



Biting midges of the genus *Atrichopogon* Kieffer (Diptera: Ceratopogonidae) described by Kieffer from Taiwan

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Abstract

Twelve species of biting midges of the genus *Atrichopogon* reported by Kieffer (1912, 1916a,b, 1921, 1922) from Taiwan are redescribed, illustrated and/or interpreted. They are included in the subgenus *Psilokempia* Enderlein (*A. myrmedon* Kieffer, 1912) and in the subgenus *Atrichopogon* s. str. (*A. argus* Kieffer, 1916, *A. flaviceps* Kieffer, 1912, *A. haemorrhoidalis* Kieffer, 1921, *A. insularis* Kieffer, 1921, *A. minimus* Kieffer, 1916, *A. pruinus* Kieffer, 1921 and *A. ruber* Kieffer, 1916). Five new synonyms are proposed for the following species: *A. ruber* Kieffer, 1916 (= *A. formosanus* Kieffer 1918), *A. myrmedon* Kieffer, 1922 (= *A. quadrispinosus* Remm, 1993; = *A. pectinacaudalis* Yu & Yan, 2006), *A. insularis* Kieffer, 1921 (= *A. citrinipes* Kieffer, 1922) and *A. flaviceps* Kieffer, 1912 (= *A. mendax* Kieffer, 1922, as var. of *A. flaviceps*). *Atrichopogon crispantis* Liu, Yan & Liu, 1996 is resurrected from synonymy with *A. insularis* Kieffer, 1921. *Atrichopogon rufescens* Kieffer, 1921 is recognized as a *nomen dubium*, while *A. atriceps* mentioned by Blech & Rohlfien (1987) is considered a *nomen nudum*. A key to the species described by Kieffer from Taiwan is provided.

Key words: Diptera, Ceratopogonidae, *Atrichopogon*, Taiwan, redescription, synonymy

Introduction

Adults of *Atrichopogon* Kieffer are easily distinguished from the related *Forcipomyia* Meigen by the thoracic paratergite bearing at least 1 seta. They are common in all moist terrestrial habitats throughout the world, including oceanic islands (Borkent 1991, Szadziewski *et al.* 1997, Borkent & Spinelli 2007). The oldest fossils were reported from Eocene Baltic amber (Szadziewski 1988, 1996). The genus includes 509 extant species from 5978 biting midges (Borkent & Wirth 1997, Borkent 2009). Of the 1015 species of biting midges recorded from China (Yu *et al.* 2006), 85 are of *Atrichopogon*, and many of those were recently described as new. Only a few species out of the 12 described by Kieffer (1912, 1916a, 1916b, 1918, 1921, 1922) from Taiwan were later reported by Tokunaga and Chinese authors. In 1934, Tokunaga (1940a,b) collected seven species of *Atrichopogon* in Taiwan (Taihoku), including four described previously by Kieffer from Taiwan (*A. rufescens*, *A. insularis*, *A. formosanus*, *A. minimus*) which were mostly not interpreted correctly (see below) and one from Philippines (*A. flavidus* Kieffer, 1921).

One difficulty in understanding the Oriental fauna is that many of the species described by Kieffer are poorly understood, with most lacking existing types. Fortunately, the Kieffer types of most of the species of *Atrichopogon* from Taiwan as Formosa (Kieffer 1912, 1916a,b, 1918, 1921, 1922) are available for study and are the basis of the interpretation presented here. Biting midges of the genus *Atrichopogon* named by Kieffer were collected by H. Sauter. The types were deposited in the Museum of Natural History in Budapest (Hungary) and in the Senckenberg Deutsches Entomologisches Institut (SDEI) in Eberswalde (Germany). Subsequently, the Budapest types were lost in the 1956 fire, while some types or specimens determined by Kieffer from type localities in Taiwan are, fortunately, preserved in Eberswalde. Blech & Rohlfien (1987) listed the preserved SDEI *Atrichopogon* specimens of the following species: *A. citrinipes*, *A. flaviceps*, *A.*