

Subject: Entomology

Class: B.Sc. (Hons.) Ag.

Second Semester

Name of the Paper: **Fundamentals of Entomology**

Topic: Types of larvae and pupae

Dr. Awaneesh Chandra

Assistant Professor

Email: robincsa@gmail.com

Department of Entomology Faculty of

Agriculture

Government Degree College Jakhini Varanasi

Larvae: Larval stage is the active growing stage. It is the immature stage between the egg and pupal stage of an insect having complete metamorphosis. This stage differs radically from the adult.

Types of larvae : There are three main type of insect larvae namely oligopod, polypod and apod, based on the number of legs they have.

1. Oligopod: Thoracic legs are well developed. Abdominal legs are absent. There are two subtypes.

a. Campodeiform larvae : They have a long fusiform compressed body, well sclerotized cuticles sensory equipment, prognathous head, long thoracic legs, a pair of abdominal processes and absence of dorsal ocelli . Larvae are generally predators and are very active, e.g. grub of lady bird beetle.

b. Scarabaeiform : Body is C shaped stout and sub-cylindrical. Head is well developed. Thoracic legs are short. Caudal processes are absent. Larva is sluggish , burrowing into wood or soil ,e.g. grub of rhinoceros beetle.

2. Polypod larvae : They have well defined segmented body and characterised by the presence of abdominal limbs or prolegs , peripneustic tracheal system , presence of little developed antennae and thoracic legs and 10 pairs of abdominal legs . The typicals of this type are seen in cruciform larvae of Lepidoptera, sawflies and scorpion flies.

3. A podous larvae : They are degenerate type of larvae which are legless, robust, C- shaped or spindle with or without well developed head, presence of three pairs of sensory papillae in the place of thoracic legs and devoid of trunk appendages.

Pupa : It is the resting and inactive stage in all holometabolous insects. During this stage, the insect is incapable of feeding and is quiescent. During the transitional stage, the larval characters are destroyed and new adult characters are created. There are three main types of pupae.

1. Obtect : Various appendages of the pupa viz., antennae, legs and wing pads are glued to the body by a secretion produced during the last larval moult. Exposed surface of the appendages are more heavily sclerotised than the inner surface, e.g. moth pupa. Pupa of mosquito is called tumbler. It is an obtect type of pupa. Pupa of butterfly is called chrysalis.

2. Exarate : Various appendages viz., antennae, legs and wings pads are not glued to the body. They are free. All oligopod larvae will turn into exarate pupae. The pupa is soft and pale e.g. pupa of rhinoceros beetle.

3. Coarctate : The last larval skin is changed into a pupal case and the pupa is actually an exarate pupa. The pupal case is dark brown, barrel shaped, smooth with no apparent appendages and called as puparium, e.g. Fly pupa.

References – A Text Book of Entomology by Dr. Mathur and Dr. Upadhyay.
INSECTA AN INTRODUCTION by K. N. RAGUMOOORTHY, V. BALASUBRAMANI, M. R. SRINIVASAN and N. NATARAJAN.

Self-declaration: The content is exclusively meant for academic purposes and for enhancing teaching and learning. Any other use for economic/commercial purpose is strictly prohibited. The users of the content shall not distribute, disseminate or share it with anyone else and its use is restricted to advancement of individual knowledge. The information provided in this e- content is authentic and best as per my knowledge.