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Two new species of *Gieysztoria* (Platyhelminthes, Rhabdocoela, Dalyelliidae) from a Freshwater Artificial Lake in Shenzhen, China

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Abstract

Two new species of the “Aequales” of genus *Gieysztoria* were collected and described from an artificial lake on the Shenzhen University campus. *Gieysztoria bimaculata* n. sp., is distinguished based on two groups clavate pigmentations dorsally between the pharynx and intestine, and has a sclerotic stylet comprising a proximal girdle with 40–46 distal dagger-shape spines, thus has the maximum number of spines within “Aequales” group. *Gieysztoria guangdongensis* n. sp. has a sclerotic stylet with a proximal girdle and 18 distal blade-shaped spines. Comparison with similar species based mainly on stylet morphology suggests that *Gieysztoria bimaculata* n. sp. and *Gieysztoria guangdongensis* n. sp. are apparently different from the known species of *Gieysztoria* in this moment. In addition, the stability of the amount of distal spines of “Aequales” species is briefly discussed.

Key words: turbellarian, new species, Rhabdocoela, Dalyelliidae, *Gieysztoria*; taxonomy

Introduction

Gieysztoria Ruebush and Hayes, 1939, the most species-rich genus within Dalyelliidae Graff, 1908, is mostly limnic with just a few species present in brackish or marine environments (Van Steenkiste *et al.* 2012). With approximately 90 species described in the freshwater environment worldwide, the genus *Gieysztoria* Ruebush and Hayes, 1939, is traditionally classified into two groups—“Aequales” and “Inaequales” (Tyler *et al.* 2012; Van Steenkiste *et al.* 2012; Lai 2013). “Aequales” contains species with a stylet composed of a proximal girdle and distal spines of similar length and shape. “Inaequales”, contains species with a stylet composed of different length and shape. “Inaequales” is further subdivided into 3 groups: “Fenestratae”; “Radiatae”; and “Aberrantes” (Luther 1955; Damborenea *et al.* 2005; Van Steenkiste *et al.* 2012). Recently, “Falcatae” has been established as a new subgroup within “Inaequales”, sharing a large robust falcate stylet spine as a common feature (Van Steenkiste *et al.* 2012).

As to biogeography, China stretches over the Oriental and Palearctic realms. Since 21st Century, 12 species of Rhabdocoela (Meixner, 1925) have been recorded and described in the Oriental realm within China’s national land (Wang & Sun 2011; Wang 2004; Wang & Deng 2006; Wang & Wu 2005a, 2005b, 2008; Zhang *et al.* 2011; Lai *et al.* 2013), among which there are four species of *Gieysztoria*: *G. shenzhensis* (Wang & Wu 2005b); *G. pulchra* (Wang & Deng 2006); *G. macrovariata* 9–*spinosa* (Luther 1955; Wang & Deng 2006); and *G. wuyishanensis* (Lai *et al.* 2013). *G. shenzhensis* belongs to the “Radiatae”; *G. pulchra* and *G. macrovariata* 9–*spinosa* belong to “Aberrantes”. Species of “Fenestratae” are currently unknown in China. One new species of “Falcatae” is found in the south of China (Lai *et al.* 2013).

In this contribution, we described two new species of “Aequales” collected from the artificial lake in Shenzhen University campus. The structure of their stylet is unique among the “Aequales” group and this report constitutes the first description of species of the “Aequales” group of *Gieysztoria* in China.

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