Aloe meyeri

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Aloe meyeri Van Jaarsv.

Family: Asphodelaceae
Common names: Rosyntjiesberg aloe (Eng.); rosyntjiesberg-aalwyn (Afr.)

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A rare, small, cliff-dwelling aloe with drooping rosettes of greyish green leaves and simple inflorescences of small, tu orange-red flowers with green tips, that are pollinated by sunbirds. It is cluster-forming, with the stems becoming pen up to 1 m long. It is only known from the Rosyntjiesberg in the Richtersveld and adjacent Namibia of the lower Orange of the Northern Cape.

Fig. 1. *Aloe meyeri* in flower on the Rosyntjiesberg.

Description

Aloe meyeri is a slow-growing, long-lived, perennial (from seed 5–7 years), forming loose pendulous clusters, branch from the base, with elongated stems up to 1 m long. Roots are slightly fleshy. Branches are leafy, becoming deciduou from below or during severe drought. Leaves are crowded, ending in an apical rosette, up to 260 mm in diameter, spreading in the rainy season, inwardly curved, becoming drawn together, with a reddish colour in the dry season or prolonged drought, narrowly lanceolate-acuminate, up to 200 mm long, 35 mm in diameter, with a grey-green surfac Inflorescence simple or sometimes branched, pendulous, recurved, up to 250 mm long, the racemes in a head (capit Flowers are sub-pendent, the perianth is orange-red, green-tipped, 20 mm long. Fruiting capsules are 9–12 x 4 mm, ascending-spreading. Seeds are winged, grey, 3 x 2 mm. Flowering time is mainly in midsummer and autumn (Decem April), but sporadically at other times as well.

Fig. 2. Close-up of the rounded flower head of *Aloe meyeri* on the Rosyntjiesberg, Richtersveld National Park (N. Cap

Conservation Status

Although *Aloe meyeri* is classified as Rare on the Red List of South African plants, because of its safe, inaccessible, c face habitat falling within the Richtersveld National Park, it is not threatened.

Fig. 3. *Aloe meyeri* cluster on a south-facing quartzitic sandstone cliff on the Rosyntjiesberg, Richtersveld National Pa (Northern Cape).

Distribution and habitat

Aloe meyeri is confined to the upper slopes of the Rosyntjiesberg (Richtersveld National Park, Northern Cape) and ac area of the same geological formation in southern Namibia.

The habitat of *Aloe meyeri* consists of vertical or near vertical, quartzitic sandstone cliffs, growing at altitudes of 300– m above sea level. The geology consists of quartzitic sandstone of the Rosyntjieberg Formation (Orange River Group rock formation has many fissures, ledges and crevices and is ideal for establishment of plants. The vegetation of the Rosyntjiesberg consists of Rosyntjiesberg Succulent Shrubland of the Succulent Karoo Biome (Mucina *et al.* 2006).

Aloe meyeri grows both on exposed northern and northwestern aspects, but also on southern and eastern slopes, th plants firmly rooted in crevices. The average daily maximum temperature is about 26°C and the average daily minimu about 14°C, with frost absent in winter. The southern slopes are cooler, with shady conditions. Winters are cool and su to occasional coastal fog from the west coast. Rainfall occurs mainly from autumn (thunder showers) to spring (cyclon winter rain), ranging from 75–150 mm per annum.

Associated cliff dwelling plants in its habitat are *Conophytum taylorianum* subsp. *rosynense*, *Crassula garibina* and *C montana* subsp. *borealis*, *Othonna cremnophila*, *Trachyandra aridimontana* and *Tylecodon ellaphieae*.

Derivation of name and historical aspects

Aloe meyeri was named by the author in the *Journal of South African Botany* in 1981 (Van Jaarsveld 1981). It commem the late Reverend G. Meyer of Steinkopf, who first collected the plant in September 1939, together with the late Mr Ha Herre of the Stellenbosch University Botanical Garden. Their discovery was brought to the attention of Mr N.S. Pillans Dr G.W. Reynolds but, according to Hans Herre, they considered it to be a hybrid between *Aloe krapohliana* and anot aloe (Herre 1973).

The author came across this aloe on an expedition arranged by Pieter Drijfhout, collecting material of *Pelargonium desertorum* on the southern foothills of the Rosyntjiesberg, in June 1980. Upon investigation, and after reading the 19 article by Herre, where he mentioned the discovery of an aloe by Meyer on the Rosyntjiesberg, he realised the signif of Meyer's find and subsequently named it for him.

Aloe meyeri belongs to a group of 7 aloes belonging to section *Mitriformis*, subsection *Prolongatae* (see *Aloe dabenorisana*). This group is mainly confined to the winter rainfall region of southern Africa. *Aloe meyeri* is closely rel to *A. pavelkae* which is only known from the Hunsberg Mountains in southern Namibia. *Aloe meyeri* is easily distingu from this related group by its smaller, 20 mm long, green-tipped flowers. *Aloe pavelkae* has green leaves and a distir apical rosette and the leaves when turgid, do not become biconvex and it flowers in midwinter. *Aloe meyeri* is smalle glaucous leaves that remain functional over a considerable part of the stem (leafy stems), and flowers in midsummer. *dabenorisana* has similar green leaves, but they are recurved.

