



## *Sagittanthera* (Hyacinthaceae, Urgineoideae), a new buzz pollinated genus from the Eastern Cape Province of South Africa

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### Abstract

Within the framework of a taxonomic revision of subfamily Urgineoideae, we here describe a new genus from south-eastern South Africa. *Sagittanthera* gen. nov. is at first sight related to *Rhadamanthus* and *Tenicroa*, but it can be clearly differentiated by the presence of bracteoles and the anthers connate to form a cone-like structure dehiscing by minute apical pores. This genus is based on *Rhadamanthus cyanelloides*, an enigmatic species occurring in the Eastern Cape Province of South Africa. It was described on the basis of incomplete material. Recently, *Drimia cremnophila* and *D. mzimvubuensis*, two species that match the diagnostic characters of the new genus, were described from the same region. A complete description is presented for *Sagittanthera*, and data on morphology, ecology, and distribution are also reported. Two species are accepted in this genus, and the necessary combinations are stated. Furthermore, we demonstrate that pollen is released by vibration. This fact together with morphological features of the androecium clearly evidence that buzz pollination occurs in this new genus.

**Key words:** Asparagaceae, distribution, ecology, Scilloideae, taxonomy, Urgineae

### Introduction

Taxonomy and systematics of Hyacinthaceae subfamily Urgineoideae (*sensu* APG 2003) has been a matter of controversy in the last decades, especially regarding generic circumscriptions. The subfamily includes about 100 species (cfr. Manning *et al.* 2004) distributed in Africa, Europe, and western Asia, reaching India to the east. However, the number of species in Urgineoideae is likely to be considerably higher due to the still poor knowledge of this group throughout its wide distribution range, and the lack of detailed comprehensive taxonomic revisions. This subfamily has been alternatively treated as Asparagaceae subfamily Scilloideae tribe Urgineae (e.g. APG 2009, Chase *et al.* 2009), though we favour the former treatment based on morphological grounds.

On the one hand, extremely broad treatments have been recently proposed for Urgineoideae based on phylogenetic studies (Manning *et al.* 2004), where only three genera are accepted for the whole subfamily: the monotypic *Igidia* Speta (1998b: 70) (see further comments below), *Bowiea* Harvey ex Hooker f. (1867: t. 5619) with two species (Reid *et al.* 1990), and *Drimia* Jacq. ex Willdenow (1799: 165) with about 100 species. The resulting expanded concept of *Drimia* makes it very variable in flower and vegetative morphology, and this results in synonymization of several traditionally accepted genera, such as *Litanthus* Harvey (1844: 314), *Rhadamanthus* Salisbury (1866: 37), *Rhodocodon* Baker (1880: 280), *Schizobasis* Baker (1873: 105), *Tenicroa* Rafinesque (1837: 52), *Thuranthos* Wright (1916: 233), and *Urginea* Steinheil (1834: