

## One new aquatic Leech *Placobdella bundiensis* from Rajasthan, India

C.K. Mandal<sup>1</sup>, Poulami Paul<sup>2</sup>, Md. Nurul Hasan<sup>3</sup>, P.K. Bandyopadhyay<sup>4</sup>

<sup>1</sup>Zoological Survey of India, FPS Building, Kolkata-7000016

<sup>2</sup>Zoological Survey of India “M” Block New Alipore, Kolkata- 700053

<sup>3</sup>Zoological Survey of India, FPS Building, Kolkata-7000016

<sup>4</sup>University of Kalyani, Nadia, West Bengal

**Abstract – *Placobdella bundiensis* is described as a new species from Rajasthan. Small, flattened winged body, with distinct head region. Middle part of the body more in breadth than the two ends. Body length almost equal to its breadth. Eyes single pair, averted comma shaped. Crop caeca six pairs, with no branching. Anterior sucker about half the size of posterior sucker. Anterior sucker measures 0.5 mm. in diameter, posterior sucker, and 1.0 mm. in diameter. Number of rings 68 from anterior sucker to posterior sucker. Breeding time supposed to be in the month of July – August. Gonopores separated by two segment only. Male pore and female pores are very small. Male pore situated anteriorly (one third of the body), on 23-24 segment; and female pore on 25-26 segment.**

**Index terms – *Placobdella bundiensis* sp. nov. Hirudinea, Glossiphonidae, Rajasthan, winged body.**

### I. INTRODUCTION

There are more than 700 species (510 Freshwater, 100 marine and 90 terrestrial) of leeches (Annelida: Hirudinea) in the world (Siddall, 2008) distributed in 91 genera and 7 families (Sket and Trontelj, 2008), with one family, Americobdelidae, endemic to America. Harding and Moore (1924, 1927) contributed to description of many new species of leeches found in India. Soos (1965) has done pioneer work in Taxonomy of leeches of world. This was followed the valuable contributions from Soota (1977), Chandra (1983) and Ghosh (1998) with regard the taxonomy of leeches of India. Mandal (2004a, 2004b, 2013, 2015a and 2015b) contributed some aquatic leeches from India). Nesemann Hasko and Sharma

Gopal, 2012 worked on a new species of the leech family Salfidae. Till to date, 70 leech species under 25 genera and 6 families have been recorded from India (Mandal and Misra, 2017). Among the aquatic leeches, the family Glossiphonidae is represented by seven genera and 29 species in India (Mandal 2013). The genus *Placobdela* Blanchard, 1893 comprise 22 species in the world (www.gni.globalnames.org on 22.11.2016) with eight species known from India alone (Mandal 2013). The genus *Placobdela* is characterized in having one pair of eyes and crop with seven pairs of branching diverticula. During recent survey, one interesting species of leech has been collected from Rajasthan which is identified as new to science and described herewith as *Placobdella bundiensis* sp. nov. in the family Glossiphonidae.

## II. MATERIAL AND METHODS

One specimen from Hanuman Temple pond, Bundi District, Rajasthan (25°27' N, 75°41' E), has been collected during recent faunistic survey carried out by Zoological Survey of India. After making the collection, leech was cleaned. It was placed in a tray with a small quantity of water and was slowly killed by the anaesthetizing with drop-wise addition of alcohol allowing them to expand before death. Just after death, the leech was kept in 70% alcohol for permanent preservation. The measurements were taken by dial calipers with 0.1 mm accuracy. The identified specimen was deposited with the National Zoological Collections of the General Non-Chordata Section, Zoological Survey of India, Kolkata.

*Placobdella bundiensis* sp. nov:

Holotype: Z.S.I. A 40932/1, 1 ex., Hanuman Temple pond, Bundi district, Rajasthan, (25°27' N, 75°41' E), India, Coll. C.K. Mandal, 07. viii. 2014.



