

# CHASMANTHE

Notes on their cultivation and propagation,  
with particular reference to *Chasmanthe bicolor*.

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The increasing awareness of limited water resources, particularly during the summer months in the Western Cape, and the need to grow waterwise indigenous species in our gardens, must focus attention on our wealth of winter-growing bulbous plants, most of which are deciduous and escape summer drought by underground dormancy. *Chasmanthe* is a small irid genus consisting of three winter-growing, summer dormant species endemic to the winter rainfall region of the north-western, Western, southern and Eastern Cape. These are the low-growing *Chasmanthe aethiopica*, the medium-sized *C. bicolor*, and the robust, tall-growing *C. floribunda*.

*Chasmanthe aethiopica* growing wild in the Cape Peninsula's Silvermine Nature Reserve.  
Photo: G. Duncan.

Plants of *Chasmanthe*, probably *C. floribunda*, were cultivated in Europe as far back as the early 1630s, and this species is recorded as having been in flower in Paris in 1633, and was illustrated and described there for the first time in 1635. Often considered too 'common' to grow by gardeners in South Africa, *Chasmanthe* is an excellent choice for a variety of gardens in frost-free areas including difficult, seaside gardens

where it tolerates wind, sandy soil, minimal winter watering and summer drought, as well as lightly shaded gardens with loam soils and heavy winter rainfall, or even hot and dry inland gardens in full sun. They all produce narrow, curved flowers with arching stamens, and long, sword-shaped leaves. The generic name is derived from *chasme* and *anthe*, which refers to the gaping mouth, and the flower, respectively.

## *Chasmanthe aethiopica*

Commonly known as 'suurkanolpypie', this is a relatively low-growing, gregarious plant 25-70 cm high with the widest distribution of the three species of *Chasmanthe*. It occurs in a variety of habitats including acid sand and heavy clay mainly in coastal areas from the western part of the south-western Cape, to the southern Cape and south-eastern part of the Eastern Cape. The corm is slightly conical and





*Chasmanthe floribunda* var. *duckittii* is just as easy to grow as the more common orange form (see cover). Photo: G. Duncan.



*Chasmanthe bicolor*, unlike the other two species, is extremely rare and possibly extinct in its natural habitat in the districts of Robertson, Caledon and Franschhoek in the south-western Cape. Photo: G. Duncan.

somewhat flattened, surrounded by several layers of fibrous corm tunics, and grows up to 45 mm in diameter.

It is the earliest species to flower, from late April to June, sometimes to July or August, and occurs naturally on the Kirstenbosch estate, where it is frequently encountered in semi-shade, growing on moist sandstone in large colonies. Its flowers are arranged alternately on the upper side of the peduncle, and the inflorescence is unbranched. In addition to its striking dark reddish-orange flowers and erect, somewhat fleshy bright green leaves, its ripe capsules are particularly attractive when they split open and reveal their large, bright orange seeds.

#### *Chasmanthe floribunda*

Commonly known as 'suurkanol' and 'Adam's rib', this is probably the most well known *Chasmanthe* species. It is a robust plant growing up to 1.5 m high with long, broad, erect, soft-textured leaves, produced in a narrow fan-like position. The horizontal arrangement of the up to forty elongated individual flowers on both sides of the peduncle has given rise to the very descriptive Afrikaans colloquial name of 'Adam's rib', alluding to a human ribcage! It is most frequently seen in acidic, humus-rich soil between cracks of granite outcrops in

the western and south-western parts of the Western Cape, but it also occurs inland on sandstone in montane habitats in the western part of the Northern Cape. It has a large, flattened corm up to 100 mm in diameter, which is surrounded by several layers of tough corm tunics. Its distribution is mainly coastal, and its flowering period extends from mid-July until mid-September.

