

# COLUMBINE POLLINATION SUCCESS NOT DETERMINED BY A PROTEINACEOUS REWARD TO HUMMINGBIRD POLLINATORS

by Eric F. LoPresti

Lots of plants have sticky exudates which entrap small insects. This phenomenon is most famous and well-studied in carnivorous plants, but also occurs in thousands of non-carnivorous plants. While studying the sticky columbine, *Aquilegia eximia*, I noticed that hummingbirds were occasionally picking dead insects off the plants' surfaces. As hummingbirds are also the primary (perhaps sole) pollinators of this species, I wondered whether this proteinaceous reward might influence pollination success of the columbine.

Using five populations of columbine, I set up an experiment where I added, reduced, or left dead insect carrion levels intact on small patches of plants. I measured "pollination success" using seed set of emasculated flowers (so as to not allow self-pollination). I found that higher carrion levels did not increase pollination success of the columbine. However, the number of flowers open at the same time as each target flower did positively correlate with seed set, suggesting that hummingbirds pollinate patches with more flowers more effectively.

It is likely that the stickiness of the flowers prevents smaller – and less effective – pollinators from visiting the flowers. Other hummingbird-pollinated plants are sticky and the hypotheses presented and tested here should be borne in mind when investigating other systems.



*An Anna's Hummingbird (Calypte anna), visits the flower of the sticky columbine Aquilegia eximia. Photo by author.*