Journal of Entomology and Zoology Studies

Available online at www.entomoljournal.com

E-ISSN: 2320-7078
P-ISSN: 2349-6800
www.entomoljournal.com
JEZS 2024; 12(4): 206-209

Received: 22-05-2024
Accepted: 20-06-2024

Yogita Ninama
Associate Professor, Department of Zoology, SBP Govt. College, Dungarpur, Rajasthan, India

Different stages of common Mormon (*Papilio polytes*) butterfly on Indian curry plant (*Murraya koenigii*) at home in Dungarpur (Southern Rajasthan)

Yogita Ninama

DOI: https://doi.org/10.22271/j.ento.2024.v12.i4c.9369

Abstract
The life history of the *Papilio polytes* common Mormon butterfly was studied on the curry plant (*Murraya koenigii*) at home garden. The different stages of adults, eggs, larvae, and pupae were mentioned. The life cycle is completed in 27-35 days. The present study was accomplished at Dungarpur in Southern Rajasthan in 2024. Sequentially observation of different stages from the eggs on the curry leaves and growing larval forms of Common Mormon described with pictures. This paper explained that a suitable environment and plant at home gives opportunity to observe and research on *Papilio polytes* larval stages.

Keywords: *Papilio polytes*, *Murraya koenigii*, Dungarpur, Southern Rajasthan

Introduction
Butterflies are the most beautiful gift of nature. Its bright colours inspire us to remain positive and environmentally. Butterflies occupy a vital position in ecosystems and their occurrence and diversity are considered as good indicators of the health of any given terrestrial biotope (Aluri and Rao.2002: Kunte.2000) [1, 3]. Selection of the host plant depends on the perception by the adult female butterfly of plant chemical cues (Nakayama and Honda, 2004) [4].
Swallowtail butterfly's zoological name is *Papilio polytes* which belongs to the family Papilionidae. Adult male and female have tail (lobe like structure) at the end of the hind wing. Life cycle of the *Papilio polytes* was observed on Indian subcontinent garden plant, Murrya Koenigii belongs to the Rutaceae family. According to K. Shobana *et al.*, 2010 [2], M. koenigii was found to contain rich quantities of carbohydrate. The identification of different stages from egg to adult were sequenced photographed.

Materials and Methods
Study area
At my home on the leaves of *Murraya koenigii* belonging to the family Rutaceae in Dungarpur, Southern Rajasthan.

Methodology
The observation and photographs were done at home in Dungarpur city in Rajasthan. The duration of observation was from egg to adult stages in January month in 2024. Photographs were taken at each stage of life cycle. These photographs were taken by Samsung GALAXY S23 ULTRA.

Observation
During the observations of *Papilio polytes* life cycle, eggs were identified on the upper part of the tender leaves under bright sunshine. Approximately 8-12 eggs laid by female and distributed one to two eggs per leaves. The eggs were in round shape and yellow colour. Growing larvae depends on young leaves of M. koenigii and egg incubation period and feeding behavior of the newly hatched larvae were noted. Photographs were taken in appropriate time of larval, pupal stages and the adult emergence. Sexual dimorphism is present and Both are in black and tailed.

Corresponding Author:
Yogita Ninama
Associate Professor, Department of Zoology, SBP Govt. College, Dungarpur, Rajasthan, India

Oviposition: Adult lays eggs on the leaves of *Murraya koenigii* belonging to the family Rutaceae. As shown in figure. 2 eggs were laid on leaves prone to bask daylight. (Fig.1 & 2)

1.

2.

Fig 1, 2: Host Plant (*Murraya koenigii*) & Oviposition

First Instar stage: First instar wrapped up in 2 to 3 days. Head was round, brown, smooth. The body was a pale brown. Tufts of setae are located at the thorax and also at an anal region. After the first molt their setae disappeared. Egg shell which it becomes out was the first diet of the first instar. (Fig. 3)

Fig 3: First Instar (a & b)

Second Instar: caterpillars depend on curry leaves. The rough body with white marking was caramel brown at the abdomen and anal regions on a dorsal profile. bulky thorax on the lateral sides of both head and anal regions, 2 spines develop. (Fig.4). As the life cycle observed some caterpillars were lost by spider. (Fig.5)

