

Reuse of an Old Nest by the Polistine Wasp *Polistes chinensis antennalis* (Hymenoptera, Vespidae) in Western Japan

by

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ABSTRACT

Nest reuse has rarely been observed in *Polistes* wasps. I observed reuse of an old nest in *P. chinensis antennalis* in Takamatsu, Shikoku Isl. western Japan.

Key words: nesting biology, nest reutilization

In temperate regions *Polistes* wasps are known for their annual cycle, in which the nests are initiated during the spring and quickly grow during the summer. In the autumn, however, all the workers and males die out, thus leaving abandoned paper nests behind (Yamane 1996). Only the inseminated new gynes hibernate and will become foundresses in the next spring. Although they typically initiate their own nests, a few cases are known, in which foundresses use old nests made in the previous season (Yamane 1996). Nest reuse has been observed in the following species: *P. annularis* (Linnaeus) (Strassmann 1989), *P. dominulus* (Christ) (Liebert *et al.* 2008), *P. fuscatus* (Fabricius) (Starr 1978), *P. humilis* (Fabricius) (Cumber 1951; Itô 1986), *P. jokahamae* (= *fadwigae*) Radoszkowski (Yoshikawa 1962), and *P. metricus* Say (Starr 1976). I observed the reuse of an old conspecific nest by a colony of *Polistes chinensis antennalis* Perez in warm temperate Japan. Here I briefly report this unusual phenomenon.

In 2002, a nest was maintained by a colony of *P. chinensis antennalis* under the eaves of a veranda of an apartment house in Kita-chô, Takamatsu-shi, Shikoku Isl., western Japan (34° 19'43" N, 134° 04' 11" E). It was located close to a playground for children, thus, I occasionally observed its development when I played with my son and daughter. As usual, it was abandoned in the autumn of the same year. In April of 2003, a new nest was initiated by a solitary queen nearby the old nest (Fig. 1). On 26 June, I noticed that a queen and a few workers were found on the old nest reusing its cells for their brood (Fig. 1). The old nest seemed to have been intact (at least with no indication of parasitism in the previous year), but the color of the reused cells was blackish. It was not certain whether the queen of the new nest moved to the old nest, because I did not give individual marking to the queen. I often observed

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that a few workers walked on the new nest. The colony continuously used this old nest until autumn, but I did not record the details of its development and confirm its fate. In and around this apartment house, more than 10 old nests were seen in this year; however, nest reuse was observed only in this case.

Reuse of old nests is rare in *Polistes* wasps (Yamane 1996). If old nests are exposed to weathering, reuse may be impossible. Even the nests are intact, old nests are often unclean, containing debris from former inhabitants, and some parasites overwinter in empty nests (Yamane 1996). Furthermore, reused nests are more likely to mold, leading to greater risk of detachment (Strassmann 1983). The reason of reutilization of old nest by the queen and workers of *P. chinensis antennalis* in this study is unknown. The accumulation of observations as in this report is necessary for discussing the significance of nest reuse in *Polistes* wasps.

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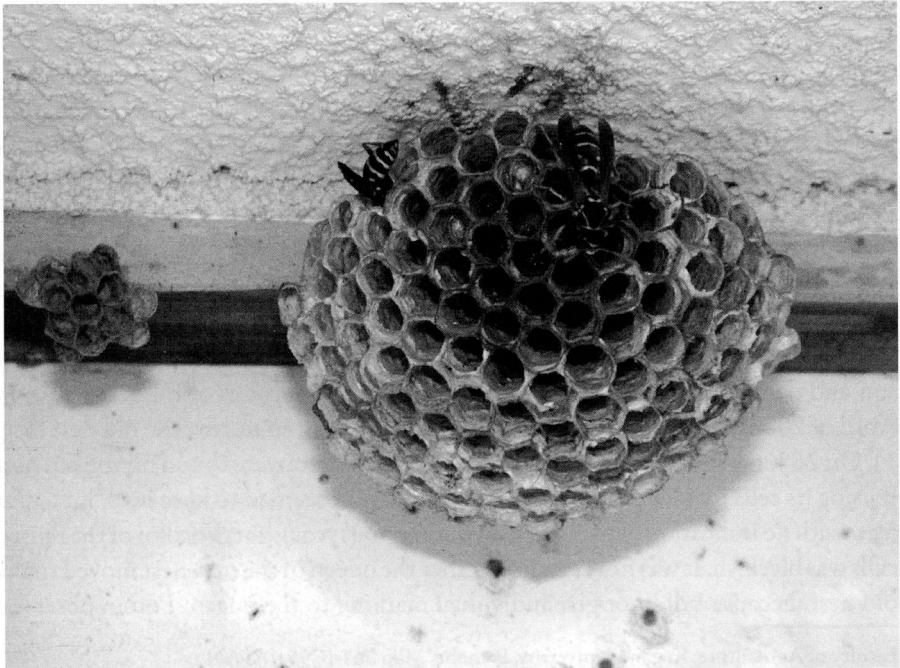


Fig. 1. Old (right) and new (left) nests of *Polistes chinensis antennalis*. A worker and a queen were found in the old nest. Blackish cells of old nest were reused. The picture was taken on 26 June, 2003.

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