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AMBUSH PREDATORS ON FLOWERS AT NIGHT: PREDATION PRESSURE ON MOTHS

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Study Description

Attacks by ambush predators on diurnal pollinators affect subsequent flower-visiting behavior. However, the impact of ambush predators on nocturnal pollinators has remained unclear. In this study, we observed diverse ambush predators on the flowers of nine plant species and detected some of these predators eating flower-visiting moths at night. Praying mantises were the most abundant group of ambush predators found on flowers; they frequently ate flower-visiting moths as well as diurnal flower visitors. Thus, nocturnal predation pressure may lead to the evolution of anti-predator morphology and escape behavior in nocturnal flower-visiting moths.

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Photo 1. Nocturnal flower-visiting moths. The crambid moth *Mabra charonialis* settling on flowers of *Eupatorium lindleyanum* (top left). The noctuid moth *Xestia stupenda* settling on flowers of *E. lindleyanum* (top right). The plusiinine moth *Macdunnoughia purissima* fluttering while visiting flowers of *Abelia* × *grandiflora* (bottom left). The hawkmoth *Agrius convolvuli* hovering while visiting a flower of *Hemerocallis citrina* (bottom right). Photo credit: Kota Sakagami.



Photo 2. The mantis *Tenodera sinensis* eating the hawkmoth *Theretra japonica* on a flower of *Hemerocallis citrina*. Photo credit: Daichi Funamoto.



Photo 3. The mantis *Tenodera sinensis* eating the hawkmoth *Agrius convolvuli* on a flower of *Trichosanthes cucumeroides*. Photo credit: Kota Sakagami.



Photo 4. The house centipede *Thereuopoda clunifera* eating the hawkmoth *Agrius convolvuli* near flowers of *Clerodendrum trichotomum*. Photo credit: Kota Sakagami.



Photo 5. The mantisfly *Austroclimaciella quadrituberculata* eating the erebid moth *Rhynchina cramboides* on flowers of *Vincetoxicum pycnostelma*. Photo credit: Kota Sakagami.

These photographs illustrate the article "Nocturnal ambush predators and their potential impact on flower-visiting moths" by Kota Sakagami, Daichi Funamoto, and Shinji Sugiura published in *Ecology*. https://doi.org/10.1002/ecy.3482