There are two colour varieties, the most common of the two being the reddish-orange variation *Chasmanthe floribunda* var. *floribunda*. The much less frequently seen primrose-yellow form known as *Chasmanthe floribunda* var. *duckittii* is restricted to just a few localities near Darling in the south-western Cape. It flowers slightly earlier than the orange form and both produce branched inflorescences and brownish-orange seeds.

#### *Chasmanthe bicolor*

This is a medium-sized plant growing from 70 cm to 1.3 metres high, but unlike the other two species, is extremely rare and possibly extinct in its natural habitat in the districts of Robertson, Caledon and Franschhoek in the south-western Cape. The corm is slightly conical and somewhat flattened, surrounded with several layers of dark brown corm tunics, and

grows up to 45 mm in diameter. Its flowers are arranged alternately on both sides of the peduncle and its dark green, soft-textured leaves are produced in a narrow fan-like position, and closely resemble those of *C. floribunda*, but are shorter and much narrower.

It blooms from July to early September and the highly ornamental, dark red flowers are marked with yellow and bright green, and are curved to a much greater degree than in *C. aethiopica* and *C. floribunda*. It is a particularly floriferous plant and unlike the other two species, each mature corm flowers every year, and the flowers are longer-lasting than the other two species. During the bud stage, the top of the inflorescence is conspicuously bent downwards, but straightens out during the flowering period. The inflorescence is usually unbranched but may occasionally develop small branches at its base. Copious amounts of small dark reddish-maroon seeds are produced.

#### Pollination

The long curved perianth of the *Chasmanthe* flower is an excellent example of how certain southern African bulbous species with large, brightly coloured flowers have ensured their survival by adapting to





*Chasmanthe bicolor*, inexplicably neglected by gardeners, is ideally suited to garden and container cultivation. Photo: G. Duncan.

pollination by sunbirds. The *Chasmanthe* perianth tube is very narrow at its base, but widens abruptly to form a broader cylindrical tube above, and has one or more shallow or deep pouches at the point of widening, which contain nectar. The long, curved beak of the lesser double-collared sunbird, the malachite sunbird and the orange-breasted sunbird (the three main pollinators of *Chasmanthe*) which they insert into the perianth tube and probe the pouches for nectar, perfectly match the curved shape of the *Chasmanthe* flower. The sturdy peduncle provides a suitable perch for the bird to cling to while feeding, and in the process of inserting its beak into the perianth tube, pollen from the arching stamens above is deposited onto the forehead of the bird. When the bird visits the flowers on another plant, pollen from its forehead rubs off onto the branched stigma above, and fertilization takes place.

Another avian visitor to the flowers of *Chasmanthe* is the Cape white-eye, a small olive-green bird with conspicuous white rims around the eyes, which lives in flocks and is very common in suburban gardens in the western, southern and Eastern Cape. These cunning little birds, with a liking for nectar but whose beaks are

far too short and straight to reach the nectar by approaching the flower from the front, have been seen to pierce the lower sides of *Chasmanthe bicolor* perianth tubes in the Kirstenbosch bulb nursery, thus gaining access to the nectar.

#### Cultivation

For frost-free areas, few winter-growing cormous plants are as trouble-free and easy to grow as *Chasmanthe*. All three species are recommended for garden cultivation, and *C. bicolor* also does well as a container plant. *C. floribunda* prefers a full sun position and the smaller *C. aethiopica* and *C. bicolor* are ideal candidates for difficult, semi-shaded parts of the garden, but

are equally successful when grown in full sun. All three species will grow and flower in even the poorest of soils but to achieve excellent flowering, a rich, well-drained soil is recommended and large quantities of fully decomposed compost and a few handfuls of bonemeal should be worked into very sandy soils. When grown in the open garden, *Chasmanthe* species should be left undisturbed for three to four years, so thorough preparation of the soil is required to ensure good flowering.

