

New Wasp Species Protects Its Progeny with Dead Ants

Recently, a new wasp species with a unique nest-construction behavior was discovered in southeast Chinese forests by an international research team from the University of Freiburg, the Museum für Naturkunde Berlin and the Institute of Zoology, Chinese Academy of Sciences in Beijing. The “antwall wasp” protects its progeny with a nest-closing plug out of dead ants, which is a behavior that has never been reported from the entire animal kingdom.

The researchers discovered and described a new species from the family of spider wasps with an intriguing nest-construction behavior in the subtropical forests of South East China. The new species with the scientific name *Deuteragenia ossarium* closes its nest with a chamber full of dead ants, in order to protect its progeny from enemies. In spider wasps, every female usually constructs its own nest that consists of several cells. Each chamber is filled with a single spider that has previously been paralyzed by a sting and on which the larva feeds. The same is also true for the newly discovered “antwall wasp”, which in contrast to all other known spider wasp species does not leave the last cell empty but does fill it up with dead ants.

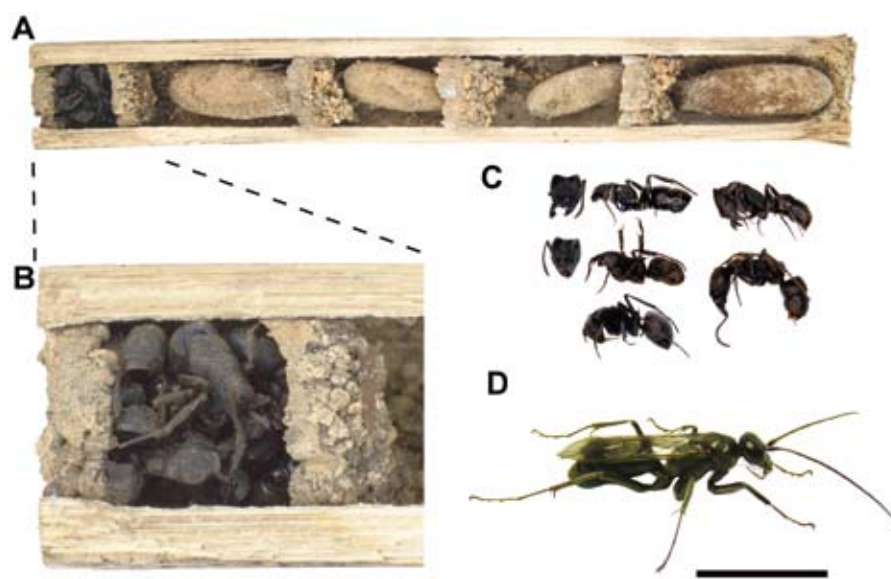
The study, led by Dr. Michael Staab from the

University of Freiburg, also shows that the antwall is very effective in protecting the nest. The progeny of the “antwall wasp” is far less frequently attacked by enemies when compared to other wasps from the same ecosystem. Most likely the unique antwall gives the nest of the wasp a similar smell than the nest of a well-fortified ant species and is thus avoided by natural enemies.

“Our discovery shows in an impressive way what fascinating strategies of nest protection have evolved in the animal kingdom. When I saw such an ant-filled chamber for the first time, it reminded me of the ancient Great Wall of China. Just like the Great Wall protected the Chinese empire against attacks from raiding nomad tribes, the antwall protects in the newly-described wasp species the progeny against enemies,” Staab said.

According to Dr. Alexandra-Maria Klein, “discovering a new species is one of the most exiting experiences of being a scientist. For this new species, it was the very unusual nest construction, which fascinated us immediately. This discovery raises new research questions. Answering them will help us to understand why species diversity is important for the functioning of ecosystems.”

However, the precise defense mechanism is still unclear and needs further investigation, the researchers say.



Nest protection in *Deuteragenia ossarium*. (A) Overview of a nest. Individual brood cells are separated by thin walls of soil material. (B) The nest is closed by a vestibular cell filled with dead ants. (C) Contents of a vestibular cell. *Pachycondyla astute* was the ant species most commonly found, but other ant species, such as *Polyrhachis illaudata* Walker, 1859 (lowest ant specimen), occurred as well. (D) Freshly enclosed adult female of *D. ossarium*. Scale bar: (A) 15 mm, (B) 5 mm, (C, D) 10 mm. Photographs: Merten Ehmgig (A, B), Michael Staab (C, D).