Fig. 4. The leafy stem of *Aloe meyeri*, note the turgid succulent leaves and small teeth.

Ecology

A slow-growing, long-lived perennial with sturdy leaves, that grows on sheer cliffs, and the drooping stems and sprea to ascending leaves, are well adapted to the exposed and shady, south-facing cliffs. During dry conditions, the leaves in, protecting the growth point and younger leaves.

This species retains its pendent leafy stems and leaves, even when growing in cultivation. Compared to related plant subsection *Prolongatae* (Reynolds 1950), there is a general reduction in size; it is the smallest in the subsection. Its sn size also allows for more effective anchorage of the rootstock, allowing it to cope more efficiently with gravity. Plants smaller size can also cope better with heat absorption under cool growing conditions, a general trend among winter-succulent plants.

The persistent leaves remain functional for many years, thus acting as a water resource and staying photosynthetical active. The small teeth on the leaf margins suggest a reduction in armament as a direct result of the reduction in herb because of the sheer cliff face. The herbivores with which the plants have to deal, include the Chacma Baboon (*Papi ursinus*), Rock Rabbit (*Procavia capensis*) and Klipspringer (*Oreotragus oreotragus*). When seed germinates on acces sites, the plants will be grazed by these herbivores, and the young inflorescences and soft new young stems by the baboons.

The young inflorescence is drooping at first but curves up as it matures, presenting the raceme(s) in the typically erec position, however, the flowers remain pendent. Pollination is by local sunbirds. The fruits ripen in autumn, with the sta the rainy season, when there is the best chance of thunder showers which are followed by cyclonic winter rains. As t capsule matures it is held in an erect position, and a gust of wind will shake the small, light, winged seeds out and sc them on the cliff, their size and angular shape ideal for establishment in crevices.

Aloe meyeri is prolific from the base, forming drooping clusters. The stems root when finding a new crevice and falle branches will also root when wedged in a suitable crevice. The continual renewal of shoots and rooting of stems in n crevices by extended stem growth, represent a vegetative backup dispersal strategy for the harsh cliff-face environm

Fig. 5. Close-up of a rosette of *Aloe meyeri* growing on a sheer rock face, note the faintly striate leaves.

Uses

It is not known whether the plants are used medicinally.

Fig. 6. A cluster of *Aloe meyeri*, note the long stems.

Growing Aloe meyeri

Aloe meyeri is best grown in succulent karoo gardens. It does best on sheer embankments or on a balcony. Plants ca grown from seed or cuttings. It is best grown as a specimen pot collection outside its native habitat. In moist environr plants may become prone to fungal crown rot. It does well in a sandy, well-drained soil. Keep dry in summer.

Outside its habitat, plants usually struggle. For best results, in a desert garden situation, grow on steep embankments where the plant can become drooping. Soil should be slightly acidic and rich in gravel. Water should be provided spa throughout the year. Propagate from stem cuttings, rooted in sandy soil in summer. Keep in light shade.

Outside of its desert habitat it is best to grow in a greenhouse in a container or hanging basket, where its climate car controlled and its habitat simulated. Grow in a sandy, slightly acidic medium, adding an organic fertiliser during water Water sparingly throughout the year.

Propagate by seed or by stem cuttings. Place offshoots in a sandy soil. Best time is in spring and summer. Seed is fin can be sown in a sandy mixture, in spring or summer and covered with a very thin layer of gravel or sand. Keep moist Remove seedlings as soon they are large enough to handle.

In moist climates the fungus *Fusarium* can damage the roots. Best to add *Trichoderma*, a fungal biological control age Aloe cancer caused by microscopic mites can sometimes be troublesome causing distorted growth of the inflorescer stem, but is easily treated with a paint brush and Karbadust mixed with water. Paint the infected cancerous portion. If tuberous growth is large it can also be removed by hand and the wound painted. Roots sometimes affected by mealy and treat accordingly, drenching the plant in a contact or systemic insecticide.

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Plant Attributes:

Plant Type: Succulent

SA Distribution: Northern Cape

Soil type: Sandy

Flowering season: Late Summer

PH: Acid, Neutral

Flower colour: Green, Red, Yellow, Orange

Aspect: Shade, Morning Sun (Semi Shade)

Gardening skill: Challenging

Special Features:

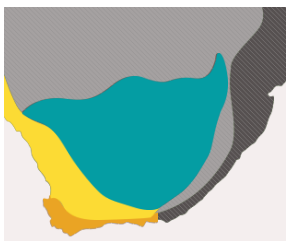
Attracts birds

Drought resistant

Good potplant

Indoor plant

Horticultural zones



Zone 2 Coastal winter rainfall, frost free
Zone 3 Winter rainfall Karoo, light frost
Zone 4 Summer rainfall Karoo and Highveld, Frost in winter

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