The large flat, pancake-like corms of *C. floribunda* should be planted about 20 cm apart, with about 5 cm of soil over the top of the corm to prevent them from falling over in strong wind. The much smaller corms of *C. bicolor* and *C. aethiopica* can be planted 10 cm apart, and 2-3 cm deep. Like all deciduous, winter-growing cormous plants, the corms of *Chasmanthe* are stimulated into active growth after their long summer dormancy by cooler night temperatures in late summer and early autumn. Active growth is indicated first by the development of new roots, followed shortly afterwards by leaf shoots. *Chasmanthe* corms are so resilient that hardly any artificial watering is necessary in the winter rainfall region of South Africa, but in

frost-free parts of summer-rainfall areas, a thorough watering once per fortnight is necessary throughout the winter-growing period, up until early spring. No supplementary liquid feeding is necessary during the growing period, but the addition of slow-release granular fertilizer such as Osmocote or Horticote is beneficial.

As temperatures rise towards early summer, the corms begin to enter dormancy, indicated by a browning of the leaves, which should be cut back to just above ground level when fully desiccated. Although *Chasmanthe* prefers a completely dry dormant period during the summer, the corms are tough enough to withstand summer rainfall or irrigation, provided that the soil drains freely. As far as I'm aware, *Chasmanthe* corms are not frequently taken by mole rats under cultivation, but porcupines will certainly eat them in place of their favourite meal of *Zantedeschia aethiopica* rootstocks when the latter is not available.

The earliest species to bloom is the deep reddish-orange *Chasmanthe aethiopica*, which has a very long flowering period extending from late April until the end of July, depending on the wild origin of the clone being cultivated. This species forms large colonies if left to its own devices, but interestingly, only about fifty percent of the mature corms in a large colony will flower in any given season. It is not yet known why this is, but it is evident in their natural habitat as well as under cultivation.

*Chasmanthe aethiopica* is a particularly useful species for difficult, semi-shaded parts of the garden as well as for sunny rockery pockets, and does equally well in clay or sandy soils. In rockery pockets, this species can be effectively interplanted with spring-flowering bulbous species like *Babiana angustifolia*, *Ixia maculata* and *Watsonia laccata*.

The ubiquitous *Chasmanthe floribunda* is a spectacular plant, seen to best advantage massed together in large beds, and is successfully grown at Kirstenbosch interplanted with deciduous or evergreen, summer-flowering *Agapanthus* species like the deep violet *Agapanthus inapertus* subsp. *pendulus* 'Graskop' and the pale greyish-white *A. praecox* subsp. *minimus* 'Storms River'. It can also be used as a backdrop planting to a wide herbaceous border, and is particularly effective in such positions when interplanted with the tall-growing winter-flowering forms of *Kniphofia uvaria*. *Chasmanthe floribunda* var. *duckittii*, the bright primrose-yellow form, is just as easily grown as the orange one, and both flower best when grown in full sun. However, like *C. aethiopica*, mature plants of this species do not flower every single year, so that a large number of corms are required in order to create a really good flowering



effect. Trials in the Netherlands are currently being conducted with *C. floribunda* var. *duckittii* to determine exactly which factors influence flower formation, in order to make this plant a commercially viable flower bulb crop. *C. floribunda* is the toughest of the three species, and easily survives garden irrigation during its summer dormant period.

The much less well-known *Chasmanthe bicolor* has for too long been neglected by gardeners, and in my view it is the most desirable of the three species. Its most important attribute is that mature corms flower reliably every single year, unlike those of *C. aethiopica* and *C. floribunda*. It can be grown equally successfully in both partial shade or full sun, and the plant produces copious amounts of

seed, as well as forming offsets and division of the mother corm. The dark red and yellow flowers have striking bright green markings that are ideal for mass planting towards the middle of a herbaceous border. Its free-flowering nature makes it suitable for cultivation in deep containers with a diameter of 30 or 35 cm. Potted flowering specimens will remain in flower for up to three or four weeks if kept well watered. Its corms are not quite as resilient to garden irrigation during its summer dormant time as the other two species, and are best planted in an area not heavily irrigated during the summer.

