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EARTHWORMS OF NORTH 24 PARGANAS, WEST BENGAL

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INTRODUCTION

Soil animals may play a range of roles in vineyards. Decomposers (some of which are opportunistic herbivores) are important in nutrient dynamics, because by reducing organic matter to its constituents, they liberate nutrients usable by grapevines. Earthworms are only part of the complex of organisms termed “decomposers” in agroecology. As noted by Charles Darwin in his 1882 classic, *The Formation of Vegetable Mould Through the Action of Earthworms with Observations on Their Habits* (Werner, 1990), earthworms process huge quantities of plant litter and help to convert it into rich topsoil, liberating nutrients for renewed plant growth. More recent studies show that earthworms can help to reduce soil compaction, improving permeability and aeration. Earthworms do this through burrowing activities, ingestion of soil along with plant debris, and subsequent excretion of casts. Upon drying, these casts form water-stable soil aggregates. These aggregates are clumps of soil particles bound together by organic compounds, and their presence helps to improve soil structure, retain nutrients that might otherwise be leached, and reduce the threat of erosion (Lee, 1985). Earthworms are increasingly recognized as indicators of agro-ecosystem health and as important tools for ensuring soil improvement and efficient nutrient cycling.

In India, due to continuous biodiversity surveys of earthworms number of new species is increasing day by day, although in comparison to more than 3000 global species (Stephenson, 1923), the number of Indian species is far less (only 390). In an attempt to enhance the knowledge on biodiversity of Indian earthworms, the present authors explored 11 earthworm species in the district of North 24 Parganas of West Bengal, of which 6 have been identified as new to the district.

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SYSTEMATIC ACCOUNT

Phylum ANNELIDA

Class OLIGOCHAETA

Order HAPLOTAXIDA

Family MEGASCOLECIDAE

1. *Gtnus-Lampito* Kingberg

(a) *Lampito manrilii* Kingberg, *Ofvers. K. Vetens. Akad. Forhandl. Stockholm*, **23** : 103.

1998. *Lampito manritii*, Halder, *Fauna of West Bengal, State Fauna Series*, **3**(Part-10) : 17-93.

Material : 4 exs., Vivekananda Nagar, Madhyamgram, North 24 Parganas, West Bengal, 15.VIII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Andaman and Nicobar islands, Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Laccadeep and Minicoy islands, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh.

Outside India : Zanziber, Comoro Isl., Madagascar, Seychelles Isl., Mauritius, Pakistan, China, Maldives, Sri Lanka, Bangladesh, Myanmar, Thailand, Malay Peninsula, Indonesia, Philippines, Hong Kong, New Caledonia.

2. Genus *Meiaphire* Siams and Easton

(b) *Metaphire houletti* (Perrier)

1872. *Prerichaeta houletti* Perrier, *Nouv. Arch. Mus. Hist. Nat. Paris*, **8** : 99.

1982. *Melaphire houletti* Julka, *Rec. zool. Surv. India*, **80** : 142.

Material : 2 exs., Sarada Pally, Madhyamgram, North 24 Parganas, West Bengal, 15.VII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Andaman and Nicobar islands, Meghalaya.

Outside India : Nepal, Bangladesh, Myanmar, Malay Peninsula, Philippines, Java, Fizi islands, Farnosa, Indonesia, Thailand, U.S.A., Central America, Cuba.

(c) *Metaphire posthuma* (Vaillant)

1868. *Prerichaeta posthuma* Vaillant, *Annl. Sci. Nat., (Ser. 5)*, **10** : 228.

1972. *Melaphire posthutma* Siams and Easton, *Biol. J. Linn. Soc.*, **4**(3) : 239.

Material : 2 exs., Sarada Pally, Madhyamgram, North 24 Parganas, West Bengal, 15.VII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Maghalaya, Andaman islands, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan and Uttar Pradesh.

Outside India : Pakistan, Bangladesh, Myanmar, Thailand, Vietnam, Malay Peninsula, Indonesia, Philippines and U.S.A.

3. Genus *Perionyx* Perrier

(d) *Perionyx excavatus* Perrier

1872. *Perionyx excavatus* Perrier, *Nouv. Arch. Mus. Hist. Nat. Paris*, **8** : 126.

1998. *Perionyx excavatus* Halder, *Fauna of West Bengal, State Fauna Series*, **3**(Part-10) : 17-93.

Material : 6 exs., Vivekananda Nagar, Madhyamgra, North 24 Parganas, West Bengal, 15.VII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Meghalaya, Andaman island, Arunachal Pradesh, Assam, Himachal Pradesh, Maharashtra, Manipur, Orissa, Sikkim, Tamil Nadu and Uttar Pradesh

Outside India : Madagascar and its adjacent islands, Sri Lanka, Myanmar, Thailand, Vietnam, Malay Peninsula, Indonesia, Philippines, Taiwan and West Indies.

4. Genus *Eutyphoeus* Michaelsen

(e) *Eutyphoeus orientalis* (Beddard)

1833. *Typhoeus orientalis* Beddard, *Ann. Mag. Nat. Hist., (Ser. 5)*, **12** : 219.

1938. *Eutyphoeus orientalis* Gates, *Rec. Indian Mus.*, **40** : 98.

Material : 1 ex., Sarada Pally, Madhyamgram, North 24 Parganas, West Bengal, 15.VII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Bihar and Uttar Pradesh.

Outside India : Bangladesh.

*(f) *Eutyphoeus nicholsoni* (Beddard)

1901. *Typhoeus nicholsoni* Beddard, *Proc. Zool. Soc. Lond.*, **1901** : 195.

1903. *Eutyphoeus nicholsoni*, Michaelsen, *Geogr. Verbr.*, 109.

Material : 2 exs., Madhyamgram, North 24 Parganas, West Bengal, 15.VII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Bihar and Uttar Pradesh.

Outside India : Not recorded.

*(g) *Eutyphoeus incommodus* (Beddard)

1901. *Typhoeus incommodus* Beddard, *Proc. Zool. Soc. Lond.*, **1901** : 200.

1903. *Eutyphoeus incommodus* Michaelsen, *Geogr. Verbr.*, 109.

Material : 1 ex., Sarada Pally, Madhyamgram, North 24 Parganas, West Bengal, 15.VII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Bihar, Hariyana, Himachal Pradesh, Orissa, Punjab, Rajasthan and Uttar Pradesh.

Outside India : Pakistan.

*(h) *Eutyphoeus waltoni* Michaelsen

1907. *Eutyphoeus waltoni* Michaelsen, *Mitt. Naturh. Hamb.*, **24** : 179.

1966. *Eutyphoeus waltoni* Soota, *Rec. zool. Surv. India*, **64** : 179.

Material : 1 ex., Vivekananda Nagar, Madhyamgram, North 24 Parganas, West Bengal, 15.VII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Bihar, Gujarat, Madhya Pradesh, Punjab and Uttar Pradesh.

Outside India : Bangladesh.

5. Genus *Amyntas* Kingberg(i) *Amyntas diffringens* (Baird)

1809. *Megascolex diffringens* Baird, *Proc. Zool. Soc. Lond.*, **1869** : 40.

1972. *Amyntas diffringens* Sims and Easton, *Biol. J. Linn. Soc.*, **4(3)** : 235.

Material : 2 exs., Ramakrishna Pally, Madhyamgram, North 24 Parganas, West Bengal, 15.VII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal : Darjeeling; Jalpaiguri; Hooghly and North 24 Parganas, Arunachal Pradesh, Himachal Pradesh, Jammu and Kashmir, Karnataka, Manipur, Meghalaya, Sikkim, Tamil Nadu and Uttar Pradesh.

Outside India : Africa, Madagascar and its adjacent islands, Europe, China, Eorea, Japan, Sri Lanka, Nepal, Bhutan, Bangladesh, Myanmar, Indonesia, Philippines, Hainan, Hong Kong, Taiwan, Australia, New Zealand, some islands in the Pacific Ocean, U.S.A., Central America, West Indies and South America.

Family MONILIGASTRIDAE

6. Genus *Drawida* Michaelsen*(g) *Drawida nepalensis* Michaelsen

1907. *Drawida nepalensis* Michaelsen, *Mitt. Naturh. Mus. Hamb.*, **24** : 146.

1961. *Drawida nepalensis* Gates, *Burma Res. Soc. 50th Anniv. Pub. No. 1* : 57.

Material : 2 exs., Abdalpur, North 24 Parganas, West Bengal, 5.VI.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Andaman and Nicobar islands, Assam, Bihar, Himachal Pradesh, Meghalaya, Sikkim and Uttar Pradesh.

Outside India : Pakistan, Nepal, Bangladesh, Myanmar and Indonesia.

Family ALMIDAE

7. Genus *Glyphidrilus* Horst

*(h) *Glyphidrilus tuberosus* Stephenson

1916. *Glyphidrilus tuberosus* Stephenson, *Rec. Indian Mus.*, **12** : 349.

1987. *Glyphidrilus tuberosus* Julka and Senapati, *Rec. zool. Surv. India, Occ. Paper No.*, **92** : 6.

Material : 6 exs., Uttar Beel, Sonapukur, Haroa, North 24 Parganas, West Bengal, 21.VII.2005, Coll. C.K. Mandal.

Distribution : INDIA : West Bengal, Orissa and Tamil Nadu.

Outside India : Not recorded.

*New place record.

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- Julka, J.M. 1988. Fauna of India and the adjacent countries : Megadrile Oligochaeta (earthworms); Haplotaxida : Lumbricina : Megascolecoidea : Octochaetidae, XIV+400 pp. *Zool. Surv. Ind.*, Calcutta.
- Stephenson, J. 1923. The Fauna of British India including Ceylon and Burma. *Taylor and Francis*, 518 pp.
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