

Study of Household Bagworms (Psychidae- Lepidoptera) from Dongarkharda Village of Yavatmal District, Maharashtra, India

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ABSTRACT

Yavatmal district is the third largest district after Nagpur and Amravati in Vidarbha by population which is surrounded by dense forest. Total forest area in Yavatmal district is 2508.010 Sq/km which is 18.46% of the geographical area of the District. Kalamb is one of the Taluka of Yavatmal District rich in both flora and fauna including Durug, Madkona, Zadkinhi, Devnala, Potgavhan & Dongarkharda are the well-known forests of the district. Trees like teak, bamboo, Tendu, Hirda, Apta and moha available in the forests. Wild-bear, Deer, Nilgai, Sambar and Hyena are some of the animals found in the forests. Bag worm protecting themselves by closing in a bag, so it is sincere attempt to find out about Creature (bagworms) from my village started survey of houses from my surroundings during September – October 2020 daily from 10 AM to late Evening. In search of bagworms 10 houses were surveyed and found bagworms were reported from only 3 houses. In current study total 47 species were reported and 13species were successfully recognized from 5 different genera.

Key Words: -Bagworm, Case, Dongarkharda,.

I. INTRODUCTION

The larval form of the Bagworm put up bags made up of silk and environmental resources such as plant debris, dirt, leaves of plants or from grass materials. These bags are sediments to rocks, foliage or branches at the time when they are in inactive phase or throughout their pupa stage otherwise mobile when they are active or in search of food. Bagworm, also are a family of the Lepidoptera which includes butterflies and moths, but comparatively bagworm family is quite smaller with in relation to 1,350 species belonging to 241 genera (Van Nieukerken et. al., 2011) these all species from Lepidoptera are found worldwide, out of which some are snail case bagworm (*Apterona helicoidella*). While the larvae of some species feed on lichen, and others favors green leaves while some eat spider webs, wool, and the superfluous larval bags of members of its own species. Hampson published 36 species in 1892, from British India together with Sri Lanka and Myanmar. Currently in India 106 species belonging to 34 genera have been found to occur (Sobczyk & Thomas 2011)

In several species, the adult females not have wings and are as a result they may be difficult to identify exactly. Shuhei Niitsu (2003) .The first evidence of these species came from Lord Walsingham in 1897 (Busck, 1933). Though, the species he collected from the Virgin Islands were not recognized properly.

Mostly all household Bagworms require high moisture for its complete development, a preventive factor for its spreading during the rest of the State. Hetrick (1957) studied that the insect in various parts of Florida and Louisiana, as well as USDA records of the household bagworms from Mississippi and North Carolina. He also found that these species might be present in the coastal areas of Alabama, Georgia, South Carolina, Texas and Virginia. Though, appropriate identification by a professional taxonomist is suggested as few other unidentified but identical species were also studied.

In its larval period, the bagworm has three set of legs as well as fake legs. It is found that that the real legs are actual which helps it walk on floors, even the fake legs through hooks on the tops permit them to walk within its defensive case.

II. MATERIAL AND METHODS

A) Study Area

Area selected for study of bagworm is outskirts area around the village of Dongarkherda of is about on 79.01 E; 19.88 N; in Kalamb Taluka. According to Census 2011 information the location code or village code of Dongarkherda village is 542335 the forest is dense with great floral and faunal diversity. The temperature of area ranges from 31.0°C to 38.0°C. The region receives an annual rainfall of 289.7 mm to 510.9 mm during the monsoon between Junes to September. The relative humidity varies from 25-59%.



Map of India showing Yavatmal



Satellite image :- Study area Village Dongerkherda District Yavatmal

Fig 1:- Satellite Map of Study Area

B) Methods

The bagworms were photographed using mobile camera ASUS Zen phone 3 with camera resolution of 16M (4:3) and few were collected by handpicking in plastic container for further development while some were left to its habitat; repetition of collection was avoided. Available keys are used to identify but no mature adult were recorded to its actual identification.

C) Observation:-

During study it is observed that the case constructed by larvae of bagworms is a slightly , horizontal and equally flattened , tapering at both ends; or spindle-shaped case which look or seem like Seed of a pumpkin which is made up of a silk-lined jacket inside and opens at both ends.

Completely shaped cases are 7-13 mm long and 4-5 mm wide. Once a larva has constructed its case, it not at all leaves its case and its all Biological activities such as feeding, excretion, molting, and pupation were took place inside the same case. To feed collected larvae we used older webs of spiders, some fresh leaves and some sort of dry grasses respectively in plastic container but unfortunately no evidences were reported of feeding.



Larvae 1



Larvae 2



Larvae 3



Larvae 4

Plate 1:- *Lepidoptera* Larvae**III. RESULT & DISCUSSION**

In the above study , it was found that in only 4 out of 10 houses where plaster was applied on walls we found bagworms, on another hand in one or two places only molds were found in cowsheds. By this it is noticed that plaster applied wall absorbs a lots of moisture in rainy season's & winter, so bagworms may have been found there.

All most all Bagworms (Lepidoptera) Constructed carrying cases for the period of their larval stage of life cycle. In order Lepidoptera such cases were created in a lot of families (e.g., Psychidae, Tineidae, Mimallonidae, Stenomidae), and show a discrepancy between genera in relation to size, shape, and materials. They may be tapering, elliptical, spherical, oval, rounded spindle-shaped. Cases studied amongst order Lepidoptera reveals the only ones similarity with genus *Phereoeca* of family Tineidae.. Mainly entire study of bagworms morphology, taxonomy, habit and habitat, life cycle were described here was taken from keys and identification charts of Aiello's(1979).

Total Number of Organisms:	47	Total Number of Species:	13
Average population size:	3.615	Decimal Accuracy:	4

$$\text{Simpson Index Approximation } \frac{\sum_i n_i^2}{N^2} 0.09552$$

$$\text{Shannon Index } - \sum_i \left(\frac{n_i}{N} \cdot \log_2 \left(\frac{n_i}{N} \right) \right) 3.514$$

Table Shows Bagworm Species from Study area.

Genus - *Narycia*

Narycia berecynthia

Narycia scelerata

Genus *Typhonia*

Typhonia colonica

Typhonia cremata

Typhonia deposita

Typhonia devincta

Typhonia imparata

Typhonia infensa

Genus *Sapheneutis*

Sapheneutis colocynthia

Sapheneutis galerita

Genus *Acanthoecia*

Acanthoecia larminati

Acanthopsyche bipars

Acanthopsyche elwesi

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