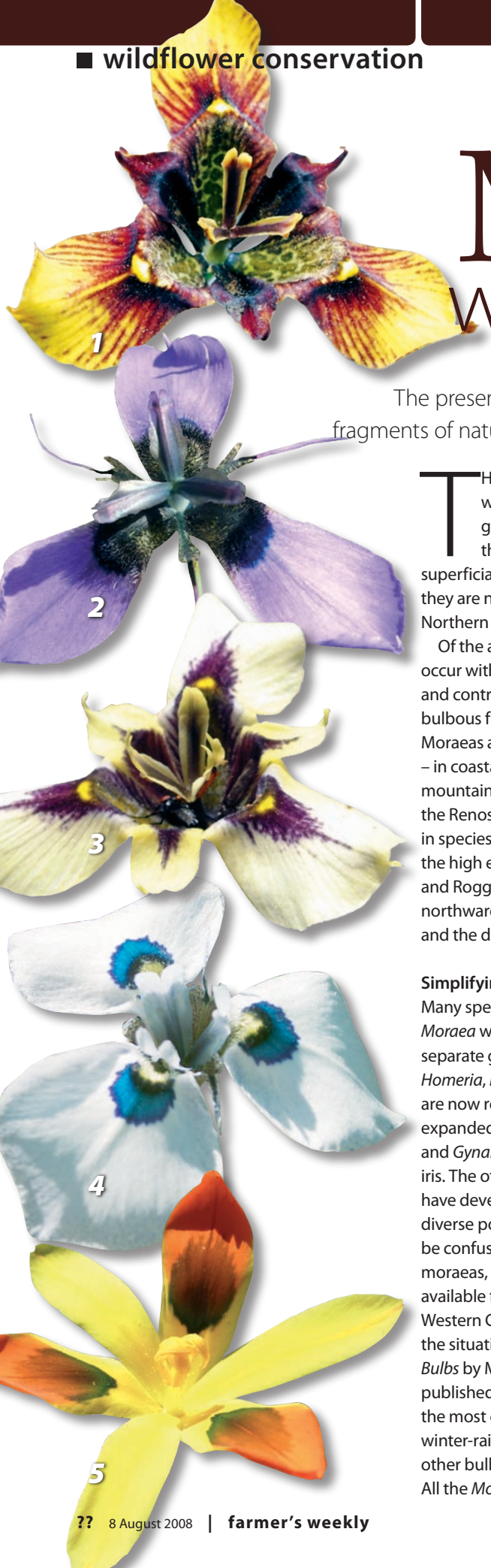

Moraeas – winter-rainfall region

The presence of moraeas can be an indication of the health and status of the fragments of natural veld that remain in cropping areas, writes **Cameron McMaster**.

THE MORAEAS, INTRODUCED LAST week, are a large and diverse group of bulbous plants within the Iridaceae family. While superficially resembling the iris flowers, they are not closely related to the Northern Hemisphere-genus iris.

Of the approximately 195 species, 123 occur within the winter-rainfall region and contribute to the richness of the bulbous flora of the Cape Floral Kingdom. Moraeas are found throughout the region – in coastal dunes, West Coast sand plains, mountain fynbos, the shale-based soils of the Renosterveld which is particularly rich in species, the Ceres and Tanqua Karoo, the high escarpments of the Bokkeveld and Roggeveld of the Western Karoo and northwards to the Kamiesberg, Namaqualand and the deserts of southern Namibia.

Simplifying for clarity

Many species now included in the genus *Moraea* were previously classified under separate genera – *Moraea*, *Gynandriris*, *Homeria*, *Hexaglottis* and *Galaxia*. These are now regarded as groups within the expanded genus. Only the subgenera *Moraea* and *Gynandriris* have flowers that resemble iris. The others have flower shapes that have developed as a result of adaptations to diverse pollination strategies. While this may be confusing to anyone on the lookout for moraeas, reference to the various field guides available for Namaqualand, Northern and Western Cape, will soon assist in clarifying the situation. *The Color Encyclopedia of Cape Bulbs* by Manning, Goldblatt and Snijman, published by Timber Press, is currently the most comprehensive reference for winter-rainfall moraeas as well as all the other bulbous genera in the this region. All the *Moraea* species in this region are deciduous and follow a winter growth and spring flowering cycle. Flowers are born in terminal clusters, emerging successively from two green bracts. Flowers usually open for a single day, but a few species open for a few more. Some moraeas in specific populations have the ability to flower simultaneously on certain days and not on others, thus ensuring effective fertilisation.