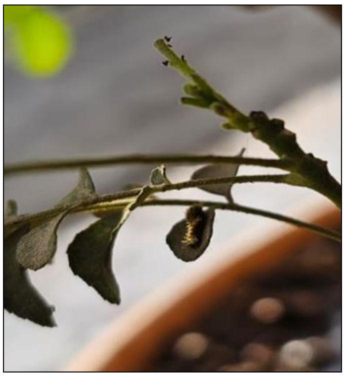

Fig 4: Second Instar

Fig 5: Spider attack on instar

Third stage instar: 3 to 4 days enough for growing larva. Spines presents at the both ends and increase in length of body (Fig. 6)

Fig 6: Third Instar

Fig 7: Fourth Instar

Fourth instar: The abdominal of the body was brown and the posterior was green with 2 brown and horizontal bands on the thorax and 2 lateral brown bands and 2 brown spots below them on the abdomen, and a horizontal brown band at the anal region. The body was segmented in 13 segments with 3 pairs of legs coloured brown, 4 pairs of prolegs and 1 pair of claspers. (Fig. 7)

Fifth instar: Fifth instar becomes dark green, smoother and remain bands. Other features are look like fourth stage. (Fig. 8)

Fig 8: Fifth Instar Stage

Fig 9: Pre- pupa stage

Pre-pupa: The pupa retrenched and attached to the substratum. (Fig. 9)

Pupa: (Fig. 10 & 11) V-Shaped wide green colour pupas posterior end was pointed and it was attached to the substratum. The pupa was dome-shaped in dorsal side and indented in ventral surface. The development period from the egg to adult was 27-35 days.

Fig 10: Pupa stage

Fig 11: V- Shape pupa (Pupation)

Eclosion - The common Mormon butterfly, *Papilio polytes*, acquire 14-16 minutes to emerge from its pupa, laterly about 40-45 minutes to dry their wings to circulate blood (Fig.12). After emerging, the butterfly crawls up a dry twig to pump its wings (Fig.13).

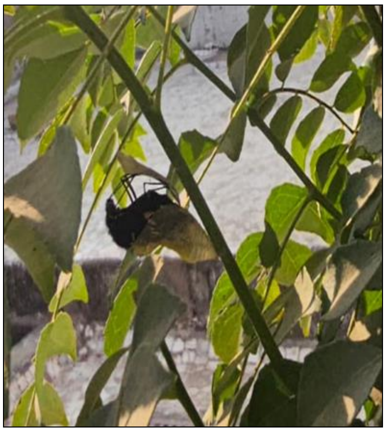

Fig 12: Eclosion (emerging from the pupal case)

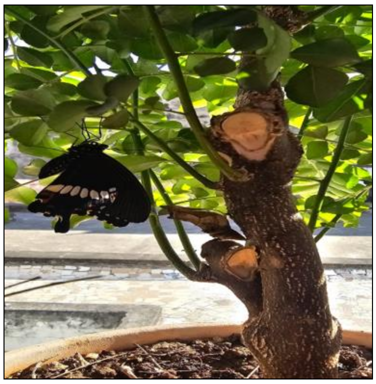

Fig 13: Adult *Papilio polytes*

Conclusion

Beautiful life cycle of common Mormon *Papilio polytes* (Papilionidae) was reported on Indian subcontinent garden plant, Murrya Koenigii belongs to the Rutaceae family. This is a good indicator of environmental quality of Dungarpur. Their short life cycle, good for research such as Batesian mimicry, polymorphism and host on good nutrient plant.

Declaration

Original photographs provided here was the direct observation stages from egg to adult in common Mormon.

Ethical Approval

These observations are the interest of author.

References

1. Aluri JSR, Rao SP. Psychophily and evolution consideration or *Cadaba fruticosa* (capparaceae). Journal of the Bombay Natural History Society. 2002;99(1):59-63.
2. Shobana K, Murugan K, Naresh Kumar A. Influence of host plants on feeding, growth and reproduction of *Papilio polytes* (The common Mormon) Journal of Insect Physiology. 2010 Sep;56(9):1065-1070
3. Kunte K. A life cape of butterflies of peninsular India. University Press, Hyderabad; c2000.
4. Nakayama T, Honda K. Chemical basis for differential acceptance of two sympatric rutaceous plants by ovipositing females of a swallowtail butterfly, *Papilio polytes* (Lepidoptera, Papilionidae). Chemoecology. 2004;14:199-205.