Comparative study of sexual and asexual parasitoid wasps

Asexual reproduction provides certain advantages as compared to sexual reproduction, such as **[…].** Studies testing these theories are always based on small taxonomic groups, prohibiting inference of general patterns. Some insect groups present high proportions of asexual species and are thus good systems to study these hypotheses. In this large scale comparative analysis, we investigated the ecology and distribution of asexual chalcid wasps (Hymenoptera: Chaldidoidea). We used a previously compiled, detailed asexual species list, and extracted distribution and host species data from an exhaustive online database. Although asexuality often occurs in small species, pairwise analysis between asexual and sexual sister species revealed no significant association between reproduction mode and body size. We also found that asexuals have more host species and wider distribution ranges than their sexual relatives, indicating that they tend to have more generalist ecologies than their sexual counterparts, which allows them to colonize larger geographic areas. Our results show that asexuality tends to appear more often in already widespread sexual species, rather than becoming widespread afterwards due to their ecological success. To our knowledge, this is the first time these hypotheses have been tested on such a large scale.