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# Checklist of earthworm species (Oligochaeta) of the Andaman and Nicobar Islands, India

P. Tiwari, N. Tiwari, S. Yadav

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## Abstract

*Checklist of earthworm species (Oligochaeta) of the Andaman and Nicobar Islands, India.* The study presents an extensive list of earthworm species that have been documented in the Andaman and Nicobar Islands of India. The text enumerates a total of 28 species and subspecies belonging to 16 genera and seven families. Among the identified species, four have been categorized as native peregrine, six as endemic, three as subendemic and 15 as exotic peregrine. The checklist serves as a point of reference for the primary account from the literature, the type locality, noteworthy synonyms, and data on distribution for every species and subspecies.

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Key words: Andaman and Nicobar Islands, Distribution, Earthworms, Exotic species

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## Resumen

*Lista de especies de lombrices de tierra (Oligochaeta) de las islas Andamán y Nicobar, India.* El estudio presenta una extensa lista de especies de lombrices de tierra que se han documentado en las islas Andamán y Nicobar de la India. El texto enumera un total de 28 especies y subspecies pertenecientes a 16 géneros y siete familias. Entre las especies identificadas, cuatro han sido descritas como invasoras nativas, seis como endémicas, tres como subendémicas y 15 como invasoras exóticas. La lista sirve como punto de referencia para describir el primer registro de la literatura, el tipo, los sinónimos destacables y los datos sobre la distribución de cada especie y subespecie.

Lista de datos publicada en [GBIF](#) (DOI: [10.15470/dkefty](https://doi.org/10.15470/dkefty))

Palabras clave: Islas Andamán y Nicobar, Distribución, Lombrices de tierra, Especies exóticas

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## Resum

*Llista d'espècies de cucs de terra (Oligochaeta) de les illes Andaman i Nicobar, a l'Índia.* L'estudi presenta una llista àmplia d'espècies de cucs de terra que s'han documentat a les illes Andaman i Nicobar de l'Índia. El text enumera un total de 28 espècies i subespècies pertanyents a 16 gèneres i set famílies. Entre les espècies identificades, quatre han estat descrites com a invasores natives, sis com a endèmiques, tres com a subendèmiques i 15 com a invasores exòtiques. La llista serveix com a punt de referència per a descriure el primer registre de la literatura, el tipus, els sinònims destacables i les dades sobre la distribució de cada espècie i subespècie.

Llista de dades publicada a [GBIF](#) (DOI: [10.15470/dkefty](https://doi.org/10.15470/dkefty))

Paraules clau: Illes Andaman i Nicobar, Distribució, Cucs de terra, Espècies exòtiques

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Pooja Tiwari, Nalini Tiwari, Shweta Yadav, Department of Zoology, Dr. Harisingh Gour Vishwavidyalaya (A Central University) Sagar, Madhya Pradesh, 470003 India.

Corresponding author: S. Yadav. E-mail: [kmschweta@gmail.com](mailto:kmschweta@gmail.com)

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## Introduction

Island ecosystems have been a subject of fascination for biologists and geologists for a long time. The study of island biodiversity has been a driving force behind the formulation of several prominent biological theories, including evolutionary concepts introduced by Charles Darwin and Alfred Russel Wallace. Due to its status as an epicentre of biological diversity, the Andaman and Nicobar region deserves particular consideration. The Great Nicobar Island is in closer proximity to Myanmar and Sumatra than to the Indian mainland. Over the course of millennia, due to evolutionary processes and geographical isolation, the island has acquired distinctive biological diversity. The Andaman and Nicobar Islands are an archipelago consisting of 349 islands located in the Bay of Bengal (fig. 1). The Andaman group comprises 325 islands, while the Nicobar group comprises 24 islands. The Andaman Islands exhibit Indo–Malayan biota, while the Nicobar Islands showcase Indonesian biota and are included in the Sundaland mega–biodiversity hotspot (Kulkarni and Karthick, 2018). The complete extent of the diversity and endemism present in these islands remains to be fully elucidated. The Andaman and Nicobar Islands are considered a highly valuable reservoir of biodiversity within the regions of South and Southeast Asia. The islands possess a distinctive characteristic of being a virtual bio reserve, exhibiting exceptional levels of biodiversity and abundance. There is a clear need to optimize the advantages derived from the abundant biodiversity present in these islands.

Documentation of earthworms from the Andaman and Nicobar Islands was first presented by Rosa (1891), who identified two earthworm species, namely *Lumbricus rubellus* Hoffmeister, 1843 and *Eisenia fetida* (Savigny, 1826) from the Nicobars. Michaelsen (1907) documented *Metaphire andamanensis* (Michaelsen, 1907), *Amyntas osmastoni* (Michaelsen, 1907), and *Amyntas suctorius* (Michaelsen, 1907) were endemic to the Andaman region. Stephenson (1925) and Gates (1932, 1936) reported additional endemic species within the present–day genera *Metaphire* Sims and Easton, 1972 and *Amyntas* Kinberg, 1867. The literature available to date on the earthworms inhabiting the Andaman and Nicobar Islands is restricted to the works of Michaelsen (1909), Stephenson (1916), Gates (1933, 1954, 1958, 1960, 1962), Julka and Halder (1975) and Julka (1982), Manazhy et al. (2011).

