Four new species of the *Amynthas corticis*-group (Oligochaeta: Megascolecidae) from Hainan Island, China

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Abstract

This paper describes four new species of earthworms from Hainan Island, China: *Amynthas stricosus* sp. nov., *Amynthas fuscus* sp. nov., *Amynthas montanus* sp. nov. and *Amynthas genitalis* sp. nov. They all belong to the *Amynthas corticis*-group with four pairs of spermathecal pores in 5/6–8/9. *Amynthas stricosus* sp. nov. has postsetal genital papillae within the male pore region, single or paired in XVII, XIX and XX, a heart-shaped spermathecal ampulla, and the terminal 0.4 of the spermathecal diverticulum dilated into a band-shaped chamber. *Amynthas fuscus* sp. nov. has no genital papillae, an irregular heart-shaped spermathecal ampulla, and the terminal 0.25 of the diverticulum dilated into an elongated ovoid seminal chamber. *Amynthas montanus* sp. nov. has two pairs of large ovate and flat-topped genital papillae within the male pore region, diameter 0.7–0.8mm, surrounded by epidermal folds, paired on 17/18, 18/19 and accompanied closely with the male pores, heart-shaped spermathecal ampulla, terminal 0.4 of diverticulum dilated into a rod-shaped chamber, with hairpin-looped stalk. *Amynthas genitalis* sp. nov. has four longitudinally arranged pairs of ovate and flat-topped genital papillae within the male pore region, diameter 0.4–0.5mm, one paired postsetal and presetal papillae on XVII and XIX respectively, and two paired on XVIII anterior and posterior to the setal annulet, and small and ovoid spermathecal ampulla, terminal 0.29 of diverticulum dilated into a rod-shaped chamber.

Keywords: Earthworms, Clitellata, Annelida, soil, taxonomy

Introduction

Hainan Island, with an area of approximately 33,900 km², is separated by the Qiongzhou Strait from the Leizhou Peninsula of Guangdong. The island was repeatedly connected with and separated from the mainland of China during the recent Quaternary glacial and inter-glacial periods (Long et al. 2006). Notwithstanding that the geographical and meteorological features are similar to the neighboring part of the mainland, the oligochaete fauna is quite a distinct one (Chen 1938). The first extensive collection of the earthworm fauna from Hainan Island, China was made by Yi Chen during an expedition in 1933–1934. The most abundant earthworm species were found to be endemic to this island, with characters quite different from species of the Asiatic mainland or adjacent islands.

After 73 years, we made another broad earthworm collection during a field survey in Diaoluo Mountain, Jianfeng Mountain and Bawang Mountain in Hainan Island, China. In the last four years, we have discovered ten new species. They are *Amynthas diaoluomontis* Qiu & Sun from Diaoluo Mountain (Sun et al., 2009), *Amynthas octopapillatus* Qiu & Sun from Diaoluo Mountain (Sun et al., 2009), *Amynthas zhangi* Qiu & Sun from Diaoluo Mountain (Sun et al., 2009), *Amynthas lingshuiensis* Qiu & Sun from Diaoluo Mountain (Sun et al., 2009), *Amynthas bouchei* Zhao & Qiu from Jianfeng Mountain (Zhao et al., 2009), *Amynthas omodeoi* Zhao & Qiu from Diaoluo Mountain (Zhao et al., 2009), *Amynthas edwardsi* Zhao & Qiu from Diaoluo Mountain (Zhao et al., 2009), *Amynthas trapaeoidesi* Qiu & Sun from Jianfeng Mountain (Sun et al., 2010), *Amynthas conchipapillatus* Qiu & Sun from Diaoluo Mountain (Sun et al., 2010), and *Amynthas dongfangensis* Qiu & Sun from Jianfeng Mountain (Sun et al., 2010).