

RECORD OF *AGATHIS CORYPHE* NIXON AS A NEW PARASITE OF *HOLCOCERA PULVEREA* MEYR., A PREDATOR OF THE LAC INSECT, *KERRIA LACCA* (KERR.)

This communication records *Agathis coryphe* Nixon (Braconidae : Hymenoptera) as a new parasite of *Holcocera pulverea* Meyr. (Blastobasidae : Lepidoptera) for the first time with some preliminary observations.

Fahringer (1932) had described two species, viz., *Phanerotoma butcheri* n. sp. and *Agathis bischoffi* n. sp. (Braconidae), occurring as parasites of *H. pulverea* from material collected from Palamau (Bihar) and Assam, respectively obtained from Mr. Mahdihassan. Glover (1937) listed a few beneficial insects belonging to Braconidae among others which attack *H. pulverea* and *Eublemma amabilis* Moore. (Noctuidae : Lepidoptera), the two well-known predators of the lac insect, *Kerria lacca* (Kerr.), without mentioning either of the two species recorded by Fahringer (1932). Recently, Gupta (1964) reported *Agathis festiva* Mues. as a parasite of *H. pulverea*. Nixon (1950) described *A. coryphe* along with three more species of this genus from material collected from South Coorg in South India and supplied by the Forest Research Institute, Dehradun. Though these parasites have been reported to have emerged from lepidopterous defoliators, no definitive hosts have been stated except for *A. ebula* as a parasite of *Acroolita notophthalma* Meyr., defoliating *Caesaria tomentosa* Roxb.

In the present study, six adult females and thirteen empty cocoons of the parasite were collected from the cocoons of *H. pulverea* from lac material on *Ziziphus mauritiana* Lam. collected from Maheshpur (Ranchi District, Bihar) and were identified as belonging to the genus *Agathis* Lat. (Anonymous, 1963). Later, a few more of this parasite were found at Umaria (Madhya Pradesh) and Mirzapur (Uttar Pradesh) and quite recently from Kundri (Palamau District, Bihar). The parasite was identified as *Agathi coryphe* Nixon.

*A. coryphe* was found to be a solitary internal larval parasite of *H. pulverea*. The host larva is killed immediately after it has spun its cocoon in the gallery formed by it inside the lac encrustation. The mature parasite larva comes out of the host before the latter is able to pupate. The parasite larva then spins its own cocoon inside that of the host, and finally emerges as an adult by cutting through both the cocoons at one end. Males always emerged earlier than females.

*A. coryphe* has a single brood as it always occurs in association with lac in the summer season crop and mostly from *rangeeni* excepting that at Umaria which was from *kusmi* strain.

To enable the workers to distinguish the cocoons of certain parasites of the predator *H. pulverea*, distinguishing features are also mentioned.

The only other parasite cocoon with which *A. coryphe* cocoons may be confused is that spun by *Pristomerus sulci* Mahd. and Koluv., an ichneumonid which is also an internal parasite. The cocoon of *A. coryphe* is white, paper-thin throughout and does not possess a white band in the mid-region as in the case of *P. sulci*. The posterior end is evenly curved, whereas the anterior end is tapering. It measures 7-9 mm in length and 2.5 mm in width. The cocoon of *P. sulci* is translucent and pale brown in colour and in fresh one, a distinct whitish band completely surrounding the cocoon is always present in the middle, which later fades. It measures 7-8.5 mm in length and 2.5 mm in width. This cocoon is also found inside the host cocoon. However, among the other internal parasites of *H. pulverea* which spin cocoons are *Apanteles tachardiae* Cam., and *Apanteles fakhrulhajiae* Mahd. (Braconidae). The cocoon of *A. tachardiae* is tough, snow-white in colour and oblong in shape with anterior end evenly curved. It is smaller than that of *A. coryphe* and measures 3.5-5 mm by

1-1.75 mm; whereas in the case of *A. fakhrulhajiae* the cocoon is very tough and of glistening papyraceous nature, cylindrical in shape with both ends curved but anterior half broader. The cocoon is also smaller than that of *A. coryphe* and nearly similar to that of *A. tachardia* in size, and measures 3-4.5 mm by 1-1.75 mm. It might be stated also that both *A. tachardia* and *A. fakhrulhajiae* kill the host long before it is able to spin cocoon i.e., before the host could mature. Thus, the parasite cocoons are always separate and independent.

Some confusion had existed between the modern American and European usage of the generic names *Agathis* Latreille, *Bassus* Fabricius and *Microdus* Nees, and whether the species should belong to Ichneumonidae or Braconidae. However, this confusion had since been removed ultimately (Nixon, 1950) and the genus *Agathis* was placed in the sub-family Agathidinae (Braconidae).

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