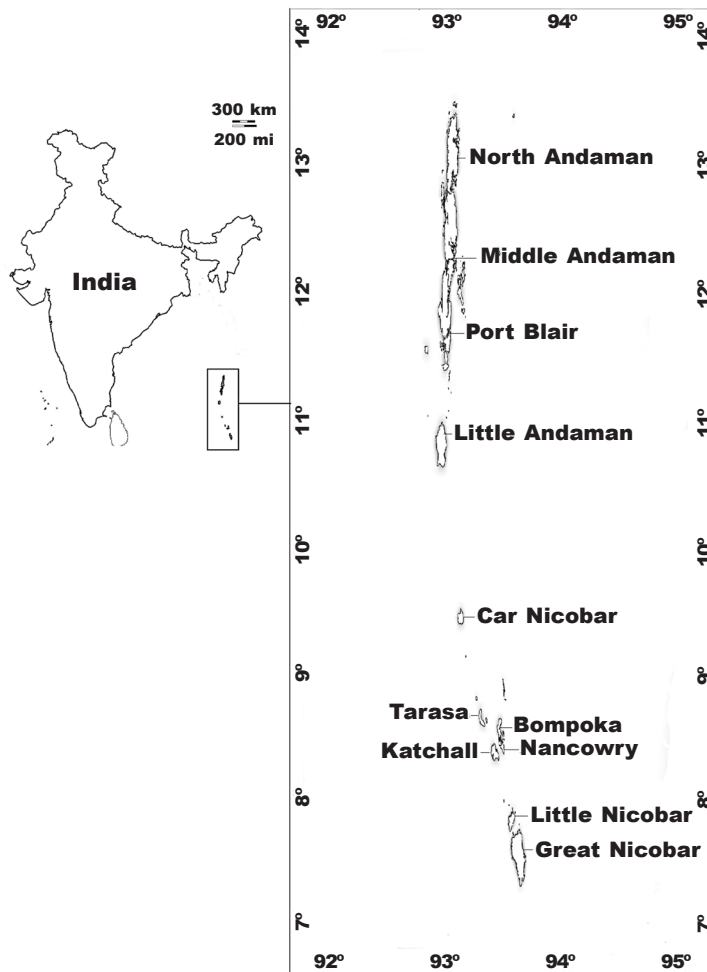


Fig. 1. Map of the study sites.

Fig. 1. Mapa de las zonas de estudio.

## Material and methods

The checklist presented here was developed following a comprehensive examination of the relevant literature up to the year 2024 (see also dataset published through [GBIF](#) with DOI: [10.15470/dkefty](https://doi.org/10.15470/dkefty)). The compilation of distributional data was sourced from taxonomic literature. The inclusion of ecological literature lacking precise geographic information has been considered for distribution and is denoted as 'unspecified localities' in the corresponding sections on species distribution. The subsequent segments comprise information pertaining to various species, encompassing: (1) the scientific nomenclature; (2) primary and associated literature; (3) alternative designations [primarily derived from initial depictions and publications by Gates (1972), Julka (1988), Csuzdi (2010), Blakemore (2016)]; (4) the location of the type specimen; and (5) the geographical range.

Furthermore, the study includes samples collected from the protected forests of the Andaman Islands, specifically Mahatma Gandhi Marine National Park, Saddle Peak National Park, and Wandoor. The specimens were preserved in a solution of 5% formalin and absolute alcohol for morphoanatomical and molecular analysis. The specimens were morphologically identified using various taxonomic parameters, including worm size, colour, setal arrangement, dorsal pores, and the presence of male and female gonopores. Each individual specimen was allocated a distinct voucher code for the purpose of identification and submitted to the Earthworm Biology Laboratory at the Department of Zoology, Dr. Harisingh Gour Vishwavidyalaya (A Central University) Sagar, Madhya Pradesh, India.

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## Results

### Family Acanthodrilidae

#### ***Ramiella bishambari* (Stephenson, 1914)**

*Octochaetus bishambari* Stephenson, 1914: 347 (Stephenson, 1914)

*Ramiella cultrifera* Stephenson, 1931a: 187 (Stephenson, 1931a)

*Ramiella bishambari* (Stephenson): Gates, 1972: 312 (Gates, 1972)

Type locality: Saharanpur, India

Distribution: Aberdeen (Gates, 1958, 1972; Julka, 1982, 1988), Port Blair (Gates, 1958, 1972; Julka, 1988)

Ecological categories endogeic (Miglani et al., 2022)

Status: native peregrine (Narayanan et al., 2023)

### Family Benhamiidae

#### ***Dichogaster bolavi* (Michaelsen, 1891)**

*Benhamia bolavi* (corr. *bolavi*) Michaelsen, 1891: 9 (Michaelsen, 1891)

*Benhamia malayana* Horst, 1893: 35 (Horst, 1893)

*Benhamia octonephra* Rosa, 1895: 2 (Rosa, 1895)

*Benhamia palmicola* Eisen, 1895: 125 (Eisen, 1895)

*Benhamia rugosa* Eisen, 1895: 126 (Eisen, 1895)

