THREE NEW SPECIES AND ONE NEW RECORD OF THE TARDIGRADA FROM CHINA

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Key words: Tardigrada; *Cornechiniscus; Pseudechiniscus; Dactylobiotus; Hypsibius*
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Our knowledge of the phylum Tardigrada from China was rather meager. The studies include: Rahm, G.[1—3], Mathew, G. B.[4], Bartos, E.[5], Pilato, G.[6], Ito, M.[7] and Yang Tong[8—9]. In January and April of 1999 and in April of 2001, some specimens of tardigrades were collected from some mosses of Kunming City and Shilin County in Yunnan Province and some filament green algae of Zhengzhou City and Luoyang City in Henan Province. On examining the materials three new species and one new record from China are found. All the type specimens are deposited in the Institute. The descriptions of these species including some notes are given below.

Cornechiniscus tibetanus (Maucci, 1979) (Fig. 1)

Five specimens were found in some mosses of Shilin County in 2100 m altitude. Body length 217.8—290.4μm. Sword shaped cephalic cirri (A) robust and short. Taking the form pattern of small pores on the dorsal plates, with distinct eyes. Median 1 and 2 plates of dorsum transversely divided. Median 3 plate of dorsum followed by the third paired plates (pseudosegmental plates). In back of terminal plate with a pair of sculptures. Posterior lateral margins of every two lateral plates with a pair of spiniform appendages. In respect of morphological features, these specimens resemble *Cornechiniscus tibetanus* (Maucci, 1979) discovered from Ladak-Dras of Kashmir in 3300m altitude[10].

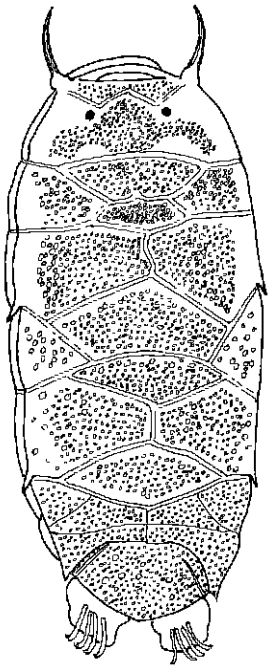

Fig. 1 *Cornechiniscus tibetanus* (Maucci, 1979) Dorsal view of the whole body

Pseudechiniscus shilinensis sp. nov. (Fig. 2)

Holotype and nine paratypes were found in some mosses of Shilin County (24°38′N, 102°64′E) and one specimen were found in the golden hall park of Kunming City

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(24°54′ N, 102°36′ E). Body length 121.0—205.7μm. The filamentous cephalic cirri (A) long and thin. Taking the form of pattern of numerous small pores on the dorsal plates, with distinct eyes. Median 1, 2 and 3 plates of dorsum are not transversely divided. Median 3 plate of dorsum followed by the third paired plates (pseudosegmental plates). At the back of terminal plate with a pair of sculptures.

Posterior lateral margins of every two lateral plates with a pair of spiniform appendages. The bendform claws of the first to third paired legs robust and short. With respect of body length, distinct eyes, pattern of dorsal plates and spiniform appendages of lateral plates, these specimens resemble *Pseudechiniscus conifer* (Richters, 1904) from Switzerland, Austria and Romania, but differ from it in without a robust and black transverse line on every median plate and having sculptures on the terminal plate. They also differ from all of other 26 known species in major aspects and considered as a new to science.[11]

Dactylobiotus henanensis sp. nov. (Fig. 3)

Holotype and nineteen paratypes were found in some filament green algae of Jiangang Reservoir

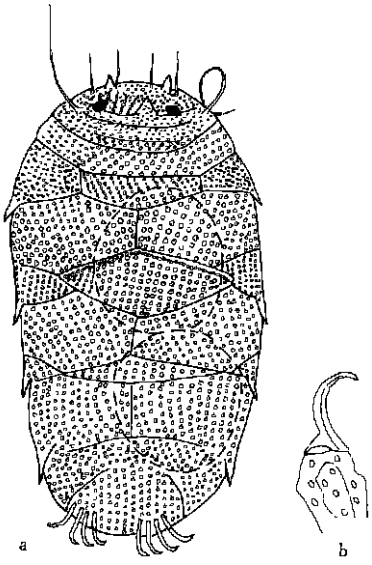

Fig. 2 *Pseudechiniscus shilinensis* sp. nov.
a. Dorsal view of the whole body;
b. Claws of the first to third pairs of legs

