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Stentor amethystinus (Protista: Ciliophora: Heterotrichida), A Common Protozoan Member of Fresh-water Plankton in Australia

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ABSTRACT. Large numbers of a brown to violet ciliate can often be seen in freshwater lakes and billabongs in Australia. Uninterpreted records by light microscopy and electron microscopy are provided. The ciliates are identified as *Stentor amethystinus* Leidy, 1880. Despite the abundance of this species, this is a new record for Australia.

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Stentor Oken, 1815 (Oken, 1815) is a widespread and familiar genus of heterotrich ciliates (protozoa). Cells are typically trumpet-shaped and often distinctly coloured; different species being green, black, blue, pink or brown (Foissner & Wölfl, 1994; Kahl, 1932; Tartar, 1961).

A brown species of *Stentor* has been reported as occurring in very large numbers in fresh-water bodies in New South Wales, the Australian Capital Territory and Victoria (Laybourn-Parry *et al.*, 1997). It occurs throughout the year but blooms, which can discolour the water, occur at various times from mid-spring to late autumn. Up to 4200 individuals per litre have been counted, and the organism is argued to make a significant contribution to primary production (Laybourn-Parry *et al.*, 1997). It has also probably been reported as "cf. *Climacostomum*" (Walker & Hillman, 1977).

The aim of this study was to establish the identity of this ciliate. The genus *Stentor* has been reviewed most recently by Foissner & Wölfl (1994) who recognised 19 species. Species distinctions are normally made on the basis of cell shape and size, presence/absence of a mucilagenous sheath, macronuclear form, the number of micronuclei and their location, numbers of kineties and membranelles, pigmentation, presence/absence of symbiotic algae. One study (Nilsson, 1986) has added ultrastructural characteristics to assist in distinguishing species. Brown species