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Grooming Patterns in the Primitively Eusocial Wasp *Polistes dominulus*

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Abstract

Grooming is a commonly observed behavior in many animals. One function of grooming is to clean the body of debris and parasites. An additional function may be to homogenize chemical cues present on the body. This latter purpose is especially likely in species in which contact-based chemical communication occurs, such as in eusocial insects. In this study we address the context, sequence, frequency and duration of 683 acts of self-grooming performed by the paper wasp, *Polistes dominulus*. In general, individuals groomed heads after cell inspections, and abdomens after sitting, suggesting that grooming serves to remove debris from the body. Although no differences were observed in the total amount of time spent grooming, foundresses groomed significantly more often than did workers. Wasps were equally likely to groom thoraces or abdomens following heads, but were more likely to groom abdomens after thoraces and heads after abdomens. Interestingly, the appendages used to groom individual body parts were highly specific (e.g. the prothoracic legs were used for the head), thus indicating that grooming is not used to homogenize chemical cues across the body surface of the wasp.

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Introduction

Grooming is one of the most common behavior patterns of animals. Typically, grooming is classified as a function of both the performer and recipient of the behavior. When the two are the same, the behavior is called self-grooming, and when the two are different, the behavior is called allogrooming (Goodenough et al. 1993). In the present study, we consider self-grooming patterns of the primitively eusocial paper wasp *Polistes dominulus*.

Grooming has mostly been evaluated within the context of its functional significance (Jander 1976). Suggested functions include the removal of ectoparasites and the formation of coalitions (see Dugatkin 1997). Grooming in highly