



LEECH FAUNA OF BIBHUTI BHUSAN NATIONAL PARK, WEST BENGAL INDIA

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INTRODUCTION

Bibhuti Bhusan National Park (Latitude 22° 11' 16" North to 23° 15' 12" North and Longitude 88° 20' East) is situated in the district of North 24 Parganas, West Bengal. Previously it was named as Parmadan Park. Principally it is a deer park. But most of other faunas are found in this park. There is a canal just outside border of the park. Medicinal plants and different types of trees of this park attract the people. So, fascinating beauties of the flora and fauna of the area lure the travelling loving people of India. These aquatic and terrestrial faunas are not only for the common people but also for the scientists. Aquatic and terrestrial Leech fauna of this National Park attract the Taxonomists very much.

Throughout the world, 700 species of leeches are sustaining with 64 species occurring in India, out of 30 species of leeches in West Bengal, only 9 species are recorded from North 24 Parganas (Mandal, 2010). In a comprehensive account of the leech fauna of India, Harding and Moore (1927) recorded most of the leeches of India. Soota, and Ghosh (1977) worked on leeches of India. Ghosh (1998) found 18 leech species from West Bengal. There was no collection from Bibhutibhusan Park in North 24 Parganas district before this survey. The present work records 6 leeches from the park area. One species, *Placobdella fulva* is recorded here for the first time from this district. The species was previously recorded from Purulia, Calcutta,

Howrah, Midnapur, Bankura, South 24 Parganas, Nadia, Murshidabad, Jalpaiguri (Mandal, 2010).

MATERIAL AND METHODS

In course of survey almost all niches are taken into consideration to find out the leech individuals occurring in the habitat/ ecosystem. In case of free-living species 5 sites from a selected ecosystem (water body) are taken into consideration to note the number of leeches occurring in the system. From each site/station an area of 30² cm has been selected at random and the numbers of leeches occurring there are counted. The mean of such five readings are considered for actual population density per 30² cm which is computed into no/m². In case of parasitic and malacophagous leeches, attempt is made to note the number of leeches attached with the host body. In such case five or more host individuals are taken into account at random and mean would be considered for population density of this external parasite per host. The malacophagous leeches are counted on the basis of samplings of pelagic molluscs from an area of 30² cm from the concerned water body. Also in this case five such samplings are taken and the leeches attached/infested with snails are counted and mean of the five readings were considered for the final data. Preserved samples were sorted very carefully using binocular microscope. After the collection, the material was washed in fresh water and then allowed to relax in water by slowly mixing many drops of 70%

alcohol at frequent intervals for about 2 hours to avoid twisting or breaking of the specimens and then transferred to 70% alcohol for preservation. All the specimens are deposited with National Zoological collections of Z.S.I., Kolkata.

SYSTEMATIC ACCOUNT

Phylum ANNELIDA

Class HIRUDINEA

Order RHYNCHOBDELLAE

I. Family GLOSSIPHONIDAE

1. Genus *Glossiphonia* Johanson, 1816

Glossiphonia weberi Blanchard, 1897

2. Genus *Hemiclepsis* Vejdovsky, 1883.

Hemiclepsis marginata asiatica Moore, 1924.

3. Genus *Placobdella* Blanchard, 1893

* *Placobdella fulva* Harding, 1920.

Order ARHYNCHOBDELLAE

II. Family ERPOBDELLIDAE

4. Genus *Herpobdelloidea* Kaburaki, 1921.

Herpobdelloidea lateroculata Kaburaki, 1921

5. Genus *Nematobdella* Kaburaki, 1921

Nematobdella indica Kaburaki, 1921

III. Family HAEMADIPSIDAE

6. Genus *Haemadipsa* Tennent, 1859.

Haemadipsa sylvestris Balanchard, 1894.

Diagnostic characters of family Glossiphonidae

Mouth is a small pore on the oral sucker from which proboscis may be protruded; jaws absent; blood colourless. Mouth large, occupying entire cavity of the oral sucker; Proboscis absent; blood is red. Body ovate, flattened; anterior sucker ventrally fixed and fused with the body; posterior sucker cupuliform, distinct from rest of the body; eyes confined to head; three annuli per mid-body segment; gastric caeca present. Dorsoventrally flattened leeches confined to fresh-water; anterior sucker ventral and fused with the body while posterior sucker cupuliform; crop with paired lateral caeca; intestine always with four pairs.

Glossiphonia weberi Blanchard, 1897

Material examined: 2 exs., Bibhutibhushan Park, District 24 Parganas (N), West Bengal, 18.12.2008, Coll: C. K. Mandal, Reg.No. An 3729/1.

Diagnostic character: Body is ovate-acuminate. It is triangular in contraction. Larger form of this species, commonly called as bitten rice or Sumatra leech, attains a length of about 12 mm, general colour varies from grayish-white to light orange but usually white in preserved state; five longitudinal rows of dark brown spots; dorsal surface bears seven longitudinal rows of prominent papillae. Dorsal surface is rough due to the presence of tubercles on every ring. Eyes are three pairs on rings 6, 7 and 8; male and female genital ducts open by a common pore between rings 27/28; rings 70; mouth opens within the anterior sucker; crop with six pairs of sublobate lateral caeca, the last and the longest pair reflected posteriorly.

Distribution: India: Widely distributed throughout India. Outside India: Pakistan, Nepal, Myanmar and Sumatra.

