



Revision of the genus *Costularia* (Cyperaceae: Schoeneae) for the flora of the Seychelles, including the rediscovery and resurrection of a rare endemic species

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Abstract

Knowledge of the monocot flora of the Seychelles remains relatively weak and new taxonomic studies, including both herbarium specimens and field observations, are needed. Extensive new explorations in the key biodiversity areas of the Seychelles granitic islands resulted in the discovery of an unknown species of *Costularia*. After careful examination of existing specimens and literature within that genus, we concluded that the unknown plant corresponds to the type of *Cladium xipholepis*, a species endemic to the Seychelles which had previously been confused and put into synonymy with two unrelated taxa, i.e. the other Seychelles endemic *Costularia hornei* and the Mascarene species *C. melicoides*. These confusions were due to the immature state of the type of *Cladium xipholepis*, which was the only known specimen of the species. The name *Cladium xipholepis* is here resurrected and combined in the genus *Costularia*, adding one endemic species to the flora of the Seychelles. In addition, a detailed description is provided, correcting important errors regarding diagnostic characters made in the original description. *Costularia xipholepis* is a rare species, occurring on lower montane inselbergs of Mahé Island, and is here proposed as endangered (EN) according to IUCN Red List categories and criteria. It is morphologically closely related to *C. pantopoda* var. *baronii* from Madagascar. The other Seychelles endemic *Costularia*, *C. hornei* (lectotype designated here), has no close relative and belongs to a group distributed in South-East Asia. We discuss these results in relation to the origins of the flora of the Seychelles. Finally, the previously thought endemic variety *Costularia hornei* var. *rectirhachilloidea* was also reviewed and we consider it to be identical to the type variety, but based on specimens at an earlier stage of spikelet development. These discoveries, along with other preliminary studies, indicate that more studies are needed to review the monocots of the Seychelles, particularly Cyperaceae, Orchidaceae and Poaceae.

Key words: Island biogeography, long-distance dispersal, *Lophoschoenus*, Western Indian Ocean

Introduction

In the Seychelles, the last attempt towards a comprehensive flora of the monocotyledons dates back to the 19th century (Baker 1877, citing 22 taxa in the Seychelles, i.e. species and infra-specific levels). Only a few groups have been reviewed since then, although a checklist was published based on a compilation of the specimens stored mostly at Kew and the Seychelles herbaria (Robertson 1989, citing 43 taxa of Cyperaceae in the Seychelles). About 365 monocot taxa are now recorded for the Seychelles, of which 131 are considered native, 159 exotic, and 75 of unknown origin (Senterre *et al.* 2013: 23). Out of these native monocot species, 35 species are considered endemic to the Seychelles, of which 5 are Cyperaceae: *Mapania floribunda* (Steudel 1855: 132) Koyama (1961: 69), *M. seychellaria* Simpson (1992: 58) and *Costularia hornei* (Clarke 1894: 657) Kükenthal (1939a: 27) in the inner granitic islands; *Bulbostylis basalis* Fosberg (1977: 829) and *Cyperus bigibbosus* Fosberg (1977: 832) in the outer coral islands. In total, if *Pycreus* Beauvois (1816: 48) and *Kyllinga* Rottbøll (1773:12) are included in *Cyperus* Linnaeus (1753: 44) (see Larridon *et al.* 2014), there are currently about 48 taxa (species and infra-specific levels) in 9 genera that are recognised for the Cyperaceae of the Seychelles (Govaerts *et al.* 2014: Seychelles and Aldabra).