Abstract

My study summarizes current knowledge of the aspects influencing reproductive success of dragonflies (Odonata). As with other organisms, the reproductive success (fitness) differs on the individual level, and it is influenced mainly by factors related to body structures. The body characteristics of individuals dragonflies affect their totally physical performance. The most studied factors include size, pigmentation and fat reserves; the individual performance is influenced also by the weight, fluctuating asymmetry, age etc. Some of these factors apply during larval development. However, the precopulatory phase (epigamic behaviour) is the most explored, since during that, males gain control and defend territory or perform courtship behaviour. At this phase, beside physical capabilities, there are other important factors such as ornamentation (pigmentation) or fluctuating asymmetry; some damselflies have developed various strategies which, at some species (namely within Calopterygidae), may evolve into colourful dimorphism of males. Next, the copulation in dragonflies is very specific, besides usual sperm transfer it often involves removal of sperm of predecessors to ensure paternity. At many species, the copulation is followed by the postcopulatory phase, during which the males secure their paternity by guarding their ovipositing mates. Both of these stages are time-consuming and investment of time can be subject to trade-off.