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Myrmicaria brunnea (Saunders) (Hymenoptera: Formicidae): a new predator in tasar sericulture

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Abstract

Myrmicaria brunnea Saunders (Hymenoptera: Formicidae) is a newly discovered predator of tasar silkworm *Antheraea mylitta* (D) (Lepidoptera: Saturniidae), an insect that produces excellent quality tasar silk. Though *A. mylitta* is wild silkworm, it is exposed to many pests and predators. In the natural tasar rearing field, *M. brunnea* workers attack the larvae of *A. mylitta* and kill large numbers of silkworm larvae. When feeding, *M. brunnea* preferred early instars of tasar silkworm larvae, over the late instars. During predation, few workers started biting selected larvae and attracted other workers of the colony so that finally groups of workers controlled the prey. Aggressive predation by *M. brunnea* workers includes continuous pricking and biting by strong mandibles, leading to leakage of haemolymph and ultimately resulting in extensive damage and death of the tasar larvae. The scanning electron microscopic (SEM) analysis revealed the presence of mechanosensory organs on the antenna and mouthparts involved in successive predatory feeding by *M. brunnea*. The predatory activity of *M. brunnea* causes 5-6 % loss of silk cocoons and affects silk production. The extensive predation and damage capacity of *M. brunnea* confirms its predatory role in economic tasar silk industry but it may be useful in an integrated pest management (IPM) programme of other pests.

Key words: aggressive predator, biological invasions, crop damage, feeding behavior, *Myrmicaria brunnea*

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