Fig.1. *Placobdella bundiensis*  
(Ventral-Upper)



Fig.2. *Placobdella bundiensis*  
(Dorsal-lower)

*Diagnosis:*

A species of the genus *Placobdella* Blanchard, 1893 with body breadth bigger than total length and having wing shaped structure of the lateral sides; single pair of averted comma shaped eye; six pairs of crop caecae, without branching and total number of rings 68.

*Description (Fig-1 & 2):*

Body whitish green in living condition, fade up at preserved state. Small, flattened winged body, with distinct head region. Middle part of the body more in breadth than the two ends. Body length almost equal to its breadth. Total length of the body is 4 mm and its breadth 4.1 mm due to its wing like structure of lateral sides. Eyes single pair, averted comma shaped. Crop caeca six pairs, with no branching. Anterior sucker about half the size of posterior sucker. Anterior sucker measures 0.5 mm. in diameter, while posterior sucker, 1.0 mm. in diameter. Posterior sucker not round, anteriorly slightly elongate, while posterior sucker almost round. Total number of rings 68 from anterior sucker to posterior sucker. Breeding time supposed to be in the month of July – August, by comparing the egg size at the time of collection. Gonopores separated by two segment only. Male pore and female pores are very small. Male pore situated anteriorly (one third of the body), on 23-24 segment; and female pore on 25-26 segment. Clitellar region relatively less swelled. Habitat: lakes with aquatic grasses and water hyacinth vegetation. It sucks the blood of mollusk sticking on their bodies. A living specimen becomes almost double in length after full extension.

*Habit and habitat:*

It is found in pond, sucks the blood of Mollusca. Lives in the lake where Aquatic grasses and water hyacinth are found.

*Distribution:*

Hanuman temple pond, Bundi district, Rajasthan, India.

*Etymology:*

The species name is proposed after the name of the locality where from it is collected first.

*Remarks:*

The new species is compared with all other species of the genus *Placobdella* known from India. *Placobdella bundiensis* sp. nov. closely resemble *Placobdella godavariensis* in body shape, but distinguished by its eye shape, colour, number of rings and single branched crop caeca in the body. Numbers of eyes are same in *P. fulva* and *P. bundiensis* sp. nov., but eyes and crops are completely different in these two species. *P. ceylanica* is clearly distinct in having three pairs of eyes. *P. indica*, *P. mydae* and *P. undulata* differs from this new species in having 70 or 71 body rings. *Placobdella bundiensis* sp. nov. is different from the new world species and others, viz., *Placobdella sp.* (Brackish water leech of Spain), *P. maurica* (Freshwater leech of New Zealand), *P. parasitica* (fresh water species), *P. lamothei* (Mexican marine leech), *P. stuhlmanni* (American marine leech), *P. costata* (brackish water leech), *P. ornate* (Marine) and Marine turtle leeches *P. translucens*, *P. bistrata*, *P. hollensis*, *P. mexicana*, *P. montifera*, *P. nuchalis*, *P. multilineata* etc. by the body pigmentation pattern, disposition of eye spots and arrangement of papillae on the body.

### III. COMPARATIVE MATERIALS

*Placobdella fulva* – An 2762/1, 3 exs., Calcutta, West Bengal; An 2767/1, 1 ex. Howrah, West Bengal; An 2782/1, 1 ex. Midnapur, West Bengal; An 2802/1, 1 ex. Bankura, West Bengal; An 2813/1, 1 ex. South 24 Parganas, West Bengal; An 2825/1, 1 ex. Nadia, West Bengal; An 2839/1, 1 ex. Murshidabad, West Bengal; An 2864/1, 1 ex. Jalpaiguri, West Bengal.

*Placobdella horai* – An 2783/1, 1 ex. Midnapur, West Bengal.

*Placobdella undulata* – An 2791/1, 1 ex. Burdwan, West Bengal; 2827/1. 1 ex. Nadia, West Bengal.

