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Abstract*

Intraspecific relations in *Formica pratensis* RETZIUS, 1783 (Hymenoptera: Formicidae)

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We studied two populations of *Formica pratensis* RETZIUS, 1783 near Cluj Napoca (Romania, Cluj County): in Fânaţele Clujului and in the Hoia Forest. *F. pratensis* frequently forms polycalic colonies, or supercolonies (BEYE & al. 1998, PIRK & al. 2001). Our goal was to determine the social structure of the studied nest-complexes. We predicted that there is a correlation between the intercolonial level of aggression and the spatial distance.

We used aggressiveness tests to detect the level of aggression between the nests. Altogether 21 colonies were studied and 103 tests were carried out in the Hoia Forest, while 28 colonies were investigated and 156 tests were carried out in Fânaţele Clujului. To establish the differences between the intracolonial and intercolonial behaviour, we compared the results of the aggressiveness tests carried out with workers from the same nest and with workers from different nests.

We found that the two populations differed in intraspecific behaviour. In the Hoia Forest population no aggressive interactions were observed between ants and hence no differences arose between the results of the intranest and internest aggressiveness tests (Mann-Whitney, $n = 30$, $p = 0.352$). Thus, we may presume that this nest complex is a supercolony.

In contrast, the population in Fânaţele Clujului is formed by monocalic nests. The aggressive behaviour between the nests correlated negatively with the spatial distances (Spearman rank correlation, $n = 128$, $r = -0.240$, $p = 0.006$). This result can be explained by the competition for the resources in the case of neighbouring nests. There is a significant difference between the seasonal behaviour of the ants, too: they are more aggressive in spring than in summer and autumn (Mann-Whitney U-test, $n = 93$, $p = 0.001$).

References

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