*Benhamia bolavi pacifica* Eisen, 1900: 209 (Eisen, 1900)

*Dichogaster bolavi decanephra* Michaelsen, 1915: 191 (Michaelsen, 1915)

*Benhamia lageniformis* Friend, 1916: 262 (Friend, 1916)

*Dichogaster bolavi malabaricus* Stephenson, 1920: 257 (Stephenson, 1920)

*Dichogaster hatomaana* Ohfuchi, 1957: 259 (Ohfuchi, 1957)

*Dichogaster (Diplothecodrilus) bolavi* (Michaelsen): Csuzdi, 1995: 102 (Csuzdi, 1995)

*Dichogaster bolavi* (Michaelsen): Blakemore, 2016: 257 (Blakemore, 2016)

Type locality: Bergedorf, Hamburg

Distribution: Car Nicobar (Soota and Julka, 1970; Gates, 1972; Julka, 1982, 1988; Manazhy et al., 2011), Nancowry village (Julka, 1988)

Ecological categories: epigeic (Miglani et al., 2022)

Status: exotic peregrine (Narayanan et al., 2023)

***Dichogaster modiglianii* (Rosa, 1896)**

*Benhamia modiglianii* Rosa, 1896: 510

*Benhamia papillata* Eisen, 1895: 126

*Benhamia kafuruensis* Michaelsen, 1896: 34

*Benhamia nana* Eisen, 1895: 125

*Benhamia papillata* var. *hawaiiensis* Eisen, 1900: 212

*Dichogaster doveri* Stephenson, 1931a: 276

*Dichogaster (Diplothecodrilus) modiglianii* (Rosa): Csuzdi, 1995: 114

*Dichogaster modiglianii* (Rosa): Blakemore, 2016: 261

Type locality: Padang, Sumatra

Distribution: Port Blair (Gates, 1958, 1972; Julka, 1988), Haddo (Gates, 1958, 1972; Julka, 1988), Pahargaon (Gates, 1958, 1972; Julka, 1988)

Ecological categories: epigeic (Ahmed et al., 2024)

Status: exotic peregrine (Narayanan et al., 2023)

Family Lumbricidae

***Eisenia fetida* (Savigny, 1826)**

*Enterion fetidum* Savigny, 1826: 182

*Allolobophora (Eisenia) foetida* (Savigny): Stephenson, 1923: 499

*Eisenia fetida* (Savigny): Tiwari et al. 2024b: 264 (for full synonymy)

Type locality: Paris, France

Distribution: Nicobar Island (Rosa, 1891; Gates, 1972; Julka, 1982)

Ecological categories: epigeic (Miglani et al., 2022)

Status: exotic preregrine (Narayanan et al., 2023)

***Lumbricus rubellus* Hoffmeister, 1843**

*Lumbricus rubellus* Hoffmeister, 1843: 187

*Lumbricus rubellus* (Hoffmeister): Blakemore, 2016: 808 (for full synonymy)

Type locality: unknown

Distribution: Nicobar Island (Rosa, 1891; Gates, 1927)

Ecological categories: epigeic (epi–endogeic) (Kutuzovic and Kutuzovic, 2013)

Status: exotic peregrine (Narayanan et al., 2023)

Family Megascolecidae

***Amyntas aculeatus* (Gates, 1936)**

*Pheretima aculeata* Gates, 1936: 390

*Amyntas aculeatus* (Gates): Sims and Easton 1972: 234

*Amyntas aculeatus* (Gates): Julka 1982: 134

Type locality: Port Blair

Distribution: Port Blair (Gates, 1936; Julka, 1982)

Ecological categories: unknown

Status: endemic (Narayanan et al., 2023)

***Amyntas alexandri alexandri* Beddard, 1901**

*Amyntas alexandri* Beddard, 1901: 999

*Pheretima lignicola* Stephenson, 1914: 399

*Pheretima alexandri* Stephenson, 1923: 291

?*Pheretima suctoria mullani* Stephenson, 1924: 340

*Amyntas alexandri alexandri* Beddard: Sims and Easton 1972: 234 (diffringens group)

*Amyntas alexandri alexandri* Beddard: Blakemore, 2016: 347

Material examined: AN–2N2–1353, Mahtama Gandhi Marine National Park, lat./long. 11.53/92.6, collector: Shweta Yadav, date collected: 29/09/2018

Type locality: Calcutta, India

Distribution: Wimberleygunj (Stephenson, 1925; Gates, 1972; Julka, 1982), Minnie Bay (Gates, 1932, 1972; Julka, 1982), Mount Harriet (Gates, 1932, 1972; Julka, 1982), Andamans, Thobang village, Nancowry Island (Gates, 1932, 1927, 1972; Soota and Halder, 1980) Mahatma Gandhi Marine National Park (present study)

Ecological categories: epi–anecic (Ahmed et al., 2024)

Status: exotic peregrine (Narayanan et al., 2023)

***Amyntas facetus* (Gates, 1932)**

*Pheretima faceta* Gates, 1932: 422

*Amyntas facetus* (Gates): Sims and Easton 1972: 235

*Amyntas facetus* (Gates): Julka 1982: 135

Type locality: John Lawrence Island

Distribution: John Lawrence Island (Gates, 1932; Julka, 1982), vicinity of Port Bonington (Gates, 1960; Julka, 1982), North Andaman Island (Gates, 1960; Julka, 1982)

