



## Earthworm fauna of Eastern Taiwan, with descriptions of two new species (Oligochaeta: Megascolecidae)

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### Abstract

The earthworm fauna of eastern Taiwan was studied, and two new species, viz. *Amyntas shinjiroi* **sp. nov.** and *Pithemera tao* **sp. nov.** are described. Other species from our collection included *Dichogaster* (*Diplotheodrilus*) *saliens* (Beddard, 1893), *Amyntas aspergillum* (Perrier, 1872), *A. gracilis* (Kinberg, 1867), *A. aff. hupeiensis* (Michaelson, 1891), *A. robustus* (Perrier, 1872), *A. aff. morrisoni* (Beddard, 1892), *Pithemera bicincta* (Perrier, 1875), *P. lanyuensis* Shen & Tsai, 2002, and *Pontoscolex corethrurus* (Müller, 1856). *Pithemera lanyuensis* was first collected on Lanyu (Orchid Island), but its distribution is now extended to the main island of Taiwan. The finding of the exotic *Pontoscolex corethrurus* in eastern Taiwan shows it has probably invaded the entire island of Taiwan, and its impacts upon the ecology and agriculture need to be studied in the future.

**Key words:** *Amyntas*, *Dichogaster* (*Diplotheodrilus*), *Pithemera*, *Pontoscolex*, taxonomy, Taiwan

### Introduction

Since 1999, the study of Taiwanese earthworms has received greater attention, and several new species and new records were reported (see Blakemore *et al.* 2006; Tsai *et al.* 2009). Shih *et al.* (1999) made the first review of earthworm studies of Taiwan between 1898 and 1999, and revealed that 26 species had been recorded. In that review, however, the locality of “Tsing-chao Maa” in central Taiwan was in fact determined not to be a place name, but a famous Taiwanese bee entomologist who provided specimens of *Polypheretima elongata* (Perrier, 1872) to the United States Department of Agriculture (Gates 1959). Most recent references were included in Blakemore *et al.* (2006) and Tsai *et al.* (2009), and only some important and more-recent papers are mentioned here.

Blakemore *et al.* (2006) provided a checklist of earthworms of Taiwan which included the previous 71 species with 2 new records, *Eisenia fetida* (Savigny, 1826) and *Eiseniella tetraedra* (Savigny, 1826). However, some statements in this checklist need to be clarified here. Blakemore *et al.* (2006: 227) mentioned “James *et al.* (2005) have recognized seven new endemic *Amyntas* species from Taiwan and these authors claim first record of *Metaphire houlleti* (Perrier, 1872) plus new reports of *Amyntas incongruus* (Chen, 1933) and *A. robustus*”; “This new Taiwan record [*M. houlleti*] is by Shen *et al.* (2005) and also claimed by James *et al.* (2005)”; and “This new Taiwan record [*Pontodrilus litoralis* (Grube, 1885)] is by Shen *et al.* (2005) and claimed by James *et al.* (2005)” (p. 230). In fact, the report of James *et al.* (2005) was accepted in 21 April 2004, but the publication was unfortunately delayed until April 2005. H.-P. Shen came to the National Museum of Natural Science to check the holotypes of James *et al.* (2005) on 6 November 2004, and she was aware that the above paper had been accepted (pers. obs.). However, the report of Shen *et al.* (2005) was accepted on 13 December 2004, but was soon published in March 2005 by a local journal. This action therefore caused confusion as to the new records of *M. houlleti* and *P. litoralis*. In addition, James *et al.* (2005) never claimed that *A. incongruus* and *A. robustus* were new records to Taiwan, but just mentioned that more localities in Taiwan were added. With the addition of recent reports (Shen *et al.* 2003; Blakemore, 2007;