

When is a harem a harem? Insect aggregations and variation in an uncommon mating system.

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Harem polygyny is a well-defined mating system seen in many mammalian groups. A male will defend a group of females from conspecifics and successful defence leads to greater reproductive success. Among a few species of insects, females group together in aggregations that have been defined as harems. But when comparing these groups to what is seen in mammals they do not seem to follow the same conditions. Insect "harems" tend to be much shorter-lived and, as there is generally no parental care from either male or female insects, both sexes have the opportunity to remate during the breeding season. However, one of the defining features of harems in mammals is that because females undertake parental care, they are unavailable for remating. In contrast, males who are not required for parental care have the opportunity to acquire multiple mates. The Auckland tree weta (*Hemideina thoracica*) and the five-spined bark beetle (*Ips grandicollis*) are two insect species whose mating system is described as harem polygynous and males and females of both species have the opportunity to remate. Both of these species are associated with holes in wood and it is potentially the lack of suitable habitat that drives these insects to form aggregations. The sex ratio in bark beetles within the wood is largely female biased and this could also be a driver of this type of mating system in some insect species. I will explore the relative influence of habitat availability and sex ratio on shaping insect harem polygyny.

