

A type of wasp that cannibalizes its sibling larvae

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Illustrative presentation of different developmental stages of brood in *Isodontia harmandi* nest. Developmental stage [I], eggs, which are singly laid on each prey by female wasp; [II], hatchlings, which emerged and begin to consume their own prey; [III], middle-sized larvae, which move around and consume one and another prey in the brood cell; [IV], full-grown larvae have consumed almost all prey; and [V], almost all larvae spun their own cocoons. Credit: *PLOS ONE* (2022). DOI: 10.1371/journal.pone.0267958

A pair of researchers at Kobe College has found that in one species of wasp, cannibalization of sibling larvae is common. In their study, published in *PLOS ONE*, Yui Imasaki and Tomoji Endo describe the insects and what they learned about their eating habits while they were still larvae.

Most bees and [wasps](#) mature in individual brood cells within a hive, but one [species](#) of wasp takes a different approach—a female lays fertilized eggs inside the carcass of a dead insect and then stuffs the whole works into an enclosed chamber such as a bamboo stalk. Up to 12 of the eggs can mature to hatch as [larvae](#). After hatching, they begin eating the dead carcass around them and then other food the mother stuffed into the chamber before she sealed it off. In many cases, the researchers found, there is not enough food in the chamber to feed all of the larvae, which led some of them to feed on their siblings.

The researchers studied the wasp species between 2010 and 2015. They collected bamboo chambers with wasp eggs, brought them back to their lab, and watched as the eggs hatched larvae. Part of their work involved counting how many larvae hatched and how many were left in a chamber as they matured into adults. They also noted how much food had been placed in the chamber.

In all, the researchers followed the growth of 39 broods. They found cannibalism in 30. They also found that such activity typically involved a larger, more mature larvae eating a smaller, less mature sibling. They also noted that the process was not aggressive—instead, the victim tended to surrender without a fight. The researchers also found that the difference between cannibalistic broods and others was the amount of food the mother provided compared with the number of [eggs](#) she deposited. The larvae only resorted to cannibalism when they ran out of food.

More information: Yui Imasaki et al, Brood reduction caused by sibling cannibalism in *Isodontia harmandi* (Hymenoptera: Sphecidae), a solitary wasp species building communal brood cells, *PLOS ONE* (2022). DOI: [10.1371/journal.pone.0267958](https://doi.org/10.1371/journal.pone.0267958)

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