Comparative study of sexual and asexual parasitoid wasps

Asexual reproduction provides certain advantages such as more efficient colonization, compared to sexual reproduction**.** Reproductive mode affects different dimensions of the ecology of asexual species, which gave rise to many theories. Studies testing these predictions 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. To our knowledge, this is the first time these hypotheses have been tested on such a large scale.