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Description of an endemic and endangered new *Sympetrum* species (Odonata: Libellulidae) from the subtropical area of Taiwan

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Abstract

Sympetrum nantouensis sp. nov. collected from Nantou, Central Taiwan, is described and figured, with remarks on its ecology and oviposition behaviour. Judging from penile structure, it is considered to belong to the *infuscatum*-group, whose members are defined here by penile characters. In the *infuscatum*-group, *S. nantouensis* is most similar to *S. risi* Bartenev, but they are probably not very closely related to each other. *Sympetrum nantouensis* differs from *S. risi* mainly in having beak-like cerci, well-lineated black and pale yellow pterothorax, and penile 4th segment with longer and apically upcurved cornua. This new species is distinct among its congeners in view of both biogeography and morphology because of its confined and peripheral existence and the odd shape of its cerci. All type specimens will be deposited at the Insect Collection of TFRI.

Key words: new species, *Sympetrum*, *Infuscatum*-group, Taiwan

Introduction

The genus *Sympetrum* is a speciose genus of libellulid dragonflies encompassing 62 species around the world (Hong & Hwang 1999; Ri & Hong 2001; Schorr & Paulson 2012). This number excludes three newly synonymized species, viz., *S. nigrescens* Lucas with *S. striolatum* (Charpentier), *S. occidentale* Bartenev with *S. semicinctum* (Say) (Pilgrim & von Dohlen 2007) and *S. haematoneura* Bartenev with *S. speciosum* Oguma (Dumont 2003), and two African species, *S. congoense* (Aguesse) and *S. navasi* (Lacroix), which were recently removed to another new genus (Dijkstra & Pilgrim 2007). Most species of this genus inhabit in the temperate areas of Holarctic zone (Pilgrim & von Dohlen 2012) where they are usually widely spread. The genus is most diverse in Asian continent where so far more than 35 species have been recorded (Tsuda, 2000) including two species not listed in the World Odonata List (Schorr & Paulson 2012). These are *S. onsupyongensis* Hong & Hwang and *S. pochonboensis* Ri & Hong, both described from North Korea and both of doubtful taxonomic status.

In Taiwan eight species of *Sympetrum* have been recorded (Lieftinck *et al.* 1984; Tsou and Yeh 2007; Yeh *et al.* 2007). All of them are widely distributed, at least at the species level, in the Asian continent and/or the Japanese archipelago. Among these, *S. cordulegaster* (Selys), *S. depressiusculum* (Selys) and *S. fonscolombii* (Selys) were newly recorded as vagrant species, and appeared every year only for a short period in fall. *S. darwinianum* (Selys) and *S. kunckeli* (Selys) both were previously known only from one single record in Szeki, Yilan County (Asahina 1940) and Nanshansi, Nantou County (Inoue & Takahashi 1969), respectively. *S. baccha baccha* (Selys) was probably locally extinct in Taiwan, though Matsuki and Lien (1983) once reported many records of this species from the Taipei area between 1968 and 1978, not a single one thereafter. Nowadays only *S. eroticum ardens* (McLachlan) and *S. speciosum taiwanum* Asahina are considered resident species with stable populations in Taiwan. However, one new and endemic species was recently discovered in Central Taiwan in 2007 and is described here, with remarks on its ecology and oviposition behavior. The authors also compared this species with its known close relative and demonstrated its uniqueness in the genus. Following the IUCN Red List Categories and Criteria, it was proposed to be listed as endangered.