Morphological Adaptations of the Social Parasite Sulcopolistes atrimandibularis to its Behaviour in Hosts' Nests of Polistes biglumis (Hymenoptera: Vespidae)

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In contrast to other so far analysed social parasitic polistines, Sulcopolistes atrimandibularis (Zimmermann 1930) is for its main host species Polistes biglumis Linnaeus 1758 not only a social parasite. It frequently occupies a primary nest, at which it will reproduce and preys in addition one or several 'supplementary nests'.

It was observed that the females do not only prey on the host’s pupae and big larvae. In addition, they also take away the prey of returning host wasps, and take it to their 'primary nest'.

There is a strong intraspecific competition among individuals of the social parasit species for suitable 'primary nests'. Violent fighting with use of the mandibles was observed. Afterwards injuries were found on antennae and wings. In more than half of the nests which were not destroyed during the observation period, the social parasitic nest owner was replaced at least once. The thickened and enlarged mandibles can not exclusively be interpreted as an adaptation to fights with the host - as reported previously. It is more likely that this character represents the result of intraspecific competition. The thickened cuticula probably serves as protection from attacks of the host wasps as well as of conspecific competing social parasites.

Key words: Polistes biglumis Linnaeus 1758 - Sulcopolistes atrimandibularis (Zimmermann 1930) - intraspecific competition - supplementary nests - thickened cuticula

Im Unterschied zu den anderen bisher untersuchten sozialparasitischen Feldwespen tritt Sulcopolistes atrimandibularis (Zimmermann 1930) bei ihrem Hauptwirt Polistes biglumis Linnaeus 1758 nicht nur als Sozialparasit auf, sondern sie kann neben einem 'Hauptnest', auf dem sie sich reproduziert, noch ein oder mehrere 'Hilfsnester' besetzen, die von ihr ausgeraubt werden. Beobachtet wurde, daß dort die ♀♀ nicht nur Puppen und große Larven rauben, sondern daß sie heimkehrenden Nestinhaberinnen die mitgebrachte Beute abnehmen um sie zum 'Hauptnest' zu bringen.