Abstract

Although the Old World sunbirds are generally considered to be an ecological analogy of the New World hummingbirds, until recently it was believed that in contrast to hummingbirds, sunbirds perch while feeding. This opinion was largely supported by several studies, mostly from South Africa, describing adaptations of plants facilitating this behaviour. However, recent studies have shown that the Old World nectarivores hover while feeding in front of flowers more frequently than previously thought.

We focused on a specialised West African pollination system of *Impatiens sakeriana* and the foraging behaviour of its two major pollinators, the Northern Double-collared Sunbird (*Cinnyris reichenowi*) and the Cameroon Sunbird (*Cyanomitra oritis*). Based on continuous monitoring in their natural habitat via camera systems, we evaluated factors influencing bird foraging behaviour on a flower, i.e. bird's decision whether to perch or to hover. Our results indicate that sunbird foraging behaviour choice depends on plant architecture, namely on the length of peduncles and pedicels. Surprisingly, weather affects pollinator's behaviour just slightly. The data also indicate that feeding and moving among flowers require less time if the bird hovers and therefore this behaviour is associated with higher flower visitation rate.

Additionally, we studied in detail hovering flight of both sunbird species. It has been hypothesized that passerines, unlike hummingbirds, are not able to sustainably hover for longer periods and that the majority of them exhibit intermittent flight with regular interruptions in flapping. Our findings show that even though actual frequency of flapping slightly decreases in time, both studied sunbird species are able to hover steadily without any interruptions in flapping for several seconds with wingbeat frequency averaging 20 Hz.

Key words: *Impatiens sakeriana*, *Cynniris reichenowi*, *Cyanomitra oritis*, foraging behaviour, hovering, bird pollination