



A NEW SUBSPECIES OF *TRYPOXYLUS DICHOTOMUS* (COLEOPTERA: SCARABAEIDAE: DYNASTINAE) FROM CHINA

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ABSTRACT

This paper describes *Trypoxylus dichotomus shennongjii* subsp. nov., the 6th subspecies of *T. dichotomus* Linnaeus (1771) from Shennongjia, Hubei Province, China, whose diagnostic illustrations with a distribution map are provided.

Key words: *Trypoxylus dichotomus*, Dynastinae, Shennongjia, Hubei province, China, V-shaped cephalic horn

Currently, the genus *Trypoxylus* (Coleoptera: Scarabaeidae: Dynastinae) is composed of two species with six subspecies including the one this paper is describing. The distribution of *T. dichotomus* Linnaeus (1771) is Japan, Korean Peninsula, Taiwan, China, and Southeast Asia (Nagai, 2007). A male of *T. dichotomus shennongjii* subsp. nov. has been found in low elevation forests (405 m a.s.l.) in Shennongjia forestry district, Hubei province, China. Large males of *T. dichotomus* are characterized by an elaborate pitchfork-shaped horn on the head and a short bifurcated horn on the thorax. On the other hand, the male of this new subspecies possesses a large, imposing V-shaped cephalic horn, which makes it specifically distinguishable.

MATERIALS AND METHODS

In the low elevation forests of Shennongjia, northwestern Hubei province, China male specimen was captured and killed in 75 % of ethanol. This specimen was purchased from Mr. Xiao Benyan, an insect collector living in Xiangfan city in the same province. The specimen is deposited in the private collection.

The male of *T. dichotomus shennongjii* subsp. nov. was compared with that of *T. dichotomus septentrionalis* Kono (1931) (Figs. 1-3). The colour description was based on dried specimen and images of specimens were taken using a Olympus C-1000L digital camera.

Trypoxylus dichotomus shennongjii subsp. nov.

(Figs. 1 A, 2A)

Type locality. China, Hubei province, Shennongjia, 405 m a.s.l., 31°352 N, 110°302 E.

Type material. HOLOTYPE: Male, labeled 'China: Hubei province / Shennongjia / 17.vii.2012, 405 m // HOLOTYPE (red)/*Trypoxylus dichotomus shennongjii* ssp. nov., Satoru Takeuchi / det. 2013'.

Diagnosis. *T. dichotomus shennongjii* ssp. nov. can be obviously distinguished from the remaining species and subspecies of the genus *Trypoxylus* by the cephalic horn in male. The new subspecies male is characterized by a large and magnificent V-shaped cephalic horn. The cephalic horn has a small fork on the apex (Figures 2A, 3A, and 4A).

Description. Male. The new subspecies is approximately 80 mm long (including horn length) x 28 mm wide, with a prominent V-shaped cephalic horn and has a thick dark-brown shell (Figures 2A, 3A, and 4A).

Female. Unknown

Etymology. The new subspecies was named after Shennongjia, a county in Hubei province, China.

Distribution. *T. dichotomus* is distributed throughout East Asia mountainous region as well as in some countries in Southeast Asia, as shown in Table 1 (Nagai, 2007). A male of the new subspecies was found in Shennongjia, a forestry district in Hubei province, located in the central part of China.

T. dichotomus septentrionalis (also called Japanese rhinoceros beetle) (Figs. 1 B, 2B, 3B) is a subspecies of the genus *Trypoxylus*, and in Japan, is popular as a pet for children and adult hobbyists. In July, *T. dichotomus shennongjii* subsp. nov. was found in low elevation forests (405 m a.s.l.) in Shennongjia, located



Fig. 1. *Trypoxylus dichotomus shennongjii* subsp. nov (A) . and *Trypoxylus dichotomus septentrionalis* (B), anterior view

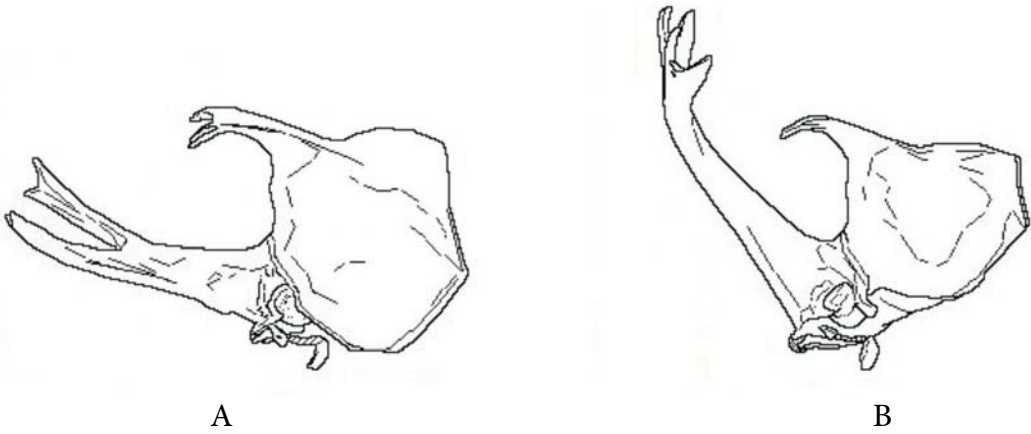


Fig. 2. *Trypoxylus dichotomus shennongjii* subsp. nov (A) and *Trypoxylus dichotomus septentrionalis* (B), head & pronotum lateral view



Fig. 3. Difference in the cephalic horn.

Trypoxylus dichotomus shennongjii subsp. nov (A), V shaped cephalic horn; *Trypoxylus dichotomus septentrionalis*, Y shaped cephalic horn (B)

Table 1. Distribution of species and subspecies of the genus *Trypoxylus*

Species and subspecies	Location
<i>Trypoxylus dichotomus</i> Thailand, Myanmar, and India etc.	China, Korean Peninsula, Cheju island, Vietnam, Laos,
<i>Trypoxylus kanamorii</i>	The northwest of Myanmar
<i>Trypoxylus dichotomus septentrionalis</i>	Honshu, Shikoku, and Kyushu
<i>Trypoxylus dichotomus tsunobosonis</i>	Taiwan
<i>Trypoxylus dichotomus takarai</i>	Okinawa and Iheyajima islands
<i>Trypoxylus dichotomus inchachina</i>	Kumejima island
<i>Trypoxylus dichotomus tsuchiyaï</i>	Kuchinoerabujima island

in central China's Hubei Province. Shennongjia ranges from the transitional zone of northern subtropical to mid subtropical, with approximately 8°C of average temperature. July and August are the wet seasons.

While the genus *Trypoxylus*, especially large males of the species *T. dichotomus* are characterized by the elaborate Y-shaped cephalic horn that protudes upwards from the head, the male of *T. dichotomus shennongjii* nov. possesses a large and prominent V-shaped horn. This male clearly differs from all others species in the genus in the cephalic horn (Figs. 1, 2, 3).

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