



A revision of *Pseudoparonella*, *Plumachaetas*, *Parachaetoceras* and *Lawrenceana* (Collembola: Paronellidae), with description of three new species from New Caledonia

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Abstract

The relationship of *Pseudoparonella* to other paronellid genera is currently unresolved. Authors have proposed different taxonomical systems for which the proposed subgeneric divisions have not been compared. We compared these genera in detail and conclude here that antennal length is a reliable diagnostic character. The antennae of species in the genera *Plumachaetas* and *Parachaetoceras*, are longer than body and bear long chaetae but are not longer than body in *Pseudoparonella*. The subapical chaeta on the maxillary outer lobe is another character potentially discriminant as it is pointed in *Pseudoparonella* but thick and blunt in *Plumachaetas*. The subgenus *Lawrenceana* is synonymised here with *Plumachaetas* because of long antennae. Three new species, *Pseudoparonella seminigra* sp. nov., *Plumachaetas yoshii* sp. nov., and *Plumachaetas sunae* sp. nov., are described from New Caledonia. Variation in colour patterns of *Pseudoparonella griseo-coerulea* Yoshii is reported. New records of *Pseudoparonella tanimbarica* Yoshii & Suhardjono and *Ps. shibatai* Yoshii, as well as a key to genera, are also provided.

Key words: antennae, long chaetae, colour pattern species, synonym, Oceania, Indonesia

Introduction

Handschin (1925) erected the genus *Pseudoparonella* for *Paronella appendiculata* Schött, 1917 from Australia, on the basis of its small mucro. In 1926, he established the genus *Chaetoceras* for *Chaetoceras sarasini* Handschin, 1926 from New Caledonia, based on long antennae carrying long, stiff chaetae; Salmon (1951) replaced *Chaetoceras* by the new name, *Plumachaetas*, because it was preoccupied in Lepidoptera by *Chaetoceras* Warren, 1896. Salmon (1941) established *Parachaetoceras* for *Chaetoceras pritchardi* Womersley, 1936, which also had long antennae with long chaetae, but differed from *Chaetoceras* in having stout dental spines and narrow scales. Yoshii (1989) and Yoshii & Suhardjono (1992) erected three subgenera (*Oceaniella*, *Najtnella*, *Irianella*) based on the modified chaetae on manubrial plaque, the chaetae of the p-row on labrum, the subapical chaeta of maxillary outer lobe, and terminal tubule of ventral tube, and reduced *Plumachaetas* Salmon, 1951 to subgeneric level; although, they stated the system they proposed was not the final one. Independently, Mitra (1992) divided *Pseudoparonella* into two subgenera *Pseudoparonella s. s.* and *Lawrenceana* based on the characters of length of antennae, shape and size of the mucro, and the number of large chaetae at tip of dens; however, he did not consider the status of genera *Chaetoceras* or *Plumachaetas* or any Yoshii's subgenera. Greenslade & Yoshii (2000) studied Australian *Pseudoparonella* following Yoshii's system (1989, 1992), and commented on the unresolved status of the subgenus *Najtnella*. Later, the subgenera, *Oceaniella*, *Najtnella*, *Irianella* were considered invalid and identical with *Pseudoparonella* in lists of Entomobryoidea genera by Soto-Adames *et al.* (2008).

All above taxa are members of Callyntrurini and grouped here under the name *Pseudoparonella*-complex. They all possess coarsely striated, mostly rounded scales and well developed tergal macrochaetae, but differ from