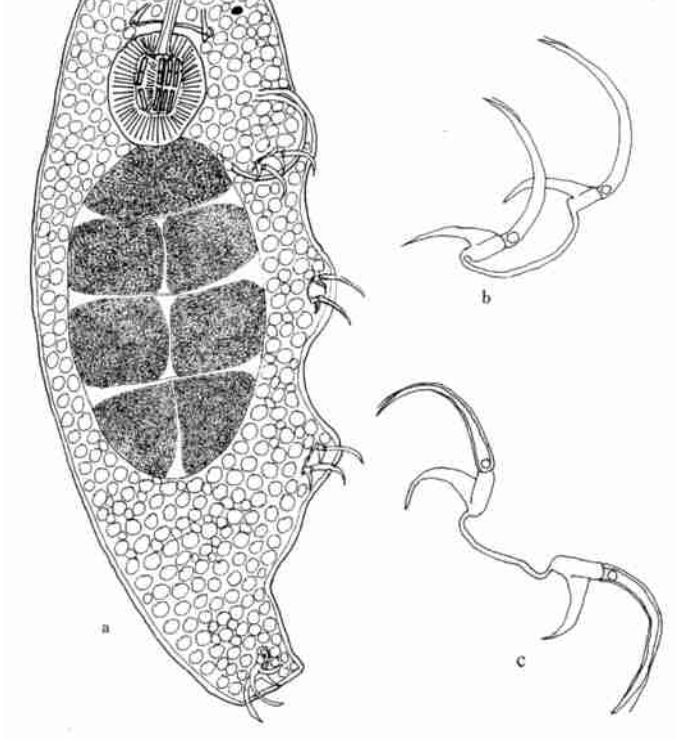

Fig. 3 *Dactylobiotus henanensis* sp. nov.
a. Lateral view of the whole body; b. Claws of the first to third pairs of legs; c. Claws of the fourth pair of legs

of Zhengzhou City (34°75′N, 113°61′E) and Yi River of Luoyang City (34°54′N, 112°38′E) in Henan Province. Body length 314.6—605.0μm. Take the form of pattern of numerous cystic marks on the body surface; with a pair of distinct eyes. Ten periphery buccal lamellae present; buccal tube short, rigid and without spiraled thickenings; large sucking pharynx contains apophyses and septulum, 4 pairs of 8 striped macroplacoids, without microplacoid. The macroplacoids of second line are two third of the first line in length, in the middle of first line with cracks. Two similar double furcated claws of each leg present and at the bases of claws structurally connected; claws sequence 2, 1, 1, 2. The lower level of primary branch with a round cuticle bar and its top with a furcated small branch in every claw of first to fourth paired legs.

With respect of buccal tube short, two similar double furcated claws of each leg at the bases of claws connect, claws sequence of 2, 1, 1, 2 and without lunulae, the author believes it belonging to the genus *Dactylobiotus* Schuster, 1980. So far as the writer knows, about 8 species of this genus have been described in the world, including 3 species discovered in China[11]. The Henan specimens differ from all of the known species of this genus in the large sucking pharynx contained 4 pairs of 8 striped macroplacoids, two double furcated claws of the first to fourth paired legs.

Hypsibius kunmingensis sp. nov. (Fig. 4)

Holotype was found in the golden hall park of Kunming City (24°54′N, 102°36′E). Body length 484μm. Take the form of pattern of numerous small pores on the body surface; without eyes. Buccal tube short; small sucking pharynx contains a pair of long ellipse macroplacoids and a pair of round microplacoids. Two dissimilar double furcated claws of each leg; not connected at bases; with cuticle bars; without lunulae. Primary branches of external double claws flexible at the junctions with secondary; internal double claws without furcated form in first to third paired legs, but with furcated form and claws sequence of 2, 1, 2, 1 in the fourth paired legs.

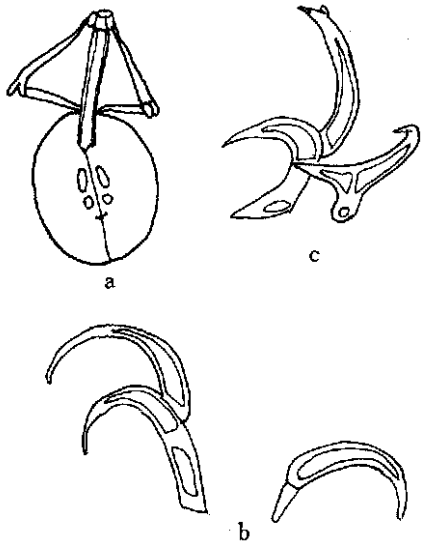

Fig. 4 *Hypsibius kunmingensis* sp. nov.
a. Buccal tube and sucking pharynx; b. Claws of the first to third pairs of legs; c. Claws of the fourth pair of legs

Although the internal claws of first to third paired legs in this specimen are very particular, but with respect of two double furcated claws and claws sequence of 2, 1, 2, 1 in fourth paired legs, buccal tube short, the writer believes it belonging to the genus *Hypsibius* Ehrenberg, 1848. So far as the author knows, about 32 species of this genus have been described in the world, including 3 species discovered in China[11].

Kunming specimen resembles *Hypsibius dujardini* (Doyere, 1840) in the body length, without eyes and sucking pharynx, but differs from all of the known species in major aspects of the claws from first to fourth paired leg.

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缓步动物门三新种及一新记录种记述

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摘要: 记述了得自云南省和河南省苔藓与丝状绿藻中的缓步动物门三新种和一新记录种: 异缓步纲棘影熊虫科的西藏角棘影熊虫新记录种 *Cornechiniscus tibetanus* (Maucci, 1979) 和石林假棘影熊虫, 新种 *Pseudechiniscus shilinensis* sp. nov.; 真缓步纲大生熊虫科的河南趾生熊虫, 新种 *Dactylobiotus henanensis* sp. nov.; 高生熊虫科的昆明高生熊虫, 新种 *Hypsibius kunmingensis* sp. nov.。

关键词: 缓步动物门; 角棘影熊虫属; 假棘影熊虫属; 趾生熊虫属; 高生熊虫属