



## Short Communication

# Record of sleeping aggregation of the solitary aculeate potter wasp *Antepipona bipustulata* (de Saussure, 1855) (Hymenoptera: Vespidae: Eumeninae) from India

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### Abstract

The sleeping aggregation and mandibular roosting behavior of *Antepipona bipustulata* (de Saussure 1855) (Hymenoptera: Vespidae: Eumeninae) is reported for the first time. The observation gains interest since the knowledge on the bionomics of *Antepipona bipustulata* is extremely sparse.

**Keywords:** *Antepipona bipustulata*, First Report, Hymenoptera, India, Sleeping Aggregation

### Introduction

Gregarious sleeping as a consistent, basic and instinctive behavior has been observed in several species of wasps and bees (Linsley, 1962). Sleep aggregations and choice of sleeping position are important to small diurnal insects to escape the risk of predator attacks as well as bad weather (Yokoi, *et al.* 2017). The inactive behavior of diurnal wasps during night, showing very less response to external stimuli is referred to as their sleep, and may not be equivalent neurophysiologically or functionally to vertebrate sleep (Evans, 1966). It often relates only to their daily major rest period. Sleeping behaviors are species specific, differing in location of sleeping sites and the sleep postures. Some species sleep in aggregation composed of members of only the same species, while some prefer the presence of other species too. Members of both sexes are present in some aggregations, in contrast to just the same sex for certain species (O'Neill, 2001).

Even solitary bees and wasps are known to possess social behaviors like gregarious sleeping. Sleeping aggregations have been documented in several aculeate

wasp families like Tiphidae, Scoliidae, Pompilidae and Vespidae (O'Neil, 2001) and investigated in several works like Evans and Linsley (1960), Linsley (1962), Evans (1966), O'Neil (2001), Amiet and Mauss (2003). However such studies on Oriental species of wasps are scarce. We describe here for the first time the sleeping aggregation and mandibular roosting behavior of *Antepipona bipustulata* (de Saussure, 1855) (Hymenoptera: Vespidae: Eumeninae). The observation gains interest since the knowledge on the bionomics of *Antepipona bipustulata* is extremely sparse.

At Chintamani Kar Bird Sanctuary (22°42'93" N, 88°40'07" E), South Kolkata, West Bengal, on 22<sup>nd</sup> July, 2017, at around 6.15 pm, just after sunset, a few hanging clusters of wasps were spotted on wild grass panicle tips, about 3.5 ft high from the ground. There were about 30 wasps, distributed 6 to 7 per branch on a bunch of panicles. One or two were found still flying in search of a suitable spot to settle down. On a close observation it was found that the wasps were sitting holding tight, the panicle by their mandibles. A few were collected and later identified as *Antepipona bipustulata*, the solitary aculeate

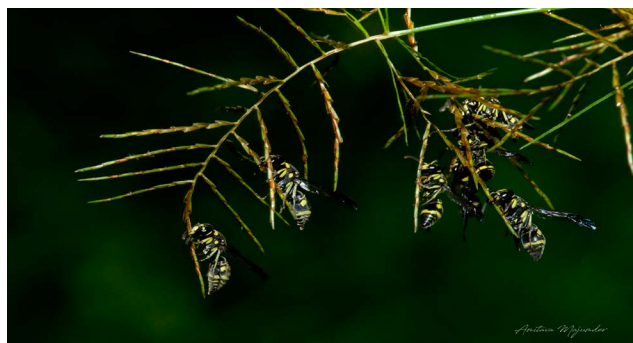
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potter wasp (the voucher specimens with reg. nos. ZSI/WGRC/I.R.-INV. 10374–10384 has been deposited at National Zoological collection, at Zoological Survey of India, Western Ghat Regional Centre, Calicut).

The observed sleeping aggregation was limited to a single species and included both males and females (of the 11 specimens collected, 5 were males and the rest females). The sleeping posture and orientation of all individuals were almost uniform, the body was held horizontal to the perch, head upward, antennae laterally extended and mandibles holding the substrate. Wings were kept folded, but extended at an approximate angle of 45 degrees. In most cases, only the front pair of legs was holding the substrate, while in others all legs were found resting on the substrate. The abdomen was kept curved forward, mostly free from contact or in a few cases touching the perch. Though gregarious, no individuals were in direct contact to each other.

*A. bipustulata* are small-sized (female, 7.5–8.5 mm; male, 6–7 mm up to second gastral tergites) and are so far recorded from India (Arunachal Pradesh, Chhattisgarh, Delhi, Jharkhand, Meghalaya, Nagaland, Odisha, Tamil

Nadu, Tripura, Uttar Pradesh, West Bengal), Sri Lanka, Myanmar, China, Thailand, Laos, Malaysia, Singapore, and Indonesia (Sumatra, Java) (Girish Kumar *et al.*, 2016).



**Figure 1.** A sleeping aggregate of *Antepipona bipustulata* (de Saussure) on panicle tips.

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