

Life cycle, diet and habitat of *Polycentropus flavomaculatus*, *Plectrocnemia conspersa* and *Rhyacophila nubila* (Trichoptera) in Øvre Heimdalen, Jotunheimen Mountains, Norway

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Life cycles, diets and habitats of the three trichopteran species, *Polycentropus flavomaculatus* (Pictet, 1834), *Plectrocnemia conspersa* (Curtis, 1834) (Polycentropodidae) and *Rhyacophila nubila* (Zetterstedt, 1840) (Rhyacophilidae) were investigated. All three species showed indications of semivoltine life cycles, probably due to low temperatures. *P. flavomaculatus* dominated the outlet of the lake, Øvre Heimdalsvatn, while *R. nubila* was widely distributed, but dominated the faster flowing reaches. *P. conspersa* dominated in the pools in the upper reaches of the stream Brurskardbekken. Both *P. flavomaculatus* and *P. conspersa* were common in the outlet of the small lake Brurskardtjern.

The dietary composition of the three predaceous trichopteran species reflected a combination of prey occurrence and foraging/capture techniques. The free-living *R. nubila* had the narrowest niche breadth while the net-spinning, *P. conspersa* and *P. flavomaculatus* had wider niche breadths. However, the species had several similar prey taxa in their diets, indicating that overlap also occurred between predators of very different foraging/capture modes. They all showed monthly variations in feeding habits as a result of seasonal variations in the abundance of prey, indicating that these species are generalists. This coupled with their ability to change to semivoltine life cycles at high altitudes is probably an important factor explaining their wide geographical distribution.

Keywords: Trichoptera, life cycle, habitat, diet.

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