

Checklist of Earthworm Diversity of Kalaburagi District of Hyderabad- Karnataka Region, India

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Abstract- Earthworms play a significant role in making soil fertile and also aerating mixing of soil i.e., bringing under soil to surface. Presently there is great paucity in the information of Earthworms of Hyderabad- Karnataka region. With the intention to find out locally available earthworm species for the same purpose a survey was conducted in Kalaburagi district belonging Hyderabad- Karnataka region. The localities selected to assess the diversity of earthworms includes gutter, garbage, pasture, bore well, irrigated land, non- irrigated land and garden. The earthworms were collected by digging and hand sorting methods. In our survey we identified 16 earthworm species viz. *Lampito mauritii*, *Pheretima alexandri*, *Polypheretima elongata atecomorph*, *Perionyx millardi*, *Perionyx arboricola*, *Perionyx foveatus* and *Perionyx sansibaricus* belonging to family **MEGASCOLICIDAE**; *Dichogaster bolau*, *Eudichogaster ashworthi*, *Eudichogaster prashadi*, *Octochaetona compta*, *Octochaetona paliensis*, *Octochaetona suriensis* and *Octochaetona parva* belonging to family **OCTOCHAETIDAE**; *Eudrilus euginae* belonging to family **EUDRILIDAE** and *Gordiodrilus sps* belonging to family **OCNERODRILIDAE**.

Keywords- Diversity, Megascolicidae, Octochaetidae, Eudrilidae, Ocnerodrilidae.

I. INTRODUCTION

Earthworms are important biological resources that have tremendous potentials in agro-ecosystems because they significantly affect soil physical structure and organic matter dynamics and promote plant growth (Lee, 1985; Lavelle et al., 1988). They are beneficial in agro-ecosystem, therapeutic, nutritional & solid waste management. At present more than 6000 species have been described, among these around 3000-3500 are valid (Csuzdi 2012) .

Presently Indian earthworm fauna comprises about 505 species and subspecies belonging to 67 genera and 10 families have been identified from India (Kathireswari 2016). Earthworm fauna of southern Karnataka have been studied by Bano and Kale (1991), Kale and Karmegam 2010. A very little diversity of northern Karnataka region is known from

Kalaburagi city by Hatti (2013). There is no report on Earthworm diversity of Kalaburagi district. The aim of the present study is to know the diversity and identify Earthworms of Kalaburagi district as and to provide the base for further investigations

II. MATERIALS AND METHODS

Kalaburagi district is one among the 30 districts of Karnataka State. It is located in the Northern part of the state and lies between 76⁰.04' and 77⁰.42' east latitude, and 17⁰.12 and 17⁰.46' north latitude, covering an area of 10,951 km². Kalaburagi is famous for Pigeon pea and the limestone deposits are more in Kalaburagi District (gulbarga.nic.in). Two main rivers, Krishna and Bhima flow in the district. Black soil is predominant soil type in the district. The district has a large number of tanks which, in addition to the river irrigate the land. The Upper Krishna project is major irrigation venture in the district. Bajra, toor, sugarcane, groundnut, sunflower, sesame, castor, black gram, jowar, wheat, cotton, ragi, Bengal gram and linseed are grown in this district (en.wikipedia.org).

The collections were made from the selected habitats of damp places like gutter, borewell, irrigated land, garden and garbage of Kalaburagi district from July- December 2017.

Earthworms were collected by digging and hand sorting method (Julka 1988) and physical parameters like temperature, humidity and location were recorded. Morphological observations of the collected earthworm were also noted down. The collected earthworms were the fixed and preserved (Julka and Paliwal 1993). Earthworms were Identified using taxonomic key charts (Stephenson 1923; Gates 1972; Julka 1988) in the laboratory.

III. RESULTS and DISCUSSION

16 Earthworm species belonging to 4 families and 9 different genera were recorded during our study. Earthworms belonged to the families Megascolicidae, Octochaetidae, Ocnerodrilidae and Eudrilidae.

Table 1. Records of Earthworm from Kalaburagi district

Sl. No	Name of the Earthworm species	Area	Taluka
1	<i>Polypheretima elongata</i> athecomorph	Kupnoor Venkatapur	Chincholi
		District Garden	Kalaburagi
2	<i>Lampito mauritii</i>	Hadebeernahalli	Chincholi
3	<i>Pheretima alexandri</i>	Garden Road	Kalaburagi
4	<i>Perionyx millardi</i>	Sedam	Sedam
		Mudhol	Chittapur
		Raddewadgi	Jewargi
5	<i>Perionyx arboricola</i>	Rajapur	Kalaburagi
6	<i>Perionyx foveatus</i>	Rajapur	Kalaburagi
7	<i>Perionyx sansibaricus</i>	Fort	Kalaburagi
8	<i>Eudichogaster ashworthi</i>	Gobbur	Afzhalpur
9	<i>Eudichogaster prashadi</i>	Kalnoor	Chincholi
		Kadaganchi	Kalaburagi
		Shivaji nagar	Afzhalpur
10	<i>Dichogaster bolau</i>	Srinivas saradgi	Kalaburagi
11	<i>Octochaetona compta</i>	Hadebeernahalli	Chincholi
12	<i>Octochaetona paliensis</i>	Chiknindhalli	Chincholi
		Gundugurti	Chittapur
		Jewargi	Jewargi
		Kadaganchi	Aland
13	<i>Octochaetona suriensis</i>	Lad Chincholi cross	Aland
14	<i>Octochaetona parva</i>	Koldongri	Aland
15	<i>Eudrilus euginae</i>	Chiknindhalli Kupnoor	Chincholi
16	<i>Gordiodrilus sps</i>	Rajapur	Kalaburagi

In our study the families Megascolicidae and Octochaetidae was found to be dominant with 7 different species each, followed by the families Ocnerodrilidae and Eudrilidae with 1 species each.

FAMILY MEGASCOLICIDAE: Earthworms belonging to 5 genera and 7 species are identified viz. *Lampito mauritii*, *Pheretima alexandri*, *Polypheretima elongata* athecomorph,

Perionyx millardi, *Perionyx arboricola*, *Perionyx foveatus* and *Perionyx sansibaricus*.

FAMILY OCTOCHAETIDAE: Earthworms belonging to 3 genera and 7 species are identified viz. *Dichogaster bolau*, *Eudichogaster ashworthi*, *Eudichogaster prashadi*, *Octochaetona compta*, *Octochaetona paliensis*, *Octochaetona suriensis* and *Octochaetona parva*.

FAMILY EUDRILIDAE: The Earthworm species identified is *Eudrilus euginae*

FAMILY OCNERODRILIDAE: The Earthworm species identified is *Gordiodrilus sps*

Only 4 species of Earthworms viz. *Polypheretima elongata*, *Perionyx sansibaricus*, *Dichogaster bolau* and *Eudrilus euginae* from Kalaburagi city area were reported by Hatti (2013). The present study reveals 12 different earthworm species from Kalaburagi district.

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