

## CRASSULACEAE

### *BRYOPHYLLUM PROLIFERUM* NATURALIZED IN KWAZULU-NATAL, SOUTH AFRICA

The most efficient method of multiplication by succulents is via adventitious plantlet proliferation. A number of alien succulents that use this method of propagation has become naturalized or weedy in South Africa. Well-known examples include *Agave sisalana* Perrine (Smith & Mössmer 1996) and *Opuntia ficus-indica* L. (Obermeyer 1976). Abnormal (adventitious) development is reflected in the panicle of *A. sisalana* becoming

bulbiferous after flowering, and shooting and rooting of the detached fruits occurring in *O. ficus-indica*. Amongst the few Crassulaceae that have been recorded naturalized in southern tropical Africa, the genus *Bryophyllum* Salisb. features prominently (Fernandes 1983). However, in the *Flora of southern Africa* region, *Bryophyllum delagoense* (Eckl. & Zeyh.) Schinz is the only member of this family to have been recorded as such (Toelken 1985; Dreyer &

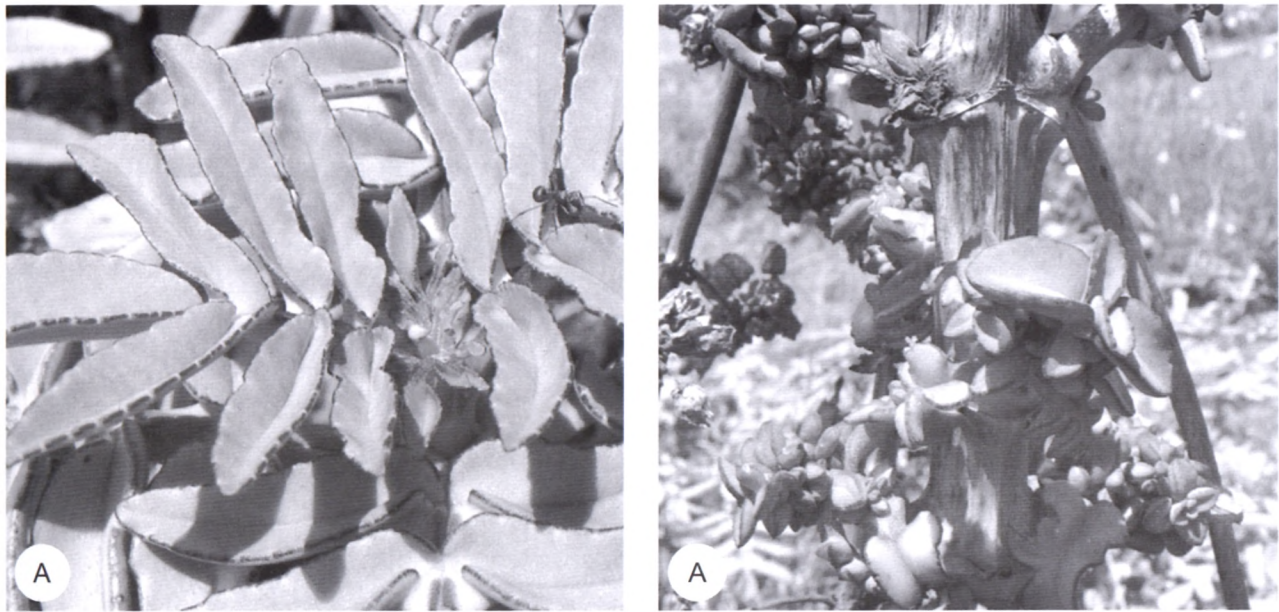


FIGURE 14.—A, leaves; B, plant showing adventitious buds.

Makwarela 2000) although Wells *et al.* (1986) listed *B. proliferum* Bowie ex Hook. as a potential problem plant.

Recent field work in KwaZulu-Natal and subsequent consideration of herbarium collections have revealed that the hardy stem and leaf succulent *Bryophyllum proliferum* has escaped from cultivation. Although these populations have not been shown to be self-replacing for a period of ten years, we categorize this hardy invasive as naturalized, for the Botha's Hill population is evidently expanding through recruitment. The population status at the original 1985 collection site on Ismont Farm has not been reassessed. Significantly, in defining 'naturalized' alien invasive taxa, Pyšek *et al.* (2004) admitted that how long a species must persist to be considered naturalized is inevitably arbitrary.

This tall species, a native of Madagascar, is grown predominantly for its foliage (Figure 14) rather than its rather unattractive greenish yellow flowers; detracting further from its horticultural appeal are the inflorescences (terminal panicles) that are usually disfigured

by the numerous adventitious buds that spring from the pedicel bases of aborted flowers. Plants grow as clump-forming subshrubs, with decussate leaf pairs borne along the upper third of the four-angled, somewhat woody stems. The impari-pinnatisect leaves are a verdant pale green and marginally crenate, each with 3–7 opposite pairs of sessile leaflets that are subdecurrent and asymmetric at the base. Small plantlets may additionally be produced in the crenatures of the entire leaf, and along the upper grooved midrib. Wells *et al.* (1986) described further proliferation via root suckers. The leaves are borne more or less horizontally, effectively shading out low-growing indigenous vegetation.

It is likely that the species has been naturalized (Figure 15) for some time but has gone unnoticed. This phenologically plastic species presents variable leaf morphologies and coloration; for example, leaf margins turn red under high light intensities, whereas this trait is absent from specimens established in shade.

#### Specimens examined

KWAZULU-NATAL.—2930 (Pietermaritzburg): 1.5 km east of The Valley Trust, Portion 585 of the Farm Assagay Kraal, Botha's Hill, colony alongside stream in granite gully. Growing in semi-shade along with *Adiantum capillus-veneris* and *Pteris vittata*, 450 m, S 29°735169; E 30°748894, (–DA), 05-05-2007, N. Crouch 1123 (NH). 3030 (Port Shepstone): edge of grassy track in *Eucalyptus* plantations between Mount Langford and Loni River (mid-Illovo area), on Ismont Farm, (–BA), 15-07-1985, B. Culcross s.n. (NH).

#### ACKNOWLEDGEMENTS

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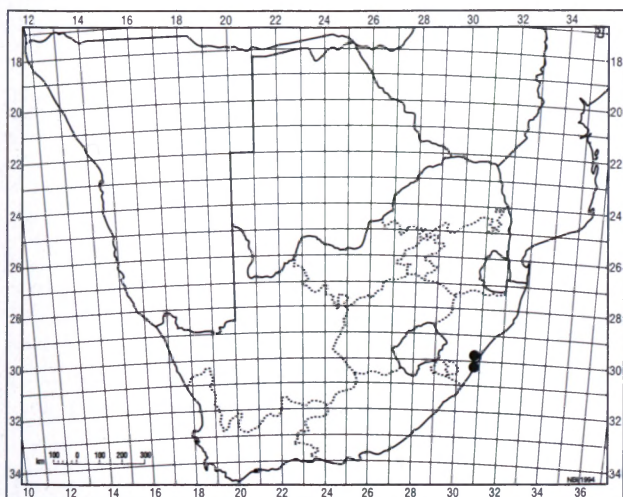


FIGURE 15.—Known distribution of *Bryophyllum proliferum* based on specimens at NH, NU and PRE.

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