Ecological categories: unknown

Status: endemic (Narayanan et al., 2023)

***Amyntas malacus* (Gates, 1933)**

*Pheretima maculosa* Gates, 1933: 534

*Pheretima malaca* Gates, 1936: 429

*Amyntas malacus* Sims and Easton, 1972: 237

*Pheretima malaca* Julka and Halder, 1975: 65

*Amyntas malacus* Julka, 1982: 136

Type locality: between Kyaukmedaung and Kameik

Distribution: Bara Balu village (Julka and Halder, 1975; Julka, 1982), Chidiya Tapu, South Andaman (Julka and Halder, 1975; Julka, 1982)

Ecological categories: unknown

Status: subendemic (Narayanan et al., 2023)

***Amyntas osmastoni* (Michaelsen, 1907)**

*Pheretima osmastoni* Michaelsen, 1907: 163

*Pheretima osmastoni* Gates, 1972: 204

*Amyntas osmastoni* Sims and Easton, 1972: 237

Type locality: Port Blair

Distribution: Wimberleyganj (Michaelsen, 1907, 1909; Stephenson, 1925; Gates, 1972; Julka, 1982), Port Blair (Michaelsen, 1907, 1909; Stephenson, 1925; Gates, 1972; Julka, 1982; Ahmed et al., 2020), Mount Harriet (Stephenson, 1925; Gates, 1932; Julka, 1982), Minnie Bay (Gates, 1932, 1972; Julka, 1982), Port Bonington (Gates, 1960, 1972; Julka, 1982)

Ecological categories: unknown

Status: endemic (Narayanan et al., 2023)

***Amyntas suctorius* (Michaelsen, 1907)**

*Pheretima suctoria* Michaelsen, 1907: 165

*Pheretima suctoria* Michaelsen: Gates, 1972: 220

*Amyntas suctorius* Michaelsen: Sims and Easton, 1972: 235

Type locality: Andaman Islands

Distribution: Andaman Islands (Michaelsen, 1907, 1909; Julka, 1982), Camorta (Michaelsen 1907, 1909; Gates, 1927, 1931, 1936, 1972; Julka, 1982)

Ecological categories: unknown

Status: endemic to Andaman Islands (Narayanan et al., 2023)

***Lampito mauritii* Kinberg, 1867**

*Lampito mauritii* Kinberg, 1867: 103

*Megascolex armatus* Rosa, 1888: 2

*Perichaeta madagascariensis* Michaelsen, 1891: 227

*Megascolex mauritii* Michaelsen, 1899: 441

*Megascolex trilobatus* Stephenson, 1923: 279

*Lampito mauritii* (Kinberg): Gates, 1972: 133

Type locality: Mauritius

Distribution: Ross Island (Stephenson, 1916; Gates, 1972; Julka, 1982), Middle Point (Narayanan et al., 2023; Gates, 1972; Julka, 1982), Mount Harriet (Gates, 1932, 1972; Julka, 1982), Jinglyhat (Gates, 1932, 1972; Julka, 1982), Haddo (Gates, 1960, 1972; Julka, 1982), Pahargaon (Gates, 1960, 1972; Julka, 1982), Aberdeen (Gates, 1960, 1972; Julka, 1982), Port Blair (Gates, 1960; Soota and Julka, 1970; Julka, 1982), Rajatgarh (Soota and Julka, 1970; Gates, 1972; Julka, 1982), Maya Bundar (Ohfuchi, 1957; Gates, 1972; Julka, 1982), Minnie Bay (Gates, 1927, 1972; Soota and Halder, 1980). Andaman Islands, Bara Balu village near Chiria Tapu, Camorta Jetty, Camorta Island, Chiria Tapu, Delanipur, Port Blair, Nancowry village, Nancowry Island (Gates, 1927, 1932, 1960, 1972; Soota and Julka, 1970; Soota and Halder, 1980)

Ecological categories: anecic (Ahmed et al., 2024)

Status: native peregrine (Narayanan et al., 2023)

***Metaphire andamanensis* (Michaelsen, 1907)**

*Pheretima andamanensis* Michaelsen, 1907: 164

*Pheretima andamanensis* Gates, 1972: 157

*Metaphire andamanensis* Sims and Easton, 1972: 237

Type locality: North Cinque Island

Distribution: North Cinque Island (Michaelsen, 1907, 1909; Gates, 1932, 1936, 1972; Julka, 1982), South Andaman Island (Stephenson, 1923)

Ecological categories: unknown

Status: endemic (Narayanan et al., 2023)

***Metaphire harrietensis* (Stephenson, 1925)**

*Pheretima harrietensis* Stephenson, 1925: 59

*Pheretima harrietensis* Gates, 1972: 188

*Metaphire harrietensis* Sims and Easton, 1972: 238 (houlleti group)

Type locality: Mount Harriet

Distribution: Mount Harriet (Stephenson, 1925; Gates, 1932, 1972; Julka, 1982)

Ecological categories: unknown

Status: endemic to Andaman Islands (Narayanan et al., 2023)



