

EARTHWORM (ANNELIDA: OLIGOCHAETA) DIVERSITY AT SAGAR ISLAND, SOUTH 24 PARGANAS DISTRICT, WEST BENGAL

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Earthworms belong to Megadrili oligochaetes and correspond to the orders Moniligastrida and Haplotaenida excluding suborder Tubificina. Perrier (1872) was first to report an earthworm species *Perichaeta houletti* Perrier, 1872 from West Bengal. Thereafter, Beddard (1901), Michaelsen (1907) and Stephenson (1923) had contributed to the taxonomic studies of earthworms from West Bengal. Later, considerable work was done by Gates (1937, 1938a, b), Julka (1988), Soota & Halder (1981), Halder (1998), Chowdhury & Hazra (2009), Chowdhury *et al.* (2010, 2011).

A study was conducted between June 2017 and October, 2018. The aim of this study was to document the diversity of earthworm fauna in some habitats of Sagar Island. Specimens were collected from Rudranagar, Manasdwip (near Ramakrishna Mission Ashram), Ganga Sagar, Chemaguri, Kaylapara, Phoobar and Beguakhali.

The study area i.e., Sagardwip is situated in the Ganges delta near the confluence of the Ganges and the Bay of Bengal, which is nearly 100 km south of Kolkata in the district of South 24 Parganas of West Bengal. It is surrounded by the Muriganga river to the north and east and Hooghly to the west. It is popularly known as Gangasagar. This island faces severe threat from soil erosion, breach of embankments, loss of landmass and rising sea

level. The flora mainly consists of betel vine, paddy, sunflower, *Mangifera indica*, *Cocos nucifera*, and *Musa paradisiaca*. Other notable vegetations are *Bombax ceiba*, *Terminalia arjuna*, *Albizia lebbek*, *Bambusa tulda*, *Colocasia esculenta*, *Cynodon dactylon*, *Solanum nigrum*, *Centella asiatica*, *Coccinia cordifolia*, *Marsilea minuta* etc. Soil of this site is alluvial in nature and clay silt loam in texture. Some areas are muddy with a large content of organic matter and salt on the seashore and margins of estuaries. Collection, narcotisation and preservation of earthworm samples were carried out following Julka (1988) and the specimens were deposited in the collection of the East Calcutta Girls' College at the address above.

In the present study, 15 species of earthworms belonging to 5 families were recorded (Table 1). Out of 15 species, 6 species belong to family Megascolicidae, 5 species belong to family Octochaetidae, 2 species belong to family Moniligastridae and family Acanthodrilidae and Almididae each is represented by a single species. Among the earthworm population *Metaphire posthuma* were most numerous, whereas *Glyphidrilus tuberosus* were fewest. Population peak was observed during monsoon and post-monsoon season.

Table 1. List of earthworm species observed.

Sl. No.	Species	Family	Abundance during monsoon and post monsoon seasons
1.	<i>Pontodrilus bermudensis</i> Beddard	Acanthodrilidae	15-19/m ²
2.	<i>Glyphidrilus tuberosus</i> Stephenson	Almidae	1-3/m ²
3.	<i>Lampito mauritii</i> Kinberg	Megascolecidae	8-15/m ²
4.	<i>Metaphire posthuma</i> (Vaillant)	Megascolecidae	19-22/ m ²
5.	<i>Metaphire houlleti</i> (Perrier)	Megascolecidae	6-8/m ²
6.	<i>Perionyx excavatus</i> Perrier	Megascolecidae	10-15/m ²
7.	<i>Polypheretima elongata</i> (Perrier)	Megascolecidae	4-6/m ²
8.	<i>Amyntas corticis</i> (Kinberg)	Megascolecidae	4-6/m ²
9.	<i>Drawida nepalensis</i> Michaelsen	Moniligastridae	7-11/m ²
10.	<i>Drawida papillifer papillifer</i> Stephenson	Moniligastridae	9-12/m ²
11.	<i>Eutyphoeus incommodus</i> (Beddard)	Octochaetidae	5-6/m ²
12.	<i>Eutyphoeus nicholsoni</i> (Beddard)	Octochaetidae	3-6/m ²
13.	<i>Eutyphoeus orientalis</i> (Beddard)	Octochaetidae	6-9/m ²
14.	<i>Octochaetona beatrix</i> (Beddard)	Octochaetidae	2-7/m ²
15.	<i>Octochaetona surensis</i> (Michaelsen)	Octochaetidae	2-5/m ²

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References

Beddard, F.E. 1901. Contribution to the knowledge of the structure and systematic arrangement of earthworms. *Proc. Zool. Soc. Lond.* 1901: 187-206.

Chowdhury, A. & A.K. Hazra. 2009. New record of the earthworm *Octochaetona surensis*

(Michaelsen) from West Bengal. *Bionotes* 11(4): 127.

Chowdhury, A., A.K. Hazra, A. K. & A.P. Nandi. 2010. New record of the earthworm *Drawida papillifer papillifer* Stephenson from West Bengal, India. *Journal of Threatened Taxa* 2(2): 716-717.

Chowdhury, A., A.K. Hazra & A.P. Nandi. 2011. On Taxonomy and Ecology of Earthworms (Annelida: Oligochaeta) from uncultivated and waste disposal sites of West Bengal with some notes on their Microbial Association. *Rec. Zool. Surv. India, Occ. Paper No.*, 324: 1 – 190.

Gates, G.E. 1937. Indian earthworms. I. The genus *Pheretima*. *Rec. Indian Mus.* 39: 175-212.

Gates, G.E. 1938a. Indian earthworms. III. The genus *Eutyphoeus*. *Rec. Indian Mus.*, 40: 39-119.

Gates, G.E. 1938b. Indian earthworms. IV. The genus *Lampito* Kinberg. V. *Nellogaster* gen. nov., with a note on Indian species of *Woodwardiella*. *Rec. Indian Mus.* 40: 423-429.

Halder, K.R. 1998. Annelida: Oligochaeta: Earthworms. In: *State Fauna Series 3* (Z. S. I.): *Fauna of West Bengal*, Part 10: 17 – 93.

Julka, J. M. 1988. *Fauna of India and adjacent countries. Megadrile Oligochaeta (Earthworms): Family: Octochaetida.* Zoological Survey of India, Calcutta. xiv + 400 pp.

Michaelsen, W. 1907. Neue Oligochaeten von Vorderindien, Ceylon, Birma und der Andaman Inseln. *Mitt. Naturh. Mus. Hamb.* 24: 143-188.

Perrier, E. 1872. Recherches pour servir à l'histoire des Lombriciens terrestres. *Nouv. Arch. Mus. Hist. Nat., Paris* 8: 5-198.

Soota, T.D. & K.R. Halder. 1981. On some earthworms from eastern Himalayas. *Rec. Zool.*

Surv. India 79: 231-234.

Stephenson, J. 1923. *The Fauna of British India including Ceylon and Burma: Oligochaeta.* Taylor and Francis, London. 518 pp.