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SWEET FLAG FLOWERS ACT AS CRADLES FOR TINY BEETLE POLLINATORS

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Study Description

Sweet flag, *Acorus calamus*, is one of the basal-most monocots and is commonly found in wetlands of the Northern Hemisphere. Although sweet flag has long been considered insect-pollinated, the pollinators of this plant have never been reported. We found that two species of tiny beetle, *Platamartus jakowlewi* and *Sibirhelus corpulentus* (Kateretidae), carried pollen grains of sweet flag in Japan. These beetles oviposit on the inflorescences, and the hatched larvae feed on pollen and other plant tissues of inflorescences. Our results suggest that the basal-most monocot *A. calamus* is pollinated by specialized beetles that use the inflorescences as a breeding site.

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Photo 1. Sweet flag *Acorus calamus* and its habitat. An inflorescence in male phase (left) and a patch in an abandoned paddy field (right). Photo credit: Daichi Funamoto.

Photo 2. Kateretid beetles on inflorescences of sweet flag *Acorus calamus*. *Sibirhelus corpulentus* (left) and *Platamartus jakowlewi* (right). Photo credit: Daichi Funamoto.

Photo 3. Fruits of sweet flag *Acorus calamus* and the larvae of beetle pollinators. A mature inflorescence damaged by *Sibirhelus corpulentus* larvae (left), larvae of *S. corpulentus* constructing pupal chambers in a mature inflorescence (top right), and a larva of *Platamartus jakowlewi* on an inflorescence in male phase (bottom right). Photo credit: Daichi Funamoto.

These photographs illustrate the article "Entomophily in *Acorus calamus*: implications for brood-site pollination mutualism in basal-most monocots" by Daichi Funamoto, Tomoyuki Suzuki, and Shinji Sugiura published in *Ecology*. https://doi.org/10.1002/ecy.3089