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## Two new species of the genus *Megascolex* Templeton, 1844 (Clitellata, Megascolecidae) from the Eastern Ghats of Odisha state, India

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## Abstract

Two new earthworm species of *Megascolex* Templeton, 1844, *M. quadripapillatus* Narayanan & Paliwal, **sp. nov.** and *M. jeyporeghatiensis* Narayanan & Paliwal, **sp. nov.** are described from the under-explored Eastern Ghats Hills of Odisha state in Peninsular India. They belong to a group of species characterized by two pairs of spermathecal pores in intersegmental furrows 7/8/9, holandric, seminal vesicles in segments 9 and 12, absence of penial setae and calciferous glands. *Megascolex ratus* Cognetti, 1911, *M. pumilio* Stephenson, 1916 and the two new species described here are the members of this group. *Megascolex quadripapillatus* **sp. nov.** and *M. jeyporeghatiensis* **sp. nov.** occur in deciduous forests with brownish gravel-loamy soils. Here we provide the detailed description of the external and internal characteristics of the new species along with the illustrations of the key characters. With the new findings, the range of *Megascolex* genus has been extended further north in the less explored Eastern Ghats Hills of India. With this discovery, the total number of *Megascolex* species has increased to 70, of which 34 are found in India.

Key words: Annelida, biodiversity, endemic, Oligochaeta, Peninsular India, taxonomy

## Introduction

In recent past several new species of earthworms have been described from the Western Ghats mountain ranges and northeastern hills of India (Narayanan *et al.* 2017, 2021a, 2022; Lone *et al.* 2020, 2022; Tiwari *et al.* 2021; Ahmed *et al.* 2022). Odisha state is located in the eastern portion of Peninsular India and in the last four decades only two new species of earthworms were described from eastern India (Senapati *et al.* 1990; Ghosh *et al.* 2018). The megadrile fauna of Odisha is rich and varied with large number of species (Julka & Senapati 1987). Knowledge on the taxonomy of the earthworms of Odisha state started with Michaelsen (1910). Shortly after, several species were described by Stephenson (1914, 1915, 1916, 1917, 1921, 1926). Subsequently, after independence, Julka (1976, 1978) conducted taxonomical studies on the earthworm fauna of the state. Later, a comprehensive account on the earthworms of this state was produced by Julka & Senapati (1987). However, the earthworm fauna of the isolated Eastern Ghats hills ranges of the state is poorly explored and insufficiently documented (Sankar & Patnaik, 2016; Goswami 2018).

Earthworms of the family Megascolecidae Rosa, 1891 have a multifarious taxonomic history beginning with the description of *Megascolex caeruleus* by Templeton (1844) from Sri Lanka (Ceylon). It is the very first species of earthworm scientifically described from the Indian subcontinent (Narayanan *et al.* 2021b). Megascolecidae is the

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