***Metaphire houlleti* (Perrier, 1872)**

- Perichaeta houlleti* Perrier, 1872: 99  
*Megascolex houlletii* Vaillant, 1889: 75  
*Perichaeta campanulata* Rosa, 1890: 115  
*Perichaeta udekemi* Michaelsen, 1892: 240  
*Perichaeta crescentica* Fedarb, 1898: 447  
*Amyntas houlleti* Michaelsen, 1899: 12  
*Pheretima houlleti* Michaelsen, 1900: 273  
*Amyntas kelantanensis* Beddard, 1900a: 902  
*Pheretima wimberleyana* Stephenson, 1925: 62  
*Pheretima houlleti* var. *tortuosa* Gates, 1926: 157  
*Pheretima houlleti* var. *rugosa* Gates, 1926: 157  
*Pheretima campanulata* var. *penetralis* Gates, 1931: 435  
*Pheretima campanulata* var. *meridiana* Gates, 1932: 457  
*Metaphire houlleti houlleti* Sims and Easton, 1972: 238 (houlleti–group)  
*Metaphire houlleti* (*lapsus pro houlleti*) Easton, 1982: 731  
*Amyntas huangi* James et al., 2005: 1014  
*Metaphire houlleti* (Perrier): Blakemore, 2016: 513

Material examined: sample ID: AN–2N9–1360, AN–2N11–1362, Mahtama Gandhi Marine National Park, lat./long. 11.53/92.6, collector: Shweta Yadav, date collected: 29/09/2018

Type locality: Calcutta

Distribution: Wimberleyganj (Stephenson, 1925; Gates, 1960, 1972; Julka, 1982); Minnie Bay (Gates, 1932, 1933, 1972; Julka, 1982), Viper Island (Gates, 1936, 1972; Julka, 1982), Port Blair (Gates, 1936, 1972; Soota and Julka, 1970; Julka, 1982), Mount Harriet (Gates, 1932, 1933, 1972; Julka, 1982), Andaman Islands (Gates, 1960; Julka, 1982), Mahatma Gandhi Marine National Park (present study)

Ecological categories: epi–anecic (Ahmed et al., 2024)

Status: exotic peregrine (Narayanan et al., 2023)

***Metaphire peguana* (Rosa, 1890)**

- Perichaeta peguana* Rosa, 1890: 113  
*Amyntas peguanus* Michaelsen, 1899: 7  
*Pheretima peguana* Michaelsen, 1900: 292  
*Pheretima* (*Pheretima*) *peguana* Omodeo, 1956: 325  
*Metaphire peguana* Sims and Easton, 1972: 239 (peguana–group)  
*Metaphire peguana* (Rosa): Blakemore, 2016: 533

Type locality: Rangoon, Myanmar

Distribution: horticulture and zoological garden, Port Blair (Soota and Halder, 1980)

Ecological categories: endogeic (Ahmed et al., 2024)

Status: exotic peregrine (Narayanan et al., 2023)

***Metaphire planata* (Gates, 1926)**

- Pheretima planata* Gates, 1926: 411  
*Metaphire planata* Sims and Easton, 1972: 217, 239

Type locality: Rangoon, Myanmar

Distribution: Andaman Islands (Gates, 1937, 1962), Garai–Berana (Gates, 1933, 1972; Julka, 1982), Corbyn's Cove (Gates, 1933, 1972; Julka, 1982), Navy Bay (Gates, 1933, 1972; Julka, 1982), Port Blair (Soota and Julka, 1970; Gates, 1972; Julka, 1982)

Ecological categories: endogeic (Ahmed et al., 2024)

Status: exotic peregrine (Narayanan et al., 2023)



***Metaphire posthuma* (Vaillant, 1868)**

*Perichaeta posthuma* Vaillant, 1868: 228

*Perichaeta affinis* Perrier, 1872: 106

*Amyntas posthumus* Michaelsen, 1899: 74

*Pheretima posthuma* Michaelsen, 1900: 295

*Pheretima incerta* Beddard, 1912: 197

*Metaphire posthuma* Sims and Easton, 1972: 239 (posthuma–group)

*Metaphire posthuma* (Vaillant): Blakemore, 2016: 537

Type locality: Java

Distribution: Andaman Islands (Gates, 1932, 1933, 1972; Soota and Julka, 1970; Soota and Halder, 1980), Jinglyhat (Gates, 1932, 1972; Julka, 1982), Minnie Bay (Gates, 1933, 1972; Julka, 1982), Ross Island (Soota and Julka, 1970; Julka, 1982), Port Blair (Gates, 1972)

Ecological categories: endogeic (Ahmed et al., 2024)

Status: exotic peregrine (Narayanan et al., 2023)

***Metaphire scitula* (Gates, 1936)**

*Pheretima scitula* Gates, 1936: 457

*Pheretima scitula* Gates, 1972: 219

*Metaphire scitula* Sims and Easton, 1972: 238 (houletti group)

Type locality: Port Blair, India

Distribution: Port Blair (Gates, 1936, 1972; Julka, 1982)

Ecological categories: unknown

Status: subendemic (Narayanan et al., 2023)

***Perionyx excavatus* Perrier, 1872**

*Perionyx excavatus* Perrier, 1872: 126

*Perionyx gruenewaldi* Michaelsen, 1891: 33

*Perionyx intermedius* Beddard, 1892a: 689

*Perionyx parvulus* Stephenson, 1916: 321

*Perionyx fulvus* Stephenson, 1916: 322

*Perionyx excavatus* (Perrier): Blakemore, 2016: 295

Type locality: Saigon, Vietnam

Distribution: Cowriaghat–South Andamans (Gates, 1933; Soota and Julka, 1970; Stephenson, 1923; Soota and Halder, 1980) Little Andaman Island (Michaelsen, 1909; Gates, 1933; Julka, 1982), John Lawrence Island? (Julka, 1982), Parnashala (Gates, 1972; Julka, 1982).

