

## Notes on an Ant Mimicking Mantid, *Euantissa pulchra* Recorded in Cashew Plantations

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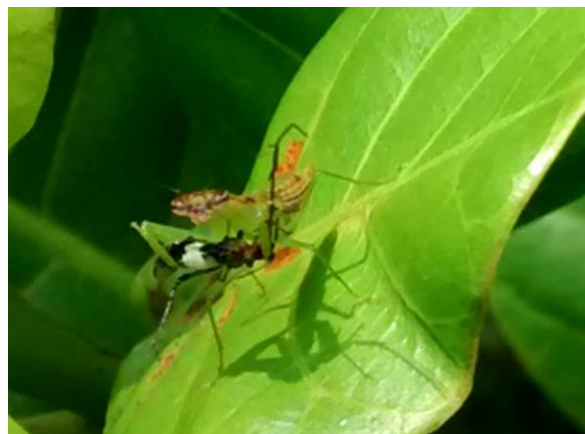
The cashew (*Anacardium occidentale* L., Anacardiaceae) is a commercial tree nut crop known to be infested by more than 150 insect pests. Among the pests, tea mosquito bug and cashew stem and root borers are considered as chief pests in majority of cashew growing regions, while leaf miners, leaf and blossom webbers, apple and nut borers and thrips are the other important emerging pests. Eco-friendly pest management methods are necessary in the changing pest management scenario. Natural enemies like predators and parasitoids play a crucial role in biological pest management.

Besides spiders, ants and reduviid bugs, praying mantids are also common predators in the cashew plantations. The ant mimicking mantids, *Euantissa pulchra* (F.) (Acromantinae: Hymenopodidae, Mantodea) is a common mantid species in cashew plantations of Puttur, Karnataka. These mantids are smaller in size, active and adults are bright green in colour. This mantid species remain active during the flushing and flowering period of cashew i.e., March-August commonly seen on the leaves. It is a predator of several insect species damaging cashew like tea mosquito bug, leaf weevils, ants, grasshoppers, leaf beetles, small caterpillars, hoppers etc. This mantid species is wide spread in China and Sri Lanka and also in many parts of India including Eastern, North eastern and Southern parts.



**An early nymph of *E. pulchra* resembling ants**

A nymph of *E. pulchra* predated on tea mosquito bug, a major pest of cashew. Early instars (younger nymphs) of *E. pulchra* are full black in colour resembling ants, and thus the name, ant mimicking mantid.



**Nymph of *E. pulchra* predated on tea mosquito bug, a major pest of cashew**

Upon laboratory rearing of the mantids to understand the breeding behaviour and life cycle of this mantid at ICAR-Directorate of Cashew Research, Puttur, it was observed that the nymphs and adults successfully feed on the larvae of greater wax moth, *Galleria mellonella* and completes its life cycle. Adult mantids successfully bred under laboratory conditions and viable egg laying was also found successful. The colour change occurs in subsequent stages with the development of brown, white and pinkish tinges on the body. Colour of the legs changed from black to brown and then to green.

The nymphs underwent six instars to become adults in a period of 53-65 days. The wing buds started developing during fourth - fifth instars and became prominently visible during the final instar. Cannibalism was not noticed at all the nymphal stages, when 3 or 4 nymphs were kept together even with sufficient prey, which could be the regulatory mechanism in field conditions on mantid population as a result of competition.

### Developmental Duration of *E. pulchra*

Sl. No.	Life stages	Duration in days (mean ± SE)	
		Male	Female
1	Incubation period	9.38 ± 0.18	
2	Total nymphal developmental period	57.08 ± 0.98	58.50 ± 0.60
3	Nymphal survivability	10-20 %	
4	Adult longevity	95.58 ± 2.67	127.50 ± 3.72
5	Total life cycle	152.05 ± 3.35	185.38 ± 2.58

Adults are green in colour. Male mantids are smaller (1.93±0.08 cm) than female mantids (2.22±0.13 cm). Forewings are dark green, opaque, costal area yellow; hind wings are transparent, basal part pink, posterior border with brown band.

In female, abdomen is stout and wings are slightly shorter exposing abdominal tip unlike male mantids. Female mantids lived up to 127.50±3.72 days in laboratory conditions, while male lived for 95.58±2.67 days. Sexual maturity occurs in a period of 12-14 days. First ootheca is laid after 12-20 days of emergence. The fecundity of female varied from 8-15 oothecae/ female and the ovipositional frequency recorded as 7-10 days. The oviposition period varied from 102-118 days. Eggs showed very good hatchability of 92 %.



**Male and female mantids in courtship**

High fertility, shorter life cycle, suitability for captive breeding under laboratory are the advantageous characteristics of this mantid species for mass culture and inundative releases. These mantids appear to be potential candidates for biological control of certain insect pests of cashew. Nevertheless, strategies are required to ensure establishment of mantids in sufficient numbers cashew plantations so as to assess their pest management efficiency.

## Selected References

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