

The Surge Flies (Diptera: Canacidae: Zaleinae) of Australasia and Notes on Tethinid-Canacid Morphology and Relationships

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ABSTRACT. The morphology, relationships, and classification of the Tethinidae and Canacidae are considered, with special reference to the Zaleinae. Homologies of bristles near the vertex of the head are critically appraised, and the origin of the sclerite known as the prelabrum or anteclypeus is considered. The family Canacidae Jones, 1906 is classified into the following six subfamilies: Apetaeninae Mathis & Munari, 1996; Canacinae s.str.; Horaismopterinae Sabrosky, 1978; Pelomyiinae Foster, 1976; Tethininae Hendel, 1916; Zaleinae D. McAlpine, 1985. The family name Tethinidae thus becomes a new subjective synonym of Canacidae. The subfamily Nocticanacinae Mathis, 1982 becomes a tribe Nocticanacini n.stat. of Canacinae. *Tethinosoma* Malloch is transferred from the Tethininae to the Horaismopterinae. A key to subfamilies of Canacidae s.l. is given. A revised characterization of Zaleinae is given and its two genera and c. 16 species are keyed. Revised characterizations of *Suffomyia* Freidberg and *Zalea* D. McAlpine are given. The following new species are described: *Suffomyia sabroskyi* (Caroline Islands); *Suffomyia ismayi* (New Guinea); *Zalea earlyi*, *Zalea johnsi*, *Zalea lithax*, *Zalea mathisi*, *Zalea ohauorae*, *Zalea uda*, *Zalea wisei* (New Zealand); *Zalea clava* (Western Australia); *Zalea dayi* (New South Wales). Two doubtful species represented by inadequate material are assigned provisional numbers. Adults of these maritime flies were found on shoreline rocks or on stranded “seaweed”. Parasitism of four *Zalea* spp. by laboulbenian fungi is recorded. Collection techniques for zaleines are mentioned.

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As explained below, the family concepts Canacidae and Tethinidae are here combined as a single family, the former (as Canacinae Jones, 1906) having nomenclatural priority over the latter (first given as Tethinidae Hendel, 1916). See Sabrosky (1999) for details. The family name Tethinidae is therefore no longer used except in reference to older usage. To avoid confusion, I here refer to the new expanded concept of Canacidae as “Canacidae s.l.”, and to the narrower traditional concept of Canacidae, excluding the “tethinid” taxa and the Zaleinae (i.e. the Canacinae plus the Nocticanacinae sensubus Mathis, 1992), as the subfamily Canacinae s.l. The subfamilies of “Tethinidae” used by Mathis & Munari (1996), viz. Apetaeninae, Horaismopterinae, Pelomyiinae, Tethininae, and Zaleinae, are

retained as a further five subfamilies of Canacidae s.l.

This paper records an increase in the number of known species of Zaleinae from four to about 17, though two of these remain unnamed because of inadequate material. New Zealand has a remarkably high representation with about 10 species seen so far, though the collections are meagre. Numerous species have probably been overlooked here and elsewhere in the Pacific because of their small size and specialized habitat. It is hoped that a New Zealand resident will undertake a major study of zaleines using ample material. Even in Australia there are still no species recorded for Queensland and South Australia, though they are very probably present.