Ecological categories: epi–endogeic (Ahmed et al., 2024)

Status: native peregrine (Narayanan et al., 2023)

***Polypheretima elongata* (Perrier, 1872)**

*Perichaeta elongata* Perrier, 1872: 124

*Perichaeta biserialis* Perrier, 1875: 1044

*Amyntas biserialis* Beddard, 1900b: 638

*Amyntas acystis* Beddard, 1900b: 638

*Megascolex elongata* Vaillant, 1889: 81

*Perichaeta acystis* Beddard, 1895: 423

*Perichaeta monocystis* Horst, 1899: 202 lapsus pro *acystis* Beddard, 1895

*Amyntas elongata* Beddard, 1900b: 650

*Pheretima elongata* Michaelsen, 1900: 265

*Metapheretima elongata* Sims and Easton, 1972: 205

*Polypheretima elongata* Easton, 1979: 53

*Polypheretima elongata* (Perrier): Blakemore 2016: 578

Material examined: AN–2N4–1355, AN–2N1–1352, Mahtama Gandhi Marine National Park, lat./long. 11.53/92.6, collector: Shweta Yadav, date collected: 29/09/2018

Type locality: Peru

Distribution: Govt. Rest House compound, Camorta Island, Camorta, Chiria Tapu village, Minnie Bay (Soota and Halder, 1980), Mount Harriet (Gates, 1936, 1972; Julka, 1982), Minnie Bay (Gates, 1932, 1933, 1972; Julka, 1982), Wrightmyo (Soota and Julka, 1970; Gates, 1972; Julka, 1982), Rajatgarh (Soota and Julka, 1970; Gates, 1972; Julka, 1982), Mahatma Gandhi Marine National Park (present study)

Ecological categories: endogeic (Ahmed et al., 2024)

Status: exotic peregrine (Narayanan et al., 2023)

### ***Pontodrilus litoralis* (Grube, 1855)**

*Lumbricus litoralis* Grube, 1855: 127

*Pontoscolex arenicola* Schmarda, 1861: 11 (part)

*Pontodrilus marionis* Perrier, 1875: 1582

*Pontodrilus bermudensis* Beddard, 1891: 96

*Cryptodrilus insularis* Rosa, 1891: 387

*Pontodrilus arenae* Michaelsen, 1892: 222

*Pontodrilus* sp. Michaelsen, 1894: 184

*Pontodrilus hesperidum* Beddard, 1894: 37

*Pontodrilus insularis* Beddard, 1895: 471

*Pontodrilus michaelseni* Eisen, 1895: 73

*Pontodrilus ephippiger* Rosa, 1898: 277, 281

*Pontodrilus matsushimensis* Iizuka, 1898: 21

*Pontodrilus ephippiger laysanianus* Michaelsen, 1899: 217

*Pontodrilus matsushimensis chathamianus* Michaelsen, 1899: 220

*Pontodrilus michaelseni hortensis* Eisen, 1900: 129, 241

*Pontodrilus laccadivensis* Beddard, 1903: 374

*Pontodrilus crosslandi* Beddard, 1906: 561

*Pontodrilus albanyensis* Michaelsen, 1907: 185

*Pontodrilus bermudensis ephippiger* Stephenson, 1915: 145

*Plutellus* (*Pontodrilus*) *bermudensis* Michaelsen, 1922: 22

*Pontodrilus albanyensis* var. *cygni* Jackson, 1931: 94

*Plutellus* (*Pontodrilus*) *matsushimensis indica* Michaelsen, 1935: 106

*Pontodrilus gracilis* Gates, 1943: 100

*Pontodrilus litoralis* (Grube): Blakemore, 2016: 285

Type locality: Bermuda

Distribution: Port Blair? (Gates, 1936; Julka, 1982), Car Nicobar (Soota and Julka, 1970; Gates, 1972; Julka, 1982)

Ecological categories: NA

Status: exotic (Narayanan et al., 2023)

