

New Report on *Hydra viridissima* Pallas, 1766 (Cnidaria, Hydrozoa, Hydridae) from Chingleput Lake, Tamil Nadu- India.

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ABSTRACT:

Hydra viridissima Pallas, 1766, a green colour fresh water polyp is well known for over 200 years for its remarkable regenerative capacity. New informations on the genus *Hydra* collected from Kolavoi Lake, Chingleput is reported here with its morphometric features. This is the first report on the occurrence of *Hydra viridissima* (Pallas, 1766) from the Kolavoi Lake, Chingleput. Tamil Nadu - India.

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INTRODUCTION:

Hydra occupy fresh water habitats, belongs to the phylum Cnidaria and is an offshoot from sister bilaterians. Hydra polyp exhibit tube shaped body posses an apical hypostome cultured on the mouth opening and surrounded by a circle of tentacles and at the aboral extremity - a basal disc. *Hydra* has the ability to regenerate any missing structure after bisection upon regular intake of food materials (Simona Chera et al , 2009).

Hydras are common in bodies of water in every continent except Antarctica (Holstein, 1995). They are reported to be absent from oceanic islands such as Hawaii and Tahiti (Hickson, 1930; Mumford, 1940 a). They are small creatures common in lakes, ponds and streams; attached to litters, stones and tree roots. They generally resembles marine hydroids but does not undergo all trace of medusoid stages and bear the gonads directly and solitary under normal conditions.

It exhibits a radial symmetry, reproduces asexually by budding (Pennak, 1953) at the base of the stomach region; successive buds appear as spiral sequence in the distal direction. Sexual reproduction is generally related to season (i.e., temperature dependent). It usually occurs in autumn or early winter in most species but in spring and early summer in the green hydra. They may be either dioecious or hermaphroditic (Libbie HH , 1959).Its green colour is due to the presence of symbiotic green algae—*Zoochlorellae*—in its endodermal cells. (Edmondson, 1959)

The modern systematic position of *Hydra* was drawn out by Schulze (1917) based largely on the European fauna. Previous reports were not available on the occurrence of the green hydra particularly in Chingleput Lake, Tamil Nadu – India. Here the systematic position of the green hydra of Chingleput Lake reported for first time.

Systematic position

Phylum	:	Cnidaria
Class	:	Hydrozoa
Order	:	Hydroida
Sub order	:	Anthomedusae
Genus	:	<i>Hydra</i> / <i>Chlorohydra</i>
Species	:	<i>viridissima</i>

Materials Examined:

Kolavoi Lake, Chingleput:

Kolavoi Lake is located in the Chingleput district and it is 58 Km away from the Chennai City. It is one of the largest lakes of Chingleput district. People use this lake water for agriculture,

recreation and fishing activities. It is a perennial lake irrigating about 200h area covering 12 nearby villages. The total capacity of the lake is 13.50 Mm³. The water spread area is 8.82 Km². The Kolavoi Lake is 3.3 Km long and 1.6 km wide. This lake is infested by the aquatic vegetation (Bharathi, 2003).

The hydras were collected using 120 µm mesh size plankton net near the littoral sites where aquatic vegetation spread over enormously. At the state of free floating, *Hydra viridissima* can be collected using plankton net. In addition, during post monsoon season (30th January 2011) ,20 liters of water were collected from the Lake with the littoral vegetation and transferred to the aquarium tank in the laboratory. Then the hydras which are present in the tank were observed under the labomed microscope and Morphometric measurements and photographs were taken for further identification. The pH recorded was 8 which was slightly alkaline and temperature (°C) observed at the time of sample collection was 22°C.

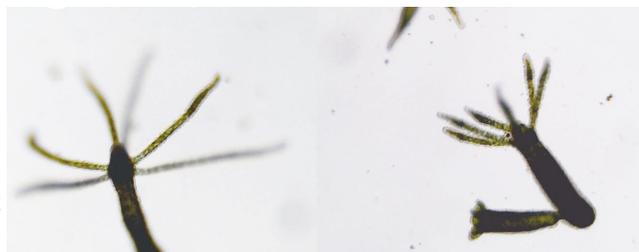
Identification:

Only freshly collected polyps were examined for the study.

Taxonomic account:

Hydra viridissima (Pallas, 1766)

Hydra viridissima are the most widespread and abundant hydra in Kolavoi lake Chingleput especially from the Paranur railway station area. Freshly collected polyps were measured between 0.4 mm to 2 mm in length (Fig. A). The fresh collections were maintained under laboratory conditions fed three *Ceriodaphnia cornuta* individuals per day. When appearing relaxed, the polyps were measured as 4 to 10 mm in column length. They usually possess 6 to 8 tentacles. As individual polyps grow older and increase in size, the stalk grows and eventually becomes the size of the upper portion of the column and sometimes larger. *Hydra* when fed three *Ceriodaphnia* can be able to produce one or two buds per polyp per day (Fig. B & Fig. C). Nematocysts were also found on



A: Hydra – Single Polyp B: Hydra Polyp with bud.

the tentacles. Two headed hydra were also seen (Fig. D & Fig. E).



C: Hydra Polyp with bud **D: Two headed Hydra - Relaxed State.**



E: Two headed Hydra - Relaxed State.

Hydra viridissima are hermaphroditic in nature. But sexual hydras were not reported from our sample collections. These hydras are phototactic and often crowd into one area within a culture tank.

Based on literature records, we conclude that our report is the first on the occurrence of *Hydra viridissima* (Pallas, 1766) from the Kolavoi Lake, Chingleput.

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