

Earthworm fauna of French Guiana

(Oligochaeta)

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Abstract. The taxonomic diversity of earthworms in eastern Amazonia is almost unknown. In French Guiana (83,534 km²) 22 species are recorded, of which about 40% are introduced. Despite of the low number of recorded taxa, the taxonomic diversity in earthworms in the humid rain forest could be very high as indicated by the description of five species and a new genus in French Guiana in 2011.

Key words. Amazonia, rain forest, earthworm, species diversity.

Taxonomic diversity of earthworms in the rain forests of eastern Amazonia is greatly underestimated because of the lack of organized studies. In French Guiana, apart from the larger earthworm samples collected in French Guiana in the first half of 20th century (ČERNOSVITOV 1934, 1935) all literature records are limited to description of a few species or to short abstracts of conference presentations (LAPIED 2000, 2004).

Currently, in French Guiana, 22 identified earthworm species are recorded of which more than 40% are introduced (Table 1). So far, the number of recorded species is even smaller than those of much smaller Panama, from where 32 species are known (BROWN & FRAGOSO 2007). The already recorded species encompass 20% of species reported from the huge territory covering the Guiana Shield, north of the Amazon river and east of Orinoco but represent only 1% of earthworm species estimated to be present in Amazonia (LAVELLE & LAPIED 2005). The fact that the recorded number is deeply underestimated is also supported by the preliminary results obtained during our earthworm biodiversity survey, focused mainly on the Nouragues Natural Reserve (www.nouragues.cnrs.fr/index.html). In this locality, encompassing an area of 1000 km² of “pristine” evergreen humid tropical rain forest, we collected more species than are known in all French Guiana (Fig. 1) - a rich material that is now under analysis. Not without interest is the fact that among this rich material are specimens morphologically so different that there is a need to establish new genera to accommodate them in the taxonomic system. The first such, already published, example is genus *Nouraguesia* (Table 1). After all, the neotropical humid rain forest might be a place of extraordinary earthworm diversity as one would predict based on its climate and regional history.

Table 1. List of earthworm species recorded in French Guiana. A – autochthonous species in French Guiana, I – introduced species in French Guiana, O – origin. 1- ČERNOSVITOV (1934); 2- ČERNOSVITOV (1935); 3- CSUZDI & PAVLÍČEK (2011a); 4- CSUZDI & PAVLÍČEK (2011b); 5- PERRIER (1872); 6- TOPOLIANTZ (2002); 7- TOPOLIANTZ & PONGE (2005); 8- BROWN & FRAGOSO (2007); 9- GATES (1972).

Species	O/I	References
1. <i>Martiodrilus (Maipure) tenkatei</i> (Horst, 1887)	A	1, 2, 3
2. <i>Martiodrilus (Botaria) dewynteri</i> Csuzdi & Pavlíček, 2011	A	3
3. <i>Martiodrilus duodenarius</i> (Michaelsen, 1917)	A	1, 2, 3
4. <i>Martiodrilus (Maipure) gaucheri</i> Csuzdi & Pavlíček, 2011	A	3
5. <i>Martiodrilus (Botaria) helleri</i> (Michaelsen, 1918)	A	3
6. <i>Nouraguesia souadae</i> Csuzdi & Pavlíček, 2011	A	4
7. <i>Nouraguesia parare</i> Csuzdi & Pavlíček, 2011	A	4
8. <i>Pontoscolex (Meroscolex) guianicus</i> Černosvitov, 1934	A	1, 2
9. <i>Pontoscolex (Meroscolex) longissimus</i> Černosvitov 1934	A	1, 2
10. <i>Pontoscolex (Pontoscolex) corethrurus</i> (Müller, 1857)	A	1, 2, 5, 6, 7
11. <i>Pontoscolex (Pontoscolex) spiralis</i> Borges & Moreno, 1990	A?	8
12. <i>Rhinodrilus gigas</i> (Perrier, 1872)	A	5
13. <i>Rhinodrilus longus</i> Černosvitov, 1934	A	1, 2
14. <i>Dichogaster (Dt.) bolau</i> (Michaelsen, 1891)	I	1, 2
15. <i>Dichogaster (Dt.) modiglianii</i> (Rosa, 1896)	I	1, 2
16. <i>Eisenia fetida</i> (Savigny, 1826)	I	1, 2
17. <i>Dendrodrilus rubidus</i> (Savigny, 1826)	I	1, 2
18. <i>Eudrilus eugeniae</i> (Kinberg, 1867)	I	1, 2
19. <i>Amyntas gracilis</i> (Kinberg, 1867)	I	1, 2
20. <i>Amyntas rodericensis</i> (Grube, 1879)	I	1, 2
21. <i>Metaphire houlleti</i> (Perrier, 1872)	I	9
22. <i>Polypheretima elongata</i> (Perrier, 1872)	I	9

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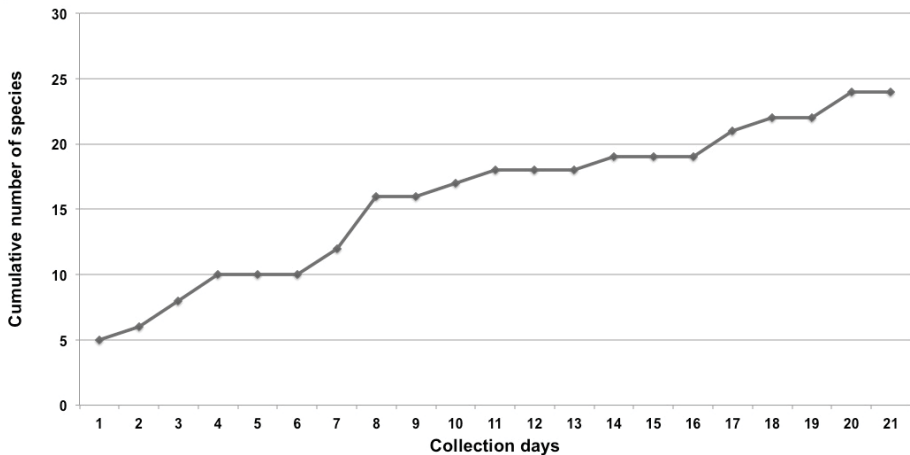


Fig. 1. Increase in number of recorded earthworm species with number of collection days.

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