

A STUDY OF LEECH FAUNA OF MARATHWADA REGION, MAHARASHTRA

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Leeches are physiologically full of zoological paradoxes and are famous for their blood sucking ectoparasitic habits. A great deal of information is available on the taxonomy and biology of leeches. Some literature has also been contributed separately on physiology (Hagadorn, 1962; 1966 a, b; 1969; Kulkarni *et al.*, 1989; Natesan *et al.*, 1992) and ecology (Mann, 1962) of mostly temperate leeches. However, ecology of tropical leeches as such remain mostly unexplored. Moore (1927) reported that *Haemidipsa sylvestria* from Assam enters the water voluntarily during dry season and swims actively. Bhatia and Bora (1973) and Bhatia (1977) studied the bionomics and distribution of land leeches of Kumaon Hills, Uttar Pradesh, India. Land leeches are also reported in large numbers in grass pastures adjacent to ponds which are often visited by domestic animals for grazing. There is hardly any report on the leech fauna of Marathwada region. Hence, it was decided to fill this lacuna by throwing some light on leech fauna of this region in Maharashtra State. Identification of leeches was done with the help of Zoological Survey of India, Calcutta.

Study area

Three major areas of Marathwada region were screened for leech species. Meteorological data of the study regions for the last two years are presented in Table 1.

Aurangabad Region

Delhi Gate (Salim Ali pond) at Aurangabad

This is a temporary freshwater littoral pond located 7km north-east of Dr. Babasaheb Ambedkar Marathwada University. It dries at least once a year at the end of May and is situated in an open area. It has a depth of 10 to 15 m and diameter of 500 to 850m. The pond is flooded in the first week of July due to the onset of monsoon. The leeches *Hirudo birmanica* (Blanchard) and *Poecilobdella viridis* (Blanchard) are found in abundance here.

Pandharpur

It is about 10 km west of the university. The pond called Khajan

is situated near Maharashtra Industrial Development Corporation (MIDC) area. The periphery and bottom of the pond is muddy and is frequented by cattle. *Poecilobdella viridis* are found in large numbers.

Khultabad

The bank of river Kham near Khultabad, about 17km north to the university is an ideal place for grazing cattle. After monsoon, the river usually flows till the end of February every year. *Poecilobdella viridis* are found in abundance on the rocky bank.

Parbhani Region

Parbhani

It is about 170km south to the University. The pond is located behind the Industrial Training Institute and is rich in leech fauna. Usually bottle green coloured *Poecilobdella granulosa* (Savigny) and black coloured *Hirudo birmanica* are found in this pond.

Gangakhed

The pond is located near railway station, 190km south to the University. The shore is muddy and rocky, and it has a muddy bottom. The pond is mainly used for laundry. *Poecilobdella viridis* and *Poecilobdella granulosa* are found here, but their numbers are less as compared to ponds with clean water. The population may be affected by the detergents used in laundry.

Pathri

This area is very rich in leeches compared to other sites. The pond is located near the railway station, and contains water till the end of February/March. Normally, *Poecilobdella viridis* and *Hirudo birmanica* are found in abundance.

Nanded Region

Nanded

It is about 270km south-east to the university. River Godavari is located in the MIDC area. A major dam named Nath Sagar is constructed on this river at Paithan in Aurangabad region, hence the water released down the stream is limited. Usually *Poecilobdella granulosa* and *Hirudo birmanica* are found in this water.

Gudsur

This is a water reservoir called Kolhapuri bandhara (percolating tank) which is built on the stream about 300km south to the university. Water is available most part of the year. Heavy grass attract cattle for grazing. *Poecilobdella viridis* is found in large numbers.

Observations and Discussion

During monsoon, after the first few showers leeches become very active but when continuous rain sets in, they crawl under dead leaves on the ground or attach to rocks. During bright sunshine they hide under stones or go into the burrows and

Table 1. Meteorological data of last two years with mean figures of various parameters in Marathwada region.

Region	Rainfall (mm)			Humidity (am/pm)			Temp (min/max °C)		
	R	W	S	R	W	S	R	W	S
Aurangabad	134	90	21	72.15/ 41.25	76.90/ 35.25	31.25/ 15.45	22.90/ 32.90	16.25/ 29.20	19.50/ 36.60
Parbhani	132	94	40	70.25/ 40.50	83.50/ 40.25	55.25/ 24.00	23.25/ 33.25	16.80/ 29.50	18.00/ 36.12
Nanded	156	102	37	76.45/ 41.25	87.25/ 43.25	51.50/ 22.25	24.50/ 33.80	17.10/ 30.25	19.25/ 37.25

R - Rainy; W - Winter; S - Summer

resume their activities when it is cloudy. They are more active and alert when rays of early morning sun fall on them. After a full blood meal, they remain sluggish for a number of days, but those that had not got an opportunity of procuring meal come out of burrows at the slightest disturbance. *Poecilobdella viridis*, *Poecilobdella granulosa* and *Hirudo birmanica* are remarkably adept at taking considerable quantities of blood (about 30ml by a 15cm leech) at a time. They attack most of the warm blooded animals but most of their victims are cattles and buffalows.

The popular belief about the medicinal value of leech is due to the secretion of a cocktail of substances from the salivary glands that acts as an anticoagulant. In 1977, Dr. Roy Sawyer of United Kingdom has isolated Hementin from *Haementeria ghillani*. In March 1996, Dr. Topol tested the Ciba-Giegy's compound Hirudin derived from leech, whereas in April 1996, John Maraganore discovered another leech derived compound called Hirulog under the ownership of 'Biogen Inc'. In all, more than 10 drugs have so far been derived from leeches, hoping to be used in treating embolisms, arthritis and glaucoma (Wall Street Journal, April 1996).

Leech fauna is the medicinal wealth of Marathwada region, and the best way to conserve this precious treasure of nature is to leave their habitat and population undisturbed. A thorough study of leech fauna of entire Maharashtra is recommended.

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