



## Record of *Natula matsuurai* Sugimoto (Orthoptera: Gryllidae: Trigonidiinae) and other sword-tailed crickets from India

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### Abstract

The genus *Natula* is a new record from the state of Rajasthan, India. Description of the species has been supported with photographs and line drawings leading to its identification. The other common sword-tailed crickets of the sub-family Trigonidiinae have also been described.

**Key words:** Orthoptera, Gryllidae, Trigonidiinae, *Natula*, *Trigonidium*, *Paratrigonidium*, *Metioche*

### Introduction

In a taxonomic review of Sword-tailed Crickets (Trigonidiinae) from Korea, Kim (2013) confirmed four members of the sub-family, named on the basis of the peculiar shape of the ovipositor (Kevan, 1982); also often referred to simply as ‘trigs’ (Otte, 1994b). Walker and Masaki (1989) opined that the ovipositor is shaped so in order to insert eggs into plant tissue and the adhesive tarsal pads of the legs adapted for running upside down on plant leaves. Though they are of small size (4–7mm), the crickets are conspicuous due to their remarkable vivid colorations and crawling behavior on the vegetation. They prefer humid habitats with abundant vegetation; such as swamps, marshes, and bogs, and they can be generally collected by net-sweeping or beating method. More than 33 genera, including 490 species are known throughout the world (Otte, 1994a); however, the study of its diversity is incomplete (Rentz, 1996). Shiraki (1930) reported ‘*Paratrigonidium bifasciatum*’ as the more common sword-tailed cricket in Korea. Doi (1932) reported ‘*Anaxiphus pallidulus*’ and ‘*Metioche insularis*’ from Korea, but were considered erroneous names due to earlier misidentifications (Storozhenko and Paik, 2007; Paik *et al.*, 2010). Bae (1998) and Kim (1998) included ‘*Trigonidium cicindeloides*’ in their guide books, based on the natural pictures, which later was named as ‘*Trigonidium japonicum*’ by Ichikawa (2001).

### Systematic account

**Order:** Orthoptera Olivier, 1789

**Suborder:** Ensifera Chopard, 1920

**Superfamily:** Grylloidea Laicharting, 1781

**Family:** Gryllidae Laicharting, 1781

**Sub-family:** Trigonidiinae Saussure, 1874

**Diagnosis.** This sub-family includes numerous small species of gryllids with the second joint of tarsi somewhat

## *Metioche japonica* (Ichikawa, 2001)

1861. *Trigonidium vittaticolle* Stal, *Eugenies Resa. Ins.*, 317.

1925. *Metioche vittaticollis* Chopard, *Ark. Zool.*, 18 (A), No. 6, 32. Chopard, 1931, *Bull. Raffles Mus.*, No. 6, 136

**Description of species.** body coloration dark shining black with bright yellow appendages looks like small coleopteroids. Wing venation similar in both sexes [Plate IV].

**Male.** Dark black, eyes large, widely separated; inner margin of eyes more brightly rimed; fastigium of vertex as wide as horizontal diameter of antennal sockets; scape and pedicel dark black, flagellum bright; apical segment of maxillary palpus black, hatched shaped. Pronotum anterior and posterior margins truncate; a median longitudinal groove present on half of front. Tagmina dark shining black, convex on top; macropterous, slightly exceeding abdominal end, apex rather pointedly projected; stridulatory absent; lateral field differ than lateral lobe of pronotum. Hind wings absent. Fore tibia without tympanum. Middle tarsomeres smaller and darkish. Hind tibia with three pairs of dorsal spine on both side posteriorly; hind basi-tarsus longer than combined length of remaining two tarsomeres circus yellowish, as long as middle femur. Subgenital plate trapezoidal. Epiphalls with wide dorsal plate, triangularly incised on the middle of hind margin; hind lateral lophi dentate, its apex more projected two figure shaped.

**Female.** tegminal venation similar with male, but rather hyaline, less dark than male circus as long as ovipositor. Sub-genital plate roundly triangular, its hind margin hardly notched at middle apex. Ovipositor strongly up-curved, half as long as hind femur; 2/3<sup>rd</sup> area from base rather widened and bumpy; dorsal valves weakly serrated apically.

**Material examined (70 specimens).** Rajasthan: 1♂ 1♀ Vallabhnagar 14.ix.2013, 1♀ Chittorgarh 7.i.2013, 3♂Anta ii.2013, 1♂ Sangaria 21.i.2013, 4♂ Pali 4.xi.2007, 3♂ 2♀ Banswara 16.v.2013, 1♂ 2♀ Rajasamand 28.x.2012, 2♂ 1♀Bhilwara 21.ii.2008, 11♂ 9♀ Udaipur 2007–2013; Madhya Pradesh: 1♂ 1♀ Mandsaur xi.2012; Gujarat: 1♀ Navsari 16.ii.2008, 2♂ 2♀ Anand 27.vii.2013; Maharashtra: 2♂ 6♀ Akola 7.x.2013; Tamil Nadu: 1♂ 6♀ Coimbatore 22.v.2012; Meghgalya: 2♂ 2♀ West Khasi Hills 4.vi.2013, 1♂ 1♀ Upper Shilong 3.vi.2013.

**Distribution.** India and S.E. Asia.

**TABLE 1.** Morphometric variation in common sword-tailed crickets (Gryllidae: Trigonidiinae).

Length (mm) Measurements	<i>M. japonica</i>		<i>T. humbertianum</i>		<i>P. nitidum</i>		<i>N. matsuurai</i>	
	Male	Female	Male	Female	Male	Female	Male	Female
Body	4.38	4.41	5.18	5.31	6.41	6.04	6.07	6.19
Pronotum	0.85	0.90	0.81	0.85	1.26	1.34	1.04	1.09
Forewing	2.74	2.82	3.66	3.80	4.42	3.64	4.19	4.40
Hind leg	8.80	8.96	9.93	10.19	9.89	10.17	9.44	10.56
Hind femur	3.54	3.71	4.11	4.23	4.20	4.28	4.43	4.73
Hind tibia	3.68	3.87	4.22	4.36	4.38	4.47	4.28	4.61

## Acknowledgments

The authors gratefully thank Dr. V. V. Ramamurthy, Professor of Entomology and National Coordinator, ICAR Network Project on Insect Biosystematics, IARI, New Delhi for inspiration, guidance and funds and Director Research, MPUAT, Udaipur, Rajasthan for providing all facilities and encouragement to carry out the work.

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