



## ON THE FIRST RECORD OF TWO SPECIES OF FRESH WATER LEECH (HIRUDINEA) FROM ARUNACHAL PRADESH

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### INTRODUCTION

Leeches are hermaphrodite animals with totally reduced both parapodia and setae, with unpaired male and female genital openings in the clitellum, sucker on both anterior and posterior end of the body, each somite divided with three to five annuli.

Leeches are mostly inhabitant of freshwater, some are terrestrial and a very few are live in saline water. Many leeches are blood-sucking on vertebrates and invertebrates; while others are mainly predators and rarely scavengers.

Some species of this group has important medicinal use from ancient time, its bio-active anticoagulant and anti-inflammatory substances are attracting medicinal and pharmaceutical attention. Beside this, these animals are now considered as a very promising model organism for ecological studies, particularly as bio-indicators in freshwater habitats. Taxonomical studies of leeches of India were carried out by several authors (Harding and Moore, 1927; Bhatia, 1955, Chandra, 1983; Ghosh, 1998; and Mandal, 2002, 2004) which reveals a total 63 species in respect of global diversity (680 species) it is remarkable (9.26%).

Arunachal Pradesh are considered as one of the important biodiversity Hot -Spot in India as well as in global context, so far a total seven species of leeches were recorded from this state (Mandal, 2006) and interestingly all those species are belongs to family Haemadipsidae and found in terrestrial habitat only.

During a recent faunistic survey tour to Arunachal Pradesh (2010-2011), the present authors collected some leeches from different freshwater habitats of this state, after investigation that reveals two species of freshwater leeches namely *Hemiclepsis marginata asiatica* Moore, 1924 and *Nematobdella indica Kaburaki*, 1921 belong to 2 families and 2 order. These species were not recorded earlier from this state, so this is the first record of this species from the state of Arunachal Pradesh.

The present communication deals with a brief description of those two species with a note on their habitat and distribution which are recorded here for the first time from this state.

### MATERIAL AND METHODS

After the collection, leeches were sorted out. Then the cleaned leeches were placed in a tray with a small quantity of water and were slowly killed by anaesthetizing with alcohol. Leeches usually die in an extended condition by the process. Just after death, the leeches were kept in 70% alcohol for permanent preservation. As fixing fluid 4% formalin were used.

### SYSTEMATIC ACCOUNT

Phylum ANNELIDA

Class CLITELLATA

Order HIRUDINEA

Suborder RHYNCHOBDELLIDA

I. Family Glossiphoniidae

Genus *Hemiclepsis* Vejdovsky, 1883

1. *Hemiclepsis marginata asiatica* Moore, 1924  
1924. *Hemiclepsis marginata asiatica* Moore, *Proc. Acad. Nat. Sci., Philad.*, 76: 343-388.

2010. *Hemiclepsis marginata asiatica*: Mandal, *Fauna of Uttarakhand, State Fauna Series*, 18(3):193-197.

*Material examined* : 2 ex. Noa-Dihing River near Miao, Changlang District, Arunachal Pradesh, India; 12. I. 2011; Regn. No. An 3727/1; Coll. J. G. Pattanayak and party.

*Diagnostic characters* : Length about 14 mm., width about 4 mm., colour pinkish white with yellowish green pigmented cells on the dorsal side; body smooth ventrally but rough dorsally; middle ring of each somite bears three pairs of larger dorsal papillae; eyes three pairs arranged in two sub-parallel columns; the first, second and third pairs of eyes lie on ring 3, 4 and 7 respectively; male and female pores open between 29/30 and 31/32 respectively; rings 73, mouth sub terminal; crop with nine pairs of lateral diverticula.

*Distribution*: India: Arunachal Pradesh; Assam; Himachal Pradesh; Haryana; Bihar; Jharkhand ; West Bengal; Rajasthan, Maharashtra; Andhra Pradesh and Karnataka.

*Remarks*: This species was found to attach with in the roots as well as in the lower side of the petiole of the leaf and also on the stalk of the *Eichhornia crassipes* plant, covered some portion of the surface area of Noa-Dihing river at Miao.

Suborder Arhynchobdellida  
II. Family Nematobdellidae  
Genus *Nematobdella* Kaburaki 1921

2. *Nematobdella indica Kaburaki*, 1921

1921. *Nematobdella indica* Kaburaki, *Rec. Indian Mus.*, 22: 689-719.

1983. *Nematobdella indica*: Chandra, *Rec. zool. Surv. India*, 80: 281.

*Material examined*: 4 ex. Fishery pond at Tafargram, Near Teju town, Lohit District, Arunachal Pradesh; India. 13. I. 2011; Regn. No. An 3728/1; Coll. J. G. Pattanayak and party.

*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, sub-marginal on somites V to XI; gonopores separated by five annuli.

*Distribution* : Arunachal Pradesh; Pradesh; Madhya Pradesh; Maharashtra; Rajasthan; Uttar Pradesh; Himachal Pradesh; Punjab; Karnataka and West Bengal.

*Remarks*: This species was found to attached with the dense root systems of *Pistia stratiotes*, a floating plants on the surface area of the pond at the collection site.

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#### REFERENCES

- Chandra, M. 1983. A check-list of leeches of India. *Rec. zool. Surv. India*, 80: 265-290.  
Ghosh, G.C. 1998. Leech In: *State Fauna Series* fauna of West Bengal. *zool. Surv. India*, 3.( Part 10): 227-249.  
Harding, W.A. and Moore, J.P. 1927. *Fauna British India. Hirudinea*, London, 1-302.  
Mandal, C.K. 2002. Checklist of the Hirudinea (Leech) of India. *Rec. zool. Surv. India*: 102 (Part1-2): 41-46.  
Mandal, C.K. 2004. Endemic leech fauna of India. *Rec. zool. Surv. India*, 103 (Part1-2): 103-110.  
Mandal, C. K. 2006. Leeches: *Zool. Surv. India, Fauna of Arunachal Pradesh, State Fauna Series*, 13(2): 47-48.