3. Summary and keywords

Flies of the genus *Lipara* form galls in the apical part of the stems of the common reed *Phragmites australis*. Research on the structure of their occurrence was conducted in south-eastern Poland. All four species found in Poland were recorded. The diversity of their assemblages in particular habitats was described and the factors shaping them were initially indicated. Significant differences were found between the assemblages of *Lipara* larvae in reed beds in four habitats (meadows, forests, fens, in the shore zone of water bodies) and the habitat preferences of the species were indicated. Spatial distribution of these species within reed beds was examined and no significant differentiation was found. The assemblages of inquilines in *Lipara*-induced galls were described, stating that their occurrence was common and highly diversified; other Chloropidae (*Cryptonevra* sp., *Intercella* sp.) were the most often and numerous, and only their occurrence was correlated with the occurrence of some *Lipara* species. A strong negative impact of the formation of *Lipara* galls on reed growth was found and its differentiation between habitats, sites and reed zones was described. The internal structure of galls of four *Lipara* species studied was described. The chemical composition of these galls was initially investigated using instrumental analysis and it was found that *Lipara* larvae deprive the reed tissue of lipids and reduce the content of proteins, while the participation of individual elements in the composition of the gall is very variable, which also applies to silicon compounds important for the resistance of the stems to infestation by flies. The collected data were discussed with the literature on the subject.

The data presented in the thesis confirms the previous knowledge about the biology of *Lipara* spp. and their relationship with *Phragmites australis* – but also, to a large extent, supplement and partially correct it. The results of preliminary analytical studies also indicate interesting, possible research directions.

Keywords: Diptera, Chloropidae, *Lipara lucens*, *Lipara similis*, *L. rufitarsis*, *L. pullitarsis*, *Phragmites australis*, galls, inquilines, distribution, habitats

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