### Family Moniligastridae

#### ***Drawida nepalensis nepalensis* Michaelsen, 1907**

*Drawida nepalensis* Michaelsen, 1907: 146

*Drawida burchardi* Michaelsen, 1903: 7

*Drawida troglodytes* Stephenson, 1924: 129

*Drawida cacharensis* Stephenson, 1926: 251

*Drawida abscisa* Gates, 1931: 336

*Moniligaster ivaniosi* Manazhy et al., 2011: 11

*Drawida nepalensis nepalensis* (Michaelsen): Blakemore, 2016: 182

*Moniligaster ivaniosi* Manazhy: Narayanan et al., 2021: 392

Material examined: AN–6N3–1408, AN–4N2–1398, AN–4N3–1399, AN–8N2–1416, AN–6N2–1407, AN–7N4–1414, AN–8N3–1417, Exact site: Saddle Peak National Park, lat./long. 13.168/93.011, collector: Shweta Yadav, date collected: 01-02/10/2018; sample ID: AN–9N7–1424, AN–9N8–1425, Diglipur Forest Division, Mudvolanao, lat./long. 12.146/92.793, collector: Shweta Yadav, date collected: 03/10/2018

Type locality: Gowchar, Nepal

Distribution: Andaman islands, Bara Balu village near Chiria Tapu–South Andamans, Delani-pur–Port Blair, garden near civil hospital–Comorta Island, Govt. Agriculture farm–Comorta Island, Resthouse compound–Comorta Island, Mathura–South Andmans (Michaelsen, 1909; Stephenson, 1925; Gates, 1933, 1927, 1962; Soota and Julka, 1970; Soota and Halder, 1980), Mount Harriet (Michaelsen, 1909; Stephenson, 1925; Gates, 1933; Julka, 1982), Port Blair (Gates, 1962, 1972; Soota and Julka, 1970; Julka, 1982), Saddle Peak National Park (present study), Diglipur forest division, Mudvolanao (present study)

Ecological categories: endogeic (Ahmed et al., 2024)

Status: native peregrine (Narayanan et al., 2023)

Family Ocnerodrilidae

***Eukerria kukenthalii* (Michaelsen, 1908)**

*Kerria kukenthalii* Michaelsen, 1908: 24

*Eukerria peguana* Soota and Julka, 1970: 204

*Eukerria kukenthalii* Jamieson, 1970: 144

*Eukerria kukenthalii* Gates, 1972: 269

Type locality: St. Thomas Island, West Indies

Distribution: Maya Bundar (Soota and Julka, 1970; Gates, 1972; Julka, 1982), Port Blair (Soota and Julka, 1970; Gates, 1972; Julka, 1982), Car Nicobar (Soota and Julka, 1970; Gates, 1972; Julka, 1982)

Ecological categories: unknown

Status: exotic peregrine (Narayanan et al., 2023)

***Gordiodrilus elegans* Stephenson, 1928**

*Gordiodrilus elegans* Beddard, 1892b: 84

*Gordiodrilus travancorensis* Michaelsen, 1910: 98

*Gordiodrilus paski* Stephenson, 1928: 1

*Gordiodrilus unicus* Stephenson, 1931b: 79

*Gordiodrilus peguanus* Gates, 1942: 85

*Gordiodrilus elegans morph paski* (Stephenson): Julka 1982: 149

*Gordiodrilus bonacanus* Černosvitov, 1942: 215

Type locality: Kigoma Harbour, Lake Tanganyika

Distribution: Maya Bundar (Soota and Julka, 1970; Gates, 1972; Julka, 1982)

Ecological categories: endogeic (Tiwari et al., 2024b)

Status: exotic (Narayanan et al., 2023)

***Ocnerodrilus occidentalis* Eisen, 1878**

*Ocnerodrilus occidentalis* Eisen, 1878: 10

*Ocnerodrilus tenellulus* Gates, 1945: 223

*Ocnerodrilus occidentalis* (Eisen): Ahmed et al., 2020: 27

Type locality: Fresno, California

Distribution: Ross Island (Stephenson, 1916; Gates, 1972; Julka, 1982), Car Nicobar (Soota and Julka, 1970; Gates, 1972; Julka, 1982), Maya Bundar (Soota and Julka, 1970; Julka, 1982), Port Blair (Soota and Julka, 1970; Julka, 1982)

Ecological categories: anecic (Miglani et al., 2022)  
Status: exotic peregrine (Narayanan et al., 2023)

***Thatonia gracilis* Gates, 1942**

*Thatonia gracilis* Gates, 1942: 101

Type locality: Thongwa, Burma

Distribution: Port Blair (Soota and Julka, 1970; Gates, 1972; Julka, 1982)

Ecological categories: endogeic (Miglani et al., 2022)

Status: subendemic (Narayanan et al., 2023)

Family Rhinodrilidae

***Pontoscolex corethrurus* (Müller, 1857)**

*Lumbricus corethrurus* Müller, 1857: 113

*Urochaeta hystrix* Perrier, 1872: 142

*Urochaeta corethrura* Perrier, 1874: 379

*Pontoscolex arenicola* Schmarda, 1861: 11

*Urochaeta dubia* Horst, 1885: 7

*Pontoscolex hawaiiensis* Beddard, 1895: 660

*Pontoscolex corethrurus mexicanus* Eisen, 1896: 8

*Pontoscolex corethrurus* Beddard, 1892c: 127

*Pontoscolex (Pontoscolex) corethrurus* Righi, 1984: 163

*Pontoscolex guangdongensis* Zhang et al., 1998: 5

*Pontoscolex corethrurus* (Müller): Blakemore, 2016: 594

Material examined: AN–4N4–1400, AN–5N1–1401, AN–7N3–1413, exact site: Saddle Peak National Park, lat./long. 13.168/93.011, collector: Shweta Yadav, date collected: 01-02/10/2018; sample ID: AN–9N6–1423, Diglipur Forest Division, Mudvolanao, lat./long. 12.146/92.793, collector: Shweta Yadav, date collected: 03/10/2018

