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Towards understanding *Lepidocyrtus* Bourlet, 1839 (Collembola, Entomobryidae) I: diagnosis of the subgenus *Setogaster*, new records and redescriptions of species

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Abstract

The taxonomic status of the subgenera of *Lepidocyrtus* Bourlet is confused. Currently ten subgenera are recognised but their separation, using the existing set of diagnostic characters, is not clear. Collections over the last forty years have shown that species of *Setogaster* Salmon, originally described as a genus (*Trichogaster* Handschin) and currently considered a subgenus of *Lepidocyrtus*, are common and widespread in Australia. The diagnostic characters of *Setogaster*, as given by Handschin, are: 1) the basal mucronal spine with spinelet; 2) lack of scales on antennae, legs, ventral tube and dorsal region of manubrium; and, for some species, 3) tufts of long filaments laterally on abdomen III. These three diagnostic characters for *Setogaster* are shared with some other subgenera, making their delimitation unclear. We provide here an array of new characters that are associated with Handschin's characters which separate *Setogaster* from all European species of the subgenera *Lanocyrtus* and *Lepidocyrtus s. str.* On this basis we define subgenus *Setogaster* more in detail, redescribe some species in the subgenus, corroborate the presence of the subgenus in many Australian localities, and confirm three records of exotic, introduced species in Australia. *Lepidocyrtus nigrofasciatus* Womersley, *Lepidocyrtus praecisus* Schött, and the Hawaiian *Lepidocyrtus kuakea* Christiansen & Bellinger, are placed in *Setogaster* subgenus; *Lepidocyrtus* (*Trichogaster*) *pallida* Salmon from Singapore is placed in the subgenus *Acrocyrtus*; *Merapicyrtus* Yoshii & Suhardjono is considered a synonym of *Setogaster*.

Key words: Australia, Singapore, New Zealand, Antarctica, Hawaiian Islands, chaetotaxy

Introduction

The genus *Lepidocyrtus* Bourlet, 1839 is currently considered to be composed of ten subgenera *sensu* Wang *et al.* (2003). This is mainly based on the pioneer publications of Ryozo Yoshii (see Yosii 1959, 1960, 1961, 1963, Yoshii 1982, 1994, Yoshii & Suhardjono 1989, 1992a, 1992b) who identified a range of diagnostic characters for their identification. However, problems have arisen in separation and diagnoses of subgenera because some characters Yoshii used to separate them occur in more than one subgenus and, more often than not, he only used a single character to separate his subgenera. Moreover, Yoshii himself treated these taxa inconsistently as either full genera or as subgenera and sometimes did not refer to his earlier taxonomic decisions on the group.

Initially, Yosii (1959) noted that the genus *Lepidocyrtus s. l.* was 'conveniently' divided into three subgenera (*Acrocyrtus* Yosii, 1959, *Discocyrtus* Yosii, 1959, and *Lepidocyrtus s. str.*) on the basis of the presence and shape, rounded or pointed, of the (basal) dental lobe and he provided a key to these subgenera based on this character. The subgenus *Discocyrtus*, with type species *L.* (*Discocyrtus*) *suborientalis* Denis, 1948, was characterised by a rounded dental lobe, and subgenus *Acrocyrtus,* type species *L.* (*Acrocyrtus*) *malayanus* Yosii, 1959, by a pointed dental lobe. Subgenus *Lepidocyrtus* lacked this structure.

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