



# Article

urn:lsid:zoobank.org:pub:C3113B70-BE45-42DB-A062-B39684EA3519

## Two new species of Tubificinae (Annelida: Clitellata: Naididae) from Tibet, China

XUEBAO HE<sup>1,2</sup>, YONGDE CUI<sup>\*1</sup> & HONGZHU WANG<sup>1</sup>

<sup>1</sup>State Key Laboratory of Freshwater Ecology and Biotechnology, Institute of Hydrobiology, Chinese Academy of Sciences, Wuhan, 430072, China

<sup>2</sup>Laboratory of Marine Biology and Ecology, Third Institute of Oceanography, State Oceanic Administration, Xiamen, 361005, China

\*Corresponding author. E-mail: ydcui@ihb.ac.cn

### Abstract

Two new species of Tubificinae (Oligochaeta: Naididae), *Tubifex conicus* n. sp., and *Isochaetides palmatus* n. sp., are reported from Tibet, China. *T. conicus* is unique in the genus by having spindle-shaped atria, large prostates and symmetrically conical penial sheaths. *I. palmatus* differs from its allies by possessing palmate dorsal chaetae, pectinate ventral chaetae and no penial sheaths.

**Key words:** *Tubifex*, *Isochaetides*, aquatic Oligochaeta, new species, taxonomy, Tibet

### Introduction

Formed in the Medio-Pleistocene Epoch of the Quaternary Period, the Tibetan plateau is known to have a unique fauna, from which many endemic insects and fishes have been found (Wang *et al.* 1992; Zhang *et al.* 1995). However, our knowledge regarding Oligochaeta in this plateau is still limited. As the earliest work, Stephenson (1909) described four Tibetan microdrile oligochaetes species, and Černosvitov (1949), in a study mainly based on Stephenson's material, recognized six species: *Chaetogaster diaphanus* (Gruithuisen, 1828) (as *Ch. orientalis* Stephenson, 1909, a synonym of *Ch. diaphanus*), *Nais* sp., *Limnodrilus udekemianus* Claparède, 1862, *Rhyacodrilus stephensoni* Černosvitov, 1941, *Lumbriculus variegatus* (Müller, 1774), and *Henlea ventriculosa* (d'Udekem, 1854). From Changdu in Tibet, Liang (1963) described a new subspecies, *Pristina amphibiotica changtuensis*, and subsequently regarded it as a separate species, *Pristina changtuensis* (Liang, 1963) (Liang *et al.* 1998). A new glacial enchytraeid, *Sinenchytraeus glacialis* Liang & Hsü, 1979, was also described from that region (Liang *et al.* 1979). No further species have been reported up to the present. In this paper, we describe two new species, *Tubifex conicus* n. sp. and *Isochaetides palmatus* n. sp., from Lake Yamzho Yumco, Tibet. Some other new species and discussion of oligochaetes faunal characteristics on Tibetan Plateau will be published separately.

### Materials and methods

Sampling sites were located in Lake Yamzho Yumco (N28°16'–29°11', E90°21'–91°05'), which is a tectonic-barrier, high altitude brackish water inland lake at 4442 meters above sea level, belonging to the drainage system of southern Tibet. The lake covers an area of 678 km<sup>2</sup> in a catchment of 6100 km<sup>2</sup>, its maximum depth is 59 m, its mean depth 30 m, and recharge coefficient is 9.0 (Wang & Dou 1998). Mean water temperature is about 12°C in summer and the ice-cover season spans a period from November to March; in the region around the lake, the annual mean air temperature is 2.6°C (Chinese Academy of Science, The Comprehensive Scientific Expedition to Qinghai-Tibet Plateau 1984).