

Abstract

Family Halictidae is one of the most socially diverse taxa of bees, and especially one of the genera that belongs in this family. It is the genus *Lasioglossum*, which includes different types of sociality from solitary behavior to eusociality. Among the species of this genus, one stands out and that is the species *Lasioglossum marginatum*. Its social behaviour was described in the years 1959-1972 by Plateux-Quén in France. Its sociality is eusocial and is completely unique. In its nests there are dozens to hundreds of individuals, all of which are produced by a single queen. The life cycle of this species is not one-year, as in most species, but is spread over 5(6) years and the queen survives the entire time. It is a univoltine species and therefore produces only one generation of offspring per year. This is not unusual, except that eusocial species in this family are always at least bivoltine with a one-year social cycle. In each year of the five-year cycle, the queen produces only workers. Only in the last year of the cycle are future foudresses and males produced. The purpose of this work is to confirm or disprove Plateux-Quénu's statements. Field experiments were performed from 2020 to 2023 in the Kletnice nature reserve in South Moravia. A total of 354 nests were excavated, and their nest structure was studied. Excavations took place in the months of March to August. Changes of the nest structure were described throughout the year. The size of the nests varies greatly. This indicates the existence of multi-year cycles. Females are building more cells in each year and producing more offspring. Part of the nests in the studied locality probably have synchronized cycles and reach the final year of the cycle together. Only one generation of offspring is produced each year. In the smaller nests, the offspring are mostly only female, only in the larger nests, which are probably in the final year of the cycle, are males produced. However, further experiments are needed to confirm or disprove existence of the five-year cycle. Measurements of head widths and dissections of female ovaries confirmed the presence of reproductive castes and the absence of caste polymorphism. Another important part of the field experiments was the marking of bees flying out of the nests. This revealed the mixing of bees between nests, the presence of multiple nest openings belonging to a single underground nest, and a significant decline of bees in nests after the nest provisioning is done. Another benefit of these markings was the discovery of the possible presence of a division of labor between females.

Key words: *Lasioglossum marginatum*, nesting biology, Anthophila, Halictidae, eusociality