The sub-genus *Moraea* is the largest and has some of the most beautiful flowers. Among these are the so-called peacock moraeas with bold, often iridescent central markings. Many of the peacock moraeas have a very restricted distribution and occur naturally in areas that have been heavily transformed by cultivation. Consequently they are highly endangered and some

'Flowers usually open for a single day…'

are possibly extinct in the wild. However, being popular pot plant subjects they have survived in cultivation. An example of this is *Moraea aristata*, a beautiful white species with dark blue to emerald nectar guides, which has a tenuous existence as a single small population in the grounds of the Royal Observatory near Mowbray. Similarly, *Moraea loubseri* known from only a single granite koppie near Langebaan

- Many of the species in the *Moraea* genus are now classified under this single group.
- *Moraea lurida* relies on its scent and not its appearance to attract pollinators.
- The Cape hosts possibly more endangered species than anywhere else in the world, says McMaster.

1, 3 and 9. Three of the many colour forms of *Moraea lurida* which relies on its putrid smell to attract its fly pollinators.

2. *Moraea loubseri* is a rare species confined to a single koppie near Langebaan.

4. *Moraea aristata* has a tenuous existence as a single small population in the grounds of the Royal Observatory near Mowbray.

5. *Moraea elegans* has a very restricted distribution in the Caledon and Napier region.

6. *Moraea melanops* (left) and *Moraea galaxia* (right). These are two small species that bloom at ground level, and can be common where they occur.

7. *Moraea tricolor*, a small species occurring in damp spots from Hopefield to Napier.

8. *Moraea tulbaghensis* from near Tulbagh, one of the peacock moraeas with a very restricted distribution.

is in grave danger. *Moraea tulbaghensis* from near Tulbagh and *Moraea insolens* from Drayton Siding near Caledon are two further species that have severely restricted distributions due to cultivation of the area in which they previously occurred.

The scent of a flower and baptism by fire

Moraea lurida relies on its fetid smell rather than its beauty to attract the flies that are its pollinators. Not having to rely on its appearance, this strange fynbos species exhibits a wide range of colour forms from almost black (from which its name is derived) through yellow and orange colours to white. It is largely dependent on fire to flower and following fires the full range of colour forms can be seen in a single population.

The subgenus *Galaxia* comprises a number of very small plants with cup-like flowers blooming almost on ground level. Although many of the species in this group also have restricted distributions, they can be very common where they occur and spectacular mass displays are sometimes seen in the Renosterveld of the Overberg. The yellow *Moraea fugacissima* and *Moraea melanops* with purple flowers with black centres, are examples of two that occur together in mass displays.

The subgenus *Homeria*, collectively known as "tulp", is well represented in the region and is responsible for mass displays in spring. For instance hundreds of hectares of veld are covered in orange- and pale-yellow blooms of *Moraea miniata* in the Roggeveld near Middelpos in late August. Various species of yellow and orange *Moraea* can be scattered across the countryside in spring and summer, such as the hardy species of *Moraea collina* and *Moraea lewisiae*. On the other hand some are exceedingly rare and restricted to only one or two populations. *Moraea elegans* is one of the most beautiful and rare of these. It is known from one population on the farm Fairfield near Napier, but two other populations have been reported in the Caledon district.

Vulnerables become more vulnerable

The fact that many of the most vulnerable *Moraea* species occur in regions like the Swartland and Overberg which have been radically transformed by agriculture, means that their habitats have largely been destroyed and many vulnerable species are confined to small fragments of natural veld too rocky or steep to plough. Even these fragments are often degraded by excessive grazing and trampling by sheep and cattle, by herbicide drifting across them during crop spraying and by the spread of alien trees and shrubs like Port Jackson willow and hakea.

'Landowners play a vital role in conservation…'

The Cape is well known for its many local endemics and probably harbours more rare and seriously endangered plant species than anywhere else in the world. For instance, members of the local Custodians of Rare and Endangered Wildflowers (Crew) group have been given the challenge to find *Moraea minima* only known from one location on the farm Mierkraal SW of Bredasdorp. It was last seen in 1981 and the comments were that its habitat was heavily invaded by alien acacias and under no form of conservation. What are the chances of it still surviving?

The presence of moraeas and other geophytes can be an indication of the health and status of the fragments of natural veld that still remain in cropping areas. Landowners play a vital role in conservation and should implement management plans to limit damage by grazing, as well as ensure that no spill-over or drift from crop sprayers and other means of distributing pesticides and herbicides occurs. They should also commence alien clearance where necessary.

With so many species of *Moraea* in the Cape floral region it is impossible to mention or list them all.

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