Genus *Hemiclepsis* Vejdovsky, 1883

Diagnostic characters: Size medium with two pairs of eyes; complete somite formed of three rings; head region distinct from rest of the body; crop with more than seven pairs of lateral diverticula; mouth opens within anterior sucker.

Hemiclepsis marginata asiatica

Moore, 1924

Material examined: 2 exs., Canal of Bibhutibhushan Park, District 24 Parganas (N), West Bengal, 18.12.2008. Coll: C K. Mandal, Reg. No. An 3730/1.

Diagnostic characters: Body of the improporioned eyed leech (common name) is translucent, attains a length of about 16 mm and the greatest width of about 6 mm; head region dilated and distinct from rest of the body. Colour reddish brown but generally white in preserved state; transverse stripes broken, pale- yellow in colour found on the dorsal surface; eyes two pairs on rings 3 and 4 but the anterior pair very minute; male and female pores

open between rings 29/30 and 31/32 respectively; crop with eleven pairs of lateral diverticula; somite III is uniannulate.



Hemiclepsis marginata asiatica (Dorsal)

Distribution: India: Himachal Pradesh; Jammu and Kashmir; Meghalaya; Uttar Pradesh and West Bengal. Outside India: Canada; U.S.A; Paraguay; Andes; and western Asia.

Genus *Placobdella* Blanchard, 1893

Diagnostic characters: Body is flattened. One pair of eyes; anterior sucker imperforate and mouth opens upon its anterior ring, crop with seven pairs of branching diverticula.

Placobdella fulva Harding, 1920.

Material examined: 1 ex., Canal of Bibhutibhushan Park, District 24 Parganas (N), West Bengal, 18.12.2008, Coll: C. K. Mandal, Reg. No. An 3731/1.

Diagnostic characters: Body flattened but very slender anteriorly, head region continuous with the body; upper surface bright reddish-yellow but ventral surface white; each ring bears a large median papilla while middle ring of each somite bears on an intermediate and a marginal pair of papillae; rings 67: eyes one pair on ring 2, male and female pores open between rings 26/27 and 28/29 respectively.



Placobdella fulva (Dorsal)



Placobdella fulva (Ventral)

Distribution: India: Rajasthan; Bihar and West Bengal. Outside India: Java Sumatra.

Diagnostic characters of family Erpobdellidae

First pair of eyes on III or on IV, gonopores separated by three to five annuli.

Nematobdella indica Kaburaki, 1921

Material examined: 1 ex., Canal of Bibhutibhushan Park, District 24 Parganas (N), West Bengal, 18.12.2008, Coll: C. K. Mandal, Reg. No. An 3732/1.

Diagnostic characters: Larger forms attain a length of about 20 mm and width about 3 mm; form very slender, attenuated anteriorly; colour bright buff when alive but fades away in preserved state; eyes six pairs, the first pair larger and dorsal on somite III, remaining five pairs smaller, submarginal on somites V to XI; gonopores separated by five annuli.



Nematobdella indica (Dorsoventral)

Distribution: West Bengal; Himachal Pradesh; Madhya Pradesh; Rajasthan; Uttar Pradesh; Punjab, and Maharashtra.

Genus *Herpobdelloidea* Kaburaki, 1921

Diagnostic characters: Eyes one pair on head and five pairs on somites IV to IX; gonopores separated by five annuli.

Herpobdelloidea lateroculata Kaburaki, 1921

Material examined: 2 exs., Canal by the side of Bibhutibhushan Park, District 24 Parganas (N), West Bengal, 18.12.2008, Coll: C. K. Mandal, Reg. No. An 3733/1.

Diagnostic characters: Larger forms attain a length of about 27 mm and width of about 3 mm; form very slender, attenuated anteriorly; colour pale buff when alive but generally white in preserved state; eyes five or six pairs, the first pair larger and dorsal on somite IV; the remaining submarginal on somites V to VIII; gonopores separated by two and one-half to three annuli.

Distribution: India: Manipur; Assam; Rajasthan; Madhya Pradesh; Maharashtra; Odisha and West Bengal.

Diagnostic characters of family Haemadipsidae:

All the species are terrestrial; five pair of eyes

and gonopores usually separated by five annuli, jaws is three, teeth acute.

Genus *Haemadipsa* Tennent, 1859

Diagnostic characters: Third and fourth pair of eyes usually on continuous annuli, auricle present.

Haemadipsa sylvestris Blanchard, 1894

Material examined: 2 exs., Bushes of Bibhutibhushan Park, District 24 Parganas (N), West Bengal, 18.12.2008, Coll: C. K. Mandal, Reg.No. An 3734/1.



Haemadipsa sylvestris (Dorsal)



Haemadipsa sylvestris (Ventral)

Diagnostic characters: This species of leech is called 'the largest and robust land leech of India. Colour is plain yellow, with three dark brown stripes. The median line is narrower. Marginal stripes are bright yellowish orange. Number of sucker rays varying between 69 and 80. Prehensile papillae are little developed. Furrow pits are five pairs on VIII to XII.

Distribution: India: West Bengal; Sikkim; Assam; Arunachal Pradesh; Andaman and Nicobar Island; Meghalaya and Uttar Pradesh. Outside India: Myanmar, Java and Sumatra.

SUMMARY

6 species of leeches under 6 genera and 3 families collected from Bibhutibhushan Park are

described. Out of six, one species is reported for the first time from this District. The total number of leech species reported from 24 Parganas (North) district of West Bengal so far has reached 10.

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