

first abdominal segment. A white line develops in the centre running longitudinally on the dorsal part of the abdomen bisecting it.

**Fifth Instar:** Average of 10 nymphs—length 5.24 mm., breadth 3.13 mm. Body colour further darkens. Head thorax and legs well sclerotized, wing pads extended up to second abdominal segment.

### **Adult**

Average of 10 adults—length 5.85 mm., width across the wings 3.38 mm. Body colour greyish brown or smoky. Antennae, mouth parts and legs black. Antennae four segmented, pronotum small, Mesonotum largest with black spots, Scutellum black.

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DEPARTMENT OF ENTOMOLOGY,  
COLLEGE OF AGRICULTURE,  
GWALIOR, M.P.,  
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S. V. DHAMDHERE  
R. R. RAWAT

## **22. EARTHWORM CASTS AS A SOURCE OF MUD FOR THE CONSTRUCTION OF NEST BY SPHECID WASP**

In the Malabar Christian College compound, when the authors were engaged in the collection of certain insects, an unidentified Sphecid wasp, about an inch in length was found frequenting a spot on the ground in the area. On closer examination, it was found that it was hovering around the earthworm casts. It landed on a few casts, apparently 'testing' the consistency or suitability of the mud and finally settled down on a particular cast. A small bit of mud was then bitten off with the mandibles and was beautifully kneaded into a spherical mass, about a quarter of an inch in diameter. The wasp then flew away, carrying the mass of mud with the help of the anterior two pairs of legs. It was naturally inferred that the wasp was using this mud for the construction of its mud-nest.



The wasp returned to the same site after about ten minutes and repeated the process. It first flew around, touched a few objects and casts and finally chose the same cast for kneading the mud-ball. It is presumed that the wasp, during the construction of its nest, flies out in search of a suitable earthworm cast and that, after having found one, marks the cast and the objects around and leading to the nest with trail marking pheromones which guide it, perhaps also along with the visual landmarks, repeatedly to the same cast.

Casual observations made for a few days (September 12-16, 1967) revealed that the number of visits made by the wasp to the cast is much greater in the forenoon than in the afternoon. This may be because the fresh casts are moist and softer in the forenoon. The fresh and moist worm casts are sticky and fine grained and should constitute a very good and convenient source of mud for the construction of the wasp's nest.

DEPARTMENT OF ZOOLOGY,  
MALABAR CHRISTIAN COLLEGE,  
CALICUT-1,  
July 14, 1968.

A. B. SOANS  
J. S. SOANS

### 23. STUDIES ON INDIAN ICHNEUMONIDAE (HYMENOPTERA PARASITICA)

(With a text-figure)

This paper describes species belonging to the vipionid genus *Apanteles* collected from the Marathwada region of Maharashtra State and contains new records of eleven species and the description of a new species, *Apanteles parbhani*. Host species are mentioned, as far as possible, to make the paper more useful for ready reference. I take this opportunity to thank Dr. Mehdi Ali, Professor of Zoology and the authorities of the Marathwada University, for all facilities in the preparation of this paper.

The type specimens and the slides are presently in the collections of the author and will be deposited in the collections of the Zoological Survey of India.

#### *Apanteles bosei* Bhatnagar 1948

MATERIAL : 1♀ SNR Coll., at light, Aurangabad, 14.ix.66.

*Distribution:* Bihar.

*Hosts:* *Amsacta moorei* (Butl.). *A. lineola* Fabr., (Arctiid moths).





Soans, A B and Soans, J S. 1969. "Earthworm Casts As a Source of Mud for the Construction of Nest by Sphecid Wasp." *The journal of the Bombay Natural History Society* 66, 221–222.

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