

Apoide Hymenopteren an Ruderalstellen der Stadt Freiburg - submediterrane Faunenelemente an Standorten von kleinräumig hoher Persistenz *

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Synopsis

In 1987 we registered 122 bee species (Hymenoptera, Apoidea) from the middle of May till the middle of September in different ruderal plant communities in and around the city of Freiburg i. Br. (FRG); e. g.: *Conyzo-Lactucetum*, *Tanaceto-Artemisietum*, *Convolvulo-Agrophyretum*, *Onopordetum acanthii*, *Daucopicridetum*. Flower visitor preferences, nesting sites and number of synanthropic bee species are analysed. The bee community of ruderal sites is characterized by a high percentage of species of the submediterranean element (25 %), by a high number of flower visiting specialists (preferring especially species of Asteraceae s. l., Fabaceae and Apiaceae) and by the presence of many species listed in the Red Data Book (18 species for FRG, 31 species for Baden-Württemberg). The structure of the bee community is influenced by specific habitat conditions of the different ruderal plant communities and their surroundings. The highest diversity of bee species was reached in such study sites where a vegetation mosaic exists with plant communities of different phytosociological progression. Ruderal sites of high 'biotic quality' could only be found at the fringe of the city. Illustrations of historical Freiburg dating back to the year 1549 show that the studied ruderal community has been situated in sites, where ruderal habitat conditions have existed for centuries. The results indicate that the studied ruderal biocoenosis has developed in a long process to reach their present-day structure.

urban ecology, ruderal plant communities, flower visitors, Hymenoptera Apoidea, biogeography

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