Original Research Paper

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Zoology

STUDY ON THE DEVELOPMENT OF THE RED PIERROT BUTTERFLY *TALICADA NYSEUS* IN MANJARI STUD FARM-PUNE, MAHARASHTRA, INDIA.

Chavan Sunita Prabhanjan

Department of Zoology, Annasaheb Magar Mahavidyalaya, Hadapsar, Pune

ABSTRACT The Talicada nyseus butterfly is seasonal, small, found in Indian subcontinent, Manjari Stud Farm area which is rich in flora and fauna. I observed Talicada nyseus in the month of February 2020 in my terrace Garden. Caterpillar of Talicada nyseus was feeding inside the Bryophyllum leaf. A single egg is laid on the Bryophyllum leaf. Egg is hatched after 4-5 days. After hatching, larva develops in 14-20 days inside the leaf. Pupation period is completed in 9-11 days. Pupa is formed without formation of cocoon. Change in colour and size is observed during pupation. Black red Talicada nyseus butterfly is hatched.

KEYWORDS : Talicada nyseus , Terrace garden in Manjari, Kalanchoepinnata , life-cycle

INTRODUCTION:

Insects are important qualitatively and quantitatively in the world . however , conservation circles have given too little attention to the ecological significance of insects (New et al.1995)

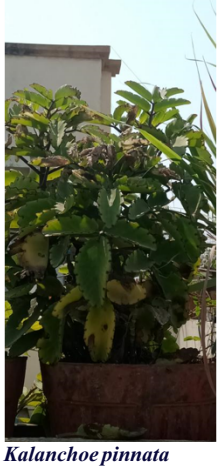
India is credited for its richness in Butterfly fauna is also witnessing the declines in Butterfly populations , and small populations are more likely to become extent (Wriqt 1983) to improve the existing low population and to restock the species in the area of their total disappearance , Butterfly farming is often suggested (Varshney 1986) for the execution of such programs Terrace garden helps to increase the population of declining Butterfly species . This butterfly species is known so far through three sub species : *Talicada nyseus nyseus, Talicada nyseus khasianand, Talicada nyseus burmana.* It is usually found around semi-arid plains , evergreen forest and semi evergreen forest , hill stations ,gardens. It is found near its nutrition plant *Kalanchoe* spp. . The larva of *Talicada nyseus* feeds on the mesophyll tissues of the *Kalanchoe* spp. leaves without disturbing the upper and lower epidermis. The larva has adapted itself to protect from outer predators (birds ,etc.). An adult butterfly commonly feeds on nectar (Karunaratne et al. 2002)

MATERIAL AND METHOD-

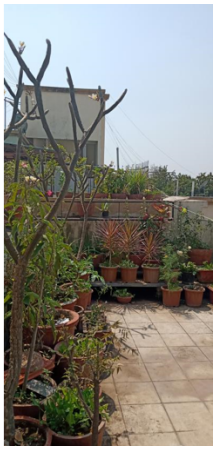
I selected my terrace garden which is 20*10 feet located on fourth floor in Manjari stud farm ,surrounding area is rich in flora. About 40 different species are grown in terrace garden .

The observation was carried out in the month of February, aerated transparent plastic bottle was used for collection of caterpillar inside the bryophyllum (*Kolanchoe*) leaf .

Daily pictures were taken with the help of realme 3i mobile camera 13+2 megapixel.



Kalanchoe pinnata



Study site (Terrace garden)

RESULT AND DISCUSSION :

Description of butterfly - Male and female individual are morphologically identical ,upper side was black and lower side was white' Dorsally fore wings are black with rectangular black and white border line which are present on the edge of wings, posterior portion of hind wings was orange in colour .Lower anterior portion of fore wings are white with black spots , posterior portion are black with white spots.

Lower anterior portion of hind wings are white with black spots ,posterior portion are orange with white spots.

Antennae and legs are black and white in colour .

Habitat-

They are found in semi -arid plain evergreen patches ,semi-evergreen forest, gardens -near the host plant *Kalanchoe* .

Habits-

The Red Pierrot is weak flier ,found close to the garden near host plant . It visits flowers .

Host plant- *Kalanchoe* pinnata was used for the study of *Talicada nyseus.*

Egg stage-

The female lays eggs singly on the leaf petiole ,stem, ,egg is circular ,blue in colour . When oviposited the colour turned white just before hatching . Hatching period was 4-5 days The larva did not feed on its eggshell ,it passed through five distinct instars in span of 14-20 days .

Larval stage -

The length of first instar larva was 1.8-2.0 mm, and width of 0.4-0.6 mm. Colour was light green ,changes in colour and sizes were observed.,body was dorsoventrally flattened ,hairs are appeared on the body . last instar larva size grew up-to 1.4-2.0 cm in length ,width was 0.4-0.6cm.

It almost finished one leaf before pupation .I kept that leaf in small transparent plastic bottle *Talicada nyseus* caterpillar came out and stopped feeding it got attached to the plastic bottle lid .After attaching it was only metabolically active its physical and locomotory movements were stopped.

Pupation Stage-

At the time of pupation , caterpillar does not weaves silk pad ,pupa resembled the caterpillar

Day 1-

It appeared light red in colour ,size were 1.4 cm in length and 0.5 cm in width. Black dotted two lines on both lateral side and gut wall appeared .

Day 2-

Pupa appeared in cream colour size was same gut wall appeared in last four abdominal segments. Dotted two line were same.

Day 3-

Thorax and abdomen was easily distinguished . thorax colour was light green and abdomen region was light reddish cream in colour ,on

the mid-dorsal side six black dots appeared .Bristle like hairs was appeared .abdomen was swollen , head region was constricted.four pairs of black dots was present laterally.

Day 4 -
Thorax colour was light green and abdomen was bright cream . Remaining character was same .

Day 5,6,7 and 8-
Thorax colour was changed into light grey ,abdominal character was same as in previous day pupa.

Day 9-
Colour of thorax was changed , it appeared in light grey in colour. Abdominal characters were same as the previous day.

Day 10-
Thorax region was bulging upward abdomen was same.

Day 11-
The anterior portion of head and thorax were totally black in colour, abdominal mid-dorsal portion appeared light black around the black dots ,colour was changing vigorously within four hours ,the colour of pupa changed into completely black.
The butterfly was almost completely formed.

Day 12-
The *Talicada nyseus* butterfly hatched from anterior dorsal region ,first the wings was weak and constricted, after some time the wings was fully formed and it was able to fly.

Pupation period-
DAY 1 to DAY 11

CONCLUSION-
Terrace garden would be successful habitat to increase butterfly population in urban and suburban area.

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