) indicated that a generation takes 60 days and field observations suggest a similar length in European species (60-80 days). The number of generations per year seems to increase with temperature. Prior to egg laying, females hold the disk-shaped jelly egg masses that contain several dozen eggs by the hind legs. Oviposition occurs at the water's edge on solid substrate or organic material.

Nomenclature and classification: According to Disney (1999).

Number of species: CH: 9 (1998 Checklist: 9),
DE: 17, FR: 18, IT: 11, Europe: 28, World: ~190.

Level of faunistic knowledge in Switzerland: In need of improvement.



Dixa maculata,
male (CMPD2, p. 300).

General references: Brindle (1963) [taxonomy larvae], Oboňa et al. (2015) [Slovakia species list], Rozkošný (1990) [catalogue Palearctic], Salmela et al. (2014) [species list Finland], Saether (1997) [Checklist Finland], Wagner (1997) [general, species in North Europe].

References to the Swiss fauna: Wagner (1998).

Checklist

Dixa Meigen, 1818
- *maculata* Meigen, 1818 !
- *nebulosa* Meigen, 1830 L
- *obsoleta* Peus, 1934 !
- *puberula* Loew, 1849 !
- *submaculata* Edwards, 1920 !

Dixella Dyar & Shannon, 1924
- *aestivalis* (Meigen, 1818) !
- *amphibia* (De Geer, 1776) L
- *autumnalis* (Meigen, 1838) !
- *serotina* (Meigen, 1818) !

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