#### IV. SUMMARY

*Placobdella bundiensis* is described as a new species from Rajasthan. Due to having one pairs of eyes, it belongs to the genus *Placobdella*. It is distinguished in possessing the following characters. Body is flattened and elongated. Eyes are small, averted and comma shaped. Six pairs of caeca (without branch) are present in the body. Papillae are found on the mid-dorsal area of the body. Anterior sucker is round. It attacks molluscs. Egg number is 18. Number of rings is 68. The leech is whitish green in living. Length of a full-grown preserved specimen is 4 mm and width is 4.1mm. Posterior sucker is 1mm in diameter and anterior sucker measures 0.5 mm diameter. Body breadth is bigger than total length of the body due to its wing shaped structure of the lateral sides. It is a diagnostic character of the species. A living specimen becomes almost double in length in full extension.

#### V. ACKNOWLEDGEMENTS

Authors are grateful to Dr. Kailash Chandra, Director, Zoological Survey of India, for lucid suggestions during the study of the leeches and facilities. Our special thanks are due to Dr. Ch. Satyanarayana, O/C, and General Non-Chordata Section for encouragement and guidance. We extend our deep gratitude to Sri S.S. Mishra, Scientist “C” Marine Fish Section for his valid suggestions and staffs of General Non-Chordata section for co-operation.

#### REFERENCES

- [1] Boris Sket; Peter Trontelj, 2008. "Global diversity of leeches (Hirudinea) in freshwater". In E. V. Balian; C. Lévêque; H. Segers; K. Martens. Freshwater Animal Diversity Assessment. Hydrobiologia. 595. pp. 129–137.
- [2] Chandra, M. 1983. A check-list of leeches. Rec. Zool. Surv. India. 80 (3&4): 265-290.
- [3] Ghosh, G.C. 1998. Annelida: Hirudinea. State Fauna Series 3. Fauna of West Bengal.
- [4] Zool. Surv. India. Part 10: 227-249.
- [5] Mandal, C.K. 2004a. *Paraclepsia gardensi* (Hirudinea: Glossiphoniidae) a new species of Leech from West

- Bengal, India. *Rec. Zool. Surv. India*, 103 (Part1-2): 111-114.
- [6] Mandal, C.K. 2004b. *Placobdella harasundarai* (Hirudinea: Glossiphonidae) a new species of Leech from West Bengal, India. : 103 (Part1-2): 99-102.
- [7] Mandal, 2013. *Hemiclepsis chharwardamensis* sp. nov. (Hirudinea: Glossiphonidae). A new species of leech from Jharkhand, India. . *Rec. Zool. Surv. India*: 113 (Part-2): 153- 155.
- [8] Mandal, C. K. 2015a. A new leech from Jharkhand, India. *Paraclepsis jorapariensis* sp. nov. (Hirudinea: Glossiphonidae). *Rec. Zool. Surv. India*: 115 (Part-3): 263-267.
- [9] Mandal, C. K. 2015b. *Placobdella godavariensis* sp. nov. (Hirudinea: Glossiphonidae) A new leech from Maharashtra, India. *Rec. Zool. Surv. India*: 115 (Part-3): 269-272.
- [10] Mark Siddall, 2008. "Myth Busters: Leech Anaesthetic". *Bdellanea*. Retrieved December 15, 2013.
- [11] Moore, J.P. 1924. Notes on some Asiatic Leeches. Principally from China. *Proc. Acad. Nat. Sec. Philad.* 76: 343-388.
- [12] Moore, J.P. and Harding, W.A. 1927. *Fauna of British India, Hirudinea*. Taylor and Francis, London: 1-302.
- [13] Neesemann Hasko and Sharma Gopal, 2012. Description of a new species of the leech family Salfidae (*Odontobdella Krishna* sp. nov.) from the river Ganga at Patna, Bihar (India). *Rec. zool. Survey. India*: 111(Part-3): 1-7.
- [14] Soos, A. 1965. Identification key to the leech (Hirudinoidea) genera of the World, with a Catalogue of the species. 111-1V. *Acta. Zool. Acad. Hung.* 11(3-4): 415-464.
- [15] Soota, T.D. and Ghosh, G.C. 1977. On some Indian Leeches. *Newsl. Zool. Surv. India*: 3(6): 359- 360.