A word of caution to bulb enthusiasts in Australia – the genus *Chasmanthe* thrives in that country, and it could be potentially invasive,

that's if this has not already happened! A garden hybrid belonging to the closely related genus *Crocasmia*, known as *Crocasmia x crocosmiiflora* (previously widely known as *Montbretia*) has already escaped and established itself in Australia and in many other countries, including Bolivia and Brasil, where it is now firmly established along cloud forest verges. ♡

#### Further reading

De Vos, M.P. 1985. Revision of the South African genus *Chasmanthe* (Iridaceae). *South African Journal of Botany* 51(4), 252-261.

Duncan, G.D. 1989. *Chasmanthe*. In: Du Plessis, N. & Duncan, G.D., *Bulbous plants of southern Africa*. Tafelberg, Cape Town.

## PROPAGATION OF CHASMANTHE

*Chasmanthe* is one of the easiest irids to propagate, either by seed or by offsets. The hard, rounded seeds are about the size of a small pea, and are ready to be harvested once the capsules have started to turn pale brown and split open, revealing the bright to dull orange or reddish-maroon seeds, which should be stored for the summer before sowing in autumn. Seeds can be kept at room temperature for up to a year, or in the vegetable compartment of a fridge if the seeds are to be stored for sowing in several years time. Sow the seeds in autumn (mid-April to May in the Southern Hemisphere) after cool weather has definitely set in, at a depth of 3-5 mm, in deep seedtrays, pots or seedbeds, filled with a well-drained medium (equal parts of river-sand or silica sand and finely sifted compost). Choose a position in light shade, and keep moist by thoroughly watering with a fine rose every two to three days. Fresh seed germinates readily within three to four weeks, but be sure to scatter the seed evenly and thinly, as sowing too thickly causes seedlings to 'bunch' together and favours the development of damping-off fungi like *Pythium*, especially after watering. It is always preferable to water seedlings of bulbous species during the morning, as this allows them to dry off during the rest of the day, leaving the leaves dry at night and reducing the risk of attack by damping-off fungi. The seeds can also be dusted with a fungicide like Thiram or Thiulin prior to sowing. Under ideal conditions, *C. aethiopica* and *C. bicolor* can be brought to flowering stage during their second season of growth, but *C. floribunda* usually flowers in its third year from seed.

All three *Chasmanthe* species readily develop offsets (daughter corms) produced from axillary buds

on the mother corm, and to a lesser extent, also propagate by division of the mother corm. *C. floribunda* also occasionally propagates by the formation of horizontal stolons which develop into new corms at their tips.

A mature corm can produce up to five daughter corms per growing season, so that after four years of remaining in the same position, a large clump of corms will have formed. Large clumps of *Chasmanthe* need to be lifted and divided every three to four years as the clumps become too thick and flowering performance tends to diminish markedly with *C. aethiopica* and *C. floribunda*. The dormant corms can be lifted at any time during the summer or early autumn months, up until the middle of March in the Southern Hemisphere. Use a large garden fork to lift the clumps, then separate the offsets, remove and discard the 'stacks' of old corms which have remained underneath the newest mature corm, and either replant the corms or store them in a cool dry place until planting time. Be sure to dust loose corms during the storage period with Bexadust to discourage the development of mealy bugs that thrive in the enclosed atmosphere of storage racks or paper packets.

In general, *Chasmanthe* is pest and disease free during the growing period with the possible occasional attack by aphids to the flower buds, which are usually made short work of by Cape white-eyes.



*Chasmanthe floribunda*. Photo: G. Duncan.

#### SOURCES OF SUPPLY

Corms and seeds of *Chasmanthe* are seldom available from commercial nurseries or specialist bulb nurseries in South Africa, but seeds of all three species, including *Chasmanthe floribunda* var. *duckittii* are regularly available from the Kirstenbosch seed catalogue, either free to members of the Botanical Society, or for sale when stocks are available. Corms of *Chasmanthe* are periodically available at the Botanical Society's annual Garden Fair.