

# Larval-Morphology in *Dytiscus Marginalis*



Dr. Sapna Kumara  
+2 Zoology teacher.  
M.R.D.Girls high school  
Sitamarhi 843302.(Bihar), India

## ABSTRACT

This research work on larval-morphology of *Dytiscus marginalis* describes , about its external features as well as the larval behavior. The significant features makes the larvae voracious and carnivore behaviour in their habitat.

**Keywords** :- carnivorous , canniblastic , water-tiger , curved mandibles , scorpion , ‘ s ’ or question mark shape , spiracles , pupal-skin , pupation.

## INTRODUCTION :

The larvae of *Dytiscus marginalis* are exclusively carnivorous , canniblastic having voracious appetite for the prey , so commonly known as – ‘ WATER TIGER.

## HABITAT :

The larvae are found in lentic ecosystem that have still or slow-running water , like : ponds , ditches , Lakes , river etc.

## MORPHOLOGY

### SHAPE AND SIZE :

#### Larva of *Dytiscus marginalis*

- The Larvae of *Dytiscus marginalis* slim and elongated body with a round and flat head.
- The Larvae are generally elongate and range from 3 to 60 mm in length at maturity , while the adult beetles are generally range from 27-35 mm.



## MOUTH-PARTS :

### JAWS & MANDIBLE

#### Larva showing distinct mouth parts

- Larvae of *Dytiscus marginalis* have large, pointed frightening sickle-shaped jaws which are sunk into the prey like hypodermic needle.
- They possess large, hollow, curved mandibles which are used to pierce and enject the digestive enzymes into their prey and resulting 'soup' is sucked and ingested.
- The Larvae often look like scorpion in water, because their tail extended vertically upward during movement. Due to bended tail in upward direction the body of larvae have 's' or 'question mark' shape.



### LEGS

- The larvae have 3 pair of legs [ 6-long legs ] differentiated into – Forelegs, Midlegs and the hindlegs.
- These are modified by long hairs for swimming.

### RESPIRATORY ORGANS :

- Larvae are aquatic, taking oxygen either through cuticle or with the support of tracheal-gills.
- To take atmospheric oxygen from the surface of water, the larvae frequently push the tail up through the water surface. These taken air leads to the air-holes or spiracle. So the larvae is lighter than water because it inhaled the air.

### PUPATION

- The full grown larva is fatty and heavy which chooses shallow water where larvae keeps its tail-tip in contact with the air.
- At maturity, Larvae crawl from the water and move to moist-mud or soil on the shore, where they dig a small hole, and burrow themselves into a pupal-skin and wait for pupation. Where they pupate.
- The pupal-stage lasts for 5-14 days after which the new beetle emerges out from the pupal-skin.
- New beetle is white and soft and has to stay in the pupal hole for a few days to get harden and body colour dark.

## CONCLUSION

On the whole, we can see that Larvae which also known as water tiger are very significant to its name because the larvae are more greedy than the adults beetles but very much ecofriendly with aquatic as well as terrestrial ecosystem.

## REFERENCES

- [1]. ^ a b Miller , K.B.; J. Bergsten (2016).
- [2]. Diving Beetles of the World: Systematics and Biology of the Dytiscidae. pp. 115-116. ISBN 978-1-4214-2054-7.
- [3]. ^ Miall, L. C. (1912) The natural history of Aquatic Insects. Macmillan and Co. Ltd.
- [4]. ^ Jackson D.J. (1958) A further note on a *Chrysocharis* (Hymenoptera, Eulophide) parasitizing the eggs of *Dytiscus marginalis* L., and a comparison of its larva with that of *Caraphractus cinctus* Walk. (Hym., Mymaridae) J. Soc. Brit. Entomol. 6:15-22.
- [5]. 4. ^ Jackson D.J. (1996) Observations on the biology of *Caraphractus cinctus* Walker (Hymenoptera, Mymaridae), a parasitoid of the eggs of Dytiscidae. II. Immature stages and seasonal history with a review of mymarid larvae..
- [6]. Parasitology. 51:269-294.
- [7]. Dytiscidae Species List at joel Hallan's Biology Catalog. Texas A&M University. Retrieved on 7 May 2012.