Type locality: Itajahy, Brazil

Distribution: Amberdeen, Andaman Island, Malacca village, Car Nicobar near civil station, Camorta Island (Soota and Halder, 1980) Ross Island (Stephenson, 1916; Julka, 1982), Aberdeen (Stephenson, 1925; Julka, 1982), Port Blair (Gates, 1933, 1954; Julka, 1982), Mount Harriet (Gates 1933, 1954, 1972; Julka, 1982), Minnie Bay (Gates, 1933, 1972, 1932), Wrightmyo (Soota and Julka, 1970; Gates, 1972; Julka, 1982), Saddle Peak National Park (present study), Diglipur forest division, Mudvolanao (present study)

Ecological categories: endogeic (Ahmad et al., 2024)

Status: exotic peregrine (Narayanan et al., 2023)

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## Conclusion

Currently, India is home to 458 valid species of earthworm, excluding, seven species that are categorised as *incertae sedis* (Ahmed et al., 2022, 2023a, 2023b; Hasan et al., 2023; Narayanan et al., 2021; Tiwari et al., 2021, 2022, 2024a; Lone et al., 2022). The study provides a comprehensive list of 28 earthworm species reported in the Andaman and Nicobar region. They belong to seven families and sixteen taxa. The island is primarily populated by exotic species, which constitute 20 out of the total 28 species present. In regards to familial metrics, Megascolecidae display a dominant presence of 56%, while Moniligastridae, Acanthodrilidae and Rhinodrilidae are each represented by just one species. The family Benhamiidae comprises three distinct species that are affiliated with the singular genus *Dichogaster* sp. Beddard, 1889. In contrast, Lumbricidae encompasses two genera, namely *Eisenia* Malm,

1877 and *Lumbricus* Linnaeus, 1758. The family Megascolecidae encompasses six distinct genera, viz., *Amyntas* Kinberg, 1867, *Lampito* Kinberg, 1867, *Metaphire* Sims and Easton, 1972, *Perionyx* Perrier, 1872, *Polypheretima* Michaelsen, 1934 and *Pontodrilus* Perrier, 1874. The family Ocnodrilidae, on the other hand, consists of four species, each belonging to a distinct genus. The pheretimoid is the dominant group among the non-native earthworm species that constitute the earthworm biodiversity of the Andaman and Nicobar Islands. The distribution of exotic worms could potentially be attributed to anthropogenic activities.

Ghosh et al. (2022) recently published an annotated checklist of earthworms from India. However, it is challenging to consider this document as credible and conclusive. A misleading list of 34 species, with a focus on Andaman Island, has been provided by them. The species *Moniligaster sapphirinaoides* Bourne, 1886, *Moniligaster ophidioides* Bourne, 1891, and *Moniligaster grandis* Bourne, 1894 are mentioned. These species have been reclassified and assigned to the genus *Drawida*. Nevertheless, Stephenson (1923) never collected from the Andaman Islands. Instead, they are exclusively found in the Nilgiri Hills of the Western Ghats. Consequently, their existence is questioned and necessitates additional scrutiny. Additionally, *Moniligaster invaniosi* is a synonym of *Drawida nepalensis*, and the valid authority is Manazhy et al. (2011), instead of Reynolds. Similarly, *Pontodrilus bermudensis* Beddard, 1891 is a synonym of *Pontodrilus litoralis*. At the same time, *Pontoscolex corethrurus* has been mentioned under family of Glossoscolecidae in place of Rhinodrilidae. The authorities listed for many species are also inaccurate, including *Malabaria sulcata* Gates, 1945, *Amyntas malacus* Gates, 1936, *Metaphire houlleti* (Perrier, 1872), *Perionyx excavatus* Perrier, 1872, and *Lampito mauritii* Kinberg, 1867. Furthermore, *Metapheretima elongata* Easton, 1976 is a synonym of *Polypheretima elongata* (Perrier, 1872). Lastly, there is no reference supporting the presence of *Malabaria sulcata* in the Andaman and Nicobar Islands. The species *Eisenia fetida* (Savigny, 1826) was misspelled. As a result, the current checklist is an updated and modified version of the Ghosh et al. (2022) catalogue in particular reference to an Andaman Islands.

Moreover, Julka (1982) concluded the presence of various earthworms of the Andaman and Nicobar Islands as an incidental record from the literature (Michaelsen, 1900; Stephenson, 1916; Gates, 1933, 1954, 1958, 1960, 1962; Julka and Halder, 1975). Nevertheless, the presence of several species in the present study invalidates their inclusion as accidental records, viz., *Polypheretima elongata* (Perrier, 1872), *Amyntas alexandri alexandri* Beddard, 1901, *Amyntas osmastoni* (Michaelsen, 1907), *Metaphire houlleti* (Perrier, 1872), *Drawida nepalensis* Michaelsen, 1907 and *Pontoscolex corethrurus* (Muller, 1857).

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