

# Mythimna L. - Album L. – Biological and Ecological Properties of White Linear Moth

Khonnazarova M.T<sup>1</sup>., Majidova G.D<sup>2</sup>.

<sup>1</sup>Tashkent State Pedagogical University named after Nizami, the Department of “Zoology and anatomy”, teacher

<sup>2</sup>Tashkent Medical Academy, the Department of “Normal and pathological physiology”, teacher

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**Abstract-** This article involves the information on the biological and ecological features of the white linear moth butterfly. The white linear moth can develop in two full generations and can conduct winter at the stage of adult worm of third generation in the Tashkent region. White linear moth's one generation develop during 65-70 days. They damage agricultural crops such as cotton, carrots, and corn, barley and wheat plants. This moth is also a pest of agriculture.

**Index Terms-** Moth, larvae, egg, imago, butterfly, environment, biology, ecology, Mythimna L.

## I. INTRODUCTION

**The actuality of the theme:** Among the agricultural pests, the most main family belongs to Noctuidae. Despite various measures against to them, moths have been damaging to the crops for some years. But it should be noted that not all the moths are harmful. Among them there are some species included in the Red Book. For example, *Charidea delphini* L., *Catocala fraxini* L. are Red Book species.

**The studied level of the problem.** In recent years, great attention is paid to finding new ways of protecting plants against pests. These methods should help to reduce the use of insecticides or abstain from self-injury. The study of the relationship between phytophage insects and nutritional plants is a matter of current research. Therefore, it is necessary to reconsider the strategy of plant cultivation.

**The result of research work.** Insects, including of the moths family, are adapted to live in a variety of climatic conditions, all of which are phytophages, which are fed by the leaves, roots, stems and fruits of plants. Naturally, depending on their living conditions, they differ greatly with their external structure, biological and ecological properties.

The all family of moths is subdivided into two ecological groups. The groups of plants live on the soil, which is the group of species nourished by roots, and the groups of nourishing with the soil surface. Why do we name the tunnel butterfly? Because of these butterflies live from got dark until the morning, and especially they are active in the evening and at night. Adult life cycle, which is the time of flight of butterflies, it depends on environmental factors. It is particularly important that the temperature ( $t^0$  C) and the length - shortness of the day is important. The activation of the moths occurs at a specific temperature in every species. Early spring species start to fly when

the temperature is + 10 - 12<sup>0</sup> C, and hot like species are activated only when the temperature exceeds +20<sup>0</sup>C.

Hot days in Tashkent will continue from early spring to late autumn, so many moths are polycyclic and develop in two or more generations. Developing species in one generation, in the summer, will pass the diapason.

Phenomenology of moths is also highly dependent on nutritional plants. Worms of early spring species eat the ephemeras and weed grasses. The more activated species can eat, especially the agriculture crops.

As a result of our research we found 18 species of tunnel butterflies in the territory of Tashkent city. They belong to the following families: Noctuidae, Hadenidae, Plusiidae, Jaspidiidae and Helothinae. A brief overview about biology, food plant and distribution are given by a number of specialists (Kojanchikov, 1937; Chechekin, 1965, Merjeevskaya, 1967, Sukharyeva, 1970, Shek, 1975, etc.) on adopted systematics [3].

Worms of white linear tunnel eat everything, a polyphage. They damage agricultural crops such as cotton, alfalfa, corn, barley, wheat. White linear tunnel - *Mythimna L. – album L.* belongs to the Hadenidae subfamily of moth's family (Noctuidae). According to our observations, the size of a butterfly is 30-35 mm, when spread its wings. The previous wings are gray, transverse lines and spots are not seen. In the middle of the previous wing, there is a white dot linear in the shape of 1. The back wings are gray. The butterfly flies in beginning of May to the end of September. It is widely spread in Europe, North Africa, Turkey, Iran, Altai, Central Asia and Kazakhstan.

In the condition of Tashkent region, medium and old age worms live under plant remedies. In early April, the worms come out of wintering and begin to feed with herbs. At the same time the leaves of cotton plant, corn, alfalfa and other crops will be extremely damaged by worms. The butterfly of worm puts egg one by one on the lower and upper parts of the leaves of the plants.

White linear tunnel has two full generations in the Tashkent region and it was observed that the third generation is wintered at the worm stage (Table 3). The butterflies of their first generation start flying in early May. At this time they are fed with the flower nectar and juice of early blooming plants. Butterflies of their first generation live between 15 and 17 days. Eggs develop for 12 to 14 days, worms for 25 to 28 days and pupas develop for 15 days.

The butterflies of the second generation will fly 17-18 days from the beginning of July. Eggs develop 7 - 10 days. We have observed that the worms of this generation developed for 30-

35 days. In our view, the reason for the development of so many times is that it is caused by the heat of the air and the lack of moisture. The development of the pupa will last for 15 days as the first generation [1].

The butterfly of its third generation flies from the first five days of September to the beginning of October. The developments of the third generation are wintered from the end of September to the end of October, middle and the adult aged worms in the November.



Picture 1. *Mythemna L. - album L.*

One of the most important and characteristic feature of the white linear life cycle is the transition to the summer diapason at the imago stage. Flight time in southern Tajikistan is observed from mid-May to the beginning of June and in the middle, the first ten days of June until mid of July lasts in Samarkand, from mid-June to mid-July in Azerbaijan. This period occurs during the period of butterflies feeding and their fertilities. At the same time, the butterflies go to diapason, which in Central Asia, in Kazakhstan until the end of August, until the beginning of September in Azerbaijan, then begins the 2<sup>nd</sup> period of the flight, and this period continues until the autumn. During this time, the pair of butterflies and egg laying will take place. This flight period

breakthrough in the wild moth, sometimes it strengthens the 2<sup>nd</sup> generation. This moth gives 1 generation everywhere. Females leave the diapauses period and lay eggs in 10- 20 days. The diapauses period ends on August 20, in Samarkand. In the second half of September, they lay eggs. The maximum number of eggs is 738.

According to S.V. Aliyev's data, at temperature + 20.5 - 21 ° C in the laboratory conditions, one female butterfly lays from 528 to 634 eggs. The worms of this moth are wintered in the egg. The worms leave the egg shells in the end of March or April. Their worms live in the soil. They age is 6 and can develop during 35-45 days [2].

They turn into pupa in the depth of 6-15 cm of soil. The nymph state is 5-8 days, and pupa period is 20-35 days. It does not exceed 2 weeks in Tajikistan. The worms are fed with about 50 plants, many of which plants are cultivated. They primarily eat the wild plants between cultivated plants. From agricultural plants such as corn, alfalfa, cotton plant, sunflower, tobacco, sugar beet, cabbage, cucumber, watermelon, melon, barley, wheat, brown, linen leaves or buds are damaged.

The worms feed` with plants in the evening. Often old aged pests (IV - VI) will damage to the plants. They feed seedlings, grasses, grains, leaves, and occasionally take the remains of the plants into the soil. The worms are found near damaged plants in the soil during the daytime.

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#### AUTHORS

**First Author** – Khonnazarova M.T, Tashkent State Pedagogical University named after Nizami, the Department of “Zoology and anatomy”, teacher

**Second Author** – Majidova G.D, Tashkent Medical Academy, the Department of “Normal and pathological physiology”, teacher