



An observation of Egg-Laying Behavior of the Ant-like Spider *Myrmarachne plataleoides*

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Abstract

Many genera of Spider (Salticidae) have been evolved in close association with ants. Such spiders are called ant like spiders. Genus *Myrmarachne* of family Salticidae shows close morphological and behavioral resemblance to ants provides strong survival advantages against predators. The egg laying behavior and the site selection for oviposition of *Myrmarachne plataleoides* was observed. During the period of three months, 5-7 successive clutches were laid by the spider. In the each clutch a silken platform is made and 5-8 eggs laid there.

Keywords: Salticids, *Myrmerachne*, Oviposition, Silken nest.

Introduction

Over the years some genera of harmless salticidae have evolved to imitate the warning signals of a harmful ant to predator¹. *Myrmarachne* is an ant mimicking spider which mimics ants morphologically and behaviorally. It belongs to jumping spiders' family salticidae. The members of this family have acute vision and complex eye structure². The spiders use these visual cues in capturing prey, mating and other activities. Egg laying behavior in salticids is not yet well described. Some literatures suggest that jumping spiders build wool like retreat silken nests on trees and in loosen barks and lays 10 to 20 eggs in their retreats. Maternal care can be seen in jumping spiders as the female stay with the eggs until they hatch and the spiderlings molt to first free living instar and disperse.

*Myrmarachne plataleoides*³ mimics the weaver ant (*Oecophylla smaragdina*). Males and females of this species are black in color (figure 1). After mating, the female makes hiding place of silk in a crevice or rolled-up leaf. Where, in the nests they lay eggs. They protect the eggs with a covering made of many layers of silk.

We have observed the egg production rate and the egg laying behavior of *M. plataleoides* at the Sirpur tank location of Indore region. The females of *M. plataleoides* lay clutches of eggs in a sequence. Many of the clutches had the viable off springs while 1 or 2 clutches did not hatch and no spiderlings were observed.

Material and Methods

During a casual visit, while surveying the spider fauna of Sirpur Tank, Indore, we observed a small web construct (figure 2), located on an unidentified shrub in the month of June, 2013. An examination of the construct revealed the presence of a Salticid spider *M. Plataleoides* inhabiting it. Two females of *M. plataleoides* were collected in the

vials from that area for the experiments. Both the spiders were reared in the laboratory and fed 4 fruit flies (cultured in the same laboratory) per day. While rearing in isolation, after 30 days from collection date both the spiders laid a clutch of eggs in difference of 8 days.

A total of 5-6 clutches were observed subsequently. Each clutch contained 5-8 eggs in it. The eggs were pale yellow in color which gradually converted into brownish orange. The difference of days between the two successive clutches was around 15-18 days. Two of the clutches were observed as they did not convert themselves into the viable off springs.

Table-1

Observations taken for three months on Egg laying behavior of *M. plataleoides*

Observations made on spiders	No. of clutches given	No. clutches hatched	No. of eggs laid in single clutch
<i>M. plataleoides</i> Female 1	7	5	5-8
<i>M. plataleoides</i> Female 2	5	4	5-7

Results and Discussion

Jumping spiders are selective about where they oviposit in nature, typically utilizing only a narrow range of microhabitat types present in their overall habitat⁴. Same as *M. plataleoides*, the female of *M. platypalpus* makes a silken platform on which she deposits 6 yellowish eggs that are covered with loose silk threads⁵.

Thiania sp. of family salticidae also constructs web in the form of nests made by binding a pair of green leaves together. The spider also uses the same structures for resting, molting and ovipositing⁶.

Some lyssomanine salticids lay eggs that are loosely covered with silk and the eggs are usually widely spaced under the silk^{7,8}.

The month of June and July must be the breeding season of these spiders. According to the table 1, the number of eggs laid in *M. plataleoides* is usually 6-8. While in other spider of same family *Chrysilla lauta* lays 10 eggs in a clutch.



Figure-1
Male and female of *Myrmarachne plataleoides*



Figure-2
A female of *Myrmarachne plataleoides* on nesting leaf

According to Eberhard⁹, the rate of egg production also depends on the rate of prey capture or food availability. More the spider is fed; more will be the tendency to produce viable offsprings. In the experiment, the spider was fed enough food. So that it gave a multiple number of successive clutches.

Some of the clutches of both the *M. plataleoides* did not hatch. As some spider species lay a batch of trophic eggs the day after the viable offspring have emerged, there was a possibility that the clutches might have contained trophic eggs. Trophic eggs are the eggs laid only to provide nutrition to the freshly hatched spiderlings.

Conclusion

The description of egg laying behavior is based on the observations made in isolation and laboratory conditions. The site selection for oviposition and egg laying behavior of various species of salticidae has been studied and well documented in many parts of the world but the similar studies on Indian forms are still poorly studied. In general, the present effort by us is an attempt to fill that gap and help contribute